

**TITLE OF THE THESIS**

**PSYCHO-PHYSIOLOGICAL ASPECT AND ITS EFFECT ON  
RESPIRATORY SYSTEM THROUGH NATUROPATHY ON CHILDREN  
AGE GROUP 5-12 YRS – POSITIVELY LINK TO GLOBAL WARMING**

A

THESIS

SUBMITTED TO THE

SHRI JAGDISH PRASAD JHABARMAL TIBREWALA UNIVERSITY,

VIDYANAGARI, JHUNJHUNU, RAJASTHAN.

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OF

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IN

**(INTERDISCIPLINARY)**



**SHILPA N. DESAI**

**REG.NO. - 20114552**

UNDER THE GUIDANCE OF

**Dr. NARENDRA V. DESHMUKH**

DEPARTMENT OF PSYCHOLOGY

**SHRI JAGDISH PRASAD JHABARMAL TIBREWALA UNIVERSITY,**

**VIDYANAGARI, JHUNJHUNU, RAJASTHAN – 333001**

Year 2013

### DECLARATION BY THE CANDIDATE

I, Mrs. Shilpa N. Desai declare that thesis entitled Psycho-Physiological Aspect and Effect on Respiratory System Through Naturopathy on Children Age Group 5-12 Years – Positively Link to Global Warming

Is my own work conducted under the supervision of Dr. Narendra V. Deshmukh. (Supervisor/ Co-supervisor) at Department of Psychology. Shri Jagdishprasad Tiberwala University. Vidyanagari, Jhunjhunu, Rajasthan - 333001

Approved by research Degree Committee. I have put in more than 200 days of attendance with the supervisor at the centre.

I further declare that to the best of my knowledge the thesis does not contain any part of any work which has been submitted for award of any degree either in this University or any other university/ deemed university without proper citation.

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Signature of Supervisor

Signature of candidate

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This is to certify that work entitled Psycho-Physiological Aspect and its Effect on Respiratory system Through Naturopathy on Children Age Group 5-12 Years – Positively Link to Global Warming

Is a piece of research work done by Smt. Shilpa N. Desai Under my supervision for the degree of Doctor of Philosophy in Interdisciplinary Of JJT University, Jhunjhunu, Rajasthan, India. That the candidate has put attendance of more than 200 days with me.

To the best of my knowledge and belief the thesis

- I. Embodies the work of candidate himself / herself
- II. Has duly been completed
- III. Fulfils the requirement of ordinance related to Ph.D. degree of the University and
- IV. Is upto the standard, both in respect of content and language for being referred to the examiner.

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Signature of the Guide (with stamp)

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Success in this world is always a matter of individual effort, yet you will only be deceiving yourself if you believe that you can succeed without the co-operation of other people. Like G.M. Adams said “We are made up of thousands of others, Everyone who has ever done a kind of deed for us, or spoken one word of encouragement to us, has entered into the make-up of our character and of our thoughts as well as our success.”

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What I experience now is a result of the past, what I experience in the future depends on what I do now. **Let us make a Secured, Healthy and Happy future for our children.**

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APPENDIX

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23	Evidence of Secondary school checked data.

ABBRIATION

	Description
<b>O<sub>2</sub></b>	Oxygen
<b>CO<sub>2</sub></b>	Carbon dioxide
<b>M.H.I.</b>	Mental Health Inventory
<b>IFV</b>	Inspiratory Flow Volume
<b>IFV<sub>1</sub></b>	Inspiratory Flow Volume in first attempt
<b>IFV<sub>2</sub></b>	Inspiratory Flow Volume in second attempt
<b>IFV<sub>3</sub></b>	Inspiratory Flow Volume in third attempt
<b>PFM</b>	Peak Flow meter
<b>SPO<sub>2</sub></b>	Concentration of Oxygen saturation
<b>PR</b>	Pulse rate
<b>RR</b>	Respiratory rate
<b>PI</b>	Pulse index
<b>Hb (g/dl)</b>	Haemoglobin
<b>CBC</b>	Complete Blood count
<b>PFEV</b>	Peak flow Expiratory volume
<b>BMR</b>	Basal Metabolic rate
<b>BMI</b>	Basal Metabolic index
<b>Ht.</b>	Height
<b>Wt.</b>	Weight
<b>PSE</b>	Positive Self-Evolution
<b>PR</b>	Perception of reality
<b>IP</b>	Integration of personality
<b>AUNTY</b>	Autonomy
<b>GOA</b>	Group oriented attitude
<b>EM</b>	Environmental mastery
<b>COPD</b>	Chronic obstructive pulmonary disease



<b>PD</b>	Panic disorder
<b>NCD</b>	Non communicable disease
<b>PC</b>	Phosphotidy Choline's
<b>PG</b>	Phosphotidy Glycerol's
<b>DPPC</b>	Dipulmitoil phosphotidyl choline
<b>WHO</b>	World health organization
<b>IPCC</b>	Inter-governmental panel on climate change
<b>SEER</b>	State education and environmental round table
<b>CDC</b>	Centres for disease control and prevention
<b>DALY</b>	Disability adjusted life year
<b>MOH</b>	Ministry of health
<b>EHL</b>	Environmental for health living

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## ABSTRACT

Climate change has resulted in increased rates of malnutrition, allergies and exposure to vector borne diseases and emerging infectious diseases. We live in a world which is affected by environmental extremes largely

WHO (2013) states “childhood malnutrition is the most widespread and pervasive primary risk factor for the major diseases of children.” (Citation required) The research report of UNICEF “**The State of the World's Children 2011**” presented “the distinct challenges, adolescence face today in protection, education and health.” (Citation required) Psychological health issues or problems account for a large proportion of the disease burden among young people from all sections of society.

.Research in alternative therapeutic intervention with regards to psychological and physiological well being of children is the need of the hour.

The present study has focused on not only preventive but also solution-based intervention, which has been (will be) tried and tested on school children. This will pave a path towards a healthy lifestyle and a future which will be secured.

The intervention targets early and later childhood and puberty by introducing Naturopathic way (remedies), i.e. drugless lifestyle. In participants belonging to M.K.E.S. English School. Mumbai. Malad (West)

(What kind of researchers?) Researcher has focused on physical fitness and mental fitness through *Suryanamaskar* and *Pranayama* and has also suggested a lifestyle diet based on corresponding height, age, body parameter, weight, BMR (basal metabolic rate). Vital parameter (is) being measured by using laboratory instruments i.e. oxymeter test (SPO<sub>2</sub>), FDA 510 (k), Incentive spirometer test (IFEV) Hudson cc/sec, Peak Flow meter test (PFEV), Personnel Best full range Peak flow meter (60-80 s/min). Psychological parameter (is measured) by selecting tools constructed by Dr. Jagdish and A.K. Srivastava i.e. MHI Mental Health Inventory, which integrates the personality, autonomous group oriented attitudes and environmental study.

Children (Participants) who are part of this study/research are from classes' Sr.Kg. to 7<sup>th</sup> Std.. They are divided age wise in three groups i.e. 5-7 years (Early childhood), 7-9 years (later childhood), 9-12 years (on set puberty). Total no. of participant was 575 from primary and secondary sections are 575.

## CHAPTER 1. INTRODUCTION

### 1.1 Overview.

Respiration is vital for the survival of individuals. O<sub>2</sub> and CO<sub>2</sub> are key factors, which allow an individual to breathe, when present in the environment, i.e. Researcher(s) can say that quality of human life is deteriorating. Hence the present generation is being affected the most, as they have to acquire fitness and immunity by working on vitality.

The present study therefore is an attempt to explore the efficiency of ‘Naturopathy’ as therapy in intervention for children from age group 5 – 12 years. While many researchers are working to save the earth, this research tries to look into the sustainability of human in the existing environmental conditions which are still conducive to providing a healthy lifestyle to children who are in the developing stages and preparing them for different climatic conditions in the future.

When we talk about vitality, nature is the only option we have, i.e. preventive measures taken by Natural cure. For decades, medication has helped us to treat and fix the symptoms of diseases. Though treatment seems to offer a quick fix, it is only a short-term, limited solution to a complex multifaceted problem. Medication only cures some symptoms temporarily and does not actually get to the root of the problem. After discontinuing the drug, the symptoms tend to re – appear and vitality will deteriorate. Drug therapy is effective over prolonged use, however this comes with its share of side effects.

There has been incessant search for progressively more effective remedies for physical and psychological ailments and the world of remedies is seeking aid in alternative form of therapy.

This chapter elaborates on physiological and psychological aspect of respiratory system and its effect on children in the age group 5 – 12 years. It describes its symptomatology, etiologic, physiology and psychological disorder associated with

respiratory function and their efficacy with present climate and suggested life-style for children as preventive measures, which can be described as psycho-physiological aspect. Physiological aspect has been measured by Body parameter like Age, Height, Weight, BMR, and BMI. Vital parameter has been measured by using laboratory instrument; Oxymeter test (O<sub>2</sub>), Fingertip Begin 2B FDA 510(k), Spirometer test (EFEV), Hudson cc/sec, Peak flow expiratory test (PFEV) Personal Best Full range peak flow meter (60-810 L/min). Psychological parameter, by selecting tools constructed by Dr. Jagdish A. K. Srivastava, i.e. Mental health inventory, which integrates the personality, autonomous group oriented attitudes and environmental mastery.

This research is to provide reliable information on pulmonary function, which would aid the diagnostic process, and students follow up. The researcher's purpose is to introduce preventive strategies to reduce the impact of global climate change on children's health. The intervention methods employed in the study are also outlined in brief. The discussion is ensured by the statement of the problem, the significance of the present research and the hypothesis, which have been derived from the objectives of the study.

## 1.2 CONCEPTS

In this section, we will look at the various concepts included in the study.

### 1.2.1 Psycho-Physiological aspects

Psycho – Physiology was a general broad field of Research in the 1960's – 1970's. The history of research said that Science progresses as new means are discovered to observe, measure and quantify the phenomenon of interest. The popularity of Psycho – Physiologist has expanded introduction with realization and need of research of the interrelatedness of mind and body. A Psycho–Physiological research has progressed and has examined the impact of Psychological status on physiological system responses, since the 1970's Psychologist(s) frequently study the impact of physiological state and systems on its state and process. It is this perspective of study of the interface of mind and body which makes the Psycho – Physiological aspect more distinct.

Psycho – Physiological aspect helps us understand cognitive process of children’s mind and body, find better means to analysis and diagnosis the problems they face,for e.g. Anger, Cough, Cold, Anxiety, Concentration, Fever, mind (mood)Swing, Skin Infection.These are common symptoms of sickness which children have at some or the other point in their life. However, these are not only Psychological or Physiological based symptoms, but infact, they are cognitive i.e. inter related psychologically and physiologically.

The accurate perception of changes in respiratory function and consequent appropriate initiation of self-management is a complex skill. Inaccurate perception of respiratory system and its Physiological and Psychological effects may occur for variety of reasons. First, there must be a perceptual capability to detect airway changes. This capability requires intact proprospective neurons in the lungs and respiratory muscles, and unimpaired neuronal pathways to the brain. Second, the person must be motivated and should be able to pay attention to these inputs. Third the individual must accurately distinguish which perceptions correspondence to changes in respiratory function due to broncoconstriction versus which perception are due to changes in anxiety levels, emotional distress, pain or other illness, nutritional deficiency. Finally, the person must have the cognitive skills, knowledge and the motivation to initiate an appropriate sequence of self-care assessment and treatments.

**Tables for Psycho – Physiological Aspects.**

Table -1 Early Childhood Development. Age 5 – 7 years

Physiological Growth	Psychological Growth
<p><b>Ht.</b> Annual increase in height is three inches.</p> <p><b>Wt.</b> The average annual increase in weight is 3 to 5 pounds.</p>	<p><b>Physical hazard.</b> Young children are highly susceptible to all kind of illness, though <b>respiratory illnesses are the most common.</b> While most illnesses are physiological in origin, some are Psycho</p>

<p><b>Body proportion.</b> Body proportion changes markedly and the “baby look” disappears. There is a gradual disappearance in the stockiness of the trunk and the body tends to become cone shaped with the flattened abdomen and broader chest. The arms and legs become longer and grow bigger.</p> <p><b>Body build.</b> Differences in body build (structure) become apparent for the first time in early childhood. Some children have an endomorphic or flabby, fat body build (structure). Some have an ectomorphic or relatively thin body build (structure).</p>	<p>somatic and result from family tension.</p> <p><b>Speech.</b> Development advances rapidly during early childhood as seen in improvement in comprehension as well as in the different speech skill.</p> <p><b>Emotional.</b> Emotional development follows a predictable pattern; there are variations in this pattern due to intelligence, sex, family size, child training and other conditions.</p> <p><b>Social.</b> Early childhood is the pre-gang-age. The time when the foundations of social development, characteristic of the gang-age of late childhood are being laid. It is also a time when companions play an important role in the socialization process.</p>
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Table-2. Later Childhood Development. Age 7 – 9 years

<b>Physiological Growth</b>	<b>Psychological Growth</b>
<p><b>Ht.</b> The annual increase in height 2 to 3 inches.</p> <p><b>Wt.</b> Weight increase is more variable than height growth. Ranging from 3 to 5 or more pounds annually.</p>	<p><b>Physical hazard.</b> Some of the common hazards of late childhood are carry-overs / carried over from earlier years, though they often take new forms. Others are new, arising from the changes in child life pattern.</p>

<p><b>Body Proportion.</b> Although the head is still proportionately too large for the rest of the body. The trunk colligates and becomes slimmer, the neck becomes longer, the chest broadness the abdomen flattens, the arms and legs lengthens and the hand and feet grow larger but at a slow rate.</p> <p><b>Body build.</b> During late childhood, fat tissue develops more rapidly than muscle tissue, which has a marked growth spurt beginning at puberty. Children of endomorphic builds have more fat than muscle tissue while the reverse is true of those of mesomorphic builds. Ectomorphs do not have a predominance of either.</p>	<p>After entering school, in late childhood children suffer mainly from occasional cold and stomach upsets which rarely have lasting effects. Illness upsets the body's homeostasis, which in turn make children irritable, demanding, and difficult to live with.</p> <p><b>Speech.</b> Pronunciation, vocabulary, and sentence structure improve rapidly during late childhood.</p> <p><b>Emotional.</b> Children are immature by both age mates and adults, they continue to show unacceptable patterns of emotional expression such as temper, anger, jealousy that are so dominant that children are disagreeable and unpleasant to be with.</p> <p><b>Social.</b> Children whose adjustment is affected by social hazard in their peer group are deprived of opportunities, voluntary isolation, geographical or socially mobile children, children against whom there is a group prejudice.</p> <p><b>Play hazard.</b> Children who lack social acceptance are deprived of opportunity to learn games and sports. There is a rapid increase in understanding and in the accuracy of concepts during late childhood, partly has a result of increased</p>
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	<p>intelligence and partly has a result of increased learning opportunity.</p> <p><b>Moral hazard.</b> In late childhood most children develop moral codes influenced by the moral standards of the groups with which they are identified and conscience which guides their behaviour in place of the external controls needed When they were younger. In spite of this in homes, schools and neighbourhoods misbehaviour is common.</p> <p><b>Family hazard.</b> Friction with family members has serious effects, it weakens family ties and it leads to a habitual unfavourable pattern of adjustment with people and is a problem which is carried outside home.</p> <p><b>Personality development hazard.</b> There are two serious hazards in personality development of a unfavourable self-concept, which leads to self-rejection and second the carry-over from early childhood of egocentrism.</p>
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Table-3 Pre Puberty Development. Age 9 – 12 years

<b>Physiological Growth</b>	<b>Psychological Growth</b>
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<p><b>Ht.</b> Among girls, annual increase in the year preceding the menarche is 3 Inches. For boys on set of the</p> <p><b>Wt.</b> Weight gain in puberty comes not only from an increase in fats but also from an increase in bone and muscle tissue thus even though pubescent, boys and girls gain weight rapidly, they often look thin and scrawny.</p> <p><b>Body proportion.</b> The thin, long trunk of the older child begins to broaden at the hips and shoulders, and waistline develops. The leg grows proportionately more than the trunk.</p>	<p><b>Physical hazard.</b> The rapid growth and development that occur during puberty depend partly on hereditary factor, as they influence the endocrine and partly on environmental factor of which nutrition in childhood cause a diminished production of the growth hormone. Good nutrition on the other hand speeds up the production of hormone. Emotional disturbance can affect growth by causing an over production of the adrenal steroids which have an adverse effect on the growth hormones.</p> <p><b>Family hazard.</b> Concern about the role of appearance in society and acceptance is not the only cause of unhappiness during puberty. The behaviour of most pubescent is so unsocial that parents, teachers, siblings, and peers, the most significant people in their lives, may be dejected in their attitudes towards them. Even worse their temper outbursts and restlessness create the impression that they are not acting their age, an impression, that further jeopardize their social acceptance and consequently their self acceptance.</p> <p><b>Personality Development Hazard.</b> One of the important developmental tasks of puberty is acceptance of the changed</p>
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	body. There are many reasons why pubescent boys and girls are dissatisfied with their changed bodies and find it difficult to accept them.
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The ability to focus attention on respiratory changes may vary between people as well as within persons, although empirical studies of relevant factors are scarce. For example, it seems possible that children with ADHD may have more difficulty than other children. The severity of their current Psychological symptoms may interfere with attention. Likewise, concurrent stressors and resultant anxiety or diasporas may either distract attention from respiratory sensations or lead to enhanced focus and hypersensitivity in them.

The ability to distinguish physical sensations from emotional states is likely dependent on a number of factors, including familial teaching or modelling culture input and genetic predisposition. Developmentally, younger children, especially in late childhood often complain of somatic symptoms when they fell distressed for emotional reasons (**Compo and Fritsch, 1994**) in part because they have not yet learned to sort out the different states.

Respiratory tract infection affects the nose, throat and the airways and may be caused by any of several different viruses. This shows clearly the psycho-physiological aspects and its effect on respiratory system.

Triggers of respiratory tract infection are:

<u>Allergic</u>	<u>Non Allergic</u>	<u>Psychosomatic</u>
Cough	Cough	Cough
Occupational	Pneumonia	Pneumonia
Perennial	Emphysema	Emphysema
Rhinitis	Tuberculosis	Tuberculosis
URTD	Bronchitis	Bronchitis
LRTD	Asthma	URTD
	COPD	LRTD

Researchers intend to examine the impact of changing lifestyle by selecting Psycho – Physiological parameter and children from age group of 5 – 12 years, as this is a developing stage for psychological and physiological aspect in their life.

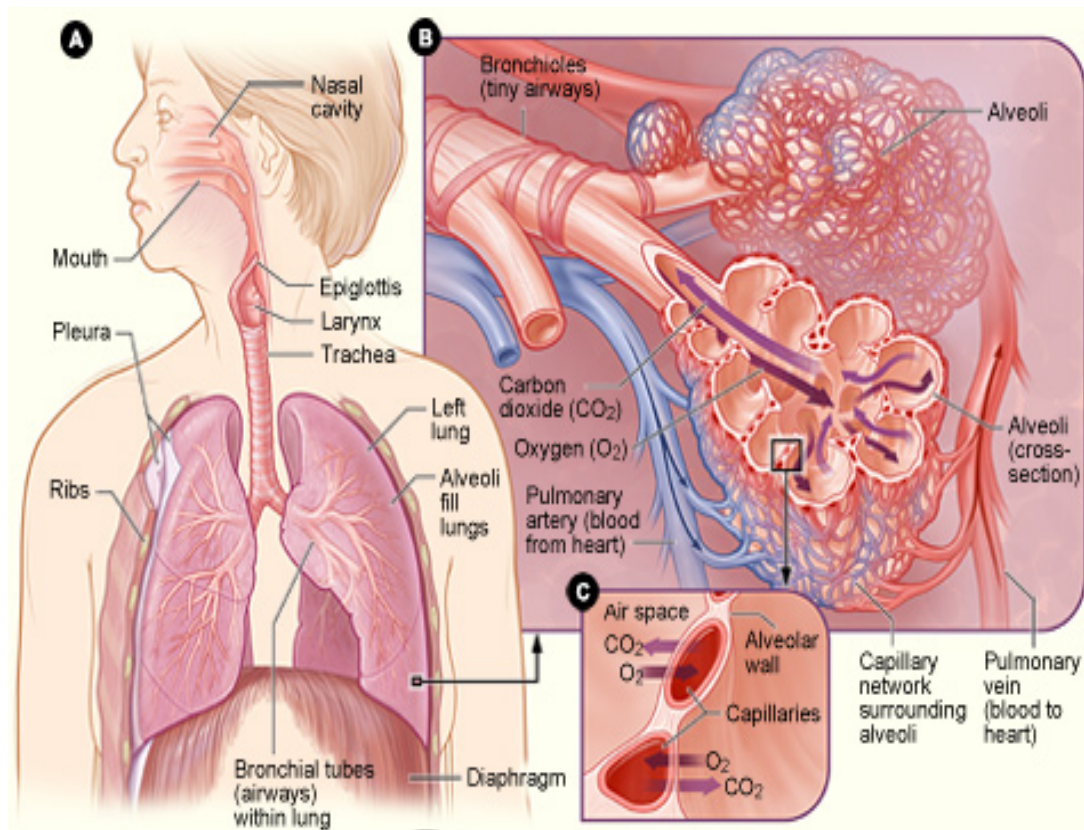
### 1.2.2 Respiratory System:

Breathing, so vital to life, occurs automatically without us even thinking about it. It is the only way that the cells in the body receive oxygen by itself, vital for converting sugar and other food products into energy. The part (organs) of the respiratory system – the nose, throat, larynx, bronchi and lungs, are designed to get the maximum amount of O<sub>2</sub> out of the air and into the blood stream.

Breathing is a prime factor to live and vitally very important for all other functions of the body and definitely growth. Healthy respiration can lead to a healthy future.

Respiration is directly connected to the atmosphere and the environmental element. Respiratory system consists of parts of the body used to receive O<sub>2</sub> from the atmosphere and pass it to the cells and tissues and for transporting the carbon dioxide produced in the tissues back into the atmosphere.

Researchers intervention has forced Breathing and Physical Exercise for children belonging to the age group 5 – 12 year as their respiratory (system) apparently grows faster than the vertebral column. During the intervention, ‘*Suryanamskar*’ and ‘*Pranayam*’ had been introduced, to the children by the Researcher and Physical educator of schools in their physical education period during school hours.



### Child and Development of Respiratory System:

The respiratory tract consists of a complex of structures that function under neural and hormonal control. During birth the respiratory system is relatively small, but after the first breath the lungs grow rapidly. The shape of the chest changes gradually from a relatively round configuration at birth to one that is more or less flattened in the ante-posterior diameter in adulthood. In severe obstructive lung disease the ante-posterior measurement approaches the transverse measurement. Periodic measurements provide clues to the course of lung disease or the efficacy of therapy.

Changes take place in the air passages that increase respiratory surface area. For example, during the first year the alveoli in the terminal units rapidly increase in number. In addition, the early globular alveoli develop septa, causing them to become more lobular. They continue to increase steadily until, at the age of 12 years, there are approximately nine times as many as were present at birth. In later stages of growth the structures lengthen and enlarge.

After the early weeks of life the respiratory tract follows the general growth curve. However, the respiratory apparatus grows faster than the vertebral column, resulting

in alterations in the relation between these structures. The bifurcation of the trachea lies in the third thoracic vertebra in the infant opposite to the fourth vertebra in the adult; descends from the level of the fourth cervical vertebra in to that of the sixth in the adult. These anatomic changes differences in the angle of access to the trachea at various ages must be considered when the infant or child is to be in a position purpose of resuscitation and airway clearance. The larynx grows slowly until puberty, when its accelerated growth produced in the voice that is particularly marked in boys.

Respiratory movements are first evident at approximately a week's gestation, and throughout fetal life there is an exchange amniotic fluid in the alveoli. In the neonate the respiratory rate rapids to meet the needs of high metabolism. During growth, the rate steadily decreases in both boys and girls until it is leveled; maturity. The volume of air inhaled increases with the growth in lungs and is closely related to the body size. In addition, there are qualitative differences in the expired air at different ages. The oxygen in the expired air gradually decreases and the carbon dioxide increases during growth. Other important aspects of the respiratory function are discussed as they relate to prenatal life and prenatal adjustments, the newborn infant, and acute and chronic respiratory problems of infants and children.

Main functions of respiratory system in children:

- Breathing and gas exchange function
- Defence function
- Metabolic function
- Deposited function
- Filtrated function
- Endocrine function

Breathing and gas exchange function is the vital function of human. Gas exchange via alveolar-capillary membrane provides supplying the human body with oxygen. The oxygen from the environment air goes through tracheal-bronchial tree into the alveoli and exchanges simultaneously with carbon dioxide from venous blood. If a physician needs to estimate the ventilation and gas exchange function in children one uses the lung volumes estimation.

### **Anatomy-Morphological Peculiarities of Respiratory System**

#### **Nasal Cavity**

The nasal cavity has three main functions. The first is the cleansing, warming, and

moistening of inspired air. It achieves this via nasal hairs (vibrissae) extending from the inner lining of the nostrils (which filter macrophages), and the mucus-secreting goblet cells in the nasal epithelium (which hydrate air and pick up smoke and dust). Also assisting in the nasal cavity functions are the pseudo stratified columnar epithelium lining the conchae (which are ciliated and responsible for air transport), along with the highly vascular nasal epithelium (which warm the air), and the turbinate bones (which circulate the air in the cavity). Another function of the nasal cavity relates to our sense of smell. The upper medial portion of the nasal cavity is lined by specialised types of epithelium which contain mucus-secreting cells and olfactory cells. In mammals other than higher primates, olfactory epithelium extends over a large surface area providing a highly developed sense of smell.

The final nasal cavity function relates to phonation, as the nasal cavity acts as a resonating chamber and is associated with voice phonetics.

### **Pharynx**

The pharynx connects the nasal and oral cavities to the larynx. Its supporting walls are composed of skeletal muscle, and the lumen is lined with mucous membrane, which eases the passage of food, and further humidifies and cleanses inspired air.

The pharynx is composed of three regions. The first is the **nasal-pharynx**. It is the uppermost part of the pharynx and lies directly behind the nasal cavity. It only has a respiratory function. The middle region of the pharynx is the **ore-pharynx**, and it is involved in the passage of both air and food. The final, lower section of the pharynx is the **larynges-pharynx**. It opens into both the oesophagus and the trachea. In the larynges-pharynx, respiratory and digestive systems become distinct.

### **Larynx**

The larynx connects the larynges-pharynx to the trachea. Its primary functions consist of permitting the passage of air during breathing, prevention of food or fluid from entering the trachea during swallowing and the production of sound via the "voice box". The larynx is composed of a framework involving 9 cartilages. There are 3 large single cartilages, **thyroid cartilage**, **epiglottis**, and **cricoids cartilage**. The other 6 cartilages are 3 pairs involved in the production of sound; the **arytenoids**, **cuneiform**, and **corniculate** cartilage pairs.

### **Trachea**

The trachea, also known as the windpipe, connects the larynx to the primary bronchi.

It is stiffened by 16-20 C-shaped rings of cartilage. The open part of the ring is located posterior and covered by fibrous connective tissue and smooth muscle. The lumen of the trachea is lined with pseudo stratified ciliated columnar epithelium. The epithelium contains mucus-secreting goblet cells which trap inhaled dust particles. The beating of the cilia on the epithelium carries mucus and trapped particles up to the pharynx where it is removed by a cough reflex. At the lower end of the trachea, it divides to form right and left primary bronchi.

### **Bronchial Tree**

The bronchial tree consists of **primary**, **secondary**, and **segmental** bronchi, **bronchioles**, and **terminal bronchioles** which divide to form alveolar ducts. The bronchi contain hyaline cartilage rings in their walls, so as to keep the air ways open. The lumen of bronchi is lined by pseudo stratified columnar epithelium. The bronchioles contain little cartilage in their walls, instead having a thick layer of smooth muscle which controls the size of the lumen. The lumen of bronchioles is lined by simple cubical epithelium.

### **Alveoli**

The alveoli are the final branching of the respiratory tree and act as the primary gas exchange units of the lung. The gas-blood barrier between the alveolar space and the pulmonary capillaries is extremely thin, allowing for rapid gas exchange. To reach the blood, oxygen must diffuse through the alveolar epithelium, a thin interstitial space, and the capillary endothelium; CO<sub>2</sub> follows the reverse course to reach the alveoli. There are two types of alveolar epithelial cells. Type I cells have long cytoplasm extensions which spread out thinly along the alveolar walls and comprise the thin alveolar epithelium. Type II cells are more compact and are responsible for producing surfactant, a phospholipids which lines the alveoli and serves to differentially reduce surface tension at different volumes, contributing to alveolar stability.

### **Surfactant**

The lung surfactant is a surface active substance covering the respiration system of the lung. Type II pneumo-cystis produce the surfactant which is stored as lamellar bodies and finally released into the alveolar fluid phase. At the air/water-interface spreading establishes a molecular film which dynamically adapts the surface tension to the actual area of the interface during breathing. The lung surfactant consists of lipids - mainly lecithin, unsaturated phosphatidylcholine's (PCs), negatively charged

phosphatidylglycerol's (PGs), and proteins. Two out of four specific proteins, SP-B and SP-C, together with lipids seem to be responsible for its surface active properties. Pulmonary surfactant is a surface-active lipoprotein formed by type II alveolar cells. The proteins and lipids that comprise surfactant have both a hydrophilic region and a hydrophobic region. By adsorbing to the air-water interface of alveoli with the hydrophilic head groups in the water and the hydrophobic tails facing towards the air, the main lipid component of surfactant, dipalmitoyl phosphate dyl-choline (DPPC), reduces surface tension.

Thus, there are some physiological-anatomical peculiarities of the respiratory system in children

The peculiarities of the nose:

- a) The nose consists particular by of cartilage.
- b) The nasal meatuses are narrow.
- c) There is no inferior nasal meatus (until 4 years).
- d) Undeveloped sub mucosal membrane (until 8-9 years).

The peculiarities of sinuses in children

- a) The maxillary sinus is usually present at birth.
- b) The frontal sinuses begin to develop in early infancy.
- c) The ethmoid and sphenoid sinuses develop later in childhood.

The peculiarities of the pharynx at the neonate

- a) The pharynx is relatively small and narrow.
- b) The auditory tubes are small, wide, straight and horizontal.

The peculiarities of the larynx at the neonate

- a) The larynx is funnel-shaped (in the adult it is relatively rounded).
- b) It is relatively long.
- c) The cricoids' cartilage descends from the level of the fourth cervical vertebra in the infant to that of the sixth in the adult.
- d) The fissure of glottis is narrow and its muscles fatigue soon.
- e) Vocal ligaments and mucous membrane are very tender and well blood-supplied.
- f) Vocal ligament are relatively short.

The peculiarities of the trachea:

- a) The length of the trachea is relatively larger (about 4 cm (in the adult 7cm) and wide.
- b) It is composed of 15-17 cartilage rings (the amount does not increase).



- c) The bifurcation of the trachea lies opposite the third thoracic vertebra in infant and descends to a position opposite the fourth vertebra in the adult.
- d) Mucus membrane is soft, well blood supplied, but sometime dry.
- e) It can collapse easily.

The peculiarities of the bronchi:

- a) young children the bronchi are relatively wide.
- b) Right bronchus is a straight continuation of the trachea.
- c) Muscle and elastic fibres are undeveloped.
- d) Lobules of segmental bronchus are narrow.

The peculiarities of the lung:

- a) size of alveoli is smaller than in adult.
- b) Quantity of alveoli is relatively less than adult.

Clinical examination of the respiratory system in children includes history taking, inspection, palpation, percussion and auscultation.

More often complaints in children who have respiratory troubles:

1. cough
2. catarrh
3. respiration rate or rhythm disorders
4. Non-specific complaints.

Inspection of respiratory system consists of some steps:

- a) face inspection
- b) nose inspection
- c) neck inspection
- d) thorax inspection

Inspection of the lungs involves primarily observation of respiratory movements, which are discussed. Respirations are liquated for (1) rate (number per minute), (2) rhythm (regular, irregular or periodic), (3) depth (deep or shallow), and (4) quality, automatic, difficult, or laboured). The doctor also notes the breath sounds based on inspection without the aid of such as noisy, grunting, snoring, or heavy, e respiratory rate at rest of the child of different age is: 40-35 per minute, 35-30 per min

Disorders of the respiratory rate:

- Tachypneais is the increase of the respiratory rate.
- Bradypneais is the decrease of the respiratory rate.

- Dyspnea is the distress during breathing.
- Apnoea is the cessation of breathing.

Disorders of the respiratory depth:

- Hyperpnoea is an increased depth.
- Hypoventilation is a decreased depth and irregular rhythm.
- Hyperventilation is an increased rate and depth.

Pathological respiration:

- Seesaw (paradoxical) respirations: the chest falls on inspiration and rises on expiration. It is usually observed in respiratory failure of third degree
- Kussmaul's breathing is hyperventilation, gasping and laboured respiration, usually seen in diabetic coma or other states of respiratory acidosis

Examination of the lungs in children:

The lungs are situated inside the thoracic cavity with one lung on each side of the sternum. Each lung is divided into an apex which is slightly pointed and rises above the first rib, a base, which is wide and concave and lies on the dome shaped diaphragm, and a body, which is divided into lobes.

The right lungs have three lobes: upper, middle, and lower. The left lobe has only two lobes, upper and lower, because of the space occupied by the heart. The two surfaces of the lungs are the costal surface, which faces the chest wall and backs up to the vertebral column, and the mediastinal surface, which faces the space lying between the lungs, the mediastinum. The centre of the mediastinal surface is called the hilus where the bronchus and blood vessels enter the lung.

Palpation -Respiratory movements are felt by placing each hand flat against the back or chest with the thumbs in midline along the lower costal margin of the lungs. The child should be sitting during this procedure and, if cooperative, should take several deep breaths. During respiration the hands will move with the chest wall. The doctor evaluates the amount and speed of respiratory excursion, noting any asymmetry of movement. Normally in older children the posterior base of the lungs descends 5 to 6 cm (about 2 inches) during a deep inspiration.

The doctor also palpates for vocal fremitus, the conduction of voice sounds through the respiratory tract. With the palmar surfaces of each hand on the chest, the doctor asks the child to repeat words such as "ninety-nine", "one, two, three," "eee-eee" etc. The child should speak the words with a voice of uniform intensity. Vibrations are felt

as the hands move symmetrically on either side of the sternum and vertebral column. In general vocal fremitus are the most intense in the regions of the thorax where the trachea and bronchi are the closest to the surface, particularly along the sternum between the first and second ribs and posterior between the scapulae. Progressing downward, the sound decreases and is least prominent at the base of the lungs. Crepitating is felt as a coarse, cracking sensation as the hand presses over the affected area. It is the result of the escape of air from the lungs into the subcutaneous tissues from an injury or surgical intervention. Both pleural frictions rub and crepitating can usually be heard as well as felt.

Percussion-The lungs are percussed in order to evaluate the densities of the underlying organs. Resonance is heard over all the lobes of the lungs that are not adjacent to other organs. Dullness is heard beginning at the fifth interspace in the right midclavicle line. Percussion downward to the end of the liver, a flat sound is heard because the liver no longer overlies the air-filled lung. Cardiac dullness is felt over the left sternal border from the second to the fifth interspaces medially to the midclavicle line. Below the fifth interspaces on the left side, tympany results from the air-filled stomach. Deviations from these expected sounds are always recorded and reported.

In comparative percussion, the chest the anterior lung is percussed from apex to base, usually with the child in the supine or sitting position. Each side of the chest is percussed in sequence in order to compare the sounds.

The pathological dullness is heard in cause of

- a) Pneumonia
- b) Hydro- Haemothorax
- c) Pulmonary Oedema
- d) Lung or Mediastinal Tumour

The ban box is heard in cause of;

- e) Emphysema of lungs,
- f) Cavern of lung
- g) Abscess of lung
- h) Pneumothorax
- i) Bronchial Asthma
- j) Asthmatic Bronchitis

Table 4. Age related Respiratory causes.

	Age	Causes
1.	Cough with onset from birth	Laryngeal webs, vascular rings or H type tracheoesophageal fistula.
2.	Cough starting in first month	Congenital infections (rubella, CMV) leading to interstitial pneumonia.
3.	Cough in early infancy	Gastroesophageal reflux leading to vomiting and aspiration of milk, saliva or gastric contents.
4.	Cough during late infancy	Bronchitis, asthma, cystic fibrosis, whooping cough.
5.	Cough in preschool age	Recurrent bronchitis, asthma, allergic bronchitis, foreign body, chronic suppurative lung disease, pulmonary eosinophilia.
6.	At all ages	Asthma, whooping cough, viral bronchitis, tuberculosis, foreign body aspiration.

The main role of the respiratory system is to work closely with the heart and the blood to extract oxygen from the external environment and dispose of waste gases, principally Carbon-dioxide. This requires the lungs to function as an efficient bellows expelling used air, bringing fresh air in and mixing it efficiently with the air remaining in the lungs. The lungs have to provide a large surface area for a gas exchange and the alveoli walls have to present minimal resistance to gas diffusion. This means the lungs have to present a large area to the environment and the dusts, gases and infective agents can damage this.

Host defence is therefore a key priority for the lungs and is achieved by a combination of structural and immunological defence.

As lung is A1 key factor for our generation to live in a not so friendly environment. Researcher, in the interest of improving lung functioning capacity and

immunity of children in their developing stages, introduces intervention of *Suryanamaskar*, Breathing exercise and Nutrition as an important part of their development and growth.

As per Medical Science Intensive Care Medicine, to prevent organ damage, Respiratory rate and Blood gases are monitored as priority. In any condition respiration is the first to be monitored and rescued as a preventive measure for the future generation. Researchers have studied various factors affecting children growth and they are: fluctuation in climatic conditions, nutritional deficiency, social stress. Each of these factors are concluding (disturbing) respiratory system, if health is improved then all the physical and psychological factor would support child to grow into a healthy adult.

### **1.2.3 Naturopathy:**

#### **Naturopathy Definition**

“Naturopathy can be defined as a drugless, non-invasive, and rational and evidence based system of medicine imparting treatments with natural elements based on the theory of vitality, theory of toxemia, theory of self-healing capacity of the body and the principles of healthy living.”

Dr. Babu Joseph Director, National Institute of Naturopathy (Govt. of India, Min of Health and Family Welfare, Dept. of AYUSH)

Naturopathy, referred to as “Natural medicine” is said to “assist nature” “support the body’s own innate capacity to achieve optimal health” and “facilitate the body’s inherent healing mechanism” Naturopaths assert that “diseases are the body’s effort to purify itself, and that cures result from increasing the patient’s vital force”. They claim to stimulate the body’s natural healing processes by ridding it of waste products and “toxins”. How many of the practices that naturopaths use, can stand the scientific test of achieving this and how much is simple quackery. The notion of a “vital force” or “life force” originated in ancient times. Historians call it the doctrine of vitalism. Vitality practitioners maintain that diseases should be treated by “stimulating the body’s ability to heal itself rather than by treating symptoms. Homeopaths, for example, claim that illness is due to a disturbance of the body’s vital force, which they can correct with special remedies, while many acupuncturists claim that disease

is due to imbalance in the flow of 'life energy' (chi or Qi), which they can balance by twirling needles in the skin. Many chiropractors claim to assist the body's "Innate intelligence" by adjusting the patient's spine. The main difference between naturopathic and conventional medicine is in philosophic approach. Naturopathic physicians claim to treat patients by restoring overall health rather than suppressing a few key symptoms. Naturopathic physicians are more concerned with finding the underlying cause of a condition and applying treatments that work in alliance with the natural Respective of the religions, faith, the Indian tradition has many things to contribute to the health of a person indirectly. Either it may be a fasting, visiting holy place, taking dip in Ganges or Sea on holy occasions, *ushapana* (drinking water in the early morning), *achamana* (drinking water while doing *Japa*) etc. etc. These practices, though not practiced as a treatment modality, have great therapeutic values with firm scientific background. Not surprisingly, some other practices have drawn its origin from the practice prevalent in Nature like birds, animals etc. We often come across the practice of diseased animals where they rest to fast and vomit out the unwanted material from the body. Animals and birds take sun bath in plenty, they get themselves into water for quite some time, and they cool the body by digging the earth and coming in contact with mud/soil. 'Naturopathy', thus defined by ancient and present Naturopath's clearly shows a changing scenario of its field. There are several definitions of Naturopathy, among them two definition are very popular. One is commonly quoted by Indian Author of "Indian Life Science" by Dr. Henry Landler that "Nature cure is an Art of Living in tune with nature and a science of treating decease through five grand elements, **Air, water, Earth, Fire and Space** of which the body is composed." Dr.Landler has defined Nature cure as "a system of man building in harmony with the constructive principles in nature, on Physical, Mental, Moral and Spiritual plans of being."

~~To quote~~ Dr. J. M. Jassuwalla has broadly classified and defined Naturopathy in three-fold manner. These fields are the Psychological, Physiological and the Chemical, i.e.

- a.) Man's Emotional, Mental and Psychical nature
- b.) The body, its anatomy and functions
- c.) The Chemical substances that compose the body cells, tissues etc.

### **Scientific principle:**

Scientific principles of Naturopathy, were established long ago by eminent scientists and physicians who cleared the idea of relation between nature and human being by theory of adaptation and adjustment. “Naturopathic physicians support, facilitate, and elicit healing by utilizing methods and modalities in harmony with the natural process.” (Downey 2000; Pizzorno 1996). The Healing Power of Nature (vis medicatrix naturae) is the cornerstone of naturopathic medicine. Enhancing the healing wisdom, native to all living systems helps to promote, maintain, and restore normal function. The supported principle is First ‘Do No Harm’ (primum non nocere) meaning, using the least invasive, but most gentle therapies first in order to avoid suppression of symptoms, which support the patient’s own self-healing process, and minimize the chances of side effects. The complete principle of health, been explained by Downey, is that to identify and treat the cause (tolle causam) which occurs when a disease’s conditions i.e. physical, mental, emotional or spiritual facilities get disturbed by the disruption of health. Symptoms are recognized as manifestations of the body’s attempt to resist, defend, adapt, or heal it when faced with challenges. Therefore, identification of these challenges to the organism is of primary importance when seeking to remove obstacles to (improve) health (Downey 2000; Pizzorno 1996). There is often more than one cause to be identified and manipulated before suggesting a line of treatment.

Treat the “Whole Person” (appreciate health and disease as a totality) reflects the multidimensional aspect of the individual and the environment. The uniqueness of each patient and the multifactorial nature of disease require a comprehensive, individualized approach to diagnosis and treatment. “Naturopathic physicians encourage patients to engage both, their internal resources (e.g. spiritual beliefs, digestion) and external support (e.g., family and friends, dietary intake) to provide a solid foundation from which to move forward into a greater state of state of health” (Downey 2000’ Pizzorno 1996).

“Wellness and Prevention (the ideal “cures”) mean more than the simple absence of disease. Assessing risk factors and genetic predisposition helps naturopathic physicians make appropriate interventions and guide patients to establish balance and optimal health. In addition, through education and the promotion of good lifestyle habits, patients learn ways to avoid disease and optimize health” (Downey 2000; Pizzorno 1996).

“Doctor as Teacher (docere) illustrates the methods by which naturopathic physicians strive to establish a cooperative doctor-patient relationship, in order to educate patients about their health, and to encourage patient’s self-responsibility in their treatment”(Downey 2000; Pizzorno 1996).

These are the principles of Naturopathy, which have been established and are being followed by Naturopaths and physicians.

**Mechanism of action:**

Naturopathic medicine is not defined by its modalities. Practitioners utilize a wide variety of therapies and techniques, from the “nature cure” (i.e., health through diet, hydrotherapy, lifestyle modification, detoxification), to the application of nutritional supplements and herbal extracts in order to manipulate the body’s biochemistry and physiology.

**Path of Nature**

- Blending of Human with Nature
- Basic Principles – Elimination, Accumulation and Cure within

**Clinical evaluation:**

“A naturopath evaluates and concludes disease by identifying symptoms of the patients with depth of analysis and suggests the line of action. In the initial visit, which typically lasts, and hour or more, a thorough history is taken. This includes an exploration of diet, lifestyle, stress, and environmental factors. Following the history, an appropriate physical examination and/or laboratory evaluation may be performed. An important component of the visit is to assess the patient’s “toxic load”. Many factors by themselves may not be sufficient to initiate frank pathologies, but together they may overwhelm the body’s ability to respond appropriately. Patients are seen as partners in their case, and a treatment plan usually includes lifestyle modifications (e.g. sufficient sleep, moderate exercise, relaxation practices), dietary recommendations, and a supportive therapy such as herbal formula, a physical modality e.g., hydrotherapy, naturopathic way of treatment.” (Pizzorno 1996).

It has been increasing apparently that multidisciplinary approaches synthesizing biological, socio-cultural, Psychological and family Perspectives are necessary to better understand respiratory function and its effect on children.



Childhood is seen as foundation for individual development at both physiologically and psychologically levels and has taken to define lifetime. Childhood is a milestone for physical vitality and personality along with mental growth. The preamble of the World Health Organization's charter defined health as "a state of complete physical, mental and social wellbeing. Not merely the absence of disease or infirmity." (Monopoliset. al. 1977). Thus, health is a broader concept including physical, social and mental health. Mental health has been reported as an important factor, influencing individual's various behaviours, activities, happiness, and performance.

The vulnerability of children increases in degraded and poor environment. Neglected and Malnourished children suffer the most. Dr. Terri Damstra has mentioned "Children are not just small adults". "WHO's" team leader for International Research Unit has analysed that children are especially vulnerable and respond differently from adults when exposed to environmental factors, and this response may differ according to the different periods of development they are going through for example, their lungs are not fully developed at birth, or even at the age of eight and lung maturation may be the origin of chronic respiratory disease later in life.

Entire naturopathic history or evidence has not reflected any light on children health and Naturopathic intervention and application hence this research is promoting Naturopathy as one of the most promising scientific option for children to lead a healthy life metaphysically. This research has allowed and given an opportunity to children to understand Nature and its curative aspects in day-to-day life. Schooling childrens reason for absences' in school mostly is:

- Cough,
- Cold,
- Fever,
- Ear pain
- Leg pain
- Headache
- Stomach upset

For such physical complaint, Naturopathy proved to be more result oriented without any side effect.

**Nutrition.**

Table-5.Nutritional Requirement and Benefits for Age Group 5 – 12 years.

(ECH)Early Childhood, (LCH) Late Childhood, (PAH)PreAdulthood.

Mineral	ECH (5-7)	LCH (7-9)	PA (9-12)	Found in	Benefit
Calcium	800 – 1000mg	800 – 1000mg	1000 – 1200mg	Milk, Cheese, Soybeans, Sardines, Salmon, Sunflower seeds, dried beans, green vegetable.	Maintains strong bones and healthy teeth. Keeps heart beats regularly. Provide strength and energy by metabolizing the body’s iron.
Chlorine	No RDA or USRDA has been established	No RDA or USRDA has been established	No RDA or USRDA has been established	Tablet salt, Kelp, Olives.	Aid in digestion, Keeps muscles limber.
Chromium	No RDA or USRDA has been established	No RDA or USRDA has been established	No RDA or USRDA has been established	Meat, Shellfish, Chicken, Corn oil, Calms, brewer’s yeast.	Aid in growth. Helps regulate blood sugar levels.
Cobalt	No RDA or USRDA has been established	No RDA or USRDA has been established	No RDA or USRDA has been established	Meat, Kidney, Liver, Milk, Oysters, Clams.	Helps prevent anaemia.

Copper	No RDA or USRDA has been established	No RDA or USRDA has been established	No RDA or USRDA has been established	Dried beans, Peas, Whole Wheat, Prunes, Seafood, and Beef, Liver.	Improves energy and alertness by aiding effective iron absorption.
Fluorine	No RDA or USRDA has been established	No RDA or USRDA has been established	No RDA or USRDA has been established	Seafood, gelatine, fluoridated drinking water.	Helps prevent dental caries, aids in the formation of strong bones.
Iodine (Iodide)	90 - 150 mcg	120 – 150 mcg	150 mcg	Kelp, Onion, all sea food, vegetable grown in iodine-rich soil.	Promotes proper growth, improves learning ability, fosters healthy hair, nails, teeth, skin, and controls weight by burning up excess fat.
Iron	10 – 18mg	10 – 18mg	18 mg	Liver, Farina, raw calms, dried Peaches, Red Meat, egg yolks, nuts, asparagus, oatmeal.	Cures as well as prevent iron – deficiency anaemia, increases energy by preventing fatigue, aid in growth, promote resistance to

					disease.
Magnesium	200mg	250 – 400mg	350 – 400mg	Figs, Lemons, Grapefruit, Yellow Corn, Almonds, Apples, nuts, seeds, dark- green vegetables.	Helps relieve stomach-aches caused by indigestion. Promote healthier teeth. Improve the cardiovascular system.
Manganese	No RDA or USRDA has been established	No RDA or USRDA has been established	No RDA or USRDA has been established	Nuts, leafy green vegetable, Peas, Beets, egg yolks, whole- grain cereals.	Provides more energy by eliminating fatigue, Allows improvement of memory, Reduces nervous irritability.
Molybdenum	No RDA or USRDA has been established	No RDA or USRDA has been established	No RDA or USRDA has been established	Leafy dark green vegetable, whole grains, legumes.	Helps in preventing anaemia.
Phosphorus	800 – 1000mg	800 – 1000mg	1000 – 1200mg	Fish, Poultry, Meat, Eggs, whole grains, nuts, seeds.	Aids in growth and promotes healthy gums and teeth. Speeds up healing of broken bones or other injuries.

					Increases energy for learning or sports by helping in the metabolization of fats and starches.
Potassium	No RDA or USRDA has been established	No RDA or USRDA has been established	No RDA or USRDA has been established	Bananas, Potatoes, Citrus fruits, Watercress, Sunflower seeds, all leafy green vegetables.	Improves learning ability by sending more oxygen to the brain. Aids in allergy treatment. Help reduce blood pressure and sugar levels in diabetic children. Aids in treatment of diarrhea.
Selenium	No RDA or USRDA has been established	No RDA or USRDA has been established	No RDA or USRDA has been established	Wheat germ, bran, Tuna Fish, Onions, Tomatoes, Broccoli.	Improves oxygen utilization, helping heart and lungs. Helps in the treatment and prevention of dandruff. Provides elasticity in

					tissues and muscles for young athletes.
Sodium	No RDA or USRDA has been established	No RDA or USRDA has been established	No RDA or USRDA has been established	Salt, Shellfish, Beets, Grains, Bacon, Kidney, Kelp.	Prevents heat prostration or sunstroke after hard play on a hot day. Helps keep reflexes toned and functioning.
Sulfur	No RDA or USRDA has been established	No RDA or USRDA has been established	No RDA or USRDA has been established	Cabbage, dried beans, Fish, lean beef, Eggs, nuts.	Keeps skin clear and smooth and makes hair more lustrous. Help fight bacterial infections.
Vanadium	No RDA or USRDA has been established	No RDA or USRDA has been established	No RDA or USRDA has been established	Fish	Inhibits the formation of cholesterol in blood vessels.
Zinc	10 – 15 mg	10 – 15mg	15mg	Lamb chops, Pork, Wheat germ, round steak, Pumpkin seeds, Sunflower seeds, Eggs, ground mustered,	Improves learning aptitude by increasing mental alertness. Decreases cholesterol. Accelerates

				brewer's yeast, nonfat dry milk.	healing time for scrapes, cuts and internal wounds. Promotes better appetite by improving ability to taste. Promotes growth.
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### 1.2.4 Age Group 5-12 yrs:

Based on age, people have been divided into specific domains according to their development and skill stages like, physical growth, gross motor skills, fine motor skills, linguistic skills, cognition, social and emotional growth.

Childhood classification is based on early to later childhood and later childhood to onset of puberty i.e. from age 5 to 12 years. Later childhood is a period of slow, steady and uniform growth until the changes of puberty begin. Development rate although continuous to be uniform during the later childhood period, significant changes in the sphere of physical, intellectual, emotional and social aspect take place. At this stage, the child acquires new experiences and tries to adopt himself or herself to his or her environment and prepare themselves to solve problems. Their power of reasoning, thinking, observation, concentration, perception, imagination etc. is developed. In later childhood, the child's field of interests widens and they show special aptitudes, liking and disliking towards things and work.

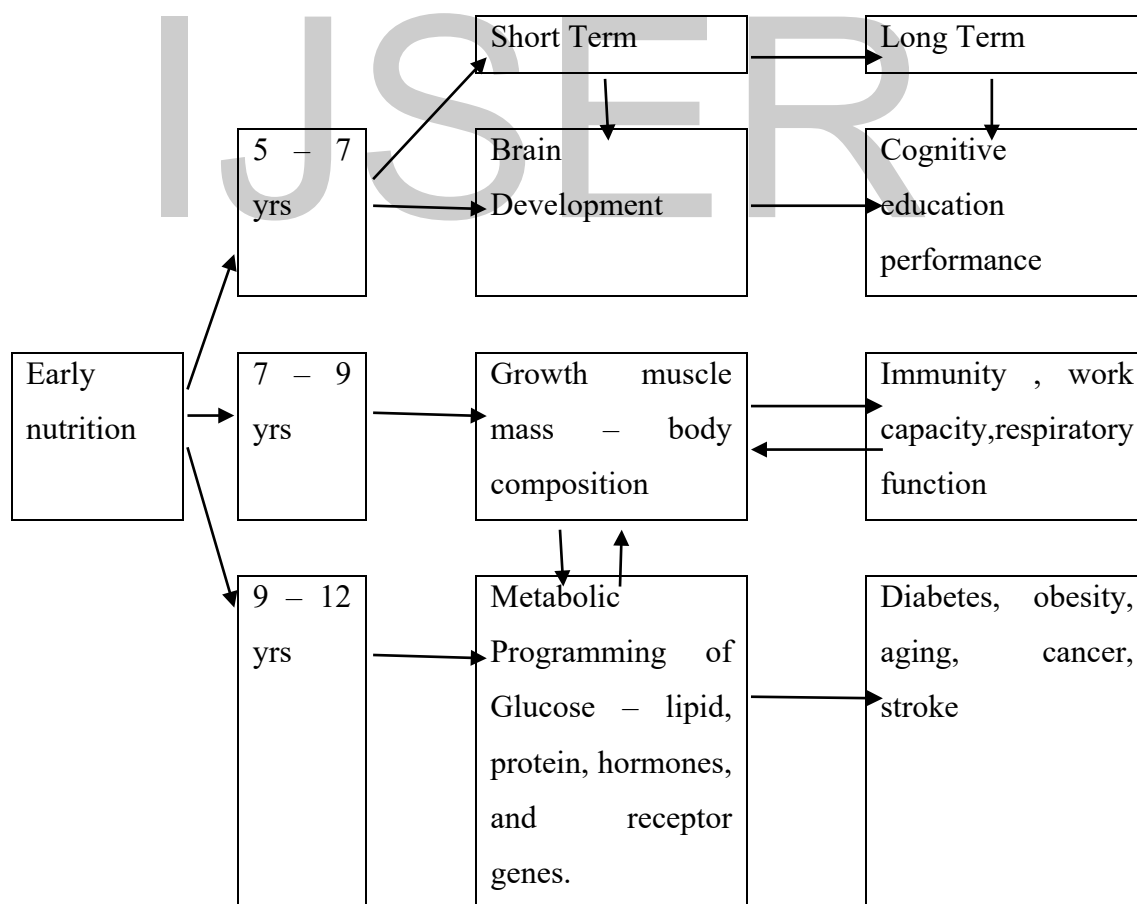
Good balanced diet is important for child's growth and development, the better the health and nutrition provided, the more children tend to develop age by age, as compared with those whose nutrition and health are poor.

There are multiple theories of development in children and adolescent. The oldest and most famous are those proposed by Freud, Piaget and Erikson. All of which are based on clinical observation, while some have tested on large groups of children.

Researchers have chosen age 5 -12 years as they are into functional growth period. This age is particularly an emphasized period of requirement of the right amount of nutrition; physical exercise and overall development. Schooling period is the most apt time to inculcate a better healthy lifestyle.

The exposure that influence children’s health begins before conception – reflecting parent’s diet and other environmental exposure, which continue through pregnancy, childhood and adolescence. Children may be an especially vulnerable subpopulation because of their developing physiological and psychological condition. Internationally  $\frac{2}{3}$  of all preventable illnesses caused by environmental factors occur in children.

**The short term and long term developmental effect of early nutrition.**





The record report of UNICEF added to produce “The State of World’s Children” 2011, on the distinct challenges adolescence face today in protection, education and health psychological issue or problem, account for a large proportion of the disease burden among young people in all society.

Researcher found it is very crucial to be aware about gender wise children’s growth accordingly one can understand their nutritional requirement comparatively what is the present scenario of children growth.

**Table 6.Boys normal Growth Chart of Age Group 5- 12 Yrs.**

Age		Ht. (Cms.)	Wt. (Cms)	BMI	BMR	Nutritional need Requirement - Cal./Kg.
Group	Yr.					
5 – 7	5	108.7	18.4	15.6	1050.8	1752
	6	118.9	22.1	15.6	1109.4	1752
	7	123.3	24.5	16.1	1145.0	2075
7– 9 (>7)	8	127.9	26.5	16.2	1177.2	2075
	9	133.6	30.0	16.8	1225.8	2194
9 - 12 (>9)	10	138.5	32.4	16.9	1262.3	2194
	11	143.4	35.3	17.2	1303.7	2194
	12	148.9	38.8	17.5	1351.9	2194

[ >5 yr old children are classified as pre-school children. >( <)5 to 12 yr classified as School age children.]

**Table 7 .Girls normal growth chart of Age Group 5-12 yrs.:**

Age		Ht. (Cms)	Wt. (Cms)	BMI	BMR	Nutritional need Requirement - Cal./Kg.
Group	Yr.					
5 – 7	5	109.1	18.4	15.5	1051.5	1630
	6	117.3	21.4	15.6	1099.8	1630
	7	122.7	24.8	16.5	1146.8	1833
7– 9	8	126.8	26.1	16.2	1171.4	1833

(>7)	9	132.3	26.7	15.3	1191.8	1833
9 - 12 (>9)	10	138.5	33.5	17.5	1272.9	1965
	11	144.1	36.5	17.6	1316.5	1965
	12	150.3	42.6	18.9	1390.9	1965

[>5 yr old children are classified as pre-school children.>( <)5 to 12 yr classified as School age children.]

Growing children are most vulnerable to effects of undernutrition. Nutritionally deprived children do not thrive well or gain weight and height. Childhood and adolescence are periods of rapid physical, social, cognitive and behavioural change. Optimal nutrition during childhood and adolescence is essential for the maintenance of growth and good health. The dietary requirements of children and young people are different to those of adults and are constantly changing as individuals grow and develop. Establishing good nutrition and physical activity patterns in childhood contributes to good health throughout life. The values, habits and behaviours developed during this period often influence behaviours in adulthood. In addition there is emerging evidence that health during childhood and adolescence impacts on health during adulthood.

Now time is knocking on the door of change. As mind and body are inter-related ignoring either one, will not help achieve goal of complete, perfect health. Healthy body can only produce healthy mind and healthy mind produce leads to a healthy future, this way researcher has chosen age group 5 -12 years as they are our the potential generation to leading the world.

Present generation of kids are not been referred to as early or late childhood children but infect they are TECNO-KIDS.Children are now at risk of developing serious diseases at a much younger age than ever before because of life-style diseases like obesity,diabetes,multiple deficiency specially vitamin B-12, D, C, and trace mineral deficiency. Nearly two-third children in Maharashtra are anaemic with over 40% having itbecause they are not provided with nutritional food. Researcher selection of age 5-12 years can be more effective and solution based for malnutrition and cognitive behavioural issues faced by today's children.

### 1.2.5 Global warming:

Environment influences ranging from nutrition to stimulation and from the impact of diseases to the effect of psychological factors interact with genetic factors to determine the pace and pattern of development.

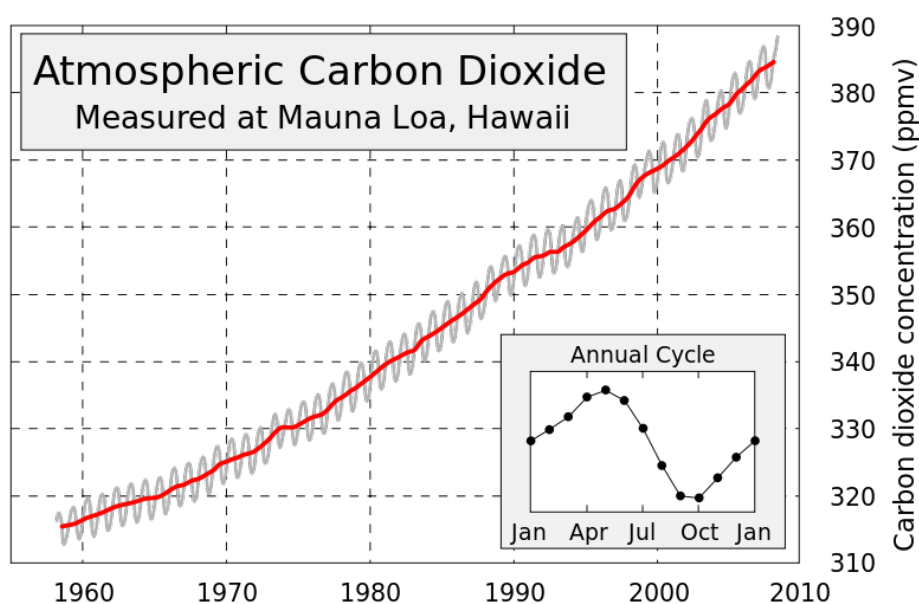
Definition:

Consequently, the level of GHG (Green House Gases) concentration went up from 280ppm before the industrial revolution to 380ppm at present, which has caused a progressive rise in the Earth's temperature this, observed phenomenon is called GLOBAL WARMING and is commonly described as climate change because of the major impact of rise in temperature on the climate

The “Century of the Environment” is the 21<sup>st</sup> Century. The government, civil society and the citizens cannot assume that social challenges such as pollution, dwindling natural resources, climate change and global warming be relegated to the future generation.

The IPCC suggests that most climatic changes since 1950 is human induced and will have fatal environmental and health effect. The scientist community often talk about global warming potential. This points out to the warming effect of a greenhouse gas [GHG] in relation to the measured effect for carbon dioxide. Scientist used the phrase ‘Global Warming’ to describe the typical increase in the earth surface temperature.

Graph 1. Atmospheric Carbon Dioxide Concentration (ppmv) 1960-2010.



Future generation and global warming impact:

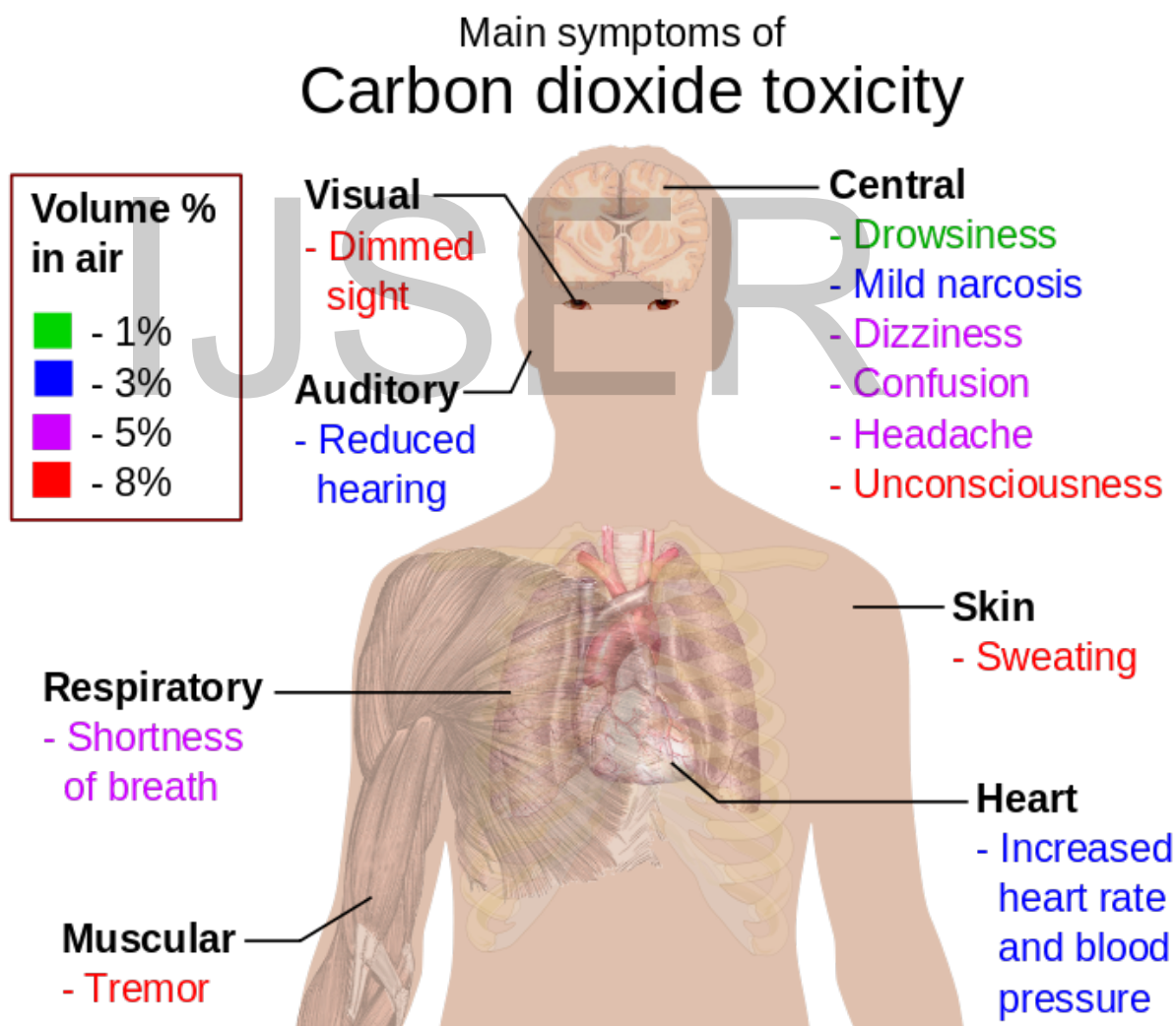
The deteriorating relationship between humans and the environment is a cause for our concern. On one hand, human influence on nature has resulted in global climate change and a decline in the health of the world's oceans. On the other hand, it is evident that humans cannot adapt to new ecological conditions, as evidenced by new diseases. Is there any way out of the crisis?

The vulnerability of children increases in degraded and poor environment. Neglected and malnourished children suffer the most. Dr Terri Damstra suggested “Children are not just small adults”, WHO’s team leader for International Research Unit has discovered that children are especially vulnerable and respond differently from adults when exposed to environmental conditions, and this response may differ according to the different periods of development they are going through for example, their lungs are not fully developed at birth, or even at the age of eight and lung maturation may be the origin of chronic respiratory disease later in life.

Global warming is caused from interactions between greenhouse gases, the Earth’s atmosphere, and the sun. The main greenhouse gases are carbon dioxide and methane. These, along with nitrogen oxides, sulphur oxides, ozone, and halocarbons, are produced by fuel combustion and agricultural activities. Thermal balance can be achieved by reradiated energy from the Earth, which should equal energy absorbed from the sun. Greenhouse gases trap energy in the atmosphere, causing global warming. The products of fuel combustion, forest fires, and agricultural activities and air pollutants such as ozone, nitrogen oxides, sulphur oxides, and particulate matter have adverse respiratory effects. In the past 15 years, asthma rates, worldwide have doubled. Ozone’s respiratory effects have been especially well studied. Cough and asthma are promoted and exacerbated by ozone. Ground-level ozone induces respiratory tract inflammation, reduces lung function, and aggravates chronic respiratory disease. Children exposed in high ozone environments are 40% more likely to develop asthma, and reductions in ambient ozone concentration are associated with reduced paediatric emergency admissions. Because warming increases the reaction that produces ozone, climatic changes may further and increase breathing zone ozone concentrations. According to the World Health Organization<sup>17</sup> (WHO), 5 million children die yearly from diseases linked to air pollution. Compared to adults, children breathe more rapidly and more often play outdoors, which leads to greater exposure to pollutants per unit mass (Figure 3). Their narrower airways

results in more tissue exposure per volume inhaled and increased inflammation. Eventually, exercise increases breathing through our mouth rather than the nose, which filters approximately half of the pollutants. Polluted air further goes straight to the lungs, increasing parenchymal damage. Because children's respiratory systems are still developing, this damage can have longer-term impacts. Because children have less self-awareness than adults do, they also often do not stop playing when they experience respiratory difficulty.

Researcher has found that even in the absence of direct impact the perception and fear of climate change may threaten mental health, however there is a reason to believe that consequences are possible as people take collective responsibility for a shared problem.



Researcher has analysed, by understanding literature related to Global Warming, which has elaborately been explained in chapter two, that ultimately We are a part of

Universe, universe is about environment and human and ecological balance between them. It's all about Adaptation and Adjustment and merging pattern. How can environment have negative impact, in fact Environment is POSITIVE and allows and giving us chance to balance an embanking generated by us. Even in the absence of direct impacts, the perception and fear of climate change may threaten mental health. However there is a reason to believe that positive consequences are possible as people take collectively responsibility for a shared problem.

First demystification of the science of climate change is necessary to bring the subject in the public domain, when the sun's energy hit the world, much of the rays and heat bounce back to the space, but Carbon dioxide ( $\text{CO}_2$ ), methane ( $\text{CH}_4$ ) and such thirty other gases create a layer that traps some of the heat from the Sun and warm the planet. The outcome is called "Green House" effect because they prevent infrared radiation from escaping the earth surface to space. Thus, the life enforcing green house gases (GHG) has been always with us and  $\text{CO}_2$  in particular exists naturally. Around 40% of global  $\text{CO}_2$  emission came from Industrial plants or power stations that burn coal.

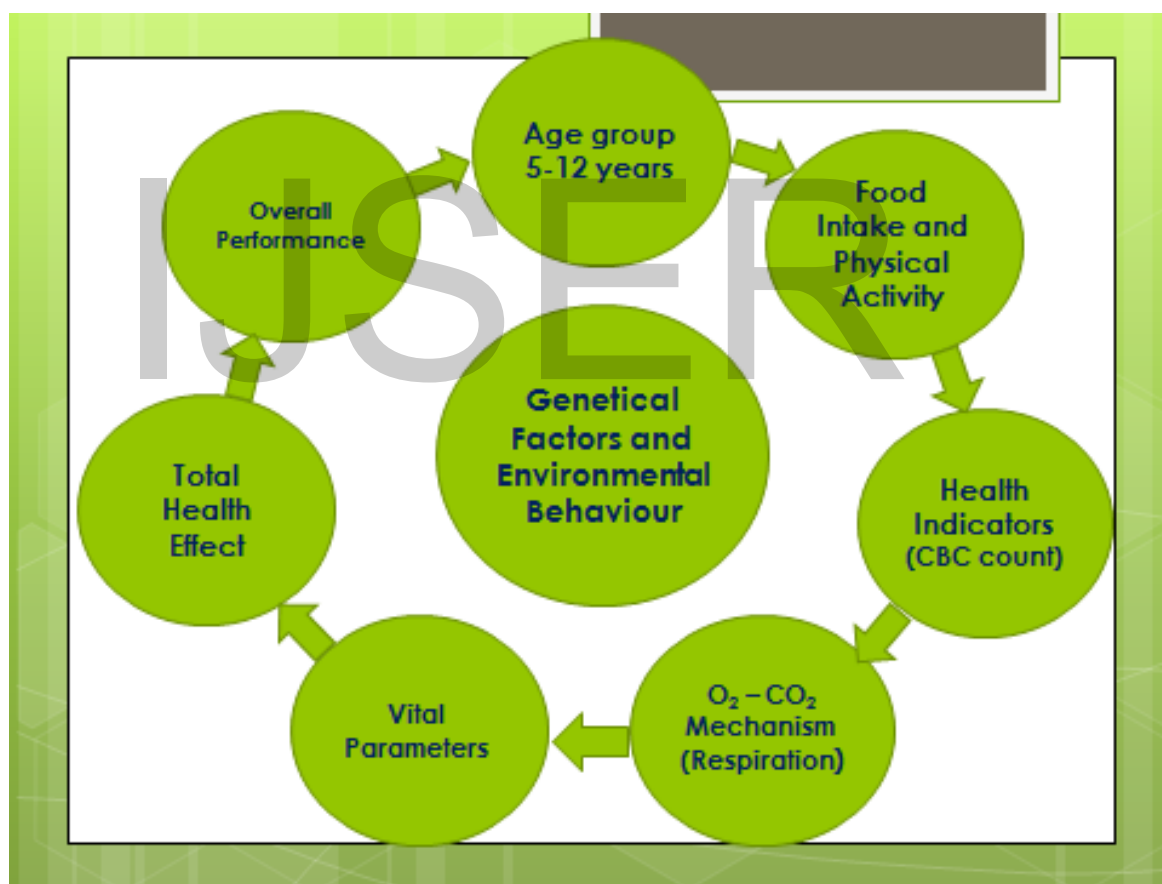
Cellular respiration i.e.  $\text{CO}_2$  is an end product in organisms that obtain energy from breaking down sugar, fat and amino acids with  $\text{O}_2$  as part of their metabolism, the carbon dioxide ( $\text{CO}_2$ ) travel in the blood from the body's tissues to the lungs, where it is exhaled. In human respiration  $\text{CO}_2$  is one of the mediators of local auto-regulation of blood supply. A person's breathing rate influences the level of  $\text{CO}_2$  in their blood. Breathing that is too slow or shallow causes respiratory acidosis, while breathing that is too rapid leads to hyperventilation, which can cause respiratory Alkalosis. Abnormal  $\text{CO}_2$  removal in the lungs (respiratory acidosis and alkalosis) and abnormalities in the regulation of Bi-carbonate and other buffers in the blood. (Metabolic acidosis and alkalosis)  $\text{CO}_2$  is the second largest group which when dissolved in blood of negative ions of blood plasma. Therefore, breathing it directly affects the blood plasma.

Researcher has found importance of knowing about cognitive aspects of child development and relation of global warming, in the modern atmosphere, presence of Oxygen has depleted due to Global warming, and as it sustains lives, it is needed in large amounts.

Oxygen from the atmosphere is taken into the lungs by the involuntary function of breathing and into the blood of the capillaries by the phenomenon of diffusion. The inhaled air  $O_2$  is passed into the upper airway continuing down the peripheral airway and is then equally distributed to the lungs. The two main processes in respiration are, i) Distribution.

ii) Diffusion of gases from blood vessels into the blood. Oxygen is absorbed into the small sack like alveoli surrounded by capillaries. The researchers efforts are to bring out the natural means of living by enhancing the bodily parameter by introducing life style approach in their school age.

### 1.2.6 Description.



Factor selected by researcher is with complete concept to reach complete goal of well being of children. Children aged between 5 -12 years are selected and three major factors, i.e. Physio-psychological parameter, nutritional and environmental factor are considered for research purposes. Humans carry genes and take birth with default

mechanism, but development stage allows them to bring changes and improve health. Height, weight, BMI, BMR, these are the basic development keys to analyse and design further investigation. For developmental growth period for children, which is 5 – 12 years, they require amount of energy as per their expenditure, so body composition is directly connected to nutrition. To achieve complete health only body or mind cannot be worked and left alone, another physical parameter BMI, BMR, i.e. body composition is very crucial factor for children to pass as a healthy child. Body composition is interrelated or directly related to stimulant of brain and nutrition intake.

The preamble of WHO's charter define health as a state of complete physical, mental and social well being. Not merely the absence of disease or infirmity. Thus, health is a broader concept including physical, social and mental health. Childhood is seen as a foundation for individual development both physiological and psychological levels and is taken to define lifetime. Childhood is a milestone for physical vitality and personality along with mental growth.

The eminent evolutionary biologist and theorist E. O. Wilson, in the Prologue of his book defines Biophilia as “the innate tendency” to focus on life and life like process. So life of any living thing is interrelated as per this theory. Researcher has connected physiological and psychological and interrelated environment with our natural love for life which helps sustain it.

Life Process starts at birth. Birth of a human require to live and respiration i.e. breath is directly connected to environment, i.e. O<sub>2</sub> and CO<sub>2</sub>. Researcher has taken up present condition and its effect on children as they grow, if their physical parameter is not as per development then their mental growth also gets affected and this way researcher has connected life process which researcher has described by diagram.

### **1.3 Significance of the study:**

The efficacy of Naturopathy is in improving quality of life by improvising fitness physiologically and psychologically as well as to have children lead a better life when there is exposure to unpredictable climatic condition and insecure life. Researcher has proposed a much secured, preventive lifestyle, which is affordable and not time consuming as the measures can be taken even at schools. This is one of a kind of experimental research, not only children but also parents were equally exposed and



educated about the parameters of research and even schools teaching staff and principal participated in accomplishing the research programme.

This research is very much interesting as it offers very interesting recipes, diet and nutrition. Children exercise every day in school. The exercises include:

- 2 time - *Suryanamashkar*
- 2 time - *Lom-vilom*
- 2 time - *Nadi- badh pranayama*

Since we are products of Nature, researcher has positively linked global warming with improving fitness and vitality of children where by they will have less adaptation problem.

This research is an attempt to save children from pain and suffering by providing a healthy lifestyle through proper diet and exercise.

**1.4 Rationale of the study:**

Advocacy of research is to raise awareness that climate change is a fundamental threat to our sub population as their physical and psychological fundamental parameter is consistently deteriorating. Children are expected to live longer than adults, exposing them to newly developing or worsening environment hazards in the future. Children consume a larger proportion of fruits and vegetables and spend a larger proportion of time than adult do. Because they breathe more air, drink more water and eat more food per unit of body weight, children experience greater proportion of exposure than adults do.

Table 8. Clinical Classification to Facilitate Treatment Decisions in Children with Cough or Difficult Breathing.

	<b>Signs and symptoms</b>	<b>Classification</b>	<b>Therapy</b>	<b>Where to treat</b>
1.	Cough or cold No fast breathing No Chest in drawing Or indicators of severe illness	No Pneumonia	Home remedies	Home

2.	Respiratory rate RR/minute 60 or more months 50 or more months 40 or more months	Age <2 2-12 12-60	Pneumonia	Cotrimoxazole	Home
3.	Chest in drawing		Severe Pneumonia	IV/IM Penicillin	Hospital
4.	Cyanosis, severe chest in drawing or inability to feed		Very severe Pneumonia	IV Chloramphenicol	Hospital

If we carefully and rationally study the table above then obviously it is proved that maximum onset of respiratory complication can be treated at home and home remedies need to be taken as a very important preventive strategy.

This research is positive research in the interest of our children specially aged between 5-12 years, as they are in developmental progress stage and they are in schooling age. Since they spend more than eight hours in school per day and by excluding holidays more than 200 hundred days. Researcher has chosen school children and school hours for her Naturopathic intervention experiment. Researcher has intervened children and parents by exposing them to preventive strategy to reduce impact of global climate change on children health through naturopathic intervention programme were Natural diet-herbal diet

**Suryanamashkar, *Nadi-bandh pranayama* invented by researcher to improvise their lung volume capacity as a preventive measure to deal with pollution and not so friendly climate.**

Researcher has done research with psycho-physiological approach to improvise not only children but their parent's health. Concept of complete positive approach by improvising child-parent relationship and by upgrading family environment practically proved to them that by adopting simple and healthy life-style they can manage to save money on medicine and market product.

### 1.5 Statement of problem:

Researcher proposes the problem which is related to psycho-physiological aspects and its effects on respiratory system among children. The title of the problem is "psycho-

physiological aspects and its effect on respiratory system through naturopathy on children age group 5-12years --positively link to global warming”

### **1.6 Summary.**

The chapter began with an overview, which briefly capsuled the essence of the present study. It proceeded to describe the various concept employed namely Psycho – Physiological aspect and effect on respiratory system, and associated disorder and current preventive measure, though intervention of naturopathic life-style, i.e. on age group of children 5- 12 years, during their school age and inculcate the programme as life-style during school hours.

Following this the three intervention method employed in study were defined. The chapter concluded, with the description and rationale of the study.

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## CHAPTER 2

### REVIEW OF LITERATURE

#### **Introduction:**

The general outline of the present study along with explanation of major concepts in the study, namely Naturopathy, Respiratory diseases, Lifestyle, Psychological disturbance, Global Warming, *Suryanamaskar*, *Pranayam*, were incorporated and covered in the first chapter. This chapter provides a review of literature of the major concept under study. It includes studies that show the relative efficiency of preventive measures as Naturopathy, Yoga, *Pranayama* and Lifestyle on respiratory system, which is affected by abrupt environmental and climatic conditions. However it should be noted that over the past few years a lot of research involving Nutrition, Lifestyle, impact on children of climate, effect of Yoga and *Pranayam* on respiration, exercise and impact on lung volume, there is also a dearth of research involving mental health, Physical health involving all Physiological parameter and natural diet.

The second chapter, review of literature, helps the researcher in deciding the direction of the research. A collective body of works done by earlier scientists is technically called literature (A K Singh 2004). Researcher believes that any scientific investigation starts with a literature review. It is the primary stage towards research. The researcher attempts a close or an in-depth attempt at revealing/providing the review of literature. The research is mostly problem oriented whether it is Psychological, Sociological or Philosophical. Not merely the research, but the review of literature is also the major source to alter, include and exclude which and what form of research done earlier in the same area. Awareness for sake of knowledge of such research prevents unnecessary repetition of documentation. Likewise, constantly flourishing developing research also revises and remoulds the documentation according to the demand of time. In this way, review of literature is helpful in identifying variable relevant for research and avoidance of repetition.

Synthesis of prior work, determining meaning differences and relationship among Physiological and Psychological variable keeping this view in mind researcher has

carefully studied the literature and review of researchers related to the urban students of M. K. E. S. English School, Mumbai.

## **2.1 Naturopathy and Nutrition:**

One of the serious problems India faces is lack of nutrition in children. The country is still struggling with this problem. Malnutrition, the condition resulting from faulty nutrition, weakens the immune system and causes significant growth and cognitive delay. Growth assessment is the measurement that best defines health and nutritional status of children, while also providing an indirect measurement of well-being for the entire population. According to UNICEF 2011 survey and research, the available international evidence suggests that along with west and central Africa, India also has highest underweight prevalence and anaemic adolescence.

Malnutrition is a central issue and supports UNICEF survey, latest Research carried out by department of community health, UP, by **Anurag Srivastava, Syed E Mahmood et.al (2012)**, has taken cross-section study in school age, slum-children aged 5-15 years took place between Dec. 2010 and April 2011 in urban slums of Bareilly (UP), India by using sample size 348. Researcher has analysed association between malnutrition and their body composition. Researcher carried out a survey by questionnaire, anthropometric measurements and clinical examination and found the mean height and weight of boys and girls in the research group was lower than the CDC 2000 (Centres for Disease Control and Prevention) standards in all age groups result. This has thrown a light on gender difference. Except refractive errors, all illnesses are more common among girls, but this gender difference is statistically significant only for anaemia and rickets. Researcher has even found, the risk of malnutrition was significantly higher among children living in joint families and children whose mother's education was [less than or equal to] 6th standard and children with working mother. Present research will be more accurate, solution based as researcher has carried out study in school from middle class, and lower middle class and parents and children were included in intervention period. Researcher's vision is to enhance childhood by generating a spirit of health consciousness, which will be very helpful for children in their adolescence

Naturopathy as a preventive measure and as a choice of life science: Biochemistry and Microbiology researcher in USA carried out a study. (**Catherine E. Ulbricht, Dawn Costa, (2012)**) they examined natural products for preventing influenza. Botanicals, minerals, and other substances produced by organisms found by Natural standard Research collaboration researcher – not only hold historical significance in various medical traditions, but they also form the basis of many modern-day drugs. Natural products are often used for primary disease prevention and treatment – or as adjuncts to conventional therapies – despite uncertain effectiveness or safety and are considered a form of complementary and alternative medicine (CAM); as with many CAM therapies. On the other hand, natural products have given rise to numerous conventional drugs, which are widely used in mainstream medicine and compose the primary therapeutic strategies for numerous conditions (including influenza). The available evidence in the review on the use of select natural products for the treatment or prevention of influenza is discussed. Finally, a brief overview of an established influenza drug with botanical origins is provided. Present study compared to this study provides an economical, preventive lifestyle for common people and exposes them directly to nature during intervention programme.

A comprehensive assessment of urinary iodine concentration and thyroid hormones in New Zealand schoolchildren: a cross-sectional study had been carried out by researcher **Sheila A Skeaff, Christine D Thomson, Noela Winsome R Parnell** by **Department of Human Nutrition, University of Otago, Dunedin, New Zealand (2012)**. Insufficient iodine in children's diets is of concern because thyroid hormones are needed for normal growth and development, particularly of the brain. This study aimed to carry out a comprehensive assessment of the iodine status of New Zealand schoolchildren using a range of biochemical indices suitable for populations (i.e. urinary iodine concentration) and individuals (i.e. thyroid hormones). The New Zealand National Children's Nutrition Survey was a cross-sectional survey of a representative sample of schoolchildren aged 5-14 years. Researcher has concluded that The UIC and Tg concentration indicate that New Zealand schoolchildren were mildly (i)odine (d)efficient according to WHO/UNICEF/ICCIDD. This research has not introduced any preventive measure in their study. For that matter this research study is presenting complete body, mind and dietary solution for school going children.

**As Lohff B, Schaefer J, Nierhaus KH, Peters T, Schaefer T, Vos R. (1998),** reviewed Natural defences and auto protection: naturotherapy, an old concept of healing in a new perspective. Body has remarkable remperative(?) power when left done – Recent Molecular – biological and Molecular – genetic research has shown that important cellular – based auto protective Mechanisms are mediated by heat shock proteins (HSP<sub>s</sub>) or stress-response proteins, also called react to extracellular stimuli by activating single transduction pathway which result in activating the genetic programme. The Phenomenon seen here is basically due to the body’s own defense mechanism which make it capable of reacting harmful influences and allow it to stabilize a structure and or function of the body of the body. The “self-healing foxes of the body.” According to **Mary Vishala, SND**writer of *Guidance and Counselling* later childhood is a period of slow, steady and uniform growth until the changes of puberty begin. Development rate, although confirms and uniform, is very show of this stage. Good and balanced diet is important for the child’s good health growth and development. The better health and nutrition, the larger Children to be, age for age, as compared with those whose nutrition and health we poor. They develop a realized attitude; they begin to accept and appropriate the hard realities of life and try adopting themselves to the real environment. Whereas other studies have examined children’s understanding of the role of Psychobiological labels such as tasty “Yummy” and not tasty (Yucky) foods on growth and illness (**Laxshmi Raman – Child development Research Vol. 2011, Article ID 638239**).

Anemic childrens performance was worse in practically all tested function. This kind of Research shows an importance of Nutrition among children. Further to support this statement **Winston J Craig (1990 : 70 Suppl) (ABCN)** mention, Research interest has focused on various herbs that possess hypolipidemic ant platelet, antitumor or immune – stimulating Properties Furthermore, a diet in which culinary herbs are used generously to favour food provides a variety of active physiochemical that promote health and project against chronic disease. Two studies found that anaemic children had minor neurological dysfunction at 5 (**de Andrea et al 1990**) and 7 of age (**Cantwell 1974**) Recent advances on the Nutritional Effects Associated with the use of garlic as a supplement by **Harunobu Amagase, 2 Brenda L. Petesch, Hiromichi Matsuura, Shigeo Kasuga.**

**Diego G Peroni, Beatrice Bonomo, et al (2012)** How changes in nutrition have influenced the development of allergic diseases in childhood. Research on importance of nutrition in childhood has been carried out in Italy, the increasing prevalence of allergic diseases in childhood in the last decades could be linked to concomitant dietary changes, especially with the modified and lower consumption of fruit, vegetables and minerals. The consumption of these foods by pregnant women and children in the first years of life seems to be associated with a reduced risk of asthma and related symptoms. Foods that can prevent the development of wheezing through their antioxidant effects contain vitamin C and selenium; blood levels of these elements correlate negatively with the risk of wheezing. Intake of vitamin E during pregnancy also appears to be correlated with a reduced risk of wheezing for the unborn child. Similarly, low intake of zinc and carotenoids by pregnant women is associated with an increased risk of wheezing and asthma in childhood. Fiber also has anti-inflammatory properties and protective effects against allergic diseases such as atopic dermatitis and asthma. The consumption of fat influences the development of the airways. Populations in Western countries have increased their consumption of n-6 PUFAs and, in parallel, reduced n-3 PUFAs. This has led to decreased production of PGE<sub>2</sub>, which is believed to have a protective effect against inflammation of the airways. Conflicting hypotheses also concern vitamin D; both an excess and a deficiency of vitamin D, in fact, have been associated with an increased risk of asthma. Further studies on the role of these substances are necessary before any conclusions can be drawn on a clinical level.

Research carried out by team of UNICEF in **2012** for report research on health status genderwise. Adolescent females are more prone to nutritional difficulties than adolescent males in early childhood (0–4 years), the available international evidence suggests that differences in nutritional status between girls and boys are statistically negligible in all regions except South Asia. As the years pass, however, girls run a greater risk than boys of nutritional difficulties, notably anaemia. Data from 14 developing countries show a considerably higher incidence of anaemia among female adolescents aged 15–19 as compared to their male counterparts in all but one country. In nine countries – all, aside from India, West and Central Africa – more than half of girls aged 15–19 are anaemic. India also has the highest underweight prevalence among adolescent girls among the countries with available data, at 47 per



cent. The implications for adolescent girls in this country are particularly serious, given that in the period 2000–2009, around 47 per cent of Indian women aged 20–24 were married by age 18. Adolescent pregnancy is a regular consequence of child marriage, and underweight mothers have a higher risk of maternal death or morbidity. (UNICEF-2012). Here researcher has mentioned only gender wise deficiency and found girls are at greater risk comparatively present study has given complete concept by taking equal consideration for both gender and introducing experimental intervention of health.

## 2.2 Physiological Aspects and Effects:

Physical fitness can be brought about as an integrated measure of most, if not all, the body functions (skeletal-muscular, cardio respiratory, hematocirculatory, psych neurological and endocrine–metabolic) involved in the performance of daily physical activity and/or physical exercise. Hence, when physical fitness is tested, the functional status of all these systems is actually being checked. This is the reason why physical fitness is nowadays considered one of the most important health markers, as well as a predictor of morbidity and mortality for cardiovascular disease (CVD) and for all causes. Physical fitness is in part genetically determined, but it can also be greatly influenced by environmental factors. Physical exercise is one of the main determinants. Childhood and adolescence are crucial periods of life, since dramatic physiological and psychological changes take place at these ages. Likewise, lifestyle and healthy/unhealthy behaviours are established during these years, which may influence adult behaviour and health status. Thorough reviews have recently discussed the associations between physical activity at young ages and its short/long-term consequences on health. However, less is known about physical fitness and health outcomes in young people.<sup>9</sup> In the last years, an increasing amount of research on physical fitness and health in childhood and adolescence has been published. This review aims to summarize the latest developments with regard to physical fitness and health outcomes such as adiposity, CVD risk factors, skeletal health, cancer and mental health, in young people.

Physical fitness, exercise and activity are a complete requirement for growth of children to support this statement research carried out in Germany by **Manfred James Müller, Inga Koertzing, Mareike Mast, Kristina Langna (1999)** is

**explained.**Physical activity and diet in 5 to 7 years old children. Objective was to assess the possible associations between physical activity, diet, social state and overweight in children. Design with Cross sectional study on 1468 children Kiel, northwest Germany. Methods: Assessment of physical activity and social factors by a questionnaire, food frequency record, body composition analysis by anthropometrics and bioelectrical impedance analysis. Results were 23% of our children were overweight or obese. Low levels of physical activity (as assessed by TV viewing time) were associated with increased body mass index and a higher prevalence of overweight. TVviewing of more than 1h per day was associated with a high consumption fast food, sweets, chips and pizza whereas fruits and vegetables were consumed less frequently. Overweight, inactivity and unhealthy eating habits were seen more frequently in families with a low social status. Conclusions, research carried out was In 5 to 7 years old children; overweight is associated with physical inactivity, unhealthy eating habits and a low social status. Primary prevention efforts should be directed to low income families.

A powerful marker of health:Physical fitness in childhood and adolescence.Unstructured Free Play Brings Cognitive, Social and Health Benefits to Children Unstructured free play in the out-of-doors brings a host of benefits to children — from being smarter to more cooperative to healthier overall. This well-documented article by two physicians builds a strong case for the importance of unstructured free play in the out-of-doors for all age groups, and especially young children. The authors cite cognitive benefits from play in nature, including creativity, problem-solving, focus and self-discipline. Social benefits include cooperation, flexibility, and self- awareness. Emotional benefits include stress reduction, reduced aggression and increased happiness. Children will be smarter, better able to get along with others, healthier and happier when they have regular opportunities for free and unstructured play in the out-of-doors. **Burdette, Hillary L. “Resurrecting Free Play in Young Children: Looking Beyond Fitness and Fatness to Attention, Affiliation and Affect.”( 2005) American Medical Association.**

**FB Ortega, JR Ruiz, MJ Castillo and M Sjo (2010)** from Department of Physiology, School of Medicine, University of Granada, Granada, Spain and Unit for Preventive Nutrition, Sweden .This review aims to summarize the latest developments

with regard to physical fitness and several health outcomes in young people. The literature reviewed suggests that. (1) Cardiorespiratory fitness levels are associated with total and abdominal adiposity; (2) Both cardio respiratory and muscular fitness are shown to be associated with established and emerging cardiovascular disease risk factors; (3) Improvements in muscular fitness and speed/agility, rather than cardio respiratory fitness, seem to have a positive effect on skeletal health; (4) Both cardio respiratory and muscular fitness enhancements are recommended in paediatric cancer patients/survivors in order to attenuate fatigue and improve their quality of life; and (5) Improvements in cardio respiratory fitness have positive effects on depression, anxiety, mood status and self-esteem, and seem also to be associated with a higher academic performance. In conclusion, health promotion policies and physical activity programs should be designed to improve cardio respiratory fitness, but also two other physical fitness components such as muscular fitness and speed/agility. Schools may play an important role by identifying children with low physical fitness and by promoting positive health behaviours such as encouraging children to be active, with special emphasis on the intensity of the activity.

Good health and freedom from disease is the best achievement of life. Modern medicine has made tremendous progress in recent years. Modern medicine as well as yoga has scientific basis and universal outlook. It is gratifying that science has started studying the EFFECTS OF *SURYANAMASKAR* ON CARDIO VASCULAR AND RESPIRATORY PARAMETERS IN SCHOOL STUDENTS (capital sentence?)**SasiKumar,Sivapriya,ShyamalaThirumeni Tutor,(2011)** Department of Physiology, Tagore Medical College and Hospital, India . Modern medical science has started to study the effects of *suryanamaskar* and yogic techniques. With increasing scientific research in *suryanamaskar* and yoga, its therapeutic aspects are explored in wide angle. This study was designed to evaluate the effects of a 45 days daily practice of *suryanamaskar* on blood pressure(BP), heart rate(HR), respiratory rate (RR), forced vital capacity(FVC) and peak expiratory flow rate (PEFR) in school students of both sexes.115 school students aged 10 to 14 years were recruited for the study. The participants were trained to perform *suryanamaskar* for 45 days study period. The cardio vascular and respiratory parameters BP, HR, RR, FVC and PEFR were measured before and after practice of *suryanamaskar*. The results showed that the Systolic blood pressure, PEFR and FVC increased significantly and RR, HR and

diastolic blood pressure decreased significantly after the practice of *suryanamaskar*. Conclusion, researcher has showed the beneficial effects of *suryanamaskar*, all schools can have their students practice it to improve their physical health and sports activities should also be introduced for the students.

Yogic techniques, while yoga has started using modern technology and scientific methods. Yogic techniques are known to improve one's overall performance and work capacity (Bhattacharyya and Krishna, 1960). Yoga appears to provide a comparable improvement in stress, anxiety and health status (Caroline et al., 2007). Yogic practices can be used as psycho-physiological stimuli to increase endogenous secretion of melatonin, which in turn, might be responsible for improved sense of well-being (Harinath et al., 2004). Training to yoga respiration selectively increases the respiratory sensation, perhaps through its persistent conditioning of the breathing pattern (Florence et al., 2005). Perhaps one of the most powerful tools in yogic practices is the use of the breath to bring our consciousness back in tune with the Divine Cosmic Breath. This cosmic breath is the rhythm of life itself. Yoga breathing, or *pranayama*, is the science of breath control. *Pranayama* (breathing exercise), one of the yogic techniques can produce different physiological responses in healthy individuals (Upadhyay et al., 2008). The science of *pranayama* is based on the retention of *prana* called '*kumbhaka*'. Among the many kinds of *pranayama*, *anulomvilom* and *bhastrika* are considered as one of the significant types of the core structuration of *pranayama*. *Bhastrika pranayama* is mainly a combination of *Kapalbhati* and *Ujjayee*. Rapid succession of forcible expulsion is a characteristic feature of *bhastrika pranayama*, whereas *anulomvilom pranayama* is also called "*Nadishuddhi Pranayama*", in this breathing technique you inhale from one nostril at one time and release the breath through the other nostril. There have been many studies on yoga and its effects on physical function (Hadi, 2007) (but with the phenomenal and ever increasing popularity of *pranayama* in the past few years, there is a lack of study on this particular discipline and as a result **the present study has been undertaken to examine the effects of *anulomvilom* and new technique of *pranayama* called nadi- bandh pranayama on the vital capacity and maximal ventilator volume.) (omit)**

**Shirley Tellesand T. Desiraju (1991)**, Oxygen consumption during *pranayamic* type of veryslow rate breathing. Research carried out in department of neurophysiology, National institute of mental Health and Neuroscience.

*Ujjayipranayama* type of breathing involves sensory awareness and is consciously controlled, extremely slow-rate breathing including at least a period of end-inspiration breath holding in each respiratory cycle would alter oxygen consumption or not, ten males with long standing experience in *pranayama*, and volunteering to participate in the laboratory study were assessed. These subjects aged 28-59 years, had normal health appropriate to their age. Since *Kumbhak* (timed breath holding) is considered as an important phase of the respiratory cycle in the *pranayama*, they were categorised into two groups of five each, one group practising the short *Kumbhak* varieties of *pranayama*, and the other the long *Kumbhak* varieties of *pranayama*. The duration of *Kumbhak* phase was on an average 22.2 per cent of the respiratory cycle in the short *Kumbhak* group and 50.4 per cent in the long *Kumbhak* group. Oxygen consumption was measured in test sessions using the closed circuit method of breathing oxygen through the Benedict-Roth spirometer. Each subject was tested in several repeat sessions. Values of oxygen consumption of the period of *pranayamic* breathing, and of post-*pranayamic* breathing period, were compared to control value of oxygen consumption of the pre-*pranayamic* breathing period of each test session. The results revealed that the short *Kumbhakpranayamic* breathing caused a statistically significant increase (52%) in the oxygen consumption (and metabolic rate) compared to the pre-*pranayamic* base-line period of breathing. In contrast to the above, the long *Kumbhakpranayamic* breathing caused a statistically significant lowering (19%) of the oxygen consumption (and metabolic rate). The values returned to near normal in the post-*pranayamic* periods. The data provide a basis to indicate that different types of *pranayamic* breathing may lead to different types of alterations in the oxygen consumption and metabolic rate. Present study is comparatively very effective, as researcher has taken pre-post study by introducing their nutritional requirement with nutritional recipe for their tiffin and by avoiding junk food.

Effect of *anulomvilom* and *bhastrikapranayama* on the vital capacity and maximal ventilatory volume by **Baljinder Singh Bal (2010)** has further proved significant importance of *pranayama* in relation with healthy respiration and sports

performance by determining the effects of *Anulom Vilom* and *Bhastrika Pranayama* on Vital Capacity and Maximal Ventilatory Volume, thirty (N = 30) randomly selected male students aged 18 - 26 years volunteered to participate in the study from D.A.V. Institute of Engineering and Technology, Jalandhar (Punjab), India. They were randomly assigned into two groups: A (experimental) and B (control). The subjects were subjected to the eight-week *pranayama* training programme that included “*Anulom Vilom Pranayam*” and “*Bhastrika Pranayam*”. The between-group differences were assessed using the Student’s t-test for dependent data. The level of  $p \leq 0.05$  was considered significant. The vital capacity and maximal ventilatory volume significantly improved in group A compared with the control one. *Pranayama* training programme may be recommended to improve vital capacity and maximal ventilator. Research on *anulomvilom* is kind of very repetitive research.

As physical activity and exercise is a subject of research, one of the researches has concluded that, negative attitude towards physical activity can be reliably measured and recommended for intervention in an effort to increase physical activity among children and adolescence, **Timothy D. Nelson, Eric R. Benson, and Chad D. Hensen, University of Kansas clinical Child Psychology Program.**

Further studies have explored effects of gases supply in respiratory system due to exercise. The great heterogeneity in response to O<sub>2</sub> supply during Exercise. Delphine Delamplé, Meritxell Sabate, Christian Prefaut and Fabienne Durand (2008) concluded the response to oxygen supply during exercise varied among COPD patients. Moreover, despite the clinical benefits of TP, no cumulative effect of TP and oxygen supply was observed during exercise. With approximately 35% of our COPD patients improving their exercise tolerance. Another research has found an inhalation of CO<sub>2</sub> has been shown to produce more Anxiety in patients with panic disorder (PD) than in healthy comparison subject. **Jack M. Gorman, Justine Kent, et al ( )**. There are many researches based on asthma and allergy which is one of the most chronic disorders of childhood. **MyoungHee Kim, et al (2012)** team has concluded that their study revealed pronounced difference between the ISAAC (International Study of Asthma and Allergies in childhood) WQ written and Audio visual questionnaire in the estimation of the prevalence of Asthma Symptoms in children aged 10-12 years and demonstrated that the AVQ may be at least as effective as WQ in detecting Asthma

Symptom in the age group. The management of respiratory disorders and their different techniques of evaluating disorder has been researchers topic like **Ascedio Jose Rodrigues, EvandroAlencarScussiatto, et.al, (Pediatric Pulmonology 47:59-62 (2012))** has done very informative Research which is a torch for other researchers this team has conceded. The knowledge and association of different methods in paediatric bronchoscope add the benefits of one method to another, minimizing the chances of thepentic failure. Another research by A. BalachandranSo.Shivhbalan on chest;they have concluded that CPT (Chest Physiotherapy) is highly effective in facilitating airway is a component of airway clearance therapy and pulmonary rehabilitation. Present study has introduced an importance of respiration and preventive strategy for school children by training them on Steve Parker experiment of respiration and motivated them for knowledge bases health achievingconcept.

**Mohammed O Al Ghobain1, Mohamad S Al-Hajjaj (2012):**Most of the studies investigating the prevalence of asthma in various countries have focused on children below the age of 15 years or adults above the age of 18 years. There is limited knowledge concerning the prevalence of asthma in 16- to 18-year-old adolescents. Objectiveof this research was to study the prevalence of asthma and associated symptoms in 16- to 18-year-old adolescents in Saudi Arabia. A cross-sectional study was conducted in secondary (high) schools in the city of Riyadh utilizing the International Study of Asthma and Allergies in Children (ISAAC) questionnaire tool. Out of 3073 students (1504 boys and 1569 girls), the prevalence of lifetime wheeze, wheeze during the past 12 months and physician-diagnosed asthma was 25.3%, 18.5% and 19.6%, respectively. Looking at this data researcher's present study would be more adaptable for schools as it is on global lifestyle solution for complete health concept.

An investigation via survey technique in Singapore had been undertaken on upper and lower respiratory tract disorders in eight year old children. **(By M. Chia, N. K. Virabhak, Y. K. Ng. S. K. Lee, J. M. J. Supramaniam, W. Chan, P. Martin and B. Gandevia, (1972 Vol. 13, No. 6)** hadsurveyed that the loose cough sign detects a sufficiently high proportion in subjects in a large population to dispense with the more time-consuming physical examination. In any case, its use in this childhood population clearly increased the sensitivity of auscultation in the detection of lower respiratorytractdisease.**Sudha Chaudhari, Madhumati Otiv, Anjali Chitale,**

**Mahendra Hoge, Anand Pandit and Anjali Mote,(2005)** team has explored the contribution of biological risk factors versus socio-demographic and environmental risk factors in cognitive development of children with birth weight less than 2kg at the age of 12 years. Further **Ewa Ternesten-Hasséus, Christel Larsson, Sven Larsson, Eva Millqvist (2011)** research carried out among patients with chronic cough, majority claimed that environmental factors induced coughing. Both the CSS-SHR(chemical sensitivity scale for sensory hyperreactivity) and the HARQ score (hull airway reflux questionnaire) systems seem to be valuable instruments in the mapping of cough patients, supporting the novel paradigm of a cough hypersensitivity syndrome. Their result emphasize that cough is a substantial burden to the patient, influencing daily living and quality of life. Present study of researcher has introduced balanced herbal water therapy which help children from fighting recurring cough.

**Raymond G. Slavin, (2008)**,The upper and lower airways do not exist as anatomically and functionally distinct areas. There are important relationships between both the nose and the paranasal sinuses and asthma. Both allergic rhinitis and rhinosinusitis may impact bronchial asthma. The patient with rhinitis should be observed carefully for the development of asthma, and those with asthma should be considered to have either rhinitis or rhinosinusitis.

In addition to being an airway defence mechanism, coughing is a very common symptom observed in many diseases other than those affecting the respiratory system. To recognize its cause is not always an easy task. To understand approach towards cough, **Francesco De Blasio<sup>1</sup>, Johann C Virchow et.al (2011)** Cough management: a practical approach. Cough is one of the most common symptoms for which patients seek medical attention from primary care physicians and pulmonologists. Cough is an important defensive reflex that enhances the clearance of secretions and particles from the airways and protects the lower airways from the aspiration of foreign materials. Therapeutic suppression of cough may be either disease-specific or symptom related. The potential benefits of an early treatment of cough could include the prevention of the vicious cycle of cough. There has been a long tradition in acute cough, which is frequently due to upper respiratory tract infections, to use symptom-related anti-tussives. Suppression of cough (during chronic cough) may be achieved by disease-specific therapies, but in many patients, it is often necessary to use symptomatic anti-tussives too. According to the current



guidelines of the American College of Chest Physician on “Cough Suppressants and Pharmacologic Protussive Therapy” and additional clinical trials on the most frequent anti-tussive drugs, it should be possible to diagnose and treat cough successfully in a majority of cases. Among drugs used for the symptomatic treatment of cough, peripherally acting anti-tussives such as levodropropizine and moguisteine show the highest level of benefit and should be recommended especially to children. By improving our understanding of the specific effects of these anti-tussive agents, the therapeutic use of these drugs may be refined. The present review provides a summary of the most clinically relevant anti-tussive drugs in addition to their potential mechanism of action.

**PavilioPiccioni, Alberto Borraccino, et.al** have concluded by experimental research and by a cross-sectional study, that by taking reference values of forced expiratory volumes and pulmonary flows in 3–6 year children (2007). The researcher’s aims of this study were to verify the feasibility of respiratory function tests and to assess their validity in the diagnosis of respiratory disorders in young children. They had performed spirometry test and collected information on health and parents' lifestyle on a sample of 960 children aged 3–6 years. Researcher Observed was the cooperation rate 95.3%. Among the valid tests, 3 or more acceptable curves were present in 93% of cases. We propose regression equations for FVC (Forced Vital Capacity), FEV1, FEV0.5, FEV0.75 (Forced Expiratory Volume in one second, in half a second and in 3/4 of a second), and for Maximum Expiratory Flows at different lung volume levels (MEF75, 50, 25). Conclusion of researcher study confirms the feasibility of spirometry in young children; however, some of the current standards are not well suited to this age group. In present study researcher have measured only spirometry test. Comparatively in proposed research, researchers study has taken peak flow meter (FEV), incentive spirometry test (IFV), oxy meter (spo<sub>2</sub>), with comparative physical parameter and haemoglobin test which allow to understand complete correlation of oxygen and carbon dioxide gas exchange as per growth of children in present environment and has proposed a diet plan and physical exercise to improvise pulmonary function.

Division of Occupational and Environmental Medicine and Division of Pulmonary and Critical Care Medicine, Department of Medicine, University of California, San

Francisco, USA **Mark D Eisner, Paul D Blanc, et.al (2007)** had conducted experimental study by taking Body parameter and observed functional limitation in COPD (chronic obstructive pulmonary disease) researcher has hypothesised that low body mass index has been associated with increased mortality in severe COPD. The impact of body composition earlier in the disease remains unclear. We studied the impact of body composition on the risk of functional limitation in COPD. Researcher has used bioelectrical impedance to estimate body composition in a cohort of 355 younger adults with COPD who had a broad spectrum of severity. In further analysis, the accumulation of greater fat mass, and not the loss of lean mass, was most strongly associated with functional limitation between both sexes. Researcher has concluded that Body composition is an important non-pulmonary impairment that modulates the risk of functional limitation in COPD, even after taking pulmonary function into account. Body composition abnormalities may represent an important area for screening and preventive intervention in COPD. Body composition is an important non-pulmonary impairment that modulates the risk of functional limitation in COPD, even after taking pulmonary function into account. Body composition abnormalities may represent an important area for screening and preventive intervention in COPD. Comparatively, present research has introduced lifestyle, which gives positive effect on body composition of children and age-to-age parameter allows children to be in preventive condition.

**Bianchi C, Baiardi P (2008)**, Spirometric and peak expiratory flows including CPF (complete pulmonary function ) data were collected on 649 (341 females, 308 males) healthy children aged between 4–18 years, using a portable spirometer and a peak flow meter. CPFs were related to anthropometric characteristics, age, and gender by linear multiple regression analysis. Reference values for CPF were estimated through regression models and calculation of empirical percentiles of data distribution. Significant relationships were found between CPF and gender, height, and body mass surface ( $P > 0.001$ ) in both males and females. In present study researcher has not only done regression analysis but proposed solution based on study conducted in school through experimentation.

**Iraj Mohammadzadeh, Mohammad Gharagozlou et.al(2006)** Conducted study in the management and evaluation of asthma, simple instruments for measurements of

peak expiratory flow rate (PEFR) are necessary. The aim of this study was to determine normal PEFR (peak expiratory flow rate) of the healthy children in Babol, Iran. This evidence of research has proved validity and necessity of research in the present environment.

**Meenakshi Sharma, Ram Babu Sharma\*, RaghuvverChoudhary (2012)** Departments of Physiology, \*Paediatrics, SMS Medical College In Jodhpur,,Rajashthan conducted pulmonary research as ventilatory function tests provide a better understanding of functional changes in the lungs and their significance from the view point of diagnosis. Only few studies are available on ventilatory functions for children of Western Rajasthan (a desert area) from 7–14 years of age. In present study, positive correlation was found between PEFR and anthropometric variables. The norms established in the present study can very well serve the purpose of physiologists as well as clinician of this region. Physicians usually refer to common international references for obtaining different normal values, but it has been shown that PEFR values vary with racial, socioeconomic and genetic features, and with lifestyle. Therefore, it would be more appropriate for each country to have its own region reference values.

### **2.3 Psychological Aspects and Effects:**

The following studies will further clarify that, it has become increasingly apparent that multidisciplinary approaches synthesizing biological, socio-cultural, psychological and family perspective are necessary for better understanding complication and healthy functioning of Respiratory System. Unsurprisingly, school was dominant in the literature as one of the key influences on children and young people's knowledge, attitudes and behaviours relating to the environment (**Gayford, 2009; Girlguiding UK, 2010; Ipsos Mori/DEA, 2008; Nicholls and Lee, 2006; Ofsted, 2009; vinspired, 2009; Wilson and Snell,( 2010)**). As children and young people spend much of their time at school, this is an important sphere of their life to explore. Furthermore, the former government's emphasis on making all schools sustainable seems to have resulted in a focus on the effectiveness and impact of 'learning for sustainability'.

Timothy D. Nelson\*, Ph.D, Eric R. Benson, M.A., and Chad D. Jensen, M.A. University of Kansas, Clinical Child Psychology Program (2012), **Negative Attitudes Toward Physical Activity: Measurement and Role in Predicting Physical Activity Levels Among Preadolescents.** Objectives are to describe the development and validation of a measure of negative attitudes toward physical activity and examine the association between these attitudes and self-reported physical activity among preadolescents. Method A school-based sample of 382 **fifth and sixth graders** (mean age  $\frac{1}{4}$ 10.8) completed measures of attitudes toward physical activity and self-reported physical activity. Body mass index data for the participants was collected as a part of a standard school health assessment. Exploratory factor analysis, confirmatory factor analysis, and structural equation modelling were utilized to test the factor structure and predictive value of attitudes toward physical activity. Results supported the reliability and concurrent validity of the negative attitudes measure and found a significant association between negative attitudes and physical activity. Negative attitudes, was found to be a stronger predictor of physical activity than positive attitudes, which have been the focus of previous research in this area. Conclusions, The results suggest that negative attitudes toward physical activity can be reliably measured and may be an important target for intervention efforts to increase physical activity among children and adolescents. Whereas this research has introduced interest based innovative exercise as physical activity.

**Astrida Seja Kangars, Ph.D, Mary D. Klinnert, Ph.D, and Bruce G. Bender, 23 Ph.D (2004) in Journal of Pediatric Psychobiology Vol. 29, no. 7** has critically reviewed published articles and book chapters to identify research findings and integrated conceptualizations that demonstrate how families affect pediatric asthma and found result that Family Emotional Characteristics, Asthma Management behaviours and physiological factors account for key influences on pediatric asthma consent and outcome.

Some investigations have examined the relationships between of early childhood respiratory disease and the risk of anxiety and depression in adulthood. In one study (**Rence D. Goodwin, PLD, MPH, Stephen L. Buka, SCD ( 2008)**) has concluded their result are consistent with and extend of a link between respiratory disease in early childhood and increased risk of anxiety disorder by age 34 years. Another study which support this researchers result is done by **Daniel. S. Pine,**

**Jeremy D. Coplan, (1998)**, their finding is on the association between ventilatory physiology and anxiety disorders in children and adolescents are consistent with results from studies of adult with panic disorder. In Costa Rica and Chile (**de Andrea et al 1990, lozoeff et al 1991 and 2000**) children were given a comprehensive battery of tests at 5 years of age. In both studies the formerly anemic children had deficient, which were not identical, across a wide range of functions preschool skills, gross motor skill and visual – motor integration were affected. Children in Costa Rica for an even a wider range of function, (**Lozoeff et al. 2000**).

Psychological Therapy and Nutritional Therapy as a part of intervention in Asthmatic and Non-Asthmatic adolescent by **Patricia LeodaSilva, Marco Tulio de Mello, et.al (2012)**. Interdisciplinary Therapy Improves Biomarkers Profile and Lung Function in Asthmatic Obese Adolescents. The simultaneous rise in the prevalence of asthma and obesity in the world, have demonstrated the importance of the development of treatment strategies. The purpose of this study was to evaluate the short- and long-term results of interdisciplinary therapy on inflammatory biomarkers and lung function in asthmatic obese adolescents. Methods: Sixty-six post-pubertal obese adolescents were recruited, including 50 non-asthmatics [body mass index (BMI), 36.5 kg/m<sup>2</sup>] and 26 asthmatics (BMI, 39.4 kg/m<sup>2</sup>). Body composition was measured by plethysmography, and visceral fat was analyzed by ultrasound. Serum levels of adiponectin, leptin, and C-reactive protein (CRP) were analyzed. Asthma and lung function were evaluated according to the American Thoracic Society criteria. Patients were submitted to 1-year weight loss interdisciplinary intervention consisting of medical, nutritional, exercise, and psychological therapy. Result was very approachable after interdisciplinary intervention, the lung function and pro/anti-inflammatory adipokines improved significantly in both groups. Furthermore, a reduction in asthma severity after treatment was observed. In addition, D adiponectin was an independent factor to improve lung function after therapy in both groups. Interdisciplinary therapy resulted in beneficial changes in inflammatory biomarkers problem and lung function in asthmatic and non-asthmatic obese adolescents. The adolescents received psychological orientation for 1 hr in a weekly group session. A psychologist discussed body image and eating disorders as well as binge eating disorders and their signs, symptoms, and health consequences. The psychologist also discussed the relationship between emotions and food as well as

familial problems in a group setting. Individualized psychological therapy was recommended when behavioural alterations including depression and anxiety symptoms or poor dietary habits were found, such as bulimia, anorexia nervosa, and binge eating. Once a week for 1 year, adolescents had nutritional lessons regarding such topics as the food pyramid, food record, weight loss diets, diet and light concepts, fat and cholesterol, and eating disorders. The nutritionist has explained to the parents and the adolescents how to record food consumption. This research proves importance and need of interdisciplinary expertise in schools for children to improvise their lifestyle. Present study has come to be very strong and effective as researchers complete concept has involved not only children but also parents, teacher and staff as well. Such an environment creates positive psychological effect on approach.

**Ghosh, S N and Taruna Sharma (Himachal Pradesh University). Life events stress and chronic pain. Psychological Studies (2010).** Stress in life has been found to play a role in triggering, maintaining and exacerbating chronic pain, yet, direct empirical evidence of the mechanism of such a role is limited. In the present study 120 non-selected chronic pain patients and an equal number of matched healthy normal were investigated with regard to life events stress. The investigation revealed that although, patients and controls did not differ in terms of number of events experienced during the last 1 year, however, patients reported significantly higher frequency of occurrence on a distinctive set of events belonging to personal, interpersonal and familial life and events related to change in eating and sleeping habits. Researchers results emphasize the importance of studying the life events beyond the simple count of number of event occurrence but to explore the specific events those cluster around pain disorders.

**Xu Z, Etzel RA, Su H, Huang C, et.al, (2012)** Children are vulnerable to temperature extremes. This paper aimed to review the literature regarding the relationship between ambient temperature and children's health and to propose future research directions. A literature search was conducted in February 2012 using the databases including PubMed, ProQuest, ScienceDirect, Scopus and Web of Science. Empirical studies regarding the impact of ambient temperature on children's mortality and morbidity were included. The existing literature indicates that very young children, especially children under one year of age, are particularly vulnerable to heat-related deaths. Hot and cold temperatures mainly affect cases of infectious diseases

among children, including gastrointestinal diseases, malaria, hand, foot and mouse disease, and respiratory diseases. Paediatric allergic diseases, like eczema, are also sensitive to temperature extremes. During heat waves, the incidences of renal disease, fever and electrolyte imbalance among children increase significantly. Future research is needed to examine the balance between hot- and cold-temperature related mortality and morbidity among children; evaluate the impacts of cold spells on cause-specific mortality in children; identify the most sensitive temperature exposure and health outcomes to quantify the impact of temperature extremes on children; elucidate the possible modifiers of the temperature and children's health relationship; and project children's disease burden under different climate change scenarios.

**Eileen Wollburg, Walton T. Roth, (2011)** Had researched on psycho-physiological aspects by Effects of Breathing Training on Voluntary Hypo- and Hyperventilation in Patients with Panic Disorder and Episodic Anxiety, Anxiety disorders are associated with respiratory abnormalities. Breathing training (BT) aimed at reversing these abnormalities may also alter the antigenic effects of biological challenges. Forty-five Panic Disorder (PD) patients, 39 Episodic Anxiety patients, and 20 non-anxious controls underwent voluntary hypoventilation and hyperventilation tests twice while psychophysiological measures were recorded. Patients were randomized to one of two BT therapies (Lowering vs. Raising pCO<sub>2</sub>) or to a waitlist. Before treatment, panic patients had higher respiration rates and more tidal volume instability and sighing at rest than did non-anxious controls. After the Lowering therapy, patients had lower pCO<sub>2</sub> during testing. However, neither reactivity nor recovery to either test differed between patients and controls, or were affected by treatment. Although the two treatments had their intended opposite effects on baseline pCO<sub>2</sub>, other physiological measures were not affected. They conclude that baseline respiratory abnormalities are somewhat specific to PD, but that previously reported greater reactivity and slower recovery to respiratory challenges may be absent.

Foundation of healthy childhood is a pillar of healthy life ahead, to support this proverb, **Renee D. Goodwin, Stephen L. Buka, (2008)** Childhood Respiratory Disease and the Risk of Anxiety Disorder and Major Depression in Adulthood. This study yielded three main findings. First, their results indicate that high RR at age 4 months, any respiratory disease by age 1 year, and parent report of respiratory disease by age 7 years are associated with increased rates of treatment of anxiety problems by

age 34 years. Second, these data suggest that the association between early respiratory conditions and mental disorders appears specific to anxiety and is largely unrelated to major depression. Third, they found that the link between early respiratory problems was not specific to asthma and that similar patterns were observable between all early respiratory diseases measured (i.e., pneumonia, bronchiolitis, and croup) and later anxiety problems. This is the first study to show a link between a range of respiratory concerns in the first year of life and anxiety problems over 30 years later in adulthood.

## **2.4 Climatic Effect on Health.**

The Oxford English Dictionary defines pollution as “the act of polluting”. “Pollute” means destroy the purity or sanctity; make foul or filthy. It is one of the gigantic crises of our environment today. It causes global warming, or the Green House Effect and the depletion of the Ozone layer, acid rain and so on.

Air pollution in cities has increased as more and more people have crowded into them. Rapid industrialization, urbanization, oil, fuel, oil and smelting industries, motor vehicles, and very big dust bins are emitting poison gases that affect human beings. Gaseous pollutants and particulate pollutants are affecting our world population.

The special vulnerability of children to exposure to air pollution is related to several differences between children and adults. The on-going process of lung growth and development, incomplete metabolic systems, immature host defences, high rates of infection by respiratory pathogens and activity patterns specific to children can lead to higher exposure to air pollution and higher doses of pollutants reaching the lungs. The efficiency of detoxification systems exhibit a time- dependent pattern during prenatal and postnatal lung development that in part accounts for the increased susceptibility of young children to pollutants at critical points in time. The review highlights concern about the longer-term implications of lung injury during childhood. Exposure of the developing lung to air pollution reduces the maximal functional capacity achieved as the child enters adulthood, and thus reduces the functional reserve. This could lead to enhanced susceptibility during adulthood to the effects of ageing and infection as well as to other pollutants, such as tobacco smoke and occupational exposures. Executive summary for effects of air pollution on children’s health and development a review of the evidence



Environment is one of the most causative factor of respiratory diseases and researcher topic of interest. **Supindabuniyavanich, , Christopher p, et.al , (2003)** We live in a world in which greater and more frequent environmental extremes are likely. Records since 860 demonstrate global warming. The 1990s was the hottest decade yet recorded, and the United Nations Intergovernmental Panel on Climate Change (IPCC) predicts a 1.48C to 88C rise by 2100. Already there is glacier retreat, pole ward shifts of animals and plants, and more extreme weather events. The IPCC posits that most climate change since 1950 is human induced and will have far-reaching environmental and health effects.

Research on climate change has concentrated on its process and sources. The next phase will be impact assessment. A critical area to address will be the differential vulnerability of subpopulations. Till date, there has been little research on climate-health relations that directly addresses children; the available data predominantly concern adult or whole populations. Children may be an especially vulnerable subpopulation because of their developing physiology and anticipated long-term exposure. Internationally, two thirds of all preventable ill health due to the environment occurs in children. In this paper, they review the available research on the health impacts of climate change, analyze its relevance to children, and propose key areas for action. The potential associations of climate change and child health can be organized under three categories.

- 1) Environmental change: Anthropogenic changes such as air pollution and altered ultraviolet radiation contribute to climate change.
- 2) Climate change: An altered climate induces thermal extremes and weather disasters.
- 3) Ecologic change: Climate change causes longer-term ecologic changes that alter food availability, allergy/ mycotoxin and disease exposure, and emerging infectious diseases.

Environment-Based Learning Enhances School Achievement and Civic Responsibility. School Achievement Is Enhanced When Curricula Are Environment Based Sponsored by many state departments of education, this (1998) study has an important place in documenting the enhanced school achievement of youth who experience school curricula in which the environment is the principal organizer. This study, completed in 1998, was followed by two related studies, conducted by the State Education and Environment Roundtable (SEER), both of which produced results

consistent with this original study. (Original Research) **Lieberman, Gerald A.; and Linda L. Hoody**. “Closing the Achievement Gap: Using the Environment as an Integrating Context for Learning.” SEER: Poway, (1998). “California Student Assessment Project.” SEER: Poway, (2000). The third and most recent of the SEER studies we are featuring is described below.

**More Evidence Corroborates Environment-Based School Achievement** This study provides further evidence to support the positive benefits on school achievement from environment-based study in schools. This **2005** study is consistent with the results of two precursor studies, cited above, “Closing the Achievement Gap” (1998) and the “California Student Assessment Project” (2000). Students in environment-based instructional programs score as well or better on standardized measures in four basic subject areas — reading, math, language and spelling. The environment-based programs also foster cooperative learning and civic responsibility, using the natural characteristics of the school grounds and local community as the foundational framework for the curricula. While the benefits are significant, this study also provides evidence for the challenges inherent in maintaining environment-based curricula in schools on a longitudinal basis, despite substantial evidence of benefits.

In addition to being an airway defence mechanism, coughing is a very common symptom observed in many diseases other than those affecting the respiratory system. To recognize its cause is not always an easy task.

Symptoms induced by environmental irritants and health-related quality of life in patients with chronic cough - A cross-sectional study been carried out by **Ewa Ternesten-Hasséus, et.al (2011)** Chronic cough is a common condition, but some patients have no evident medical explanation for their symptoms. A group of patients has been identified, characterized by upper and lower airway symptoms triggered by chemicals and scents, and heightened cough sensitivity to inhaled capsaicin. Chronic cough is usually a prominent symptom in these patients, and it has been suggested that they suffer from sensory hyperactivity. Researcher’s main aim was to analyse, in a group of patients with chronic cough, the presence of symptoms induced by environmental factors such as chemicals, scents, and cold air, and to measure the social and emotional influences of these symptoms in relation to quality of life. A second aim was to pilot-test a Swedish translation of a cough- specific questionnaire. This study has concluded that among patients with chronic cough, a majority claimed that environmental factors induced coughing. Both the CSS-SHR

and the HARQ score systems seem to be valuable instruments in the mapping of cough patients, supporting the novel paradigm of a cough hypersensitivity syndrome. Our results emphasize that cough is a substantial burden to the patient, influencing daily living and quality of life.

Centre for Child Research, Swansea University ,U.K, had carried out an healthy living study by researcher, **Rebecca A Hill, Sinead Brophy,et.al (2011)** The aim of Environments for Healthy Living (EHL) is to investigate the impact of gestational and postnatal environments on health, and to examine where structural change can be brought about to optimise health outcomes. The baseline assessment will focus on birth outcomes and maternal and infant health.

**Mrs.G.Indra, (2003)**, had examined the effect of Air pollution and its respiratory illness. Radioactive and thermal pollution has been used to identify the detrimental effects of heated charges. Cosmic rays are bombardment of the atmosphere. Tritium potassium 40, Rubidium 87 Radon-222, Uranium-238, thorium, polonium, plutonium, Alpha, Beta, Gama and X-rays and also nuclear explosions pollute the atmosphere. On the basis of existing knowledge, considerable pollution of the atmosphere can be avoided without undue capital expenditure. Certain emissions from special processes; however, appear to be unavoidable with present techniques, and others can be reduced only at a great cost. Intensified research is needed to obtain more information on methods to significantly reduce the quantity of pollutants discharged from special processes. Further, she has concluded for prevention and control on air pollution. Indian parliament made two important amendments in the constitution 42 in Article 48A, 51A 48A and especially 51A. It states “To protect and improve the environment and to safeguard the forest and wild life” of the country. According to Air prevention and control of pollution Act 1981, 1988, if we cannot find remedies eventually human beings, even dogs, will have to wear mask to keep their heads free from air pollution.

The **MOH (2003)** in New Zealand reported a research study of a sampled population including face-to-face interviews with 14,005 people. The research aimed at learning about their health styles and chronic diseases, and their use of health services and their vital bodily statistics over the 2002-2003 periods. The findings, which make interesting reading, were reported in a descriptive format and provide important information for the “implementation, evaluation and further evolution of

the New Zealand Health Strategy” (Ministry of Health 2003 a, p. iii). The report highlights the extent of the problem needing to be addressed: One in five adults aged 15-44 had been diagnosed with asthma, that the prevalence of asthma was four times higher in the European / Other and Maori ethnic groups than the Pacific and Asian groups and that one in 18 adults over the age of 45 years had been diagnosed with COPD.

**(Ministry of Health 2003 a, p. 37)**

Understanding the environmental and genetic risk factors of accelerated lung function decline in the general population is a first step in a prevention strategy against the worldwide increasing respiratory pathology of chronic obstructive pulmonary disease (COPD). Deficiency in antioxidant and detoxifying Glutathione S-transferases (GST) gene has been associated with poorer lung function in children, smokers and patients with respiratory diseases. In the present study, they assessed whether low activity variants in GST genes are also associated with accelerated lung function decline in the general adult population. We examined with multiple regression analysis the association of polymorphisms in *GSTM1*, *GSTT1* and *GSTP1* genes with annual decline in FEV<sub>1</sub>, FVC, and FEF<sub>25-75</sub> during 11 years of follow-up in 4686 subjects of the prospective SAPALDIA cohort representative of the Swiss general population. Effect modification by smoking, gender, bronchial hyperresponsiveness and age was studied.

**Perry E. Sheffield and Philip J. Landrigan (2011)** Research has been published by preventive natural lifestyle for children in global warming. Data synthesis prevention strategies to reduce health impacts of climate change include reduction of greenhouse gas emissions and adaptation through multiple public health interventions. Further quantification of the effects of climate change on children’s health is needed globally and also at regional and local levels through enhanced monitoring of children’s environmental health and by tracking selected indicators. Climate change preparedness strategies need to be incorporated into public health programs.

Approximately one in five deaths around the world each year occurs in a child < 5 years of age (WHO 2008). Lower respiratory tract infections, diarrhoea, and malaria are responsible for > 50% of childhood deaths (**Prüss-Üstün and Corvalan**

**2007**). All three of these disease categories could worsen with climate change. Diarrheal disease is primarily attributable to environmental factors, specifically contaminated food and drinking water (WHO 2008), and is affected by changing temperature and precipitation events (Campbell-Lendrum and Woodruff 2006). Thirty-five percent of excess child mortality is secondary to malnutrition (Black et al. 2008), a risk factor also expected to worsen with climate change because of increasing food insecurity (McMichael 2001b). Micronutrient deficiencies, common with malnutrition, can exacerbate infectious disease morbidity (Bhutta et al. 2008).

The WHO estimates global burden of disease using the disability-adjusted life year (DALY) metric that includes morbidity as well as mortality and provides a composite picture of health impacts caused by diverse risk factors (Kovats et al. 2005). According to WHO estimates using the DALY metric, > 88% of the existing burden of disease due to climate change occurs in children < 5 years of age in both developed and developing countries (Zhang et al. 2007). This estimate is markedly higher than the paediatric proportion of the total burden of disease, which for children < 5 years of age is 5% in high-income countries and 31% in low- and medium-income countries (WHO 2008). Zhang et al. (2007) argue that DALYs are important when assessing climate change impacts to establish priorities and to evaluate the efficiency of environmental policies. Respectively, the annual deaths attributable to climate change for four significant disease categories and the climate-related DALYs lost among different age groups. Children suffer a much greater burden of climate-related disease than do adults (WHO 2002a, 2008). Furthermore, the impacts of climate change on children are not evenly distributed globally, but instead occur in parts of the world already experiencing a higher relative disease burden, namely, in low-income countries.

**TordKjellstrom, Ainslie J. Butler (2010)** Researchers efforts have thrown light on Public health impact of global heating due to climate change: potential effects on chronic non-communicable diseases, Objectives were several categories of ill health important at the global level are likely to be affected by climate change. To date the focus of this association has been on communicable diseases and injuries. This paper briefly analyzes potential impacts of global climate change on chronic non-communicable diseases (NCDs).They reviewed the limited available evidence of the relationships between climate exposure and chronic and NCDs. We further reviewed

likely mechanisms and pathways for climatic influences on chronic disease occurrence and impacts on pre-existing chronic diseases. Results have clearly left impact of climate factor on health. There are negative impacts of climatic factors and climate change on some physiological functions and on cardio-vascular and kidney diseases. Chronic disease risks are likely to increase with climate change and related increase in air pollution, malnutrition, and extreme weather events. Conclusions have called for global efforts for prevention and control over non-communicable diseases. There are substantial research gaps in this arena. The health sector has a major role in facilitating further research and monitoring the health impacts of global climate change. Such work will also contribute to global efforts for the prevention and control of chronic NCDs in our ageing and urbanizing global population.

## **2.5 Summary.**

The field of Naturopathy provides preventive measures for Psycho – Physiological well being by taking into account complete health concept, i.e. Body parameter, diet parameter and physical fitness parameter ascertained with psychological aspect; for the school children aged between 5 – 12 years. In addition, linking this concept to global warming by positive aspect, which is relatively very new and at this point of time, very crucial to inculcate in children.

There is an obvious paucity of relevant research. Nevertheless, the available literature shows efficiency of nutrition and naturopathy, the Physiological aspect and effect, relative Psychological aspects and effect to global warming for school going children of age 5 – 12 years.

The evident dearth in research adds support to the importance of the present study. As mentioned in chapter one, school children aged between 5 – 12 years have been affected by their poor lifestyle and whose effects are seen on their Psycho – Physiological development. When they are in their crucial age of development, adaptation and adjustment with environment, short term solution and using pharmaceutical drugs for very common infection and problems like headache, cold,

leg pain, body pain, mood swings, nutrition deficiency, is general, but inspite of their relative effectiveness a need for alternative form of therapy is ideal i.e. Naturopathic lifestyle to support a drugless lifestyle.

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## CHAPTER 3

### RESEARCH METHDOLOGY

#### 3.1 Methodology

This section describes the method used to study the variables and test the hypothesis. Thus, it is a description of the sample selected, the tools used and the procedure employed.

#### 3.2 Sample:

The sample for the study consists of 575 children, from Mumbai city’s M.K.E.S English School located inMalad(West).The Boys and Girls were from age group 5-12 years.

**Table 9.Participant Student’s Total Data with Age - Genderwise.**

Section	Class	Age	Total no. Of Student	Male	Female
<b>Primary</b>	Sr. Kg	5years	76	42	34
	Std. 1	6-7years	81	42	39
	Std. 2	7-8years	72	43	29
	Std. 3	8-9years	64	40	24
	Std. 4	9-10years	58	32	26
<b>Secondary</b>	Std. 5	10-11years	73	45	28
	Std. 6	11-12years	72	41	31
	Std. 7	12-13years	79	52	29
		<b>TOTAL</b>	<b>575</b>	<b>335</b>	<b>240</b>

**TOTAL NO OF SUBJECT: 575**

**NO OF FEMALE PARTICIPANT: 240**



NO OF MALE PARTICIPANT: 335

### 3.3 Objectives of Research :

1. To study the mental health and body quotient of children between age group 5-12 years and enhances vital capacity.
2. To compare the present environmental effects with prescribed lifestyle among children between ages 5-12 years.
3. To study how environmental element CO<sub>2</sub> and O<sub>2</sub> affects mental health and BQ of children between 5-12 years suffering from respiratory system.
4. To study especially with age group 5-12 years, the human body in balance with the natural environment by controlling the bodily environment through the complete process of naturopathy, which deals with body and mind.
5. To compare natural environment and bodily environment and merging capacity of children age group 5-12 years.
6. To compare haemoglobin level and oxygen level of children aged between 5-12 years with their respiratory function.
7. To study haemoglobin levels and oxygen levels in the body and parameter of children aged between 5-12 years.
8. To study pre and post effects of natural remedies and counselling on children aged between 5-12 years.

### 3.4 Hypotheses:

1. Oxygen level of body would be depending on the haemoglobin level of an individual.
2. Individuals would be improving their haemoglobin levels which will positively affect immunity of an individual.
3. Haemoglobin level in an individual would be a parameter of an individual lifestyle.
4. Every individual would be having own pattern related to environment.
5. Right pattern of diet would be related to increased haemoglobin level in body.
6. Haemoglobin level of the body would be related to a child's coping up capacity with the environment and related effects.

7. Positive stimulation of mind would show elevated effect on total health of the body.
8. Recommended lifestyle would be working as a future remedial measure.
9. Exercise and appropriate diet would positively be improving children's total health.

### 3.5 Variables:

#### Independent Variable:

1. Body Parameter: Age, Wt, Ht, BMR, BMI
2. Diet Parameter: Herbal therapy, Diet therapy
3. Respiratory Parameter: Oxymeter test (SPO<sub>2</sub>), incentive Spirometer test, Peak Flow meter.
4. CBC(Complete Blood Count): Haemoglobin (Oxygen Carrier)

#### Dependant variable:

Psychological and Physiological factor

1. Genetic factor
2. Adjustment
3. Personality
4. Home environment
5. Climate

### 3.6 Operational Definitions of Variables:

**Mental Health Inventory (MHI):** Operational definition of mental health-For the present purpose of developing the inventory, mental health is defined as person's ability to make positive self-evaluation, to perceive the reality, to integrate the personality, autonomy group oriented attitudes and environmental mastery. The detail of the dimensions of mental health is as follows:

1. **Positive Self-Evaluation (PSE):** It includes self-confidence, self-acceptance, self-identity, feeling of worth-wholeness, realization of one's potentialities, etc.

2. **Perception of Reality (PR):** It is related to perception free from need distortion, absence of excessive fantasy and a broad outlook on the world.
3. **Integration of Personality (IP):** It indicates balance of psychic forces in the individual and includes the ability to understand and to share other people's emotions, the ability to concentrate at work and interest in several activities.
4. **Autonomy (AUTNY):** It includes stable set of internal standards for one's action, dependence for own development upon own potentialities rather than dependence on other people.
5. **Group Oriented Attitudes (GOA):** It is associated with the ability to get along with others, work with others and ability to find recreation.
6. **Environmental Mastery (EM):** It includes efficiency in meeting situational requirements, the ability to work and play, the ability to take responsibilities and capacity for adjustment,

#### **PHYSIOLOGICAL VARIABLE:**

Physiological variable include following parameter:

#### **BODY PARAMETER:**

**Age:** It is a chronological age.

**Weight:** Abode is relative mass or quantity of matter contained by it. Wight is measured by Kg / pounds.

**Height:** The vertical measurement of an object or body. Height is measured by cm/.ft or in inches.

**Basal Metabolic Rate (BMR):** Basal metabolic rate is the number of calories your body burns at rest to maintain normal body function. It is the amount of calories per day your body burns regardless of habit of exercise .it changes with ~~thaw~~, age, gender, diet and habit of exercise.

**Body Mass Index (BMI):** Body mass index is a relationship between weight and height that is associated with body fat and health risk.

## **DIET PARAMETER: NATUROPATHY**

**Energy :**As per WHO standard the energy requirement of an individual is the level of energy intake from food that will balance energy expenditure when the individual has a body size and composition and level of physical consistent with long term good health and that will allow for the maintenance of economically and socially desirable physical activity.

**Herbal therapy:** Herbal medicines include herbs, herbal materials, herbal preparations and finished herbal products that contain as active ingredients parts of plants, or other plant materials, or combinations.

**Herbs:** Crude plant material such as leaves, flowers, fruit, seed, stems, wood, bark, roots, rhizomes or other plant parts, which may be entire, fragmented or powdered.

**Diet therapy:** Diet therapy is a personalized eating program designed to address a particular medical problem or to help you lose weight for health reasons. The program is called therapy because rather than simply cutting calories, a diet therapist "prescribes" certain nutrients to treat certain diseases and conditions. The therapy might include reducing or adding certain nutrients in your diet to prevent ill health effects or to treat one or more which already exist.

## **RESPIRATORY PARAMETER:**

**Peak Flow Meter (PFM):**The peak expiratory measure how fast a person can breathe out (exhale) air. It is one of the many tests that measure how well the lungs are working.

**Incentive Spirometer:**Is a goal-oriented exercise using SMI (sustain maximal inspiration) to promote bronchial hygiene in ridding the lungs of unwanted secretions. Incentive spirometer allows you to monitor your own progress.

**Oximeter SPO<sub>2</sub>:** Oxymeter is interpretation of oxygen saturation monitor to determine the percentage (%) of haemoglobin in the blood that is saturated with O<sub>2</sub>. The percentage is called blood oxygen saturation. Or SPO<sub>2</sub> .a pulse Oxymeter also measures and displays the pulse rate.

**Pulse Rate (PR):**The number of pulsation noted in a peripheral artery per unit time.

**Respiration Rate (RR):**The number movement of the chest wall per unit of time indicative of inhalation or exhalation.

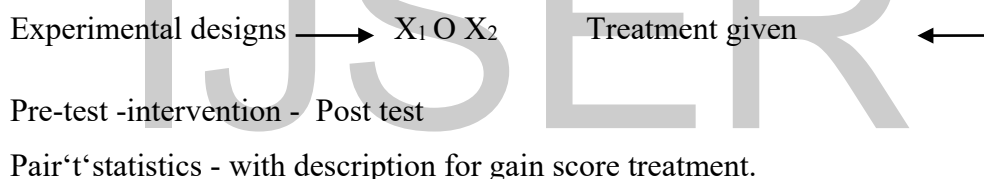
**Pulse Index (PI):** Pulse index is an interactive installation that records participant’s fingerprints at the same as it detect their heart rate.

**Complete Blood Count (CBC):**A set value of the cellular(formedelements) of blood. These measurements are generally determined by specially designed machines that analyse the different components of blood in less than a minute.

**Haemoglobin (Hb g/dl):** Haemoglobin is the protein molecule within red blood cells that carries oxygen and gives blood its red colour.

**3.7 Research Design (Pre and post):**

Group	Test	Treatment	Test
Experiment	Pre	Yes	Post



**3.8 Research tools:**

1) **Mental Health Inventory (MHI)** constructed by Jagdish and A K Srivastava, mental health-For the present purpose of developing the inventory, mental health is defined as person's ability to make positive self-evaluation, to perceive the reality, to integrate the personality, and autonomy group oriented attitudes and environmental mastery.

2) **Physiological Test:**

CBC (Complete Blood Count) – Hb-transport oxygen from lungs to tissue.

Incentive Spirometry (SPO<sub>2</sub>) – Spirometer directly measures flow and volume of air.

Peak Flow Meter (PFEV): Tomeasure expiratory lung capacity.

Oximetry Test – Pulse oximetry may be substituted for arterial blood gases in children under 12 years of age.

BMR (Basal Metabolic Rate): To measure amount of calories per day your body burn.

BMI (Body Mass Index): is a relationship between height and weight that is associated with body fat and health risk.

Ht (Height); to measure growth of subject relative age.

Wt (Weight): to measure body's relative mass.

### **3.9 Reliability and Validity.**

Researcher has conducted intervention programme in M.K.E.S. English School, Malad (West), Mumbai. Obtained permission from principal of primary and secondary section for experimental research programme by presenting eligible document to intervene on children aged between 5-12 years. Details of intervention programme was provided to parents and teachers by power point presentation and orientation.

Intervention programme was designed as experimental research programme during academic year 2012 -2013. Intervention programme had been executed in June 2012 and research was conducted during school hours i.e morning 8 a.m. to afternoon 1 p.m., pre-test data was obtained. Total no. of participants were 575 from primary and secondary section.

Intervention researches have taken psychologically (psychology) as mental health inventory (MHI) **constructed by Jagdish and A K Srivastava**, mental health-For the present purpose of developing the inventory. In addition, physiological data obtained for measuring complete body parameter, pulmonary function test conducted by instrument peak flow meter (PFM), incentive spirometer, Oxymeterspo<sub>2</sub>. Orientation was conducted and Intervention was introduced by PRO-DIET PLAN and herbal remedy. Physical exercises such as *suryanamaskar* and *pranayana* conducted by taking help of physical educator teacher of school and introduced as physical period

Herewith validity and reliability of the intervention have been produced as follows.

### **Reliability and Validity Test.**

Mental Health Inventory (M.H.I):

Mental health inventory known as (M.H.I) it has been designed to measure mental health (positive) of normal individuals

absence of mental illness was considered as an indicator of good health.

Total 54 questions have been formulated and dimension of mental health are;

1. **Positive self-Evaluation (PSE):** It includes self-Confidence, self-acceptance, self-identity, feeling of worth-whileness, realization of one's potentialities, etc.
2. **Perception of Reality (PR):** It is related to perception free from need distortion; absence of excessive fantasy and a broad out-look on the world.
3. **Integration of Personality (IP):** It indicates balance of psychic forces in the individual and includes the ability to understand and to share other people's emotions, the ability to concentrate at work and interest in several activities.
4. **Autonomy (AUTNY):** It includes stable set of internal standards for one's action, dependence for own development upon own potentialities rather than dependence on other people.
5. **Group Oriented Attitudes (GOA):** It is associated with the ability to get along with others, work with others and ability to find recreation.
6. **Environmental Mastery (EM):** It is includes efficiency in meeting situational requirements, the ability to work and play, the ability to take responsibilities and capacity for adjustment,

**Rating scale** has been developed on 4-point scale

1. Always 2. Often 3. Rarely 4.Never.

Ratings were 1,2,3,4

High score –216 score

Lowest score- 54 score

Lesser the score better is the adjustment. Totally, 72 item were derived out of that 30 false keyed and 24 true keyed items have been selected to constitute the final format of the inventory.

Table10. Showing theReliability Coefficients of Mental Health Inventory.

Sr. No.	Dimensions of M. H.	Reliability index
1	Positive self-evaluation	.75
2	Perception of reality	.71
3	Integration of personality	.72
4	Autonomy	.72
5	Group oriented attitudes	.74
6	Environmental competence	.71
	Overall	.73

Reliability:Was determined by “split half method” using odd-even procedure over all 73 total reliability is found which is satisfactory.

Validity:Construct validity of the individual is determined by finding co-efficient of co relation. It was found to be 54.

Sampling; M.K.E.S. English School, Malad (West), Mumbai, India. A total no. of 575 subjects were taken in the range of 5-12 years.

#### **INCENTIVE SPIROMETRY:**

Incentive spirometer has been used of Hudson RCL Rx only (REF 1750) US MANUAL NO 4,232,683.Was used for calculating inspired lung volume capacity and monitors visually your own progresswhich was made in Mexico

Precaution: Avoid fatigue and hyperventilation.

US PATENT NO 4,232,683 indicates reliability and validity of the tool.

Sampling: 575 subjects were individually called for spirometer test (pre-test - post-test)

#### **PEAK FLOW METER:**



Personal best \* is a convenient device used to measure Peak expiratory flow rate (PEFR). It is an important indicator of lung function. Personal best used for monitoring respiratory condition.

Devise use for peak flow meter is Personal Best Full Range Peak Flow Meter Is of HEALTH SCAN Products inch .made and printed in USA, CS-755004-2

Precaution:

Reliability and validity of the tool is indicated by US patent no- 5,224,487.

Sampling: 575 subjects were individually called for Personal Best peak flow meter test.

### **Oxymeter Sp<sub>o</sub><sub>2</sub> Test:**

Oxymeter Sp<sub>o</sub><sub>2</sub> Has Been Used Of Begin2b Made In Pro- India By Heal- Force Bio-Med Tech. Instrument Named As Begin 2b Finger Tip Oxymeter With Three In One Sp<sub>o</sub><sub>2</sub>, Heart –Rate And Perfusion . Feature Of Oxygen Are That It Is Fast, Easy And Accurate and Convenient To Use For Screening In OPD And Ward, Colourised Display With Four Directions. Alarm for Abnormal Result, Auto On and Off, Auto Finger Recognition.

Reliability and Validity of Oxymeter is indicated by FDA 510 (K), CE0123.

Sampling: 575 subjects were individually called for fingertipoxymeter test (pre-test and post-test).

Body Parameter

Age: Anthropometric chronological age.

Height (Ht): Describe linear growth relative to age stature or length for age is use to define shortness or tallness. Height chart been used as per WHO parameter in Cm.

Weight (Wt): Reflect body weight relative to age and is influence by recent changes in health or nutritional status. It is important for monitoring weight and helping explain changes in weight for length and BMI for age in children. Weight scale been used of weighing subject, Omron Weight Scale been used. Model HBF-362.

Validity and reliability of Omron Scale is indicated by IN-9183 90001A. 9058660-7C

Sampling: 575 students of M.K.E.S.English School, Malad (West), Mumbai.

Basal Metabolic Rate (BMR): To calculate metabolic rate Researcher has retrieve excel formula

Formula BMR Excel Sheet

Using the Metric Imperial BMI Formula;

$$=655 + (9.6 * G7) + (1.8 * F7) + (4.7 * E7)$$

G7 = Weight Kg

F7 = Height cm

E7 = Age

Reliability and validity: As per WHO parameter.

Sampling: 575 subjects were individually called for weighing their weight. (Pre-test -- post- test)

Basal Mass Index (BMI): Is an anthropometric index of weight and height combined with age. BMI for age is used to classify children and adolescence as underweight, overweight, or at risk of overweight.

Formula for BMI Excel Sheet Function

Using the Metric Imperial BMI Formula

$$=J1 / ((K1 / 100) ^2)$$

J = Weight in Kg

K = Height in Cm's

Reliability and Validity: As per WHO (World Health Organisation) parameter.

Sampling: 575 subjects were individually called for weighing their weight. (Pre-test -- post- test)

### **3.10 Research Procedure.**

After procuring permission from the Head of Principals of M.K.E.S. English School, Malad (West), Mumbai. The basic principle information about class and no. of the students was obtained from class teachers and then the respective parents of the target population.

The entire process was explained to the parents after which their consent was obtained.

The three parts of the procedure were as follows:

Pre-test - Intervention - Post-test.

Hence, the design could be classified as pre-test – post-test experimental group design.

#### **Pre –post-test procedure:**

The class teacher and parents were briefed on experimental procedure on students physical and mental parameter.

Based on selected age group, 5 – 12 years, students were divided class wise in three groups by talking entire population of class for pre-test intervention programme.

Intervention pre-test obtained in the month of June 2012.

#### **Intervention Method.**

In 2012, in context of the study on the effect of climate, outdoor pollution and lifestyle, eating habit and family environment on the respiratory system, naturopathy was introduced to curb the ill effects of the sources mentioned above. Physiological testing was done via questionnaire method i.e. mental health inventory. Based on the answers from the questionnaire, a remedy, to improve mental health was provided to apply in daily life. This study was conducted on a sample size of 575 children aged between 5 – 12 years, attending primary and secondary classes in M.K.E.S. English School, Malad (West). Mumbai. India. The study was carried out in the month of June 16, 2012 to January 18, 2013. i.e. 212 days.

A standardized questionnaire of mental health inventory by A. K. Srivastava and Dr. Jagdish was to be filled by parents with the help of class teacher. The intervene children were between the ages of 5 – 6 years. For the age group 7 – 9 years and 9 – 12 years, questionnaire was to be filled in by children themselves as pre-test psychological testing was done during school hours.

The questionnaire investigates for the person's ability to make positive evaluation, to perceive the reality, to interrogate the personality, autonomy group oriented attitude and environmental mastery.

“Showing item numbers included in various dimensions of mental health.”

Dimensions of Mental Health	Items	Positive	Negative	Total
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1- Positive self evaluation	[1*, 7*, 13*, 19, 23*, 27, 32, 38, 45, 51	6	4	10
2- Perception of reality	6, 8, [14*, 24*, 35*, 41, 46], 52	4		48
3- Integration of personality	[2*, 9*, 15*, 18*, 20, 25*, 28*, 33, 36, 40, 47, 53	1	11	12
4- Autonomy	[3*, 10*, 29, 42, 48], 54	2	4	6
5- Group-oriented attitudes	4, [11*, 16*, 21*, 26, 30, 39, 43, 49*,	4	5	9
6- Environmental mastery	[5, 12, 17, 22], 31, 34, 37, 44, 50,	7	2	9
*False keyed items		<b>24</b>	<b>30</b>	<b>54</b>

### Use of Mental Health Inventory

The inventory may be used for measuring mental health of individuals in various sphere of life. It has been mostly employed in researches of industrial and educational fields. The scale is helpful in screening the individuals with poor mental health who may need assistance and counselling for their happier life and excellent future.

**Intervention Programme:** Researcher has conducted intervention programme in M.K.E.S. English School, Malad (West), Mumbai, by obtaining permission letter from principals. Programme had been explained through power point presentation and orientation..Intervention programme were designed as experimental research programme, during academic year 2012 – 2013. Programme started in June 2012 (repetitive)and intervention programme been design in three parts. As follows:

Exploratory stage

Summarised stage

Confirmatory stage

#### Exploratory stage:

Exploratory stage began in the month of June 16, 2012.

**June** -Pre-test conducted. Physiological and psychological (MHI) to obtain data -- Yoga, *Suryanamskar*, *pranayama* demonstrated by researcher with the help of physical education teacher and as intervention of *Suryanamskar* and *pranayama* was incorporated in their daily school schedule as physical education period.

Obtained exploratory data from M.K.E.S English Schools register of students by the permission of secondary and primary principal. Total no. of students have been selected as per intervention requirement from age group 5-12 years, they were from primary section i.e. Sr. Kg, 1<sup>st</sup> std, 2<sup>nd</sup> std, 3<sup>rd</sup> std, 4<sup>th</sup> std, and secondary section i.e. 5<sup>th</sup> std, 6<sup>th</sup> std, 7<sup>th</sup> std. total no of student to collect exploratory data were 575 .

**July** - Each class from Sr. Kg. to fourth standard i.e. primary section, and Standard 5, 6 and 7 Secondary sections, were given Pro-vit diet as per their physiological parameter and psychological pre-test and requirement, subjects were counselled for their body parameter and mental condition. [Pro-vit diet been given to each child's family by conducting weekly orientation, distributed spinach and raw leaf vegetable to children after sterilised.]

Pre-test been conducted in June 2012-13, and obtained 494 total data of physiological test as per age group of student i.e. 5-7 years., 7-9 years. and 9-12 years.

Pre-test been conducted in June 2012-13, and obtained total data of psychological test as per age group of student i.e. 5-7 years., 7-9 years. and 9-12 years. Received data were 341 from total preliminary data 575.

Pre-test been conducted in June 2012-13, and after parent orientation, they were asked to get CBC (complete blood count) test done of participating students . Received test reports of CBC were 265 from total preliminary data 575.

Each class from Sr. Kg. To 4<sup>th</sup> standard i.e. primary section, and Standard 5, 6 and 7, secondary section, were given Pro-vit diet as per their physiological parameter and psychological pre-test and requirement, subjects were counselled for their body parameter and mental condition. [Pro-vit diet been given to each child's family by conducting weekly orientation, distributed spinach and raw leaf vegetable to children after sterilised.] number of student received diet plan were 494.

Each class from Sr. Kg. To 4<sup>th</sup> standard i.e. primary section, and Standard 5, 6 and 7 secondary sections, were trained by giving demonstration of yoga and *pranayama*, as per their physiological parameter and psychological pre-test and requirement, subject was counselled for their body parameter and mental condition. Numbers of student trained for intervention of yoga and *pranayama* were 494.

**August** -- Follow up taken and researcher has introduced Steve parker experiment related Pulmonary Basic functions, Breathing and working model of peak flow meter.

**September** -- Subject had participated in project for national science congress. The theme of the project was 'Energy and Society' researcher trained them with the help of teachers for project title "Gender-wise Energy consumption" Title was AWAKE, ARISE and ACT.

Researcher has conducted seminar on "GO-IN-GREEN GOOD HEALTH" to motivate children and parents and enable them to include Naturopathy based lifestyle in their day – to – day activities. For this intervention seminar researcher had invited: **Director of NIN of Ayush, ministry, Govt. Of Indai, Pune, Dr. Babu Joseph** and his team of senior researchers. The aim of the seminar was to educate parents and introduce them to the concept of naturopathy, natural diet and acupressure in daily life.

**October** -- Researcher trained students for Junior research project which was conducted in P-ward. Science exhibition on "Go-in-Green" model of lifestyle. Climate and its effect. This model has bagged **1<sup>st</sup> prize among 110 schools of P-ward.**

Before Diwali break, researcher conducted reinforcement programme i.e. teaching *Suryanamskar, Pranayam* to neighbouring people and children.

### **Summarised stage :**

Summarised stage began in the month of November and extended till January first week. During summarised stage second data was obtained of intervention i.e. physiological parameter.

Summarised stage is second stage of intervention programme, no of student present for second stage were 575.

Number of data obtained during Second stage of intervention of physiological test, out of 575 no of students were 451. Numbers of student who attempt only post mid-test were 13.

Numbers of student attempt psychological mental health inventory during secondary stage were 304. As per data we can see number of student attempt from age group 5-7 years were 14, 7-9 years were 70 and 9-12 years were 220.

Summarised stage received post CBC (Complete blood count) data were 105 out of total 575.

During summarised stage, number of students who received diet plan were 494.

During summarised stage, number of students who received training and received plan were 494 out of 575.

**November** -- Researcher has taken up subjects second data after vacation and has measured physiological data class wise to obtain result. Taken counselling session for studies on behaviour modification as per class teacher student record.

Researcher during this intervention had taken care of their inclination towards their lifestyle, awareness of health remains with interest in their routine life style.

**December** -- Before Christmas vacation researcher had conducted parent mid-term orientation, where researcher had an interactive session with parents and again trained them for *Suryanamskar* and *Pranayam* and given them literature which had complete information with pictures and demonstration, to each of the parents from primary section Sr. Kg to Std IV and Secondary section V to VII.

### **Confirmatory stage :**

**January** -- After Christmas vacation researcher has started collecting post-test data of Physiological and Psychological parameter. As per procedure of pre-test, researcher asked subject to obtain CBC report as post intervention procedure.

Confirmatory stage total number of student present were 575.

During confirmatory stage number of student present were 575 out of total gender wise boys were 338 and girls were 237.

During confirmatory stage, total numbers of student present were 451.

Numbers of student attempt pre-post psychological test at confirmatory stage were 304.

Number of student attempt CBC (complete blood count) at confirmatory stage and submitted pre-post CBC (complete blood count) report were 90.

Total Physiological Attempt By The Student (Age 5 - 7 Yr) - 157 Received Data - 104

Total Physiological Attempt By The Student (Age 7 - 9 Yr) - 194 Received Data - 160

Total Physiological Attempt By The Student (Age 9 - 12 Yr) - 224 Received Data - 187  
Total Psychological Attempt By The Student (Age 5 - 7 Yr) - 157 Received Data - 14  
Total Psychological Attempt By The Student (Age 7 - 9 Yr) - 194 Received Data - 70  
Total Psychological Attempt By The Student (Age 9 - 12 Yr) - 224 Received Data - 220  
Total CBC (Complete Blood Count) Attempt By The Students (Age 5-12 Years.) Were  
90

After gathering all the data i.e. Pre-test data and Post-test data, researcher has conducted Classwise orientation for parents and obtained their view on intervention and its effect on their lifestyle. Researcher conducted 'Intervention – Result Programme' in school auditorium. Researcher invited all intervene parents, children's and faculty of Medicine, Naturopathy, Ayurveda and Homeopath doctor along with guide, Dr. Narendra V. Deshmukh, School Management and JJTU University Co-ordinator Dr. Anju Singh. They attended and appreciated programme.

Intervention programme: subject Age group 5 – 12 years have demonstrated *Suryanamskar* and *Pranayam* i.e. *Lom-vilom* and *nadi-budh* programme, which was very much appreciated. **Dr. Ram Barot, Municipal Counsellor was Chief Guest** in intervention result programme. This way researcher has completed her intervention programme. Subject and parents were given literature material to follow Pro-vit diet, habit and exercise.

### **Physiological Intervention Procedure for Pre-Post test:**

The prior permission was granted from principals of secondary and primary section to intervene Spiro metric, peak, flow meter and Oxymetric test, which were carried out in the morning during school activities; children's height (measure with a stadiometer), weight and body mass index and Basal metabolic rate were also recorded. Intervene student were trained for physical training of *suryanamskar* and *pranayama*. This training was given in physical training period in day to day schedule of school.

**Hudson Ri Incentive Spirometer** visually designed to monitor progress of lung capacity; none of the children had ever performed Spirometer in the past. To perform the spirometer, like in other studies the children were gathered and called



from their respective class in to small groups and by using playful communication the test was conducted. We explained how to carry out the test. The test were carried out by sitting with erect position on table for the initial manoeuvre, we encouraged the children to focus their attention, they were invited to look at the operators face and perform the manoeuvres together and inspired air as long as possible and stopping at their comfort zone.

The volume time (V-T) and inspired volume (I-V) training obtained were visually inspected and the results were recorded. Children unable to perform any valid inspiratory effort were considered to be non-co-operating.

For each child a number of three times were recorded within 5 minute intervals, subject with only one acceptable manoeuvre were not considered in the analysis.

We have considered not acceptable the entire manoeuvre with,

- a. A sub-maximal inspiration effort in which an inspiratory flow (IFV) was not clearly determined.
- b. Evidence of cough or glottis closure
- c. An inspiratory time less than 0.3 seconds.
- d. An abrupt end of inspiratory effort.

Children with reported skeletal anomalies or lung diseases other than Asthma were also excluded.

Amongst all the acceptable subjects, we considered in the analysis the ones with the largest sum  $IFV_0, IFV_1, IFV_{0.75}, IFV_{0.5}$  according to maximum inspiratory time obtained.

The instantaneous inspiratory flow parameter as well as those for the other parameter was obtained amongst 3 – 6 attempts recorded and only the 3 best were accepted, they were used for the analysis in particular.

To calculate inspired volume we multiplied childrens (subject) inspiratory time (in sec.) by the inspiratory flow setting (in CC/Sec) we have considered flow setting of 200 CC/Sec for 5 seconds.

Inspiratory time X flow setting = inspiratory Vol.

5 sec X 200 cc/sec = 1000 cc / or / tie.

**Personal best full range peak flow meter** (60 – 810 L / min) (PEFR) is a convenient portable device to measure peak expiratory flow rate (PEFR), an important indicator of your lung function. Personal best should be used for monitoring

respiratory conditions. None of the children had ever performed Peak flow meter in the past. To perform the peak flow meter like in other studies children were gathered and called from their respective class into small group and by using playful communication test was performed, researcher has demonstrated how to carry out the test. The test was carried out by sitting erect position on table for the initial manoeuvre, researcher has encouraged the children to focus their attention and then they were invited look at the researchers demonstration. Researcher completely handled the task by self supervision and made sure that the indicator is at the bottom of the scale. Instruction given out individually i.e. Breath in as deeply as possible, then place your mouth firmly around the mouth piece making sure that their lips form a tight seal, instruction given that blow out as hard and fast as they can. That will move the indicator up the scale. The number besides the final position is your peak flow measurement repeated procedure for 3 times and recorded.

The volume time (V-T) and flow volume (F-V) timing obtained were visually inspected to assess the result. Children unable to perform any valid expiratory effort were considered as non co-operating. For each child a number of 3 times were recorded within 2 – 3 minutes of intervals. Researcher has used disposable mouth piece for their applications. Personal best has cleaned after each child use. The instrument had been disinfected by most sterilized methods, such as Cidex<sup>®</sup> (Johnson and Johnson) subject with only one acceptable manoeuvre were not considered in the analysis, we have considered not acceptable all the manoeuvre with;

- a. A sub-maximal expiratory effort in which peak expiratory flow (PEF) was not clearly determined or with slow rise of PEF.
- b. Evidence of cough or glottis closure.
- c. An abrupt end of expiration effort.

Children with reported skeletal anomalies or lung diseases other than Asthma were also excluded. Among all the acceptable subject flow, we considered in the analysis the ones with the largest sum FVC, and FEV<sub>1</sub>, FEV<sub>2</sub>, FEV<sub>3</sub>, and recorded the highest flow rate.

The instantaneous expiratory flow parameter as well as those for the other parameter were, obtained from the best among 3 attempts recorded and only when these were acceptable were they used for the analysis in particular.

For FVC and MEF reference of table normal peak flow value are provided as a reference.

Table 11. Normal Children and Adolescence Male and Female Peak Flow Capacity  
 As Per Manual:

Height and (inches)	Males Females	Height and (inches)	Males Females	Height and (inches)	Males Females
43	147	51	254	59	360
44	160	52	267	60	373
45	173	53	280	61	387
46	187	54	293	62	400
47	200	55	307	63	413
48	214	56	320	64	427
49	227	57	334	65	440
50	240	58	347	66	454

**Fingertip Oximeter (SpO<sub>2</sub>)** is a convenient portable device to determine the percentage of (%) of haemoglobin in the blood that is saturated with oxygen. The percentage is called blood oxygen saturation or SpO<sub>2</sub>. A pulse oximeter also measures and displays the pulse rate and pulse index at the same time it measure the SpO<sub>2</sub> level. None of the children have performed oxymeter SpO<sub>2</sub> test in past. To perform oxymeter test like in other studies children were gather and called from their respective class into small group and by using playful communication, researcher has demonstrated how to follow instruction and perform the test.

After giving instructions researcher made sure and checked that finger tip is clean and free from nail polish. Also made sure, that body is not too cold and that the oxymeter itself has not been under direct sunlight for a long time. Researcher has taken care that children keep still as movement can interrupt the revelling function. For each child researcher has performed oxymeter test and recorded SpO<sub>2</sub> pulse rate and P I Index. Normal range for SpO<sub>2</sub> pulse rate and P I Index been followed by manual of fingertipoxymeter.

Respiratory rate is a respiratory minute volume (is the volume of air which can be inhaled or exhaled from a person's lung in one minute). Respiratory rate of each child been recorded while performing oxymetric test.

Respiratory rate is known by respiratory rate (RR), pulmonary ventilator rate (PVR), ventilation rate (VR) is the number of breaths taken with a set amount of time. Researcher has set amount of time as 60seconds i.e. 1 minute for children and recorded that how many times the chest rises. A normal respiratory rate [18-25--- ] is termed as Eupria, an increased respiratory rate is termed as Tachypnea [25-28 ] and a lower than normal respiratory rate is termed Bradpnea [14-16 ]

Normal values of RR (Respiratory Rate) for children age group

5 – 7 years	18 – 25 breath per minute
7 – 9 years	18 – 25 breath per minute
9 – 12 years	15 – 20 breath per minute.

**DietParameter :**

**Proposed Natural Diet Prescribed to the Sample to follow:**

<b>Eating Pattern:</b>	Pro.Vit Baby Diet. Age group {5-12 years}
<b>Dietary Advice:</b>	40 days
<b>Water Intake:</b>	6 glass (small) water / 2 glass (warm)
<b>Advice:</b>	Wheat 500gm, Soya bean 100gm, Methi 10 gm.. Sheera: 1 Spoon Wheat , 1 Spoon Nachni, Jaggeri: 1 Spoon Ghee
<b>Morning:</b>	<b>hydrotherapy ----1 gl W.W [200 ml] 1 gl N.W R.T</b>
<b>Water:</b>	Tulsi + Ajvain + Mint [balance water-100 ml]
<b>Raw Juice:</b>	Carrot + Amla+ fresh Turmeric [100 ml] 1 Almond + ½ Walnut +flour of wheat,soya, nachni,rajgeera Sheera – 1 Spoon
<b>Fruit:</b>	1 Anjir + Milk [50ml]

**Afternoon Lunch:** 1 Small Roti + Veg. + Dal + Rice + Salad (1 Tomato Slice)

**Water:** 1 Small glass + lemon (warm)

**Advice:** Hydrotherapy ----1 glw.w [200 ml]  
1 gln.w

**Evening Snacks:** Rawa + Nachni - Upma

**Fruits:** 2 Strawberries + Milk

**Juice:** Apple Juice [100 ml]

**Advice:** hydrotherapy ----1 glw.w [200 ml]  
1 gln.w

**Night:**

**Soup:** Drumstick + RawPalak leaves

Tomato+ basil leaves

**Dinner:** Veg. Khichdi + dal khichdi + mint leaves

**Advice:** Balance Water

**Herb:** mint, basil, ajwain leaves (Balance Water)

( W.W----WARM WATER)

(N.W----NORMALWATER ROOMTEMPRETURE )

Selection of pro-vit diet for subject been selected from *urli-kanchan* diet( ANNEXER)

Table 12. Table of Herbs/Vegetables/Fruits/Nuts and Seeds - Iron Content with value per 100gm.

List of Diet	Content of Iron – Value Per 100 gm
Gain Brown Rice 1 Cup cooked wheat germ, 2 tablespoon out meal, 1 cup cooked. Total cerail (Kichdi) 1 ounce legume seals and say	0.8 mg.
Soya Milk ½ Cup	1.4 mg.
Tofu firm ½ Cup	1.8 mg.
<b>Vegetable rich in iron</b>	
Broccoli	0.7 mg.
Spinach	10.9 mg.
Green beans ½ cup boiled	0.8 mg.
Beet 1 cup	1.8 mg.
Potato Baked / cook w/skin on	4.0 mg.
Green Leafy Vegetable	2.0 mg.
Watermelon	3.0 mg.
Drumstick	7.0 mg.

Carrot	2.2 mg.
Bitter Gourd	1.8 mg.
Beet Root	1.0 mg.
Lemon	2.3 mg
Banana	0.9 mg
Apple	1.0 mg
<b>Nuts and Seeds</b>	
Raisins	7.7 mg.
Fig	0.6 mg.
Date	7.3 mg.
Fenugreek	16.5 mg.
Soyabean	11.5 mg.
Almond	4.5 mg.
<b>Herbs</b>	
Ginger (Roots)	2.6 mg.
Mint	15.6 mg.
<b>Grains – Pulses</b>	
Rice	3.2 mg.
Wheat	2.5 mg.
Bengal Gram	10.2 mg.
Black Gram	9.1 mg.
Green Gram	8.5 mg.

**Intervention diet and herb:** Herbs/ Vegetables/ cereals/ Fruits/Nuts and Seeds – Iron Content.

**Subject:** Children Age Group 5-12 years.

**Sample Size:** n=575

**Source of Subject:** M.K.E.S English School, Malad (West), Mumbai. India

### Psycho-Physiological Aspects and Effect of Hemoglobin:

Table 13. Blood Cell Morphology finding in CBC:

Morphology of Cell	Symptoms		Cause
	Physiological	Psychological	
<b>Normocytic Normochromic</b> – No. of Red blood cell is low	Loss of appetite, Pale lips Brittle nail, Sore Throat Fatigue	Poor attention span, easily distracted	Fall in R.B.Cs is Chronic diseases or drug therapy
<b>Hypochromia or Hypochromasia</b>  The % of Hb in R.B.Cs is low	Loss of apatite	Poor Sleep and attention span, Anger irritable easily frustrated	Iron deficiency
<b>Microcytosis</b>  Small R.B.Cs cell	Anemia Thallasamia	Mild speech disturbances with poor	iron deficiency microcytic hypochromic, Anemia,

		vocabulary	Iron Supplementation
<b>Anisocytosis</b> R.B.Cs cell are unequal in size	Fatigue, Brittleness, Pale Skin, Rapid heat beat	Isolated learning disabilities with full normal intelligence	Deficiency of Iron, Vit A, B12
<b>Poikilocytosis</b> Abnormal shape of R.B.Cs	Nutrient absorption problem, asccliae diseases	Anger and Temper Tantrums	Deficiency of Folic acid and Vit B12
Lymphocytosis Elevated amount of lymphocytic it's a type of W.B.C.	Feature of infection in children	Difficulty in sustaining attention, Irritable	Acute Viral Infection



**Diet parameter – Naturopathy:**

Diet therapy been constructed by research as per obtaining height, weight and age of a subject as per WHO (2006).

General Diet therapy chart distributed is from Urlikanchan, Pune.

Reliability and Validity of Physical exercise.

Researcher had attended Orientation in Pune, Urlikanchan for 8 days, conducted by National Institute of Naturopathy. (Govt. Of India, Ministry of Health and family welfare, Department of Ayush), Babu Bhavan, Pune. i.e. 5<sup>th</sup> to 11<sup>th</sup> October, 2009, where researcher had learned and been trained for *Suryanamaskar* and *Pranayam* i.e. *LOM – VILOM. Nadi – Badhak Pranayam*, researcher has designed as per basic technique of *pranayam* specially for M. K. E. S. English Schools students. Further complete instruction and technique been explained.

**3.11 Summary :-**

In this chapter the design of the study was discussed in detail, being an intervention, experimental study, there were two groups, i.e. gender wise, two of which were the treatment group. This made the study pre-test, post-test, three-group design.

The sample of the study and the tools used were described. Pre-test and post-test, scores were obtained of children in age group 5 -12 years, gender wise according to their chronological development, and were analysed.

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## CHAPTER-4

### RESULTS AND INTERPRETATION

#### Data Analysis:

Data was obtained from 575 participating students of M. K. E. S. English School, Malad West, Mumbai, between ages of 5 – 12 years. To study the effect of diet programme and *Suryanamskar* as a complete concept of health. The study consisted of three groups, Ages 5 – 7 years. (early childhood) Ages 7 – 9 years. (late childhood) Ages 9 – 12 years. (pre-puberty).

#### STAGE 1.

#### Exploratory Data.

Table 14. Preliminary Student Data as per M.K.E.S. School register data

Section	Class	Total Student
Primary Age 5 – 7 Years	Sr. Kg. A	46
	Sr. Kg. B	30
	Std 1A	40
	Std 1B	41
		157
Age 7 – 9 Years	Std 2	72
	Std 3	64
	Std 4	58
		194
Secondary	Std 5	73

	<b>Std 6</b>	<b>72</b>
	<b>Std 7</b>	<b>79</b>
		<b>224</b>
	<b>TOTAL</b>	<b>575</b>

TOTAL NO STUDENT 575

Exploratory data was obtained from M.K.E.S English School register of students with the permission of secondary sections and primary sections principals. Total students were selected as per intervention requirement, between age group 5-12 years, they were from primary section i.e Sr. Kg, 1<sup>st</sup> std, 2<sup>nd</sup>std, 3<sup>rd</sup>std, 4<sup>th</sup> std and secondary section i.e 5<sup>th</sup> std, 6<sup>th</sup> std and 7<sup>th</sup> std. total no of student to collect exploratory data were 575.

Table 15. Preliminary Attendance of Physiological - Pre data.

<b>Section</b>	<b>Class</b>	<b>Total no. of Student</b>	<b>Pre Physiological data</b>
<b>Primary Age 5 – 7 Years.</b>	<b>Sr. Kg. A</b>	<b>46</b>	<b>26</b>
	<b>Sr. Kg. B</b>	<b>30</b>	<b>12</b>
	<b>Std 1A</b>	<b>40</b>	<b>38</b>
	<b>Std 1B</b>	<b>41</b>	<b>35</b>
		<b>157</b>	<b>111</b>
	<b>Std 2</b>	<b>72</b>	<b>64</b>
	<b>Std 3</b>	<b>64</b>	<b>56</b>

<b>Age 7 – 9 Years.</b>	<b>Std 4</b>	<b>58</b>	<b>57</b>
		<b>194</b>	<b>177</b>
<b>Secondary Age 9 – 12 years</b>	<b>Std 5</b>	<b>73</b>	<b>67</b>
	<b>Std 6</b>	<b>72</b>	<b>62</b>
	<b>Std 7</b>	<b>79</b>	<b>77</b>
		<b>224</b>	<b>206</b>
	<b>TOTAL</b>	<b>575</b>	<b>494</b>

TOTAL NO. STUDENT 575

TOTAL NO OF STUDENT ATTEMPT 494

Pre-test been conducted in June 2012-13, and obtained 494 total data of physiological test as per age group of student i.e. 5-7 years., 7-9 years. and 9-12 years.

Table 16. Preliminary Attendance of Psychological - Pre test data.

<b>Section</b>	<b>Class</b>	<b>Total Student</b>	<b>Only Pre</b>

<b>Primary</b> <b>Age 5 – 7</b> <b>Years</b>	<b>Sr. Kg. A</b>	<b>46</b>	<b>NA</b>
	<b>Sr. Kg. B</b>	<b>30</b>	<b>1</b>
	<b>Std 1A</b>	<b>40</b>	<b>22</b>
	<b>Std 1B</b>	<b>41</b>	<b>6</b>
		<b>157</b>	<b>29</b>
<b>Age 7 – 9</b> <b>Years</b>	<b>Std 2</b>	<b>72</b>	<b>25</b>
	<b>Std 3</b>	<b>64</b>	<b>12</b>
	<b>Std 4</b>	<b>58</b>	<b>58</b>
		<b>194</b>	<b>95</b>
<b>Secondary</b> <b>Age 9 – 12</b> <b>years</b>	<b>Std 5</b>	<b>73</b>	<b>73</b>
	<b>Std 6</b>	<b>72</b>	<b>70</b>
	<b>Std 7</b>	<b>79</b>	<b>77</b>
		<b>224</b>	<b>220</b>

TOTAL NO. STUDENT 575

TOTAL NO OF STUDENT ATTEMPT 341

Pre-test been conducted in June 2012-13, and obtained total data of psychological test as per age group of student i.e. 5-7 years., 7-9 years. and 9-12 years. Received data were 341 from total preliminary data 575.

Table 17. Preliminary Reported Pre CBC Data.

<b>Section</b>	<b>Class</b>	<b>Total no. of Student</b>	<b>Pre CBC</b>
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<b>Primary</b> <b>Age 5 – 7</b> <b>Years.</b>	<b>Sr. Kg. A</b>	<b>46</b>	<b>21</b>
	<b>Sr. Kg. B</b>	<b>30</b>	<b>12</b>
	<b>Std 1A</b>	<b>40</b>	<b>20</b>
	<b>Std 1B</b>	<b>41</b>	<b>27</b>
		<b>157</b>	<b>80</b>
<b>Age 7 – 9</b> <b>Years.</b>	<b>Std 2</b>	<b>72</b>	<b>32</b>
	<b>Std 3</b>	<b>64</b>	<b>24</b>
	<b>Std 4</b>	<b>58</b>	<b>29</b>
		<b>194</b>	<b>85</b>
<b>Secondary</b> <b>Age 9 – 12</b> <b>years</b>	<b>Std 5</b>	<b>73</b>	<b>47</b>
	<b>Std 6</b>	<b>72</b>	<b>27</b>
	<b>Std 7</b>	<b>79</b>	<b>29</b>
		<b>224</b>	<b>103</b>
	<b>TOTAL</b>	<b>575</b>	<b>265</b>

TOTAL NO. STUDENT

575

TOTAL NO OF STUDENT ATTEMPT PRE CBC

265

Pre-test been conducted in June 2012-13, and after parents orientation they were asked to get CBC (complete blood count ) test done of their children- Received test report of CBC were 265 from total preliminary data 575.

Table 18. No. of Students who Received Diet Plan

<b>1 Section</b>	<b>Class</b>	<b>Total no. of Student</b>	<b>Pre received diet data</b>
<b>Primary Age 5 – 7 Years.</b>	<b>Sr. Kg. A</b>	<b>46</b>	<b>26</b>
	<b>Sr. Kg. B</b>	<b>30</b>	<b>12</b>
	<b>Std 1A</b>	<b>40</b>	<b>38</b>
	<b>Std 1B</b>	<b>41</b>	<b>35</b>
		<b>157</b>	<b>111</b>
<b>Age 7 – 9 Years.</b>	<b>Std 2</b>	<b>72</b>	<b>64</b>
	<b>Std 3</b>	<b>64</b>	<b>56</b>
	<b>Std 4</b>	<b>58</b>	<b>57</b>
		<b>194</b>	<b>177</b>
<b>Secondary Age 9 – 12 years</b>	<b>Std 5</b>	<b>73</b>	<b>67</b>
	<b>Std 6</b>	<b>72</b>	<b>62</b>
	<b>Std 7</b>	<b>79</b>	<b>77</b>
		<b>224</b>	<b>206</b>

	<b>TOTAL</b>	<b>575</b>	<b>494</b>
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TOTAL NO. STUDENTS 575

TOTAL NO OF STUDENTS WHO RECEIVED DIET PLAN 494

-- Each class from Sr. Kg. To 4<sup>th</sup> standard i.e. primary section, and Standard 5, 6 and 7 Secondary section, were given Pro-vit diet as per their physiological parameter and psychological pre-test and requirement, subject was counselled for their body parameter and mental condition. [Pro-vit diet been given to each child's family by conducting weekly orientation, distributed spinach and raw leaf vegetable to children after sterilisation.] number of student received diet plan were 494.

Table 19. No. of Students who Attempted *Suryanamasakra* and *Pranayama*, in pre physical education class.

2 Section	Class	Total no. of Student	Pre physical class data.
Primary Age 5 – 7 Years.	Sr. Kg. A	46	26
	Sr. Kg. B	30	12
	Std 1A	40	38
	Std 1B	41	35
		157	111
Age 7 – 9 Years.	Std 2	72	64
	Std 3	64	56
	Std 4	58	57
		194	177

<b>Secondary</b> <b>Age 9 – 12 years</b>	<b>Std 5</b>	<b>73</b>	<b>67</b>
	<b>Std 6</b>	<b>72</b>	<b>62</b>
	<b>Std 7</b>	<b>79</b>	<b>77</b>
		<b>224</b>	<b>206</b>
	<b>TOTAL</b>	<b>575</b>	<b>494</b>

Total No. of Students 575

No. of Students who attempted yoga and *pranayama* in physical class 494

Each class from Sr. Kg. To 4<sup>th</sup> standard i.e. primary section, and Standard 5, 6 and 7 Secondary sections, were trained by giving demonstration of yoga and *pranayama*, as per their physiological parameter and psychological pre-test and requirement, subject was counselled for their body parameter and mental condition. Numbers of student trained for intervention of yoga and *pranayama* were 494.

SUMMERISED STAGE.

Table 20. Preliminary Student Data as per M.K.E.S. School Register Data.

<b>Section</b>	<b>Class</b>	<b>Total Student</b>
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<b>Primary</b> <b>Age 5 – 7 Years</b>	<b>Sr. Kg. A</b>	<b>46</b>
	<b>Sr. Kg. B</b>	<b>30</b>
	<b>Std 1A</b>	<b>40</b>
	<b>Std 1B</b>	<b>41</b>
		<b>157</b>
<b>Age 7 – 9 Years</b>	<b>Std 2</b>	<b>72</b>
	<b>Std 3</b>	<b>64</b>
	<b>Std 4</b>	<b>58</b>
		<b>194</b>
<b>Secondary</b> <b>Age 9 – 12 Years</b>	<b>Std 5</b>	<b>73</b>
	<b>Std 6</b>	<b>72</b>
	<b>Std 7</b>	<b>79</b>
		<b>224</b>
	<b>Total</b>	<b>575</b>

Summarised stage is second stage of intervention programme, no. of students present for second stage were 575.

Table 21. No. of Students who attended *Suryanamaskar* and *Pranayam* in post Physical class.

Section	Class	Total no. of Student	Post Physiological data	
			Post Parameter	Only Post Parameter
Primary Age 5 – 7 Years.	Sr. Kg. A	46	22	0
	Sr. Kg. B	30	12	0
	Std 1A	40	36	1
	Std 1B	41	34	0
		157	104	1
Age 7 – 9 Years.	Std 2	72	59	1
	Std 3	64	48	4
	Std 4	58	53	2
		194	160	8
Secondary Age 9 – 12 years	Std 5	73	60	0
	Std 6	72	58	4
	Std 7	79	69	0

		<b>224</b>	<b>187</b>	<b>4</b>
		<b>575</b>	<b>451</b>	<b>13</b>

Total No.of Students- **575**

Total No. of StudentsPresent in Secondary Physiological Data **451**

No. of Students who attended only post physiological test were **13**

Numbers of data obtained during Second stage of intervention of physiological test, out of 575 was 451. Number of students who attempted only post mid-test were 13.

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Table 22.No. of Students whoAttended Psychological - Post data in summarised stage.

<b>Section</b>	<b>Class</b>	<b>Total Student</b>	<b>Only Post</b>
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<b>Primary</b> <b>Age 5 – 7 Years</b>	<b>Sr. Kg. A</b>	<b>46</b>	<b>NA</b>
	<b>Sr. Kg. B</b>	<b>30</b>	<b>NA</b>
	<b>Std 1A</b>	<b>40</b>	<b>8</b>
	<b>Std 1B</b>	<b>41</b>	<b>6</b>
		<b>157</b>	<b>14</b>
<b>Age 7 – 9 Years</b>	<b>Std 2</b>	<b>72</b>	<b>9</b>
	<b>Std 3</b>	<b>64</b>	<b>8</b>
	<b>Std 4</b>	<b>58</b>	<b>53</b>
		<b>194</b>	<b>70</b>
<b>Secondary</b> <b>Age 9 – 12 years</b>	<b>Std 5</b>	<b>73</b>	<b>73</b>
	<b>Std 6</b>	<b>72</b>	<b>70</b>
	<b>Std 7</b>	<b>79</b>	<b>77</b>
		<b>224</b>	<b>220</b>
	<b>TOTAL</b>	<b>575</b>	<b>304</b>

Total no. of Students - **575**.

Received Psychological PostData- **304**.

Numbers of students attempted psychological mental health inventory during secondary stage were 304. As per data, we can see number of students who attempted from age group 5-7 years were 14, 7-9 years were 70, and 9-12 years were 220.

Table 23. No. Of student reported Post CBC data in summarised stage.

<b>Section</b>	<b>Class</b>	<b>Total no. of Student</b>	<b>Post CBC</b>
<b>Primary</b> <b>Age 5 – 7 Years.</b>	<b>Sr. Kg. A</b>	<b>46</b>	<b>1</b>
	<b>Sr. Kg. B</b>	<b>30</b>	<b>0</b>
	<b>Std 1A</b>	<b>40</b>	<b>6</b>
	<b>Std 1B</b>	<b>41</b>	<b>5</b>
		<b>157</b>	<b>12</b>
<b>Age 7 – 9 Years.</b>	<b>Std 2</b>	<b>72</b>	<b>10</b>
	<b>Std 3</b>	<b>64</b>	<b>14</b>
	<b>Std 4</b>	<b>58</b>	<b>22</b>
		<b>194</b>	<b>46</b>
	<b>Std 5</b>	<b>73</b>	<b>18</b>

<b>Secondary</b> <b>Age 9 – 12 years</b>	<b>Std 6</b>	<b>72</b>	<b>15</b>
	<b>Std 7</b>	<b>79</b>	<b>14</b>
		<b>224</b>	<b>47</b>
	<b>TOTAL</b>	<b>575</b>	<b>105</b>

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TOTAL NO. OF STUDENTS 575

TOTAL NO. OF STUDENTS WHO ATTEMPTED POST CBC 105

Summarised stage received post CBC (Complete Blood count) data were 105 out of total 575.

Table 24. No. of Students who Received Post Diet plan in Summarised Stage.

<b>1 Section</b>	<b>Class</b>	<b>Total no. of Student</b>	<b>Received Post-diet plan.</b>
<b>Primary</b> <b>Age 5 – 7 Years.</b>	<b>Sr. Kg. A</b>	<b>46</b>	<b>26</b>
	<b>Sr. Kg. B</b>	<b>30</b>	<b>12</b>
	<b>Std 1A</b>	<b>40</b>	<b>38</b>
	<b>Std 1B</b>	<b>41</b>	<b>35</b>
		<b>157</b>	<b>111</b>
<b>Age 7 – 9 Years.</b>	<b>Std 2</b>	<b>72</b>	<b>64</b>
	<b>Std 3</b>	<b>64</b>	<b>56</b>
	<b>Std 4</b>	<b>58</b>	<b>57</b>
		<b>194</b>	<b>177</b>
<b>Secondary</b> <b>Age 9 – 12 years</b>	<b>Std 5</b>	<b>73</b>	<b>67</b>
	<b>Std 6</b>	<b>72</b>	<b>62</b>
	<b>Std 7</b>	<b>79</b>	<b>77</b>
		<b>224</b>	<b>206</b>
	<b>TOTAL</b>	<b>575</b>	<b>494</b>

TOTAL NO. STUDENT

575

TOTAL NO OF STUDENT RECEIVED DIET PLAN 494

During summarised stage number of students who received diet plan 494.

Table 25. No. of Students who Attempted *Suryanamaskar* and *Pranayama*, in Summarised Stage.

Section	Class	Total no. of Student	Post physical class data.
Primary Age 5 – 7 Years.	Sr. Kg. A	46	26
	Sr. Kg. B	30	12
	Std 1A	40	38
	Std 1B	41	35
		157	111
Age 7 – 9 Years.	Std 2	72	64
	Std 3	64	56
	Std 4	58	57



		<b>194</b>	<b>177</b>
<b>Secondary Age 9 – 12 years</b>	<b>Std 5</b>	<b>73</b>	<b>67</b>
	<b>Std 6</b>	<b>72</b>	<b>62</b>
	<b>Std 7</b>	<b>79</b>	<b>77</b>
		<b>224</b>	<b>206</b>
	<b>TOTAL</b>	<b>575</b>	<b>494</b>

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Total No. of Students 575.

Total number of students trained for *Suryanamaskar* and *Pranayama* were 494.

During summarised stage number of students, who received training and received plan were 494 out of 575.

#### CONFIRMATORY STAGE.

Table 26. No. of Students as per M.K.E.S. School Register Present in Confirmatory Stage.

<b>Section</b>	<b>Class</b>	<b>Total Student</b>
<b>Primary</b> <b>Age 5 – 7 Years</b>	<b>Sr. Kg. A</b>	<b>46</b>
	<b>Sr. Kg. B</b>	<b>30</b>
	<b>Std 1A</b>	<b>40</b>
	<b>Std 1B</b>	<b>41</b>
		<b>157</b>
<b>Age 7 – 9 Years</b>	<b>Std 2</b>	<b>72</b>
	<b>Std 3</b>	<b>64</b>
	<b>Std 4</b>	<b>58</b>
		<b>194</b>
<b>Secondary</b> <b>Age 9 – 12 years</b>	<b>Std 5</b>	<b>73</b>
	<b>Std 6</b>	<b>72</b>
	<b>Std 7</b>	<b>79</b>
		<b>224</b>
	<b>TOTAL</b>	<b>575</b>

TOTAL NO STUDENTS 575

Confirmatory stage: total number of students present were 575.

TABLE 27. Total No. Of Student Gender-wise as per M.K.E.S. English school.

<u><b>Age Group</b></u>	<u><b>Total no of Student</b></u>	<u><b>Male Student</b></u>	<u><b>Female Student</b></u>

<b>5 - 7</b>	<b>157</b>	<b>85</b>	<b>72</b>
<b>7 - 9</b>	<b>194</b>	<b>117</b>	<b>77</b>
<b>9 - 12</b>	<b>224</b>	<b>136</b>	<b>88</b>
<b>TOTAL</b>	<b>575</b>	<b>338</b>	<b>237</b>

**TOTAL NO. STUDENT                    575**

**TOTAL NO. OF BOYS                    338**

**TOTAL NO. OF GIRLS                    237**

During confirmatory stage number of students present were 575 out of total, gender-wise, boys were 338 and girls were 237.

Table 28. No. of Students who Attempted Pre-Post Test in Confirmatory Stage.

<b>Section</b>	<b>Class</b>	<b>Total no. of Student</b>	<b>Pre-Post Physiological data</b>
			<b>Confirmatory Pre-Post Parameter</b>
<b>Primary</b>	<b>Sr. Kg. A</b>	<b>46</b>	<b>22</b>
	<b>Sr. Kg. B</b>	<b>30</b>	<b>12</b>
	<b>Std 1A</b>	<b>40</b>	<b>36</b>
	<b>Std 1B</b>	<b>41</b>	<b>34</b>

<b>Age 5 – 7 Years.</b>			
		<b>157</b>	<b>104</b>
<b>Age 7 – 9 Years.</b>	<b>Std 2</b>	<b>72</b>	<b>59</b>
	<b>Std 3</b>	<b>64</b>	<b>48</b>
	<b>Std 4</b>	<b>58</b>	<b>53</b>
		<b>194</b>	<b>160</b>
<b>Secondary Age 9 – 12 years</b>	<b>Std 5</b>	<b>73</b>	<b>60</b>
	<b>Std 6</b>	<b>72</b>	<b>58</b>
	<b>Std 7</b>	<b>79</b>	<b>69</b>
		<b>224</b>	<b>187</b>
	<b>TOTAL</b>	<b>575</b>	<b>451</b>

Total no. of Students - 575.

Confirmatory Pre-Post Data - 451.

During confirmatory stage total number of students present were 451.

Table 29. Confirmatory Attendance of Psychological Pre- post data.

Section	Class	Total Student	Confirmatory Pre- Post data
<b>Primary</b> Age 5 – 7 Years	<b>Sr. Kg. A</b>	<b>46</b>	<b>NA</b>
	<b>Sr. Kg. B</b>	<b>30</b>	<b>NA</b>
	<b>Std 1A</b>	<b>40</b>	<b>8</b>
	<b>Std 1B</b>	<b>41</b>	<b>6</b>
		<b>157</b>	<b>14</b>
<b>Age 7 – 9 Years</b>	<b>Std 2</b>	<b>72</b>	<b>9</b>
	<b>Std 3</b>	<b>64</b>	<b>8</b>
	<b>Std 4</b>	<b>58</b>	<b>53</b>
		<b>194</b>	<b>70</b>
<b>Secondary</b> Age 9 – 12 years	<b>Std 5</b>	<b>73</b>	<b>73</b>
	<b>Std 6</b>	<b>72</b>	<b>70</b>
	<b>Std 7</b>	<b>79</b>	<b>77</b>
		<b>224</b>	<b>220</b>
	<b>TOTAL</b>	<b>575</b>	<b>304</b>

Total no. of Students - 575 ,

Confirmatory Pre-Post Data - 304.

No. of Students who Attempted Pre-Post Psychological Test at Confirmatory Stage were 304.

Table 30. No. of Students who Submitted Pre-Post CBC Data.

Section	Class	Total no. of Student	Total confirmatory data collected
Primary Age 5 - 7 Years	Sr. Kg to Std. 1	157	12
Age 7 - 9 Years	Std. 2 to Std. 4	194	36
Secondary Age 9 - 12 Years.	Std. 5 to Std. 7.	224	42
	TOTAL	575	90

**TOTAL NO. OF STUDENT 575**

**CONFIRMATORY PRE-POST CBC DATA 90**

Number of students who attempted CBC (Complete Blood Count) at confirmatory stage and submitted Pre-post CBC (Complete Blood Count) were 90.

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Table 31. No. of Students Pre-post Physiological – Psychological data with CBC report.

Section	Class	Total no. of Student	Total Physiological data collected		Total Psychological data collected
			With CBC Parameter	Total attempt body parameter	
Primary Age 5 - 7	Sr. Kg to	157	12	104	14

Years	Std. 1				
Age 7 - 9 Years	Std. 2 to Std. 4	<b>194</b>	<b>36</b>	<b>160</b>	<b>70</b>
Secondary Age 9 - 12 Years.	Std. 5 to Std. 7.	<b>224</b>	<b>42</b>	<b>187</b>	<b>220</b>
	TOTAL	<b>575</b>	<b>90</b>	<b>451</b>	<b>304</b>

Total Physiological Attempt By Students (Age 5 - 7 Yr) - 157

Received Data - 104

Total Physiological Attempt By Students (Age 7 - 9 Yr) - 194

Received Data - 160

Total Physiological Attempt By Students (Age 9 - 12 Yr) - 224

Received Data - 187

Total Psychological Attempt By Students (Age 5 - 7 Yr) - 157

Received Data - 14

Total Psychological Attempt By Students (Age 7 - 9 Yr) - 194

Received Data - 70

Total Psychological Attempt By Students (Age 9 - 12 Yr) - 224

Received Data - 220

Total CBC (Complete Blood count) attempt by the student (Age 5 – 12 years) were 90.

Table 32.No. of Students as per Class and Name with Pre-Post Comparison Chart.



<b>Class</b>	<b>Roll no.</b>	<b>Name of students</b>	<b>Pre CBC</b>	<b>Post CBC</b>
Sr Kg B	14	Saba	12.20	12.11
Std I A	2	ChobeyPurva	10.00	12.00
	6	MondheRashmi	10.20	12.40
	12	Shah Bhanya	10.20	12.80
	24	DeurushekarParth	12.70	13.70
	27	Siddhesh	9.00	12.50
	39	WaghelaHansh	11.10	12.80
Std I B	30	Amanullah	12.30	11.60
	1	BhagatSalu	10.30	11.30
	11	Shah Khyati	13.40	13.50
	31	Moksh Patel	8.00	10.70
	37	Singh Piyush	9.30	13.30
Std II	7	Krishna	9.50	11.60
	10	Shrejal	11.80	12.20
	11	Palak	10.40	12.20
	23	SoniNeera	11.60	12.00
	22	Sakshi	12.90	12.50
	26	Suchi	13.00	13.70
	46	Akhil	12.80	12.00
	56	Patel Rutvik	10.60	11.20
Std III	3	ChawdaKhushi	11.60	12.60
	6	RiyaKanojia	11.20	11.20
	8	Arkita	11.20	11.20
	11	ParmarArchi	12.80	11.80
	17	Shah Purna	11.10	12.10
	26	Raj	12.10	11.00
	33	Aditya	11.90	12.00
	42	Krushang	11.50	11.20
	54	Singh Dyush	9.00	11.20
	55	Ansh	11.70	12.90
Std IV	5	Hetakshi	10.20	12.60
	8	Khushi	10.00	11.70
	12	Khushi	10.50	11.20
	14	Asiya	11.80	12.30

	16	Devansi	<b>10.80</b>	<b>12.30</b>
	17	Devanshi	<b>10.50</b>	<b>12.30</b>
	18	Nandita	<b>11.20</b>	<b>11.30</b>
	22	Sharon	<b>12.00</b>	<b>11.60</b>
	23	Charmi	<b>11.30</b>	<b>11.60</b>
	25	Krati	<b>12.20</b>	<b>12.90</b>
	26	Kanak	<b>10.70</b>	<b>9.80</b>
	29	Omkar	<b>10.30</b>	<b>10.90</b>
	43	Nihar	<b>13.20</b>	<b>12.20</b>
	45	Sajjad	<b>11.60</b>	<b>12.00</b>
	46	Shankar	<b>10.80</b>	<b>10.90</b>
	48	Prince	<b>12.70</b>	<b>13.80</b>
	50	Nikhil	<b>10.00</b>	<b>11.60</b>
	51	Dhruv	<b>12.40</b>	<b>11.70</b>
Std V	5	Neha	<b>9.00</b>	<b>9.00</b>
	6	Simran	<b>9.80</b>	<b>11.80</b>
	7	Devi	<b>9.40</b>	<b>12.00</b>
	8	Parthvi	<b>10.00</b>	<b>13.00</b>
	11	Aditi	<b>11.30</b>	<b>11.70</b>
	16	Aishwarya	<b>11.40</b>	<b>10.90</b>
	18	Harshita	<b>10.80</b>	<b>11.30</b>
	26	Khushboo	<b>11.30</b>	<b>11.50</b>
	31	Sujit	<b>11.70</b>	<b>12.70</b>
	32	Vaibhav	<b>12.50</b>	<b>13.00</b>
	41	Prakash	<b>12.10</b>	<b>12.20</b>
	42	Saurabh	<b>12.40</b>	<b>13.30</b>
	49	ParmarVaibhav	<b>10.20</b>	<b>12.10</b>
	58	Narendra	<b>11.10</b>	<b>10.80</b>
	68	Gautam	<b>9.90</b>	<b>12.00</b>
	70	Om	<b>11.70</b>	<b>12.00</b>

Std VI	2	Parthvi	<b>11.30</b>	<b>12.40</b>
	3	Ria	<b>10.50</b>	<b>11.80</b>
	5	Shruti	<b>12.90</b>	<b>13.50</b>
	14	Vrushali	<b>10.60</b>	<b>11.30</b>
	21	Hema	<b>9.80</b>	<b>11.20</b>

	22	Natasha	12.00	11.70
	23	Maitri	13.00	11.90
	24	Gauri	11.90	12.20
	26	Virti	11.40	13.60
	39	Krushanth	11.60	12.60
	57	Sahil	12.10	11.90
	61	Harsh	10.90	12.20
	67	Vishal	11.20	11.80
Std VII	6	Saloni	10.80	11.50
	11	Vaibhavi	11.80	11.90
	16	Ayushi	11.80	10.00
	17	Shraddha	9.80	8.50
	25	Madhura	11.70	11.70
	27	Rumi	13.00	12.50
	30	Vijay	12.30	12.90
	33	Nimesh	12.80	13.00
	37	Piyush	11.30	10.80
	40	Jay	11.50	12.00
	71	Himanshu	12.00	10.90
	73	Aditya	11.90	12.20
	31	Amit	13.20	13.30

Total no of Pre-post CBC

90

#### 4.2 Screening of Data:

Detail analyses was treated by pairing 't' test with description for gaining score treatment using paired t' statistic.

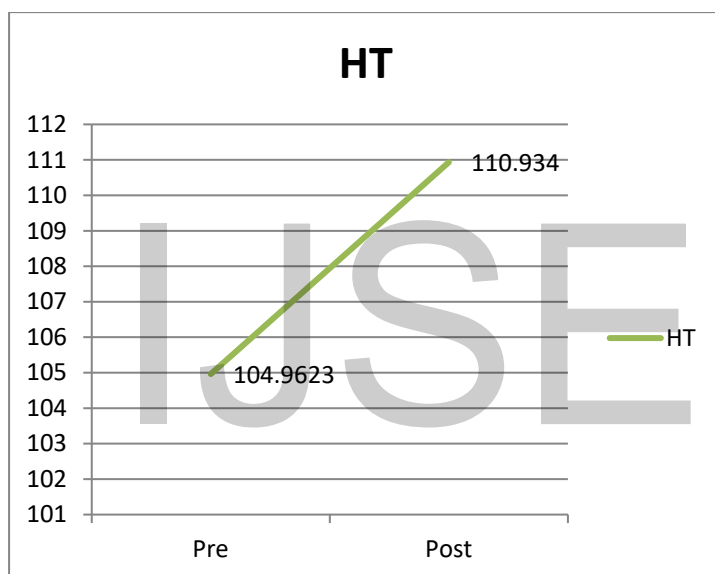
### 4.2.1 Age group 5 – 7 years.

**Height :**

**Table 33. ‘t’ test for pre-post correlation of height for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	104.9623	103	7.74587	0.858	15.394	.01
	Post	110.9340	106	7.02142			

**Graph 2. Pre-post Mean difference of Height for age group 5 – 7 years.**



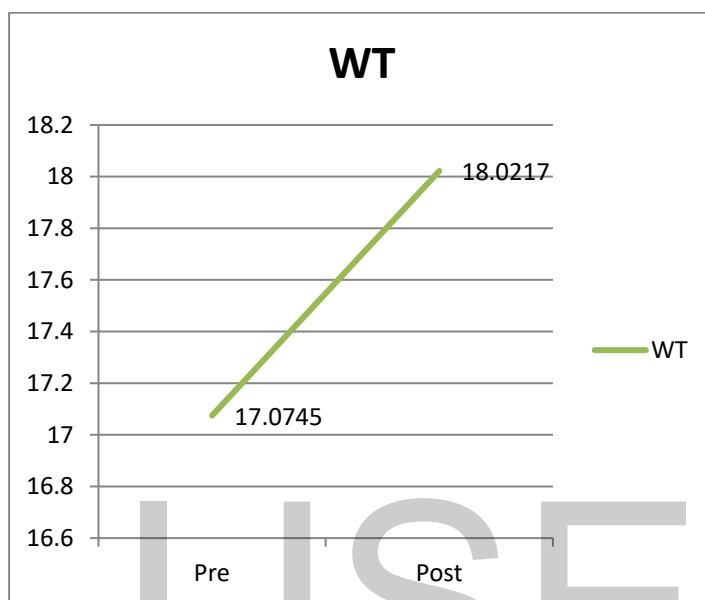
It is observed that the **pretest** of average is **104.9623** and standard deviation is **7.74587** as well as **posttest** mean is **110.9340** and standard deviation is **7.0214**. The correlation value is **.858** and obtained is **15.394**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to student in improvising their height as per the requirement of age growth.

**Table 34. t’ test for pre-post correlation of weight for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
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Wt	Pre	17.0745	106	3.42301	0.915	6.929	.01
	Post	18.0217	106	3.42183			

Graph 3. Pre-post Mean difference of Weight for age group 5 – 7 years.

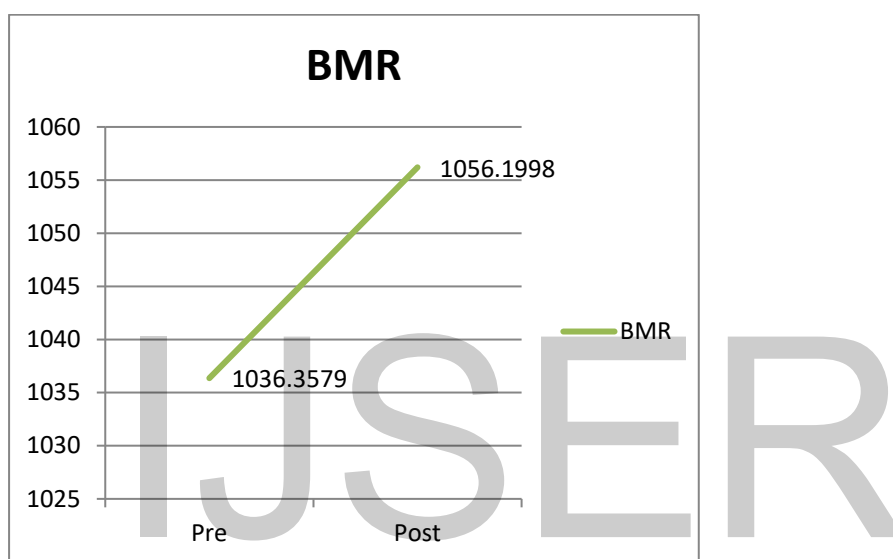


It is observed that the **pretest** of average is **17.0745** and standard deviation is **3.42301** as well as **posttest** mean is **18.0217** and standard deviation is **3.42183**. The correlation value is **.915** and obtained is **6.929** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improvise their weight as per their requirement of age and height.

**Table 35. t' test for pre-post correlation of BMR for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
BMR	Pre	1036.3579	106	44.06111	0.933	12.755	.01
	Post	1056.1998	106	43.02615			

Graph 4. Pre-post Mean difference of BMR for age group 5 – 7 years.



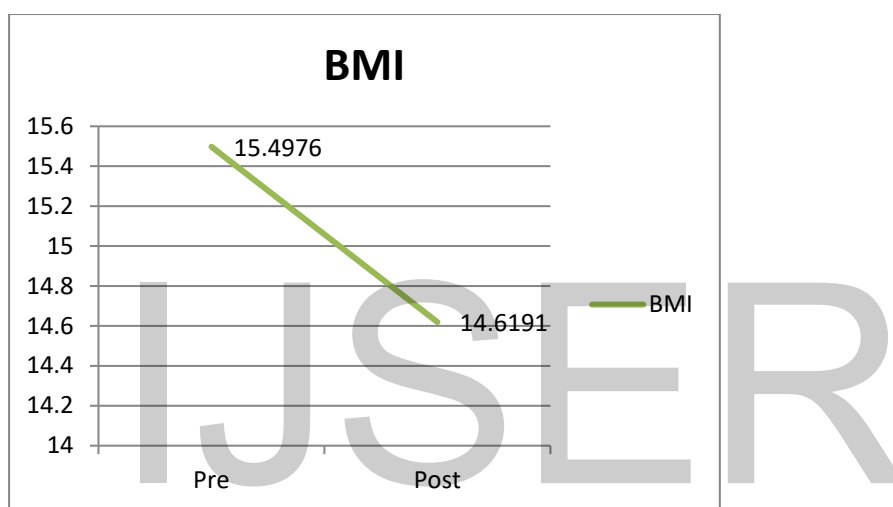
It is observed that the **pretest** of average is **1036.3579** and standard deviation is **44.06111** as well as **posttest** mean is **1056.1998** and standard deviation is **43.02615**. The correlation value is **.933** and obtained is **12.755**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to student to improve their basal metabolic rate which improve their physical fitness and energy .

**Basal mass index (BMI) :**

**Table 36. t’ test for pre-post correlation of BMI for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
BMI	Pre	15.4976	106	2.46300	0.743	5.416	.01
	Post	14.6191	106	2.10342			

**Graph 5. Pre-post Mean difference of BMI for age group 5 – 7 years.**



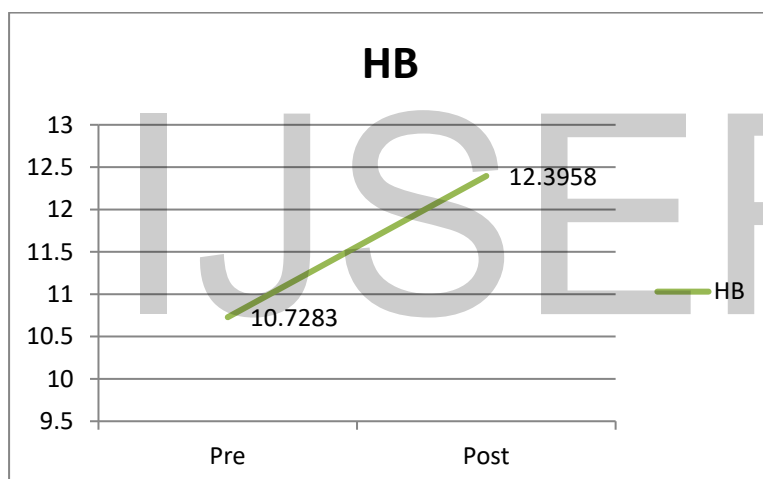
It is observed that the **pretest** of average is **15.4976**and standard deviation is **2.46300** as well as **posttest** mean is **14.6191**and standard deviation is **2.10342**. The correlation value is **.743** and obtained is **5.416**.This is significant on **.01** levels andwe can thus interpret/obtain that our intervention is helpful to students to improvise their basal mass index, which improvises their physical fitness.

**Haemoglobin (Hb) :**

**Table 37. t' test for pre-post correlation of HB. for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Hb.	Pre	10.7283	12	1.64226	0.424	3.981	.01
	Post	12.3958	12	0.90260			

Graph 6. Pre-post Mean difference of Hb. for age group 5 – 7 years.



It is observed that the **pretest** of average is **10.7283** and standard deviation is **1.64226** as well as **posttest** mean is **12.3958** and standard deviation **1.90260**, the correlation value is **.474** and obtained is **3.981**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity by elevating haemoglobin level and improving children's respiratory function.

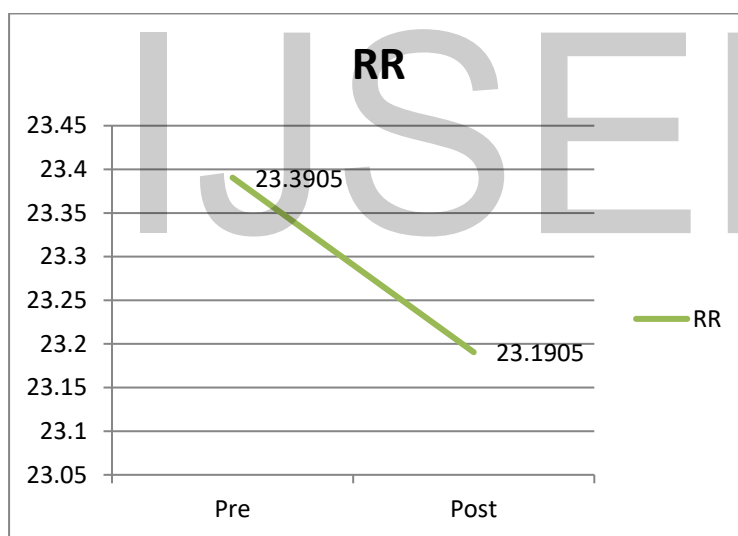


**Respiratory rate (RR) :**

**Table 38. t' test for pre-post correlation of RR for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
RR	Pre	23.3905	105	3.15465	0.309	0.676	.01
	Post	23.1905	105	1.40120			

**Graph 7. Pre-post Mean difference of RR for age group 5 – 7 years.**



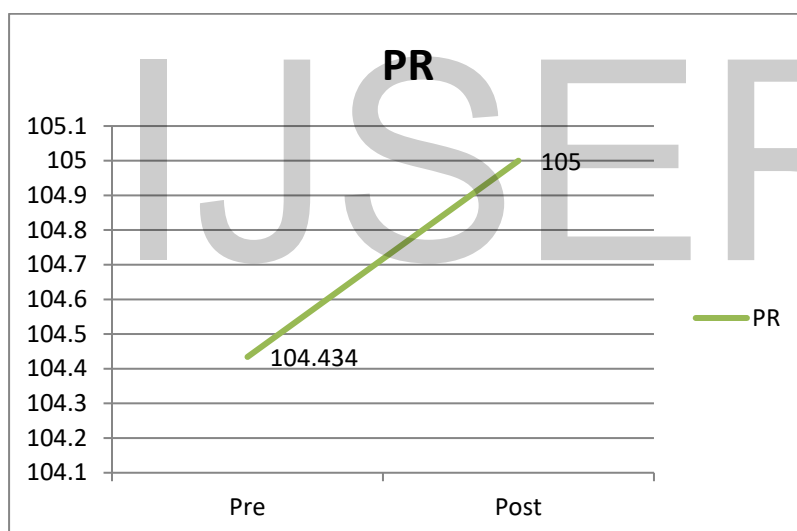
It is observed that the **pretest** of average is **23.3905** and standard deviation is **3.15465** as well as **posttest** mean is **23.1905** and standard deviation is **1.40120**. The correlation value is **.309** and obtained is **.676** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity.

**Pulse rate (PR) :**

**Table 39. t’ test for pre-post correlation of PR for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
PR	Pre	104.4340	106	11.48914	0.258	0.403	.01
	Post	105.0000	106	12.20382			

**Graph 8. Pre-post Mean difference of PR for age group 5 – 7 years.**



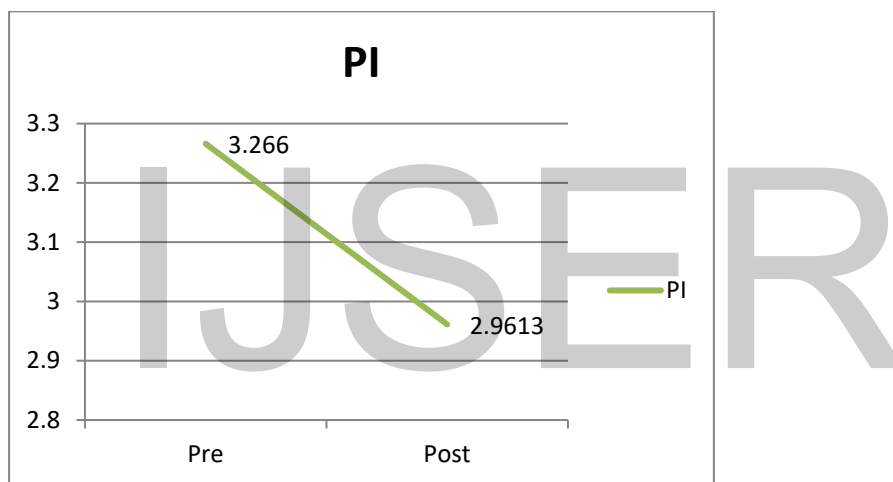
It is observed that the **pretest** of average is **104.4340** and standard deviation is **11.48914** as well as **posttest** mean is **105.0000** and standard deviation is **12.20382**. The correlation value is **.258** and obtained is **.403** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity.

**Pulse index (PI) :**

**Table 40. t’ test for pre-post correlation of PI for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
PI	Pre	3.2660	106	1.50908	0.591	2.122	.01
	Post	2.9613	106	1.73230			

**Graph 9. Pre-post Mean difference of PI for age group 5 – 7 years.**



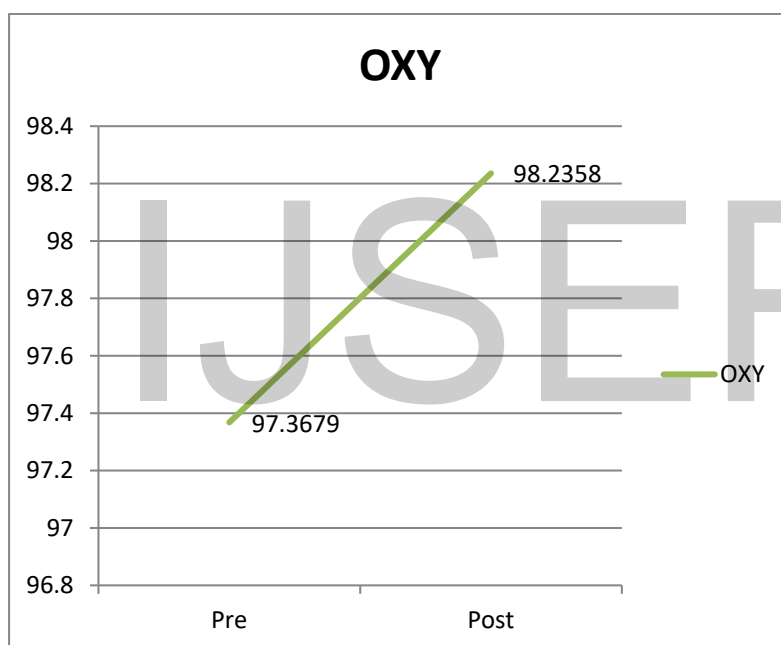
It is observed that the **pretest** of average is **3.2660** and standard deviation is **1.50908** as well as **posttest** mean is **2.9613** and standard deviation is **1.73230**. The correlation value is **.591** and obtained is **2.122** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve vital function of pulse index.

**Oxymetry SPO<sub>2</sub> :**

**Table 41. t’ test for pre-post correlation of SPO2 for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Oxy	Pre	97.3679	106	3.02159	0.100	2.643	.01
	Post	98.2358	106	1.84933			

Graph 10. Pre-post Mean difference of Oxy. for age group 5 – 7 years.



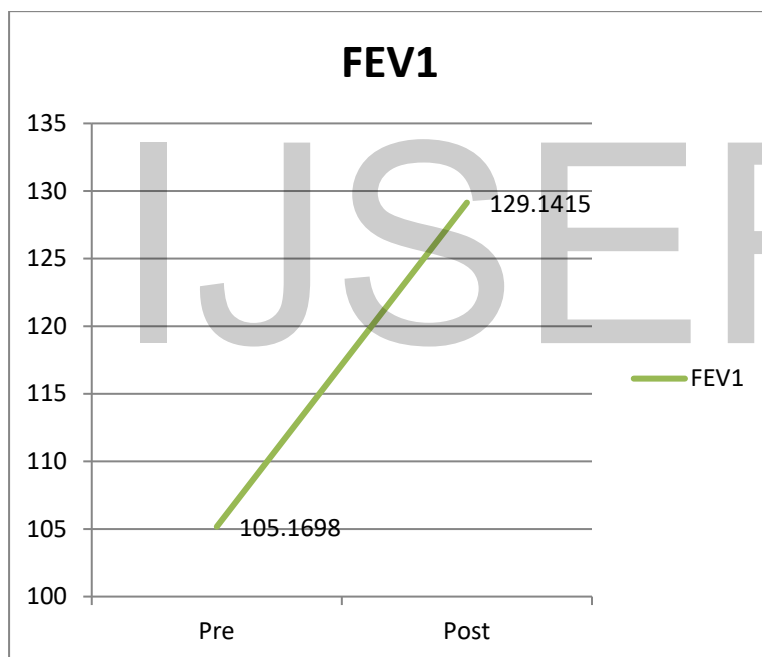
It is observed that the **pretest** of average is **97.3679** and standard deviation is **3.02159** as well as **posttest** mean is **98.2358** and standard deviation is **1.84933**. The correlation value is **.100** and obtained is **2.643** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve vital function of lungs for exchange of gases i.e. oxygen O<sub>2</sub> and carbon dioxide CO<sub>2</sub>.

**FEV<sub>1</sub>( forced expiratory volume in the first attempt ):**

**Table 42. t’ test for pre-post correlation of FEV1 for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
FEV <sub>1</sub>	Pre	105.1698	106	33.70332	0.651	8.166	.01
	Post	129.1415	106	38.05296			

**Graph 11. Pre-post Mean difference of FEV1 for age group 5 – 7 years.**



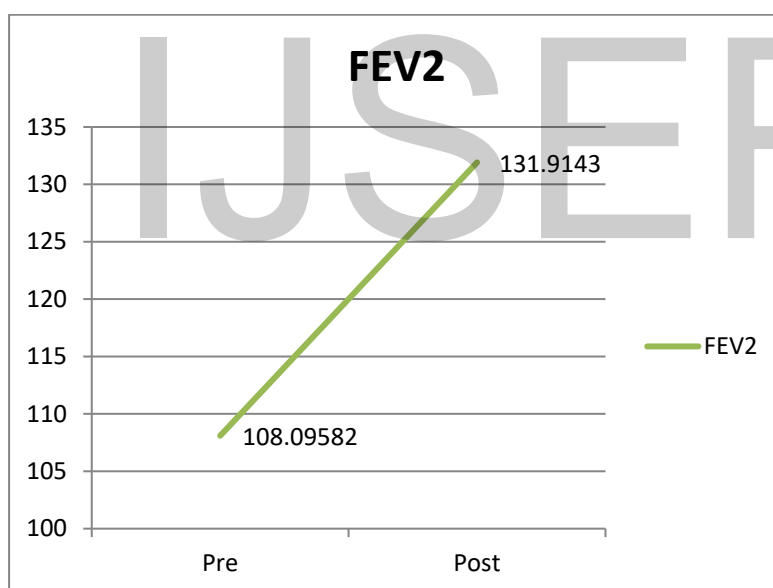
It is observed that the **pretest** of average is **105.1698** and standard deviation is **33.70332** as well as **posttest** mean is **129.1415** and standard deviation is **38.05296**. The correlation value is **.651** and obtained is **8.166** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function of expiratory flow volume in first trial.

**FEV<sub>2</sub> (Forced expiratory volume in the second attempt):**

**Table 43. t’ test for pre-post correlation of FEV2 for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
FEV <sub>2</sub>	Pre	108.09582	105	33.82919	0.641	7.932	.01
	Post	131.9143	105	38.23211			

**Graph 12. Pre-post Mean difference of FEV2 for age group 5 – 7 years.**



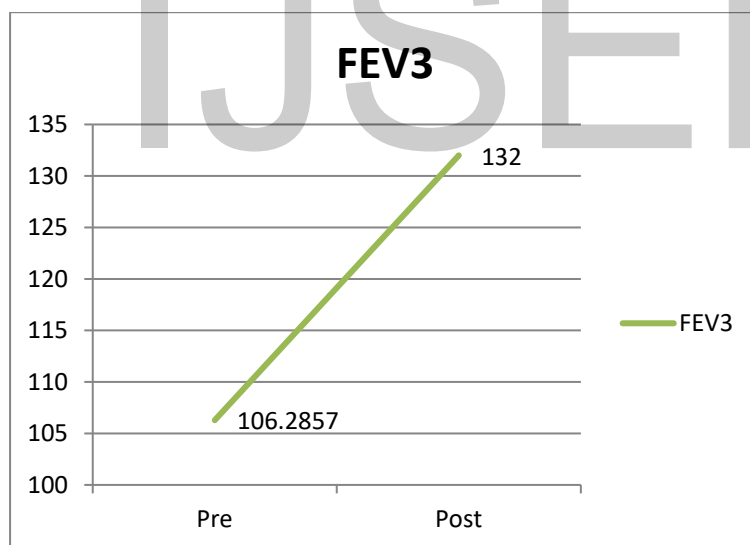
It is observed that the **pretest** of average is **108.0952** and standard deviation is **33.82919** as well as **posttest** mean is **131.9143** and standard deviation is **38.23211**. The correlation value is **.641** and obtained is **7.932** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function of expiratory flow volume in second trial.

**FEV<sub>3</sub>( Forced expiratory volume in third attempt) :**

**Table 44. t’ test for pre-post correlation of FEV3 for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
FEV <sub>3</sub>	Pre	106.2857	105	34.14497	0.697	8.978	.01
	Post	132.0000	105	39.96152			

**Graph 13. Pre-post Mean difference of FEV3 for age group 5 – 7 years.**



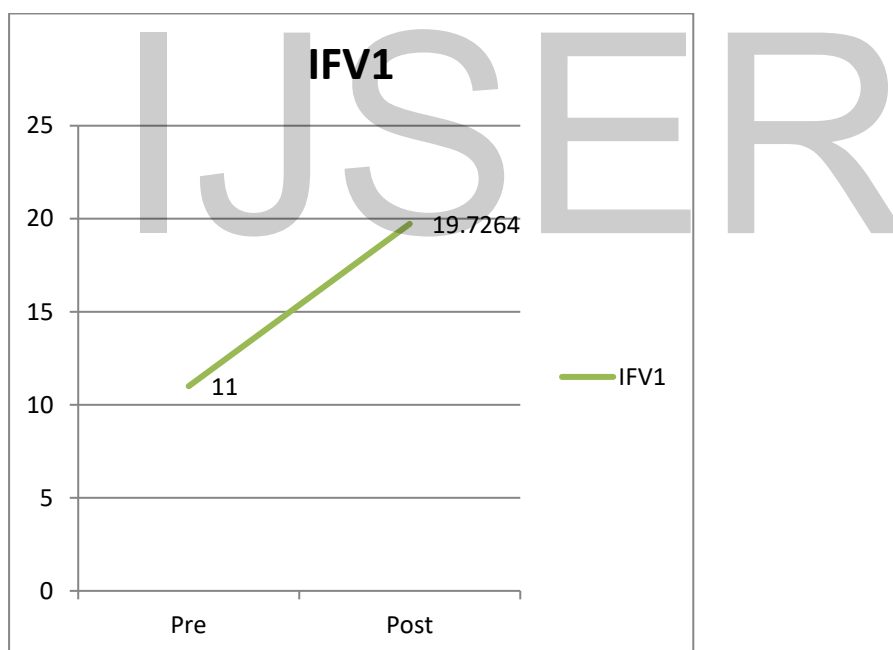
It is observed that the **pretest** of average is **106.2857** and standard deviation is **34.14497** as well as **posttest** mean is **132.0000** and standard deviation is **39.96152**. the correlation value is **.697** and obtained is **8.978** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function of expiratory flow volume in third trial.

**IFV<sub>1</sub>( Inspiratory flow volume in the first second ) :**

**Table 45. t’ test for pre-post correlation of IFV1 for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
IFV <sub>1</sub>	Pre	11.0000	106	23.26821	0.435	3.037	.01
	Post	19.7264	106	30.99018			

**Graph 14. Pre-post Mean difference of IFV1 for age group 5 – 7 years.**



It is observed that the **pretest** of average is **11.0000** and standard deviation is **23.26821** as well as **posttest** mean is **19.7264**and standard deviation is **30.99018**. The correlation value is **.435** and obtained is **3.037**which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improvise lung function inspiratory flow volume in first trial.

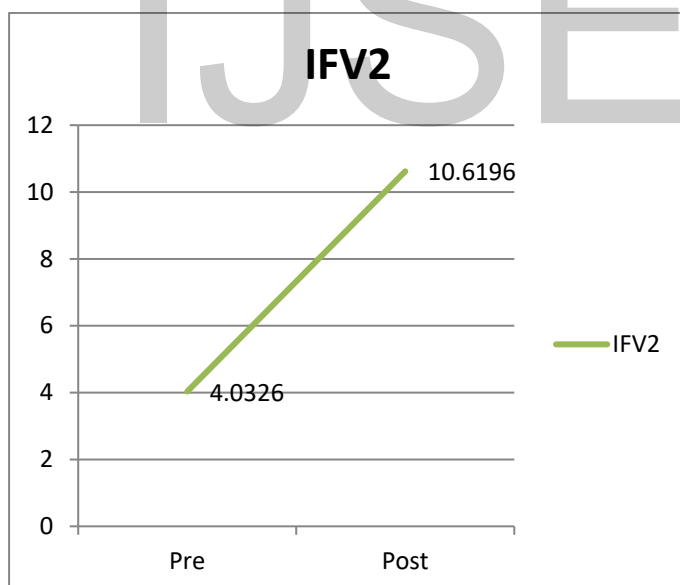


**IFV<sub>2</sub> (Inspiratory flow volume):**

**Table 46. t' test for pre-post correlation of IFV<sub>2</sub> for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
IFV <sub>2</sub>	Pre	4.0326	92	1.01040	0.247	23.244	.01
	Post	10.6196	92	2.78474			

**Graph 15. Pre-post Mean difference of IFV<sub>2</sub> for age group 5 – 7 years.**



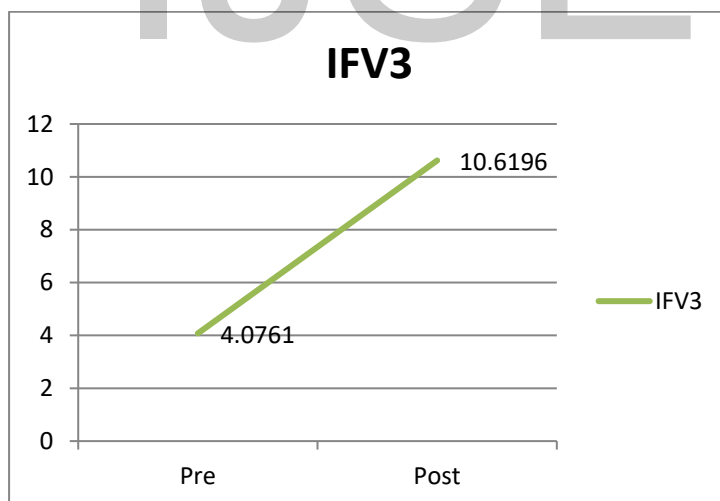
It is observed that the **pretest** of average is **4.0326** and standard deviation is **1.01040** as well as **posttest** mean is **10.6196** and standard deviation is **2.87474**. The correlation value is **.01** and obtained is **23.244** which is significant on **.000** level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function inspiratory flow volume in second trial

**IFV<sub>3</sub> (Inspiratory flow volume in third) :**

**Table 47. t’ test for pre-post correlation of IFV3 for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
IFV <sub>3</sub>	Pre	4.0761	92	1.18816	0.109	21.183	.01
	Post	10.6196	92	2.84718			

Graph 16. Pre-post Mean difference of IFV3 for age group 5 – 7 years.



It is observed that the **pretest** of average is 4.0761 and standard deviation is 1.18816 as well as **posttest** mean is 10.6196 and standard deviation is 2.84718. The correlation value is .109 and obtained is 21.183 which is significant on .01 level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function inspiratory flow volume in third trial.

**Table 48. Master chart of t testpre-post co-relation of physiological parameter. Age group 5 – 7 years.**

	<b>Test</b>	<b>Mean</b>	<b>N</b>	<b>Std. Deviation</b>	<b>Co - relation</b>	<b>T</b>	<b>Significance ( 2 – tailed)</b>
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Ht	Pre	104.9623	103	7.74587	0.858	15.394	.01
	Post	110.9340	106	7.02142			
Wt	Pre	17.0745	106	3.42301	0.915	6.929	.01
	Post	18.0217	106	3.42183			
BMR	Pre	1036.3579	106	44.06111	0.933	12.755	.01
	Post	1056.1998	106	43.02615			
BMI	Pre	15.4976	106	2.46300	0.743	5.416	.01
	Post	14.6191	106	2.10342			
Hb.	Pre	10.7283	12	1.64226	0.424	3.981	.01
	Post	12.3958	12	0.90260			
RR	Pre	23.3905	105	3.15465	0.309	0.676	.01
	Post	23.1905	105	1.40120			
PR	Pre	104.4340	106	11.48914	0.258	0.403	.01
	Post	105.0000	106	12.20382			
PI	Pre	3.2660	106	1.50908	0.591	2.122	.01
	Post	2.9613	106	1.73230			
Oxy	Pre	97.3679	106	3.02159	0.100	2.643	.01
	Post	98.2358	106	1.84933			
FEV <sub>1</sub>	Pre	105.1698	106	33.70332	0.651	8.166	.01
	Post	129.1415	106	38.05296			

FEV <sub>2</sub>	Pre	108.09582	105	33.82919	0.641	7.932	.01
	Post	131.9143	105	38.23211			
FEV <sub>3</sub>	Pre	106.2857	105	34.14497	0.697	8.978	.01
	Post	132.0000	105	39.96152			
IFV <sub>1</sub>	Pre	11.0000	106	23.26821	0.435	3.037	.01
	Post	19.7264	106	30.99018			
IFV <sub>2</sub>	Pre	4.0326	92	1.01040	0.247	23.244	.01
	Post	10.6196	92	2.78474			
IFV <sub>3</sub>	Pre	4.0761	92	1.18816	0.109	21.183	.01
	Post	10.6196	92	2.84718			

The table shows significant t test and co-relation of pre –post score of each of the physiological variable. i.e physical parameter i.e ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e Flow expiratory volume, FEV<sub>1</sub>,FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .001 and oxymetry i.e SPO<sub>2</sub> test which clearly shows significant .01 oxygen carrying capacity of children with elevated haemoglobin i.e shows clear functional positive effect on age group 5-7 years .

Complete Blood Count (CBC) :

**Table 49. t’ test for pre-post correlation of CBC for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)
	Pre	11.2811	90	1.13878			
	Post	11.9401	90	.94595		5.535	.01

CBC					.425		
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It is observed that the **pre-test** of average **CBC** (complete blood count) mean is **11.28** and standard deviation is **1.13** as well as **post-test mean is 11.94** and standard deviation is **.94** the correlation value is **.425** and obtained **t** is **5.53**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to student to improve their CBC (Complete blood count) as per their requirement of age growth.

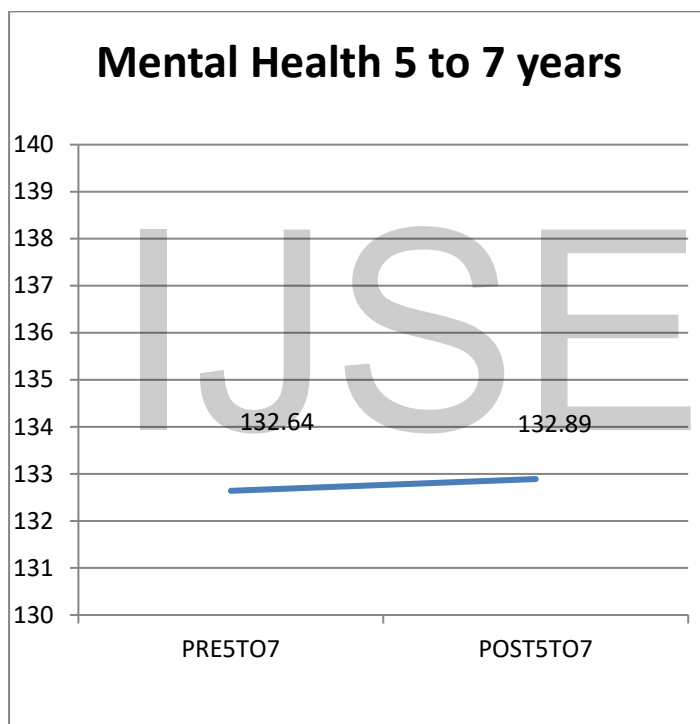
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MENTAL HEALTH INVENTORY (M.H.I) :

**Table 50. t' test for pre-post correlation of MHI for the age group 5 -7 years.**

		Mean	N	Std. Deviation	Correlation	t	Sig. 2-tailed
MHI 5 – 7 years.	Pre	132.64	28	12.08217	.337	.095	.925
	Post	132.89	28	7.60708			

Graph 17. Pre-post Mean difference of MHI for age group 5 – 7 years.



The obtained t value is 0.095 which is very low and insignificant. There is no significant difference between pre and post situations in terms of mental health of the age group 5 to 7. As per graph, mental health of children have shown elevated effect which mentions that continuation of this intervention can show positive result on mental health of children.

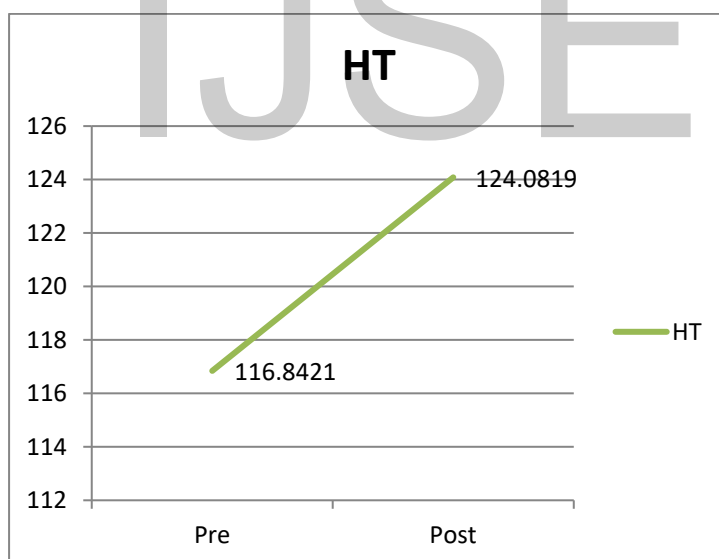
**Age group 7 – 9 years.**

**Height :**

**Table 51. t’ test for pre-post correlation of height for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	116.8421	171	7.75575	0.889	28.766	.01
	Post	124.0819	171	7.84139			

**Graph 18. Pre-post Mean difference of Height for age group 7 - 9 years.**



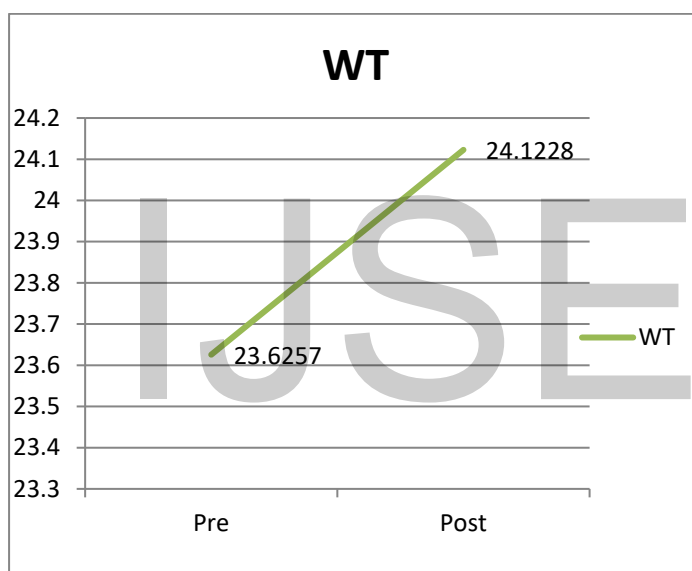
It is observed that the **pretest** of average is **116.8421**and standard deviation is **7.75535** as well as **posttest** mean is **124.0819**and standard deviation is **7.84139**. The correlation value is **.889** and obtained is **25.766**which is significant on .01 levels andwe can thus interpret/obtain that our intervention is helpful to student to improvise their height as per their requirement of age growth .



**Table 52. t’ test for pre-post correlation of weight for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Wt	Pre	23.6257	171	5.28374	0.921	2.909	.01
	Post	24.1228	171	5.72015			

**Graph 19. Pre-post Mean difference of Weight for age group 7 - 9 years.**

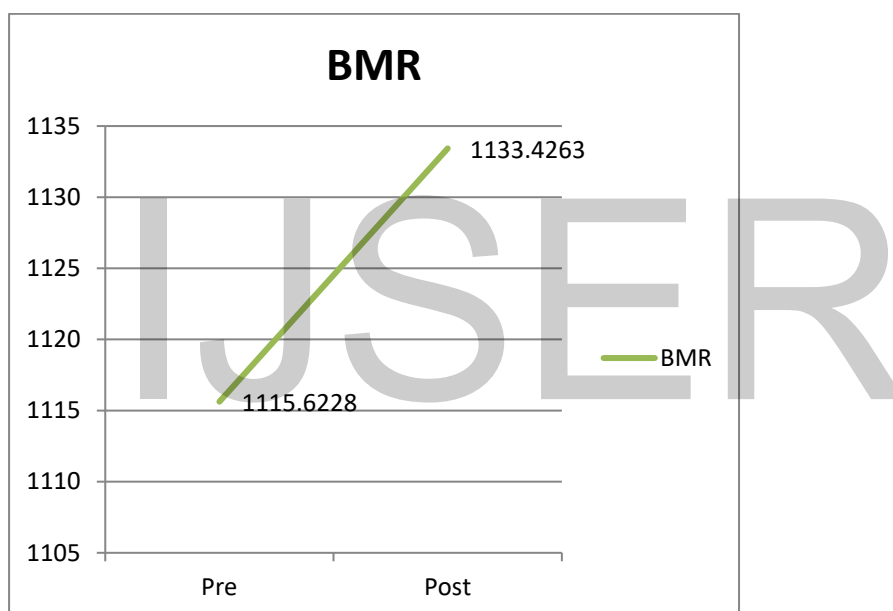


It is observed that the **pretest** of average is **23.6257** and standard deviation is **5.28374** as well as **posttest** mean is **24.1228** and standard deviation is **5.72015**. The correlation value is **.921** and obtained is **2.909**, **which** is significant on **.01 level** and we can thus interpret/obtain that our intervention is helpful to students to improvise their weight as per their requirement of age and height.

**Table 53. t' test for pre-post correlation of BMR for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
BMR	Pre	1115.6228	171	61.86381	0.933	9.853	.01
	Post	1133.4263	171	65.46849			

**Graph 20. Pre-post Mean difference of BMR for age group 7 - 9 years.**

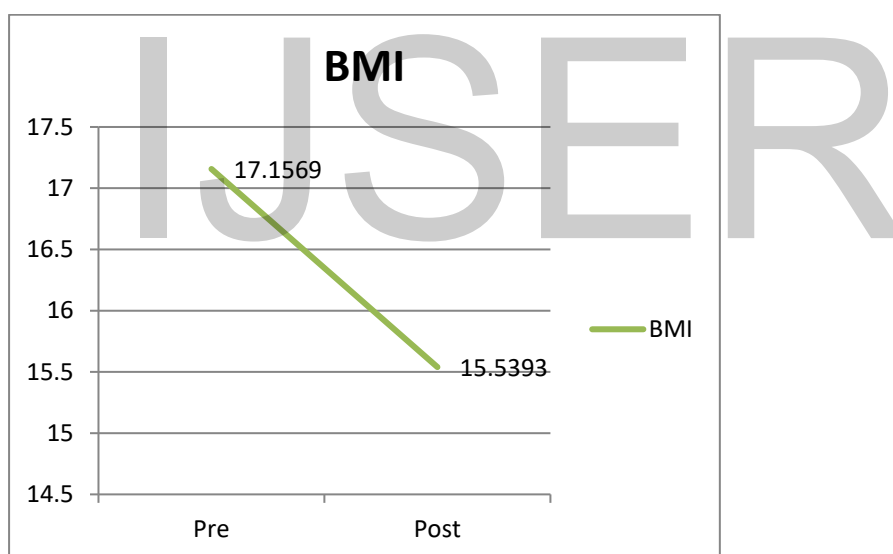


It is observed that the **pretest** of average is **1115.6228** and standard deviation is 61.86381 as well as **posttest** mean is **1133.4263** and standard deviation is **65.46849** the correlation value is **.933** and obtained is **9.853**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their basal metabolic rate which improves their physical fitness and energy

**Table 54. t’ test for pre-post correlation of BMI for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
BMI	Pre	17.1569	171	2.47146	0.785	12.679	.01
	Post	15.5393	171	2.60389			

**Graph 21. Pre-post Mean difference of BMI for age group 7 - 9 years.**

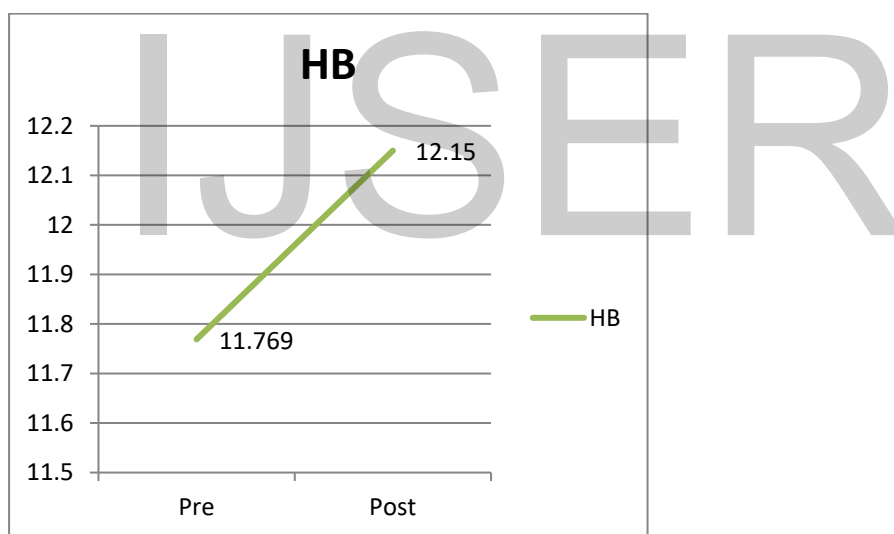


It is observed that the **pretest** of average is **17.1569** and standard deviation is **2.47146** as well as **posttest** mean is **15.5393** and standard deviation is **2.10342**. The correlation value is **.785** and obtained is **12.679**. This is significant on **.01** levels and we can thus interpret/obtain that our intervention is helpful to students to improve their basal mass index which improves their physical fitness.

**Table 55. t’ test for pre-post correlation of Hb. for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Hb.	Pre	11.7690	42	2.75446	0.861	1.502	.01
	Post	12.1500	42	1.51211			

**Graph 22. Pre-post Mean difference of HB for age group 7 - 9 years.**

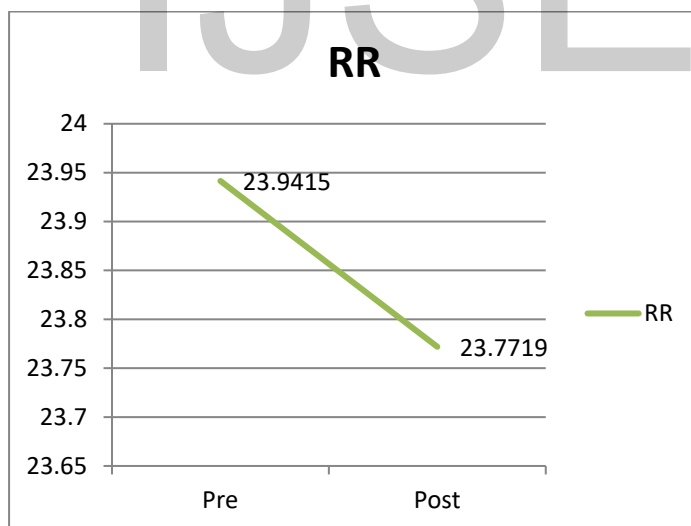


It is observed that the **pretest** of average is **11.7690** and standard deviation is **2.75446** as well as **posttest** mean is **12.1500** and standard deviation is **1.51211**. The correlation value is **.861** and obtained is **1.502**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity by elevating **haemoglobin** at **.01** level and improving child's respiratory function.

**Table 56. t’ test for pre-post correlation of RR for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
RR	Pre	23.9415	171	3.59394	0.830	0.682	.01
	Post	23.7719	171	5.54028			

**Graph 23. Pre-post Mean difference of RR for age group 7 - 9 years.**

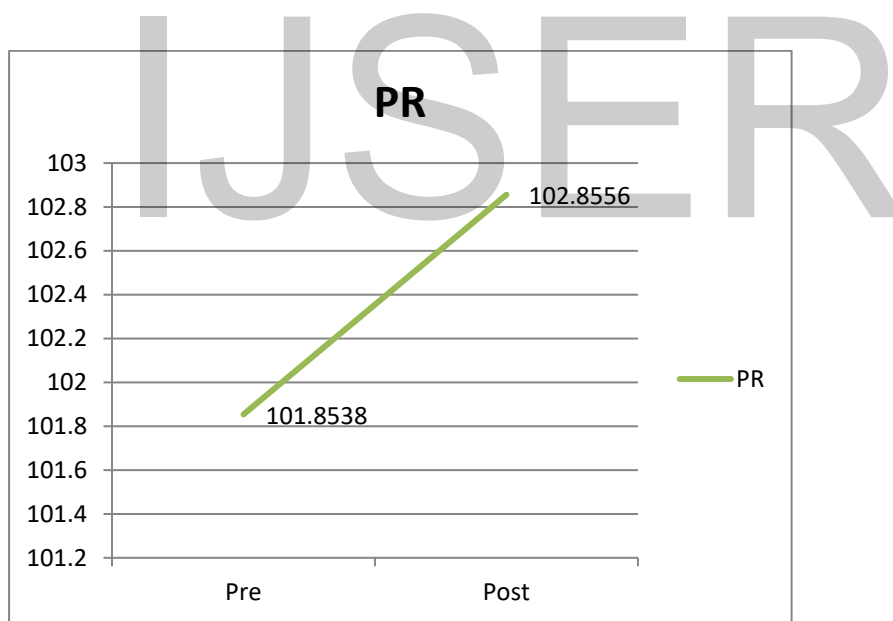


It is observed that the **pretest** of average is **23.9415** and standard deviation is **3.57394** as well as **posttest** mean is **23.7719** and standard deviation is **5.54028**. The correlation value is **.830** and obtained is **.682**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improvise their vital capacity.

**Table 57. t’ test for pre-post correlation of PR for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
PR	Pre	101.8538	171	13.31371	0.571	0.9582	.01
	Post	102.8556	171	15.94482			

**Graph 24. Pre-post Mean difference of PR for age group 7 - 9 years.**

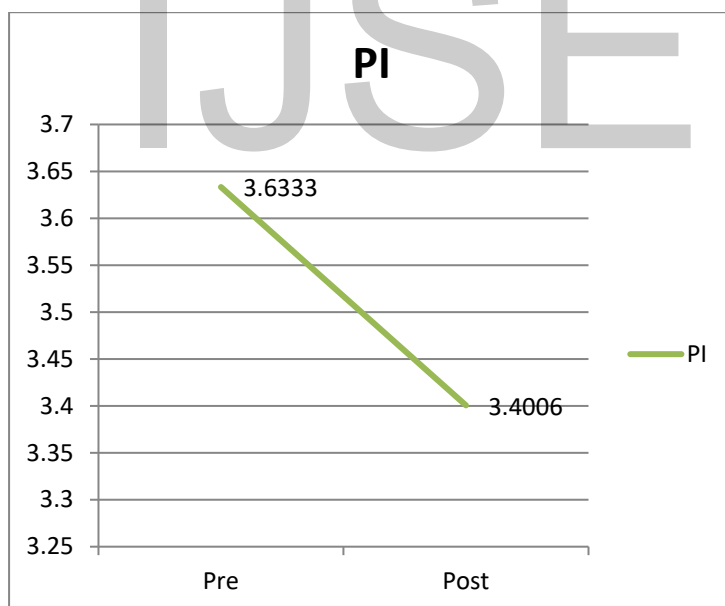


It is observed that the **pretest** of average is **101.8538** and standard deviation is **13.31371** as well as **posttest** mean is **102.8556** and standard deviation is **15.94482**. The correlation value is **.571** and obtained is **.01** which is significant on **.234** levels and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity.

**Table 58. t’ test for pre-post correlation of PI for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
PI	Pre	3.6333	171	7.15311	0.985	2.303	.01
	Post	3.4006	171	7.46445			

**Graph 25. Pre-post Mean difference of PI for age group 7 - 9 years.**

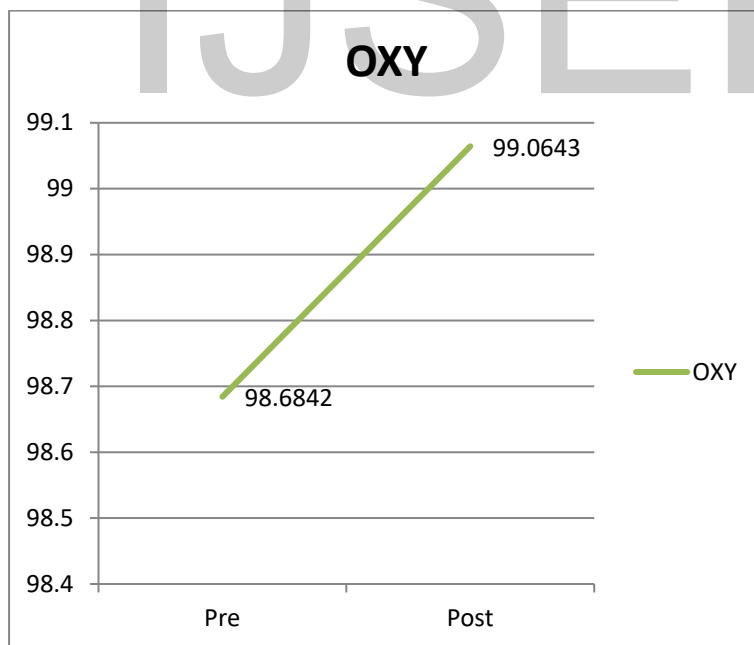


It is observed that the **pretest** of average is **3.6333** and standard deviation is **7.15311** as well as **posttest** mean is **3.4006** and standard deviation is **7.46445**. The correlation value is **.985** and obtained is **2.303** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve vital function of pulse index.

**Table 59. t’ test for pre-post correlation of Oxy for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Oxy	Pre	98.6842	171	5.78891	0.932	1.979	.01
	Post	99.0643	171	4.00756			

**Graph 26. Pre-post Mean difference of OXY for age group 7 - 9 years.**



It is observed that the **pretest** of average is **98.6842** and standard deviation is **5.78891** as well as **posttest** mean is **99.0643** and standard deviation is **4.00756**. the correlation value is **.932** and obtained is **1.979** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for

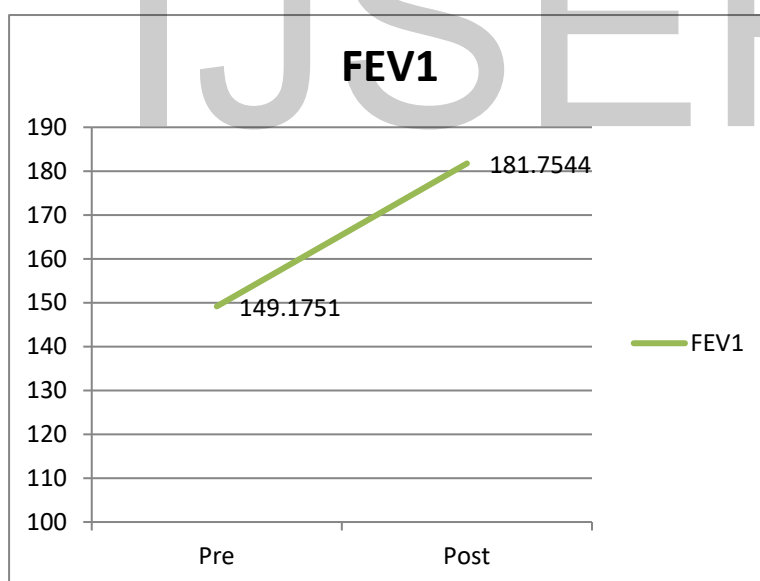


students to improvise vital function of lungs for exchange of gases i.e oxygen O<sub>2</sub> and carbon dioxide CO<sub>2</sub>.

**Table 60. t' test for pre-post correlation of FEV1 for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
FEV <sub>1</sub>	Pre	149.1751	171	39.42073	0.474	9.383	.01
	Post	181.7544	171	48.30502			

**Graph 27. Pre-post Mean difference of FEV1 for age group 7 - 9 years.**



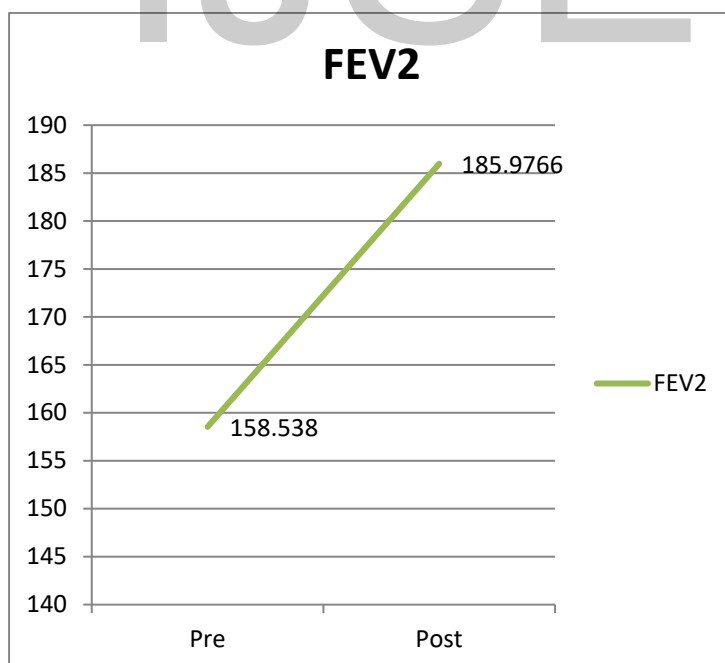
It is observed that the **pretest** of average is **149.0175** and standard deviation is **39.42073** as well as **posttest** mean is **181.7544** and standard deviation is **38.30502**. The correlation value is **.474** and obtained is **9.383** which is significant on **.01** level and we can thus interpret/obtain that our intervention

is helpful for students to improvise lung function of expiratory flow volume in first trial.

**Table 61. t’ test for pre-post correlation of FEV2 for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
FEV <sub>2</sub>	Pre	158.5380	171	40.02091	0.633	9.552	.01
	Post	185.9766	171	46.59979			

**Graph 28. Pre-post Mean difference of FEV2 for age group 7 - 9 years.**



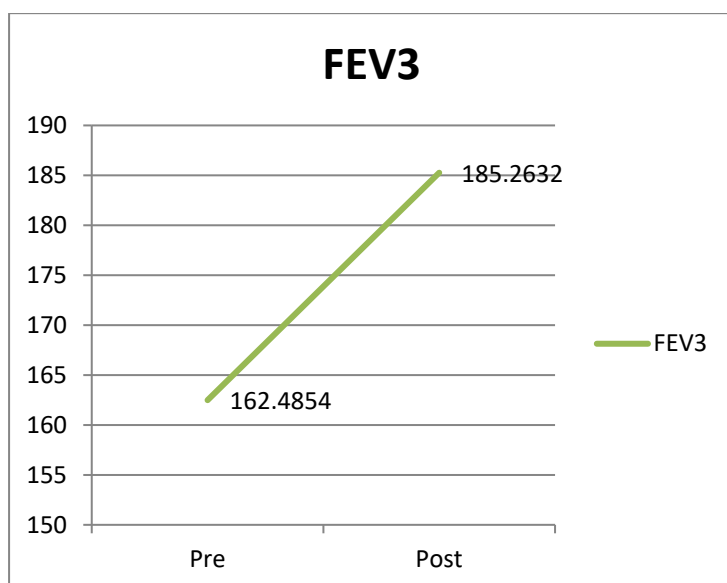
It is observed that the **pretest** of average is **158.5380** and standard deviation is **40.02091** as well as **posttest** mean is **185.9766** and standard deviation

is **46.59979**. The correlation value is **.633** and obtained is **9.552** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function of expiratory flow volume in second trial.

**Table 62. t' test for pre-post correlation of FEV3 for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
FEV <sub>3</sub>	Pre	162.4854	171	43.00949	0.649	7.602	.01
	Post	185.2632	171	49.47151			

Graph 29. Pre-post Mean difference of FEV3 for age group 7 - 9 years.

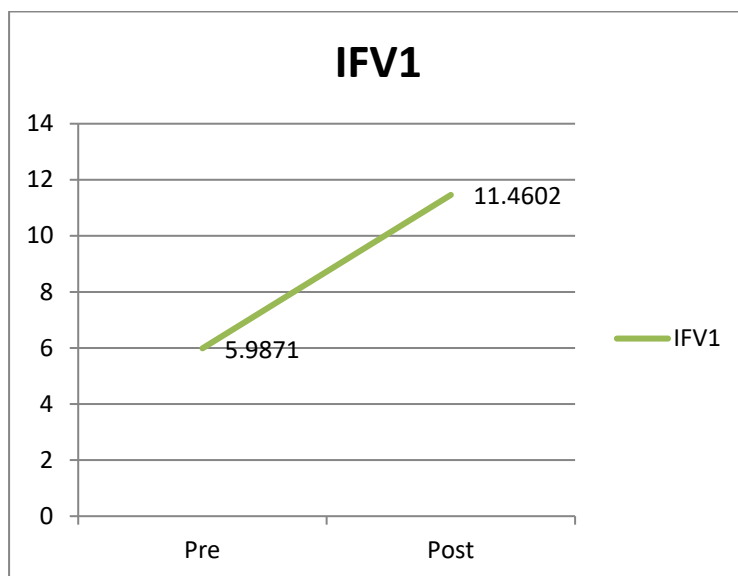


It is observed that the **pretest** of average is **162.4854** and standard deviation is **43.00949** as well as **posttest** mean is **185.2632** and standard deviation **49.47151**. The correlation value is **.649** and obtained is **7.602** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function of expiratory flow volume in third trial.

**Table 63. t' test for pre-post correlation of IFV1 for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
IFV <sub>1</sub>	Pre	5.9871	171	1.40170	0.393	28.178	.01
	Post	11.4602	171	3.31589			

**Graph 30. Pre-post Mean difference of IFV1 for age group 7 - 9 years.**

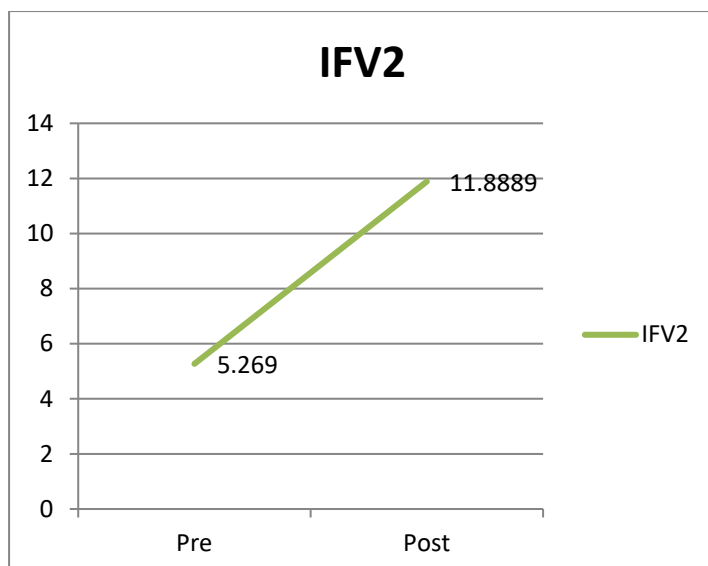


It is observed that the **pretest** of average is **5.1871** and standard deviation is **1.40170** as well as **posttest** mean is **11.7602** and standard deviation is **3.31589**. The correlation value is **.435** and obtained is **28.178** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improvise lung function inspiratory flow volume in first trial.

**Table 64. t’ test for pre-post correlation of IFV2 for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
IFV <sub>2</sub>	Pre	5.2690	171	1.52166	0.579	30.424	.01
	Post	11.8889	171	3.44101			

**Graph 31. Pre-post Mean difference of IFV2 for age group 7 - 9 years.**

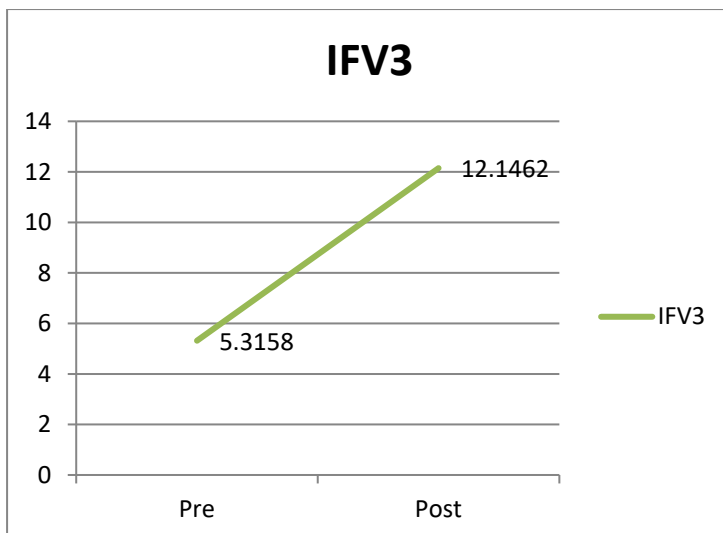


It is observed that the **pretest** of average is **5.2690** and standard deviation is **1.52166** as well as **posttest** mean is **11.8889** and standard deviation is **3.44101** the correlation value is **.579** and obtained is **30.424** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function inspiratory flow volume in second trial.

**Table 65. t' test for pre-post correlation of IFV3 for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
IFV <sub>3</sub>	Pre	5.3158	171	1.44703	0.451	26.973	.01
	Post	12.1462	171	3.70163			

**Graph 32. Pre-post Mean difference of IFV3 for age group 7 - 9 years.**



It is observed that the **pretest** of average is **5.3158** and standard deviation is **1.44903** as well as **posttest** mean is **12.1462** and standard deviation is **3.70163**. The correlation value is **.451** and obtained is **26.973** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function inspiratory flow volume in third trial.

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**Table 66. Master chart of t test pre-post co-relation of physiological parameter age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)

Ht	Pre	116.8421	171	7.75575	0.889	28.766	.01
	Post	124.0819	171	7.84139			
Wt	Pre	23.6257	171	5.28374	0.921	2.909	.01
	Post	24.1228	171	5.72015			
BMR	Pre	1115.6228	171	61.86381	0.933	9.853	.01
	Post	1133.4263	171	65.46849			
BMI	Pre	17.1569	171	2.47146	0.785	12.679	.01
	Post	15.5393	171	2.60389			
Hb.	Pre	11.7690	42	2.75446	0.861	1.502	.01
	Post	12.1500	42	1.51211			
RR	Pre	23.9415	171	3.59394	0.830	0.682	.01
	Post	23.7719	171	5.54028			
PR	Pre	101.8538	171	13.31371	0.571	0.9582	.01
	Post	102.8556	171	15.94482			
PI	Pre	3.6333	171	7.15311	0.985	2.303	.01
	Post	3.4006	171	7.46445			
Oxy	Pre	98.6842	171	5.78891	0.932	1.979	.01
	Post	99.0643	171	4.00756			
	Pre	149.1751	171	39.42073	0.474	9.383	.01
	Post	181.7544	171	48.30502			

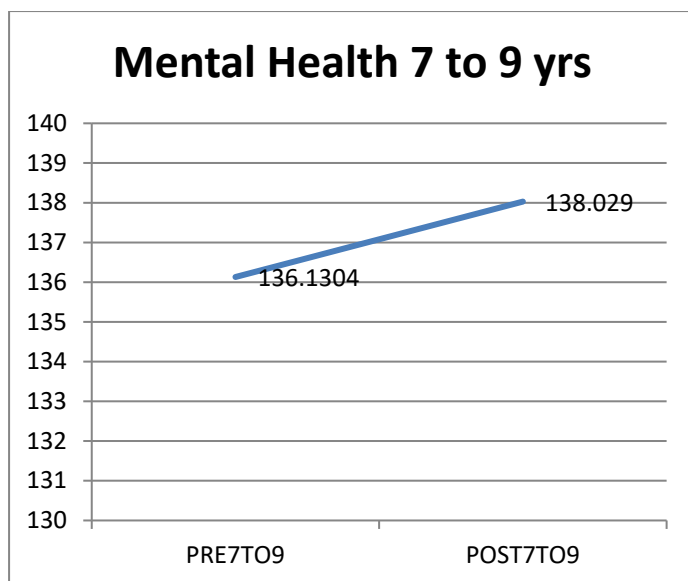


FEV <sub>1</sub>							
FEV <sub>2</sub>	Pre	158.5380	171	40.02091	0.633	9.552	.01
	Post	185.9766	171	46.59979			
FEV <sub>3</sub>	Pre	162.4854	171	43.00949	0.649	7.602	.01
	Post	185.2632	171	49.47151			
IFV <sub>1</sub>	Pre	5.9871	171	1.40170	0.393	28.178	.01
	Post	11.4602	171	3.31589			
IFV <sub>2</sub>	Pre	5.2690	171	1.52166	0.579	30.424	.01
	Post	11.8889	171	3.44101			
IFV <sub>3</sub>	Pre	5.3158	171	1.44703	0.451	26.973	.01
	Post	12.1462	171	3.70163			

The table shows significant t test and co relation of pre –post score of each of the physiological variable i.e physical parameter i.eht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .01 and oxymetry.i.e SPO<sub>2</sub> test which clearly shows significant .01 oxygen carrying capacity of children with elevated haemoglobin i.e shows clear functional positive effect on age group 7-9 years .

MENTAL HEALTH INVENTORY (M.H.I) :

Graph 33. Pre-post Mean difference of MHI for age group 7 – 9 years.



**Table 67. t’ test for pre-post correlation of MHI for the age group 7 – 9 years.**

		Mean	N	Std. Deviation	Correlation	t	Sig. 2-tailed
MHI 7 – 9 years.	Pre	136.1304	69	8.29052	.092	1.466	.147
	Post	138.0290	69	7.66768			

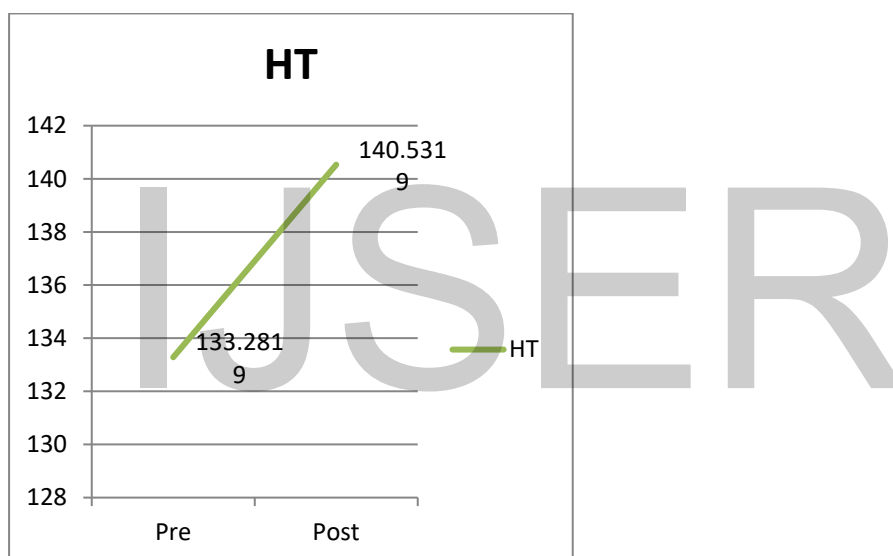
The obtained t value is 1.47 which is low and insignificant. There is no significant difference between pre and post situations in terms of mental health of the age group of 7 to 9. As per graph mental health of children have shown elevated effect which mention that continuation of this intervention can show positive result on mental health of children.

**Age group 9 – 12 years.**

**Table 68. t’ test for pre-post correlation of Height for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	133.2819	188	9.80943	0.921	25.431	.01
	Post	140.5319	188	9.90619			

Graph 34. Pre-post Mean difference of HT for age group 9-12 years.

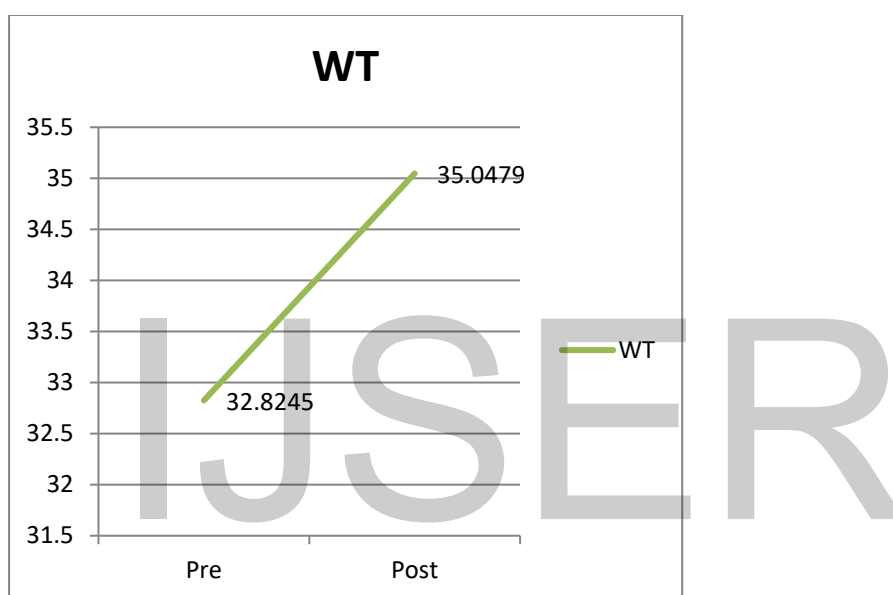


It is observed that the **pretest** of average is **133.2819** and standard deviation is **9.80943** as well as **posttest** mean is **140.5319** and standard deviation. The correlation value is **.921** and obtained is **25.431** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their height as per their requirement of age growth.

**Table 69. t' test for pre-post correlation of Weight for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Wt	Pre	32.8245	188	8.97269	0.959	11.173	.01
	Post	35.0479	188	9.58080			

**Graph 35. Pre-post Mean difference of WT for age group 9-12 years**

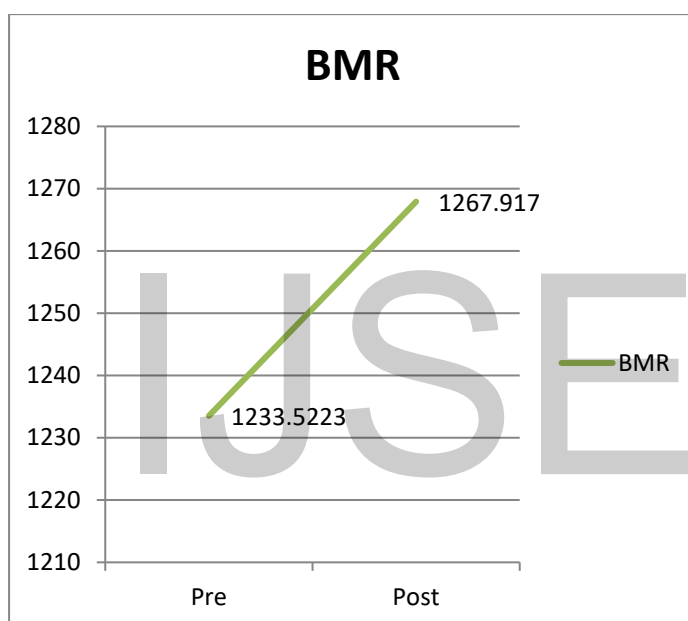


It is observed that the **pretest** of average is **32.8245**and standard deviation is **8.97269** as well as **posttest** mean is **35.0475**and standard deviation is **9.58080**. The correlation value is **.959** and obtained is**11.173****which** is significant on **.01 level** andwe can thus interpret/obtain that our intervention is helpful to students to improvise their weight as per their requirement of age and height.

**Table 70. t’ test for pre-post correlation of BMR for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
BMR	Pre	1233.5223	188	99.23069	0.964	16.790	.01
	Post	1267.9170	188	105.61965			

**Graph 36. Pre-post Mean difference of BMR for age group 9-12 years**

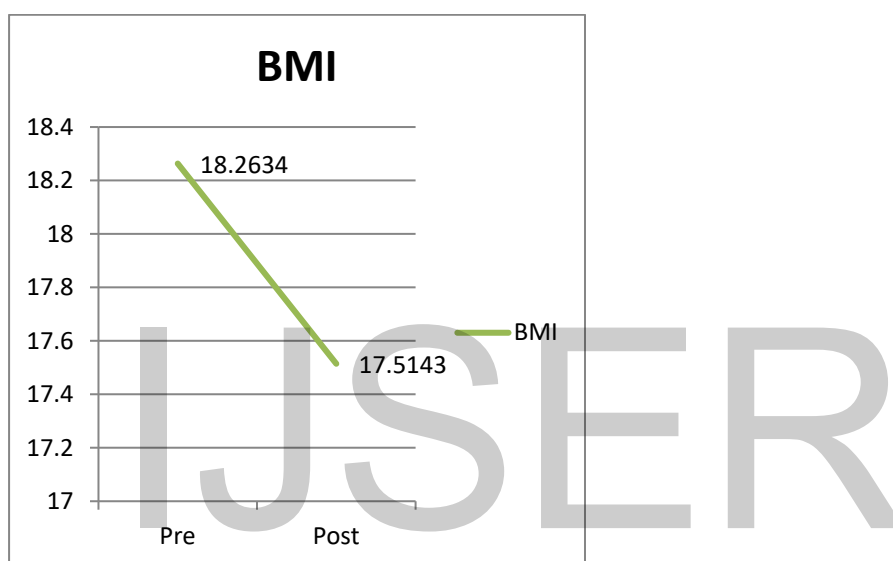


It is observed that the **pretest** of average is **1233.5223** and standard deviation is **99.23069** as well as **posttest** mean is **1267.9170** and standard deviation is **105.61965**. The correlation value is **.964** and obtained is **16.790**. This is significant on **.01** levels and we can thus interpret/obtain that our intervention is helpful to students to improve their basal metabolic rate which improves their physical fitness and energy.

**Table 71. t’ test for pre-post correlation of BMI for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
BMI	Pre	18.2634	188	3.62828	0.891	6.203	.01
	Post	17.5143	188	3.37967			

**Graph 37. Pre-post Mean difference of BMI for age group 9-12 years**



It is observed that the **pretest** of average is **18.2634** and standard deviation is **3.62828** as well as **posttest** mean is **17.5143** and standard deviation is **3.37967**. The correlation value is **.891** and obtained is **6.203**. This is significant on **.01** levels and we can thus interpret/obtain that our intervention is helpful to students to improve their basal mass index which improves their physical fitness.

**Table 72. t' test for pre-post correlation of HB for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Hb.	Pre	11.2651	188	1.08340	0.452	3.724	.01
	Post	11.8909	188	1.01789			

**Graph 38. Pre-post Mean difference of HB for age group 9-12 years**

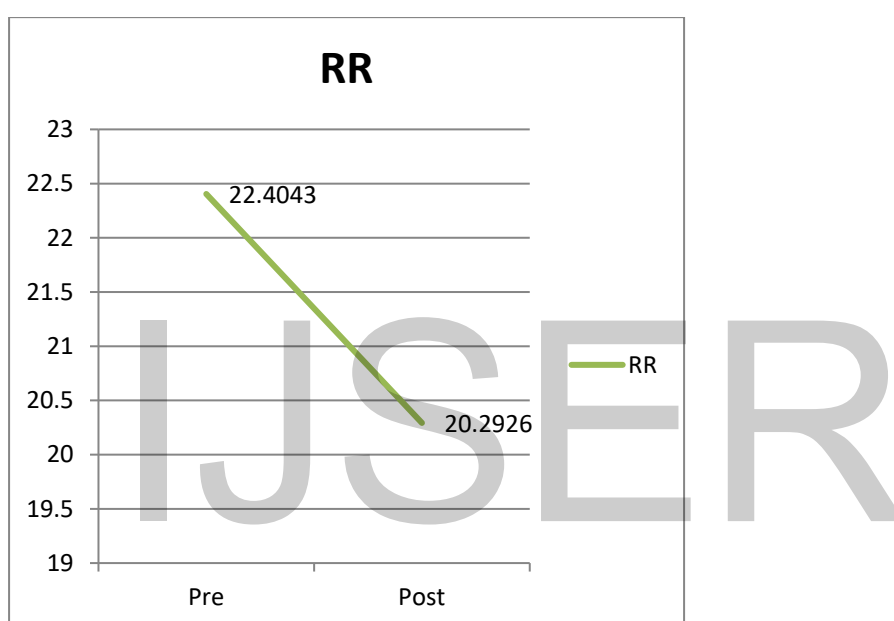


It is observed that the **pretest** of average is **11.2651** and standard deviation is **1.08340** as well as **posttest** mean is **11.8907** and standard deviation is **1.01789**. The correlation value is **.452** and obtained is **3.724**. This is significant on **.01** levels and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity by elevating haemoglobin level and improving child's respiratory function.

**Table 73. t' test for pre-post correlation of RR for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
RR	Pre	22.4043	188	2.60324	0.165	9.793	.01
	Post	20.2926	188	1.89414			

**Graph 39. Pre-post Mean difference of RR for age group 9-12 years**



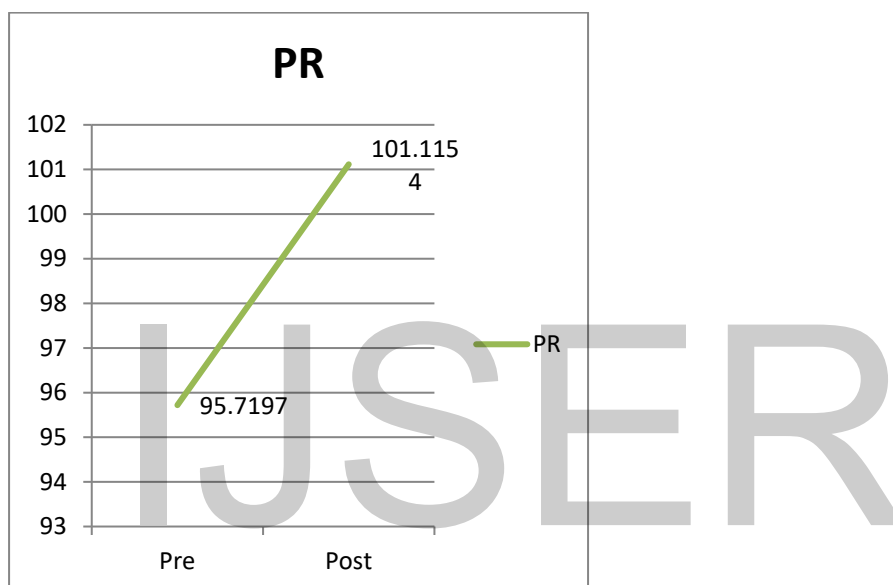
It is observed that the **pretest** of average is **22.4043**and standard deviation is **2.60324** as well as **posttest** mean is **20.2926**and standard deviation is **1.89414**. The correlation value is **.165** and obtained is **9.793**which is significant on **.01** level and we can thusinterpret/obtain that our intervention is helpful to students to improvise their vital capacity.



**Table 74. t' test for pre-post correlation of PR for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
PR	Pre	95.7197	188	15.88719	0.561	4.953	.01
	Post	101.1154	188	15.97876			

**Graph 40. Pre-post Mean difference of PR for age group 9-12 years**

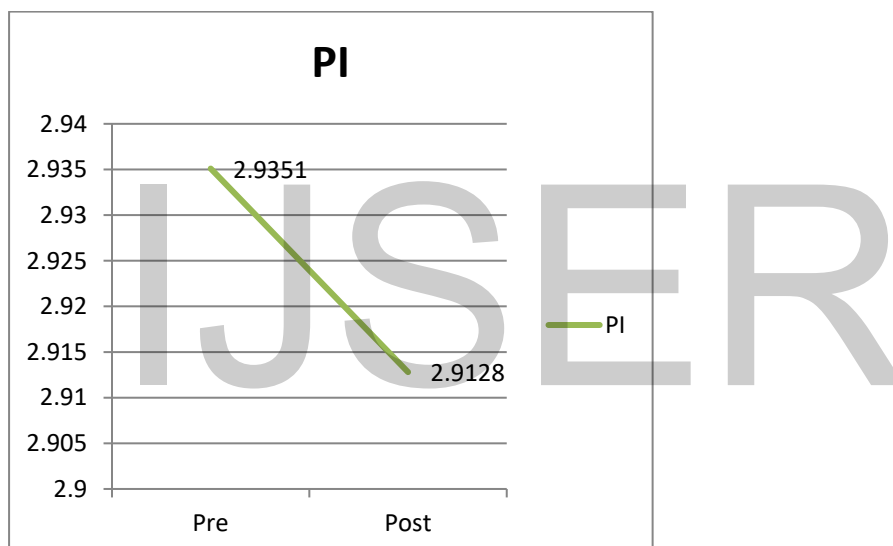


It is observed that the **pretest** of average is **95.7197** and standard deviation is **15.88719** as well as **posttest** mean is **101.1154** and standard deviation is **15.97876**. The correlation value is **.561** and obtained is **.4.953** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity.

**Table 75. t' test for pre-post correlation of PI for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
PI	Pre	2.9351	188	1.42076	0.135	0.112	.01
	Post	2.9128	188	2.52689			

**Graph 41. Pre-post Mean difference of PI for age group 9-12 years**

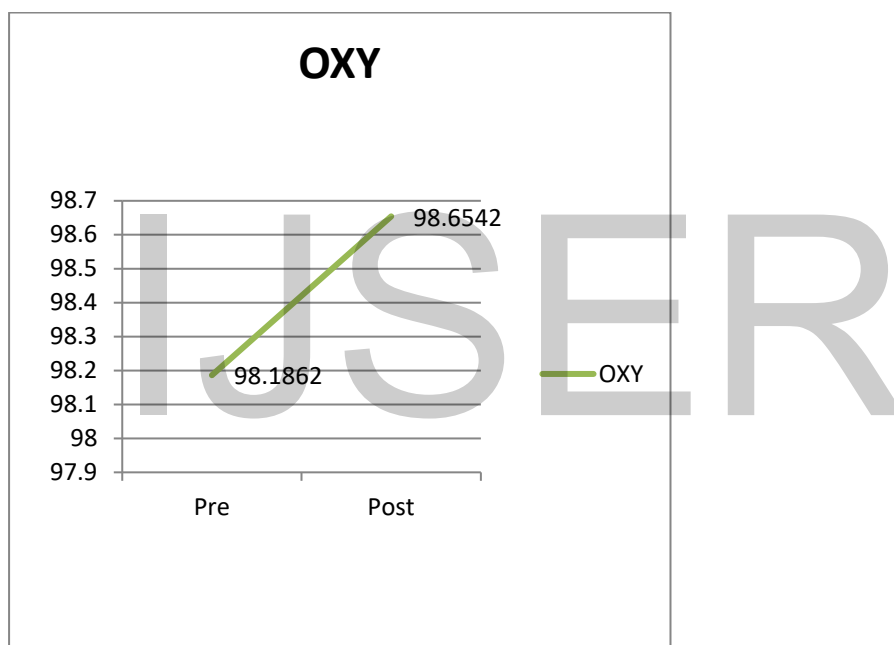


It is observed that the **pretest** of average is **2.6351**and standard deviation is **1.42076** as well as **posttest** mean is **2.9128**and standard deviation is **2.52689**. The correlation value is **.135** and obtainedis **.112**which is significant on **.01** level andwe can thus interpret that function of pulse index is not significant.

**Table 76. t’ test for pre-post correlation of OXY for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Oxy	Pre	98.1862	188	1.66191	0.017	2.702	.01
	Post	98.6542	188	1.66840			

**Graph 42. Pre-post Mean difference of OXY for age group 9-12 years**

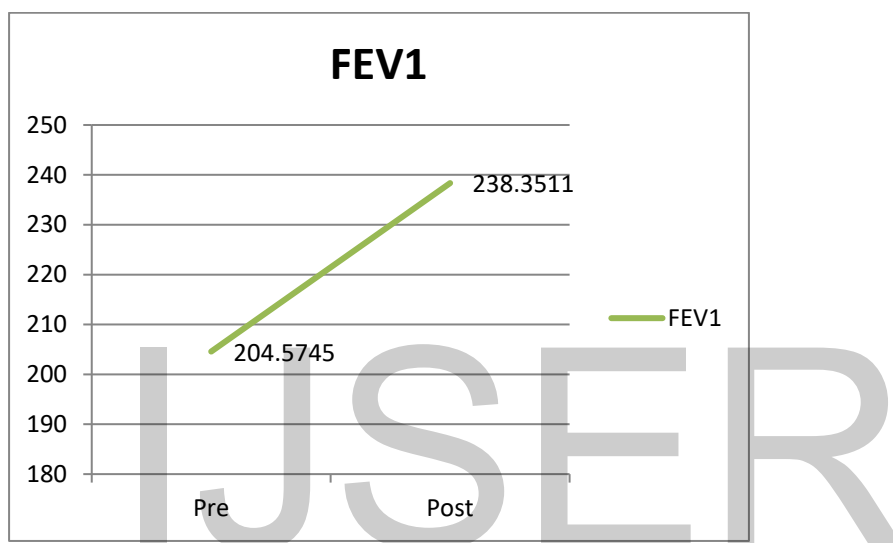


It is observed that the **pretest** of average is **98.1862** and standard deviation is **1.66191** as well as **posttest** mean is **98.6543** and standard deviation is **1.66840**. The correlation value is **.017** and obtained is **2.702** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve vital function of lungs for exchange of gases i.e oxygen O<sub>2</sub> and carbon dioxide CO<sub>2</sub>.

**Table 77. t' test for pre-post correlation of FEV1 for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
FEV <sub>1</sub>	Pre	204.5745	188	49.72738	0.712	11.455	.01
	Post	238.3511	188	55.82578			

**Graph 43. Pre-post Mean difference of FEV1 for age group 9-12 years**

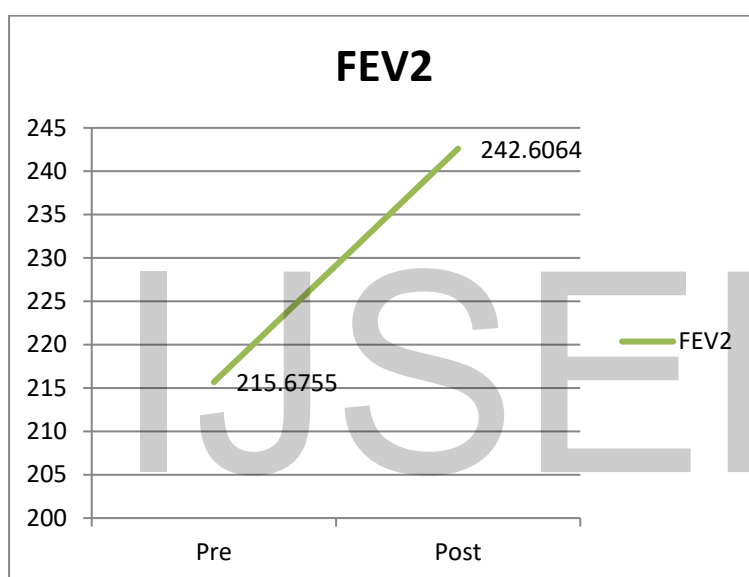


It is observed that the **pretest** of average is **204.5745** and standard deviation is **49.72738** as well as **posttest** mean is **238.3511** and standard deviation is **55.82578**. The correlation value is **.712** and obtained is **11.455** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function of expiratory flow volume in first trial.

**Table 78. t’ test for pre-post correlation of FEV2 for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
FEV <sub>2</sub>	Pre	215.6755	188	53.39306	0.719	8.883	.01
	Post	242.6064	188	57.05907			

**Graph 44. Pre-post Mean difference of FEV2 for age group 9-12 years**

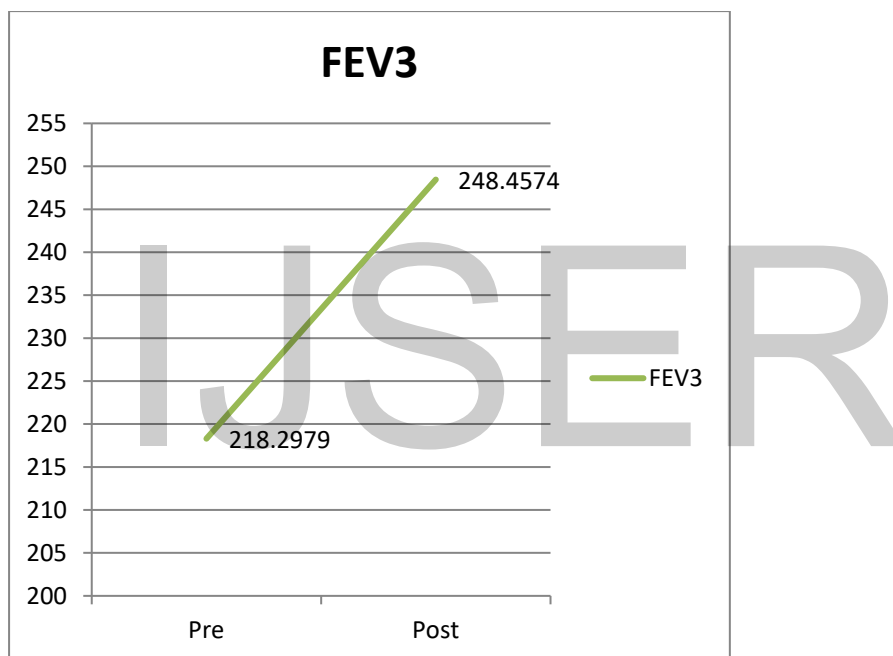


It is observed that the **pretest** of average is **215.6755** and standard deviation is **53.39306** as well as **posttest** mean is **242.6064** and standard deviation is **57.05907**. The correlation value is **.719** and obtained is **8.883** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function of expiratory flow volume in second trial.

**Table 79. t' test for pre-post correlation of FEV3 for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
FEV <sub>3</sub>	Pre	218.2979	188	55.70431	0.714	9.091	.01
	Post	248.4574	188	63.18010			

**Graph 45. Pre-post Mean difference of FEV3 for age group 9-12 years**

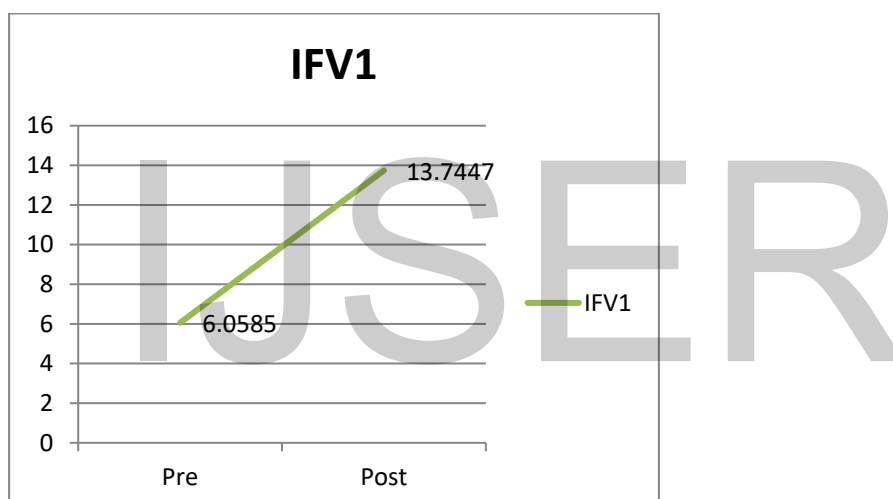


It is observed that the **pretest** of average is **218.2979** and standard deviation is **55.70431** as well as **posttest** mean is **248.4574** and standard deviation **63.18010**. The correlation value is **.714** and obtained is **9.091** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function of expiratory flow volume in third trial.

**Table 80. t’ test for pre-post correlation of IFV1 for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
IFV <sub>1</sub>	Pre	6.0585	188	1.92139	0.475	24.743	.01
	Post	13.7447	188	4.82293			

**Graph 46. Pre-post Mean difference of IFV1 for age group 9-12 years**

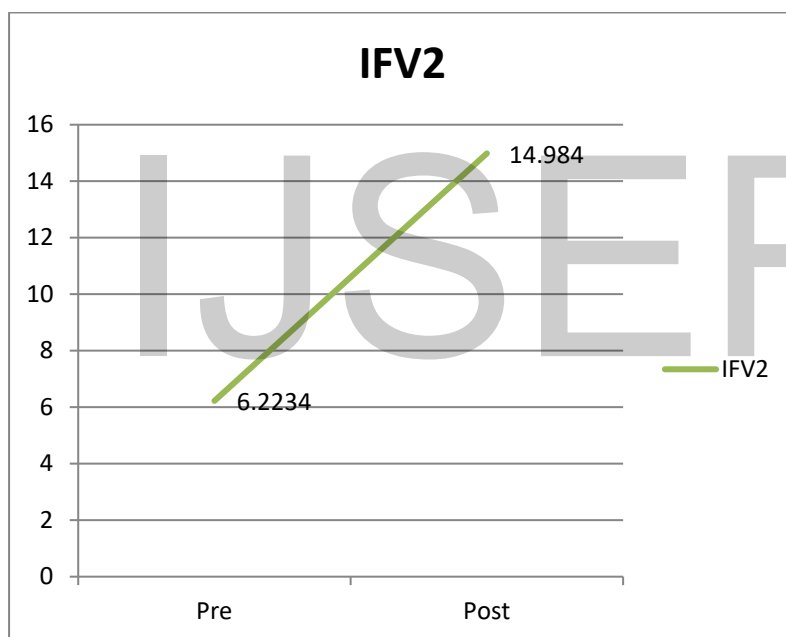


It is observed that the **pretest** of average is **6.0585** and standard deviation is **1.92139** as well as **posttest** mean is **13.7447** and standard deviation is **4.82293**. The correlation value is **.475** and obtained is **24.743** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improvise lung function inspiratory flow volume in first trial.

**Table 81. t’ test for pre-post correlation of IFV2 for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
IFV <sub>2</sub>	Pre	6.2234	188	2.08972	0.550	27.693	.01
	Post	14.9840	188	5.11940			

**Graph 47. Pre-post Mean difference of IFV2 for age group 9-12 years**



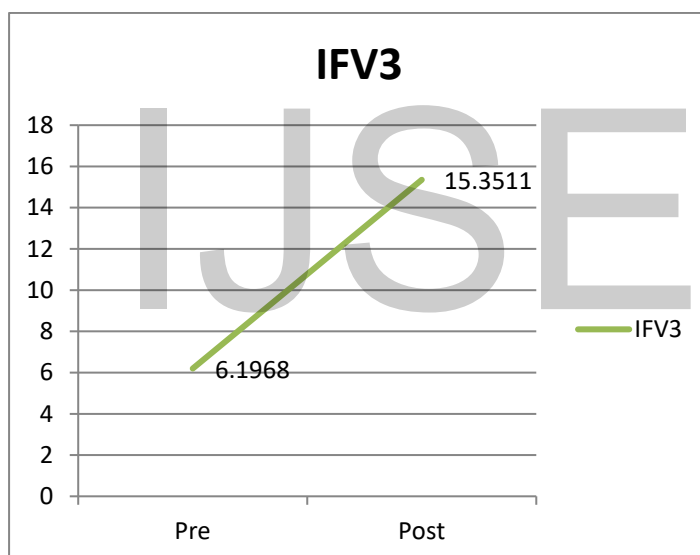
It is observed that the **pretest** of average is **6.2234** and standard deviation is **2.08972** as well as **posttest** mean is **14.9840** and standard deviation is **5.11940**. The correlation value is **.550** and obtained is **27.693** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve lung function inspiratory flow volume in second trial.



**Table 82. t’ test for pre-post correlation of IFV3 for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
IFV <sub>3</sub>	Pre	6.1968	188	2.86281	0.527	26.681	.01
	Post	15.3511	188	5.45219			

**Graph 48. Pre-post Mean difference of IFV3 for age group 9-12 years**



It is observed that the **pretest** of average is **6.1963** and standard deviation is **2.06281** as well as **posttest** mean is **15.3511** and standard deviation is **5.45219**. The correlation value is **.527** and obtained is **26.681** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improvise lung function inspiratory flow volume in third trial.

Mental health inventory (M.H.I) :

Graph 49. Pre-post Mean difference of MHI for age group 9 – 12 years.

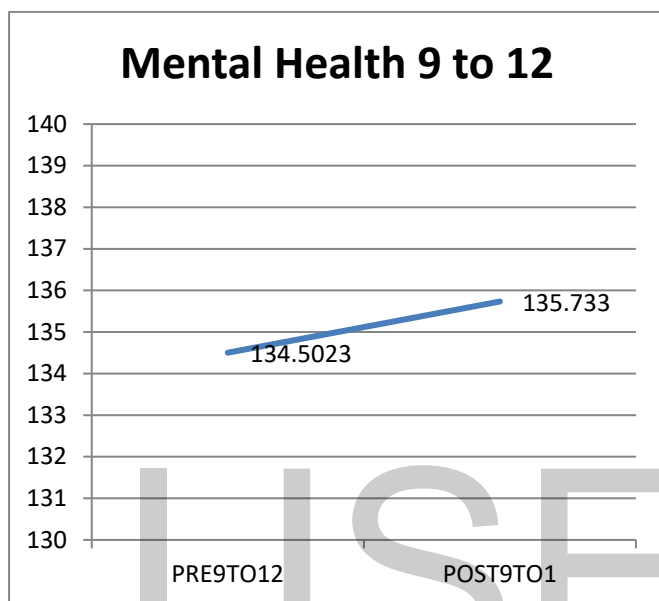


Table 83. t’ test for pre-post correlation of MHI for the age group 9 – 12 years.

		Mean	N	Std. Deviation	Correlation	t	Sig. 2-tailed
MHI 9 – 12 years.	Pre	134.5023	221	7.34267	.148	1.888	.060
	Post	135.7330	221	7.50492			

The obtained t value is 1.88 is low and insignificant. There is no significant difference between pre and post situations in terms of mental health of the age group of 9 to 12.

As per graph mental health of children have shown elevated effect which suggests that continuation of this intervention can show positive result on mental health of children.

**Table 84. Master chart of t test pre-post co-relation of physiological parameter age group 9 - 12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
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Ht	Pre	133.2819	188	9.80943	0.921	25.431	.01
	Post	140.5319	188	9.90619			
Wt	Pre	32.8245	188	8.97269	0.959	11.173	.01
	Post	35.0479	188	9.58080			
BMR	Pre	1233.5223	188	99.23069	0.964	16.790	.01
	Post	1267.9170	188	105.61965			
BMI	Pre	18.2634	188	3.62828	0.891	6.203	.01
	Post	17.5143	188	3.37967			
Hb.	Pre	11.2651	188	1.08340	0.452	3.724	.01
	Post	11.8909	188	1.01789			
RR	Pre	22.4043	188	2.60324	0.165	9.793	.01
	Post	20.2926	188	1.89414			
PR	Pre	95.7197	188	15.88719	0.561	4.953	.01
	Post	101.1154	188	15.97876			
PI	Pre	2.9351	188	1.42076	0.135	0.112	.01
	Post	2.9128	188	2.52689			
Oxy	Pre	98.1862	188	1.66191	0.017	2.702	.01
	Post	98.6542	188	1.66840			
	Pre	204.5745	188	49.72738	0.712	11.455	.01
	Post	238.3511	188	55.82578			

FEV <sub>1</sub>							
FEV <sub>2</sub>	Pre	215.6755	188	53.39306	0.719	8.883	.01
	Post	242.6064	188	57.05907			
FEV <sub>3</sub>	Pre	218.2979	188	55.70431	0.714	9.091	.01
	Post	248.4574	188	63.18010			
IFV <sub>1</sub>	Pre	6.0585	188	1.92139	0.475	24.743	.01
	Post	13.7447	188	4.82293			
IFV <sub>2</sub>	Pre	6.2234	188	2.08972	0.550	27.693	.01
	Post	14.9840	188	5.11940			
IFV <sub>3</sub>	Pre	6.1968	188	2.86281	0.527	26.681	.01
	Post	15.3511	188	5.45219			

The table shows significant t test and co relationof pre–post score of each of the physiological variable i.e physical parameter i.eht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .001 and oxymetryi.e SPO<sub>2</sub> test which clearly shows significant .01 oxygen carrying capacity of children with elevated haemoglobin i.e shows clear functional positive effect on age group 9-12 years .

**DATA OF CBC (complete blood count) :**

**Table 85. t’ test for pre-post correlation of CBC for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)

CBC	Pre	11.2811	90	1.13878	.425	5.535	.01
	Post	11.9401	90	.94595			

It is observed that the **pre-test** of average **CBC** (complete blood count) mean is **11.28** and standard deviation is **1.13** as well as **post-test** is **11.94** mean and standard deviation is **.94** the correlation value is **.425** and obtained **t** is **5.53**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their CBC (Complete blood count) as per their requirement of age growth.

Data of blood oxygen saturation (SPO<sub>2</sub>) :

**Table 86. t' test for pre-post correlation of SPO<sub>2</sub> for the age group 9 – 12 years.**

	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)
SPO <sub>2</sub>	Pre	14.9661	90	1.51041	.426	5.535	.01
	Post	15.8398	90	1.25429			

It is observed that the **pre-test** of average **SPO<sub>2</sub>**-Blood oxygen saturation mean is **14.96** and standard deviation is **1.51** as well as **post-test** is **15.83** mean and standard deviation is **1.25** the correlation value is **.426** and obtained **t** is **5.53**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their oxygen carrying capacity at cell level as per their requirement of age growth.

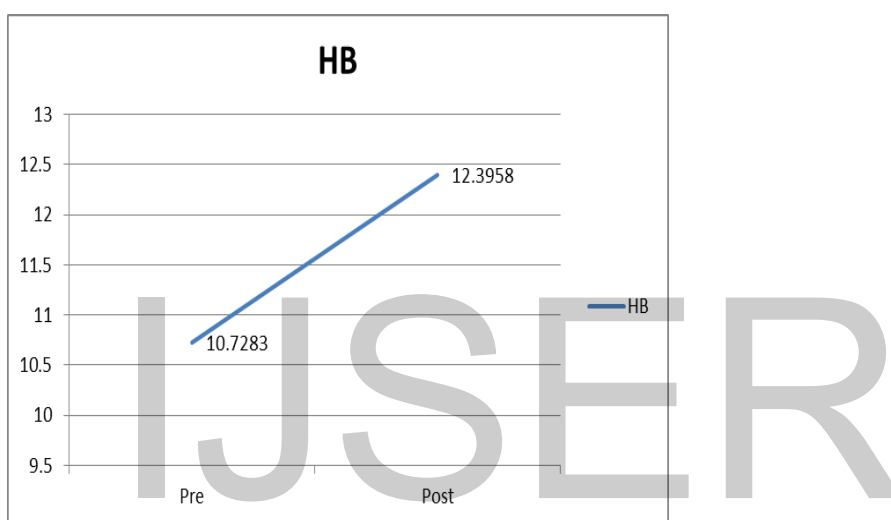
### 4.3 Results And Discussions.

#### Hypothesis 1—

**Oxygen Level Of Body Would Depend On The Haemoglobin Level Of An Individual.**

#### AGE 5-7 YEARS :

Graph 50. Pre-post Mean difference of HB for age group 5 – 7 years.



**Table 87. t’ test for pre-post correlation of Hb for the age group 5 – 7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Hb.	Pre	10.7283	12	1.64226	0.424	3.981	.01
	Post	12.3958	12	0.90260			

It is observed that the **pretest** of average is **10.7283** and standard deviation is **1.64226** as well as **posttest** mean is **12.3958** and standard deviation is **1.90260**. The correlation value is **.474** and obtained is **3.981**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity by elevating haemoglobin level and improving child's respiratory function

Graph 51. Pre-post Mean difference of RR for age group 5 – 7 years.

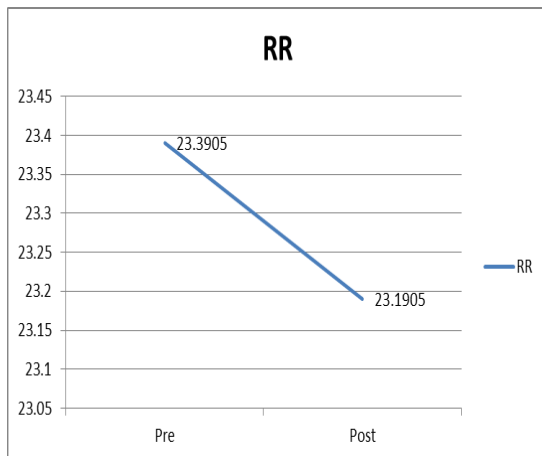


Table 88. t’ test for pre-post correlation of RR for the age group 5 – 7 years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
RR	Pre	23.3905	105	3.15465	0.309	0.676	.01
	Post	23.1905	105	1.40120			

It is observed that the **pretest** of average is **23.3905** and standard deviation is **3.15465** as well as **posttest** mean is **23.1905** and standard deviation is **1.40120**. The correlation value is **.309** and obtained is **.676** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity.



Graph 52. Pre-post Mean difference of PR for age group 5 – 7 years.

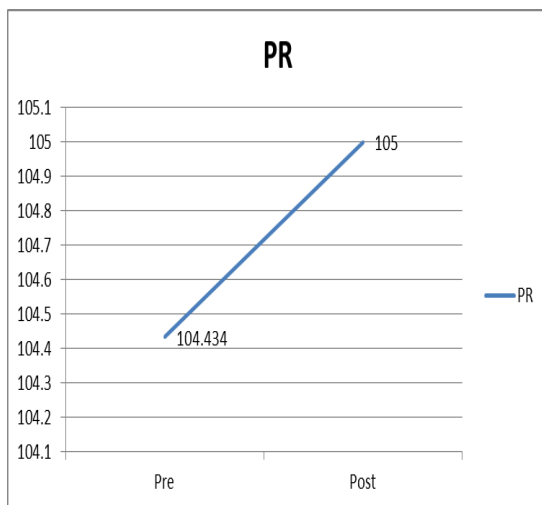


Table 89. t’ test for pre-post correlation of PR for the age group 5 – 7 years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
PR	Pre	104.4340	106	11.48914	0.258	0.403	.01
	Post	105.0000	106	12.20382			

It is observed that the **pretest** of average is **104.4340** and standard deviation is **11.48914** as well as **posttest** mean is **105.0000** and standard deviation is **12.20382**. The correlation value is **.258** and obtained is **.403** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity.

Graph 53. Pre-post Mean difference of PI for age group 5 – 7 years.

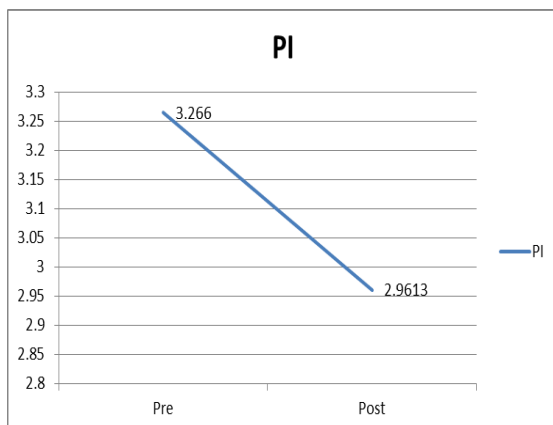


Table 90. t’ test for pre-post correlation of PI for the age group 5 – 7 years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
PI	Pre	3.2660	106	1.50908	0.591	2.122	.01
	Post	2.9613	106	1.73230			

It is observed that the **pretest** of average is **3.2660** and standard deviation is **1.50908** as well as **posttest** mean is **2.9613** and standard deviation is **1.73230**. The correlation value is **.591** and obtained is **2.122** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve vital function of pulse index.

Graph 54. Pre-post Mean difference of OXY for age group 5 – 7 years.

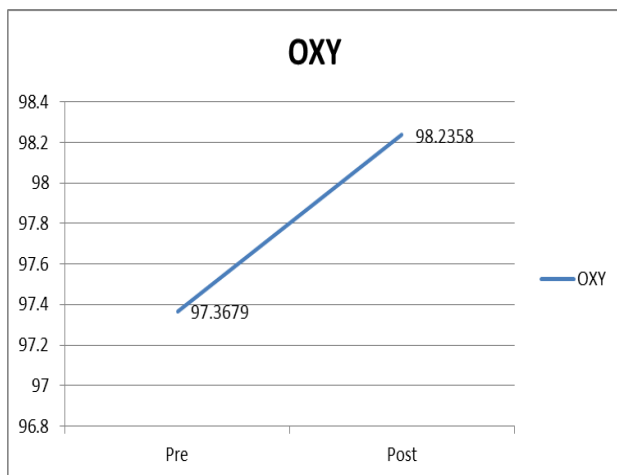


Table 91. t’ test for pre-post correlation of Oxy for the age group 5 – 7 years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Oxy	Pre	97.3679	106	3.02159	0.100	2.643	.01
	Post	98.2358	106	1.84933			

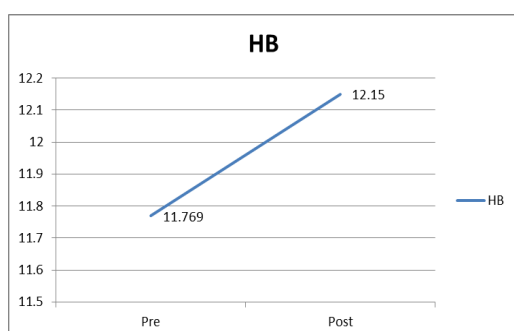
It is observed that the **pretest** of average is **97.3679**and standard deviation is **3.02159** as well as **posttest** mean is **98.2358**and standard deviation is **1.84933**. The correlation value is **.100** and obtained is **2.643**which is significant on **.01** level and we can thusinterpret/obtain that our intervention is helpful for students to improvise vitalfunction of lungs for exchange of gases i.e. oxygen O<sub>2</sub> and carbon dioxide CO<sub>2</sub>.

The above graph of age group 5-7years simultaneously shows , respiratory rate (RR), haemoglobin (Hb), Pulse rate (PR),pulse index (PI), and oxymetry graph ,which significantly indicate pre-post correlation of children aged

between 5-7 years have significantly shown rise in haemoglobin have shown correlation with parameter of respiration .

**AGE 7-9 YEARS:**

Graph 55. Pre-post Mean difference of HB for age group 7 – 9 years.



**Table 92. t' test for pre-post correlation of Hb for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Hb.	Pre	11.7690	42	2.75446	0.861	1.502	.01
	Post	12.1500	42	1.51211			

It is observed that the **pretest** of average is **11.7690** and standard deviation is **2.75446** as well as **posttest** mean is **12.1500** and standard deviation is **1.51211**. The correlation value is **.861** and obtained is **1.502**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity by elevating **haemoglobin** level and improving child's respiratory function.

Graph 56. Pre-post Mean difference of RR for age group 7 – 9 years.

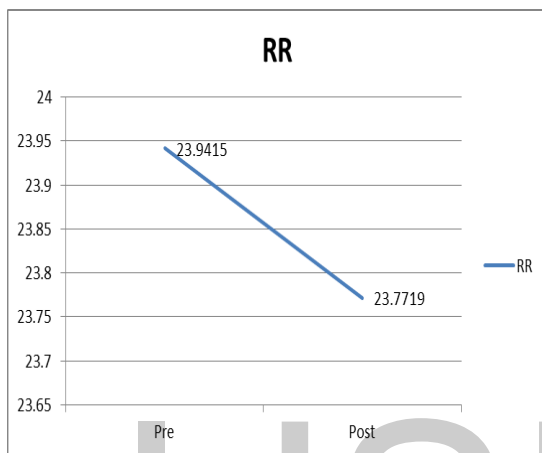


Table 93. t’ test for pre-post correlation of RR for the age group 7 – 9 years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
RR	Pre	23.9415	171	3.59394	0.830	0.682	.01
	Post	23.7719	171	5.54028			

It is observed that the **pretest** of average is **23.9415** and standard deviation is **3.57394** as well as **posttest** mean is **23.7719** and standard deviation is **5.54028**. The correlation value is **.830** and obtained is **.682** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity.

Graph 57. Pre-post Mean difference of PR for age group 7 – 9 years.

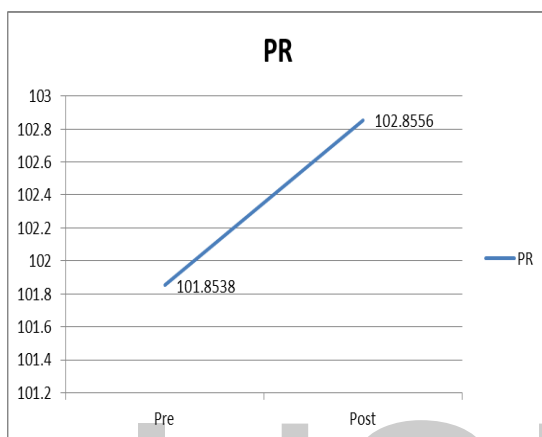


Table 94. t' test for pre-post correlation of PR for the age group 7 – 9 years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
PR	Pre	101.8538	171	13.31371	0.571	0.9582	.01
	Post	102.8556	171	15.94482			

It is observed that the **pretest** of average is **101.8538** and standard deviation is **13.31371** as well as **posttest** mean is **102.8556** and standard deviation is **15.94482**. The correlation value is **.571** and obtained is **.952** which is significant on **.01** levels and interpret that our intervention is helpful to students to improve their vital capacity.

Graph 58. Pre-post Mean difference of PI for age group 7 – 9 years.

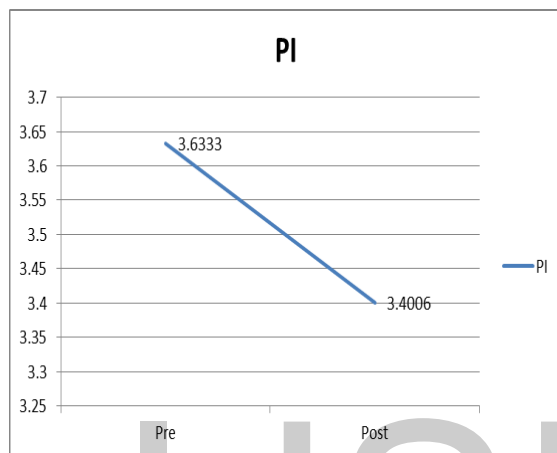


Table 95. t' test for pre-post correlation of PI for the age group 7 – 9 years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
PI	Pre	3.6333	171	7.15311	0.985	2.303	.01
	Post	3.4006	171	7.46445			

It is observed that the **pretest** of average is **3.6333** and standard deviation is **7.15311** as well as **posttest** mean is **3.4006** and standard deviation is **7.46445**. The correlation value is **.985** and obtained is **2.303** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve vital function of pulse index.

Graph 59. Pre-post Mean difference of OXY for age group 7 – 9 years.

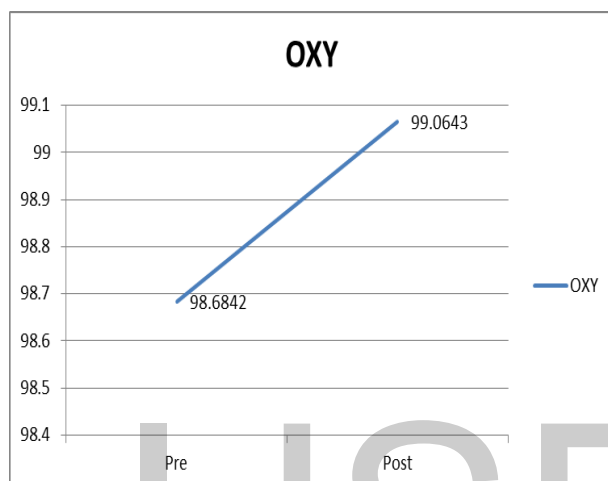


Table 96. t' test for pre-post correlation of Oxy for the age group 7 – 9 years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Oxy	Pre	98.6842	171	5.78891	0.932	1.979	.01
	Post	99.0643	171	4.00756			

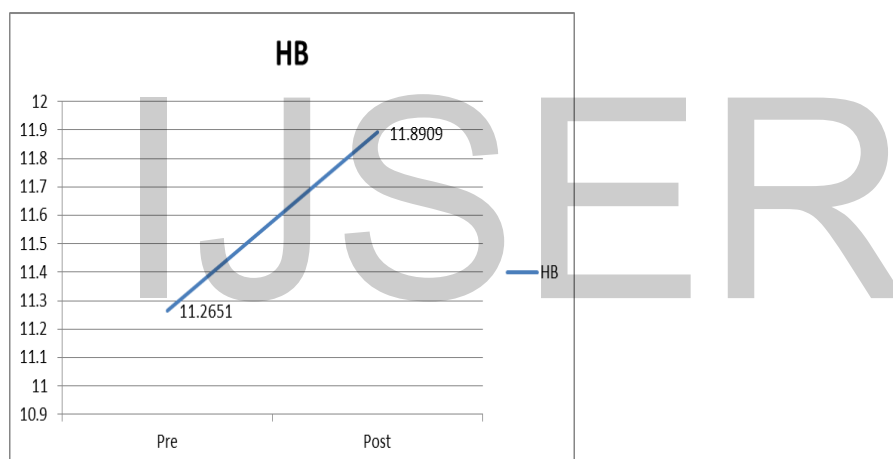
It is observed that the **pretest** of average is **98.6842** and standard deviation is **5.78891** as well as **posttest** mean is **99.0643** and standard deviation is **4.00756**. The correlation value is **.932** and obtained is **1.979** which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improve vital function of lungs for exchange of gases i.e oxygen O<sub>2</sub> and carbon dioxide CO<sub>2</sub>.



The above graph of age group 7-9 years simultaneously shows, respiratory rate (RR), haemoglobin (Hb), Pulse rate (PR), pulse index (PI), and oxymetry graph, which significantly indicate pre-post correlation of children aged between 7-9 have significantly shown rise in haemoglobin have shown correlation with parameter of respiration .

**AGE 9-12 YEARS:**

Graph 60. Pre-post Mean difference of HB for age group 9 – 12years.



**Table 97. t’ test for pre-post correlation of Hb for the age group 9 – 12years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Hb.	Pre	11.2651	188	1.08340	0.452	3.724	0.01
	Post	11.8909	188	1.01789			

It is observed that the **pretest** of average is **11.2651**and standard deviation is **1.08340** as well as **posttest** mean is **11.8907**and standard deviation is **1.01789**. The correlation value is **.452** and obtained is**3.724**.This is significant on .01 levels andwe can thus interpret/obtain that our intervention is helpful to

students to improvise their vital capacity by elevating haemoglobin level and improvising child respiratory function.

Graph 61. Pre-post Mean difference of RR for age group 9 – 12years.

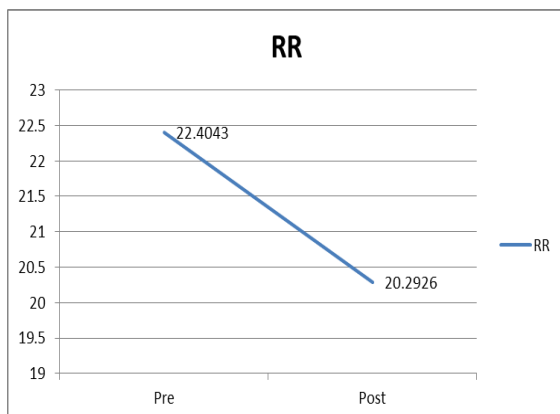


Table 98. t’ test for pre-post correlation of RR for the age group 9 – 12years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
RR	Pre	22.4043	188	2.60324	0.165	9.793	0.01
	Post	20.2926	188	1.89414			

It is observed that the **pretest** of average is **22.4043**and standard deviation is **2.60324** as well as **posttest** mean is **20.2926**and standard deviation is **1.89414**. The correlation value is **.165** and obtained is **9.793**which is significant on **.01** level andwe can thus interpret/obtain that our intervention is helpful to students to improvise their vital capacity.

Graph 62. Pre-post Mean difference of PR for age group 9 – 12years.

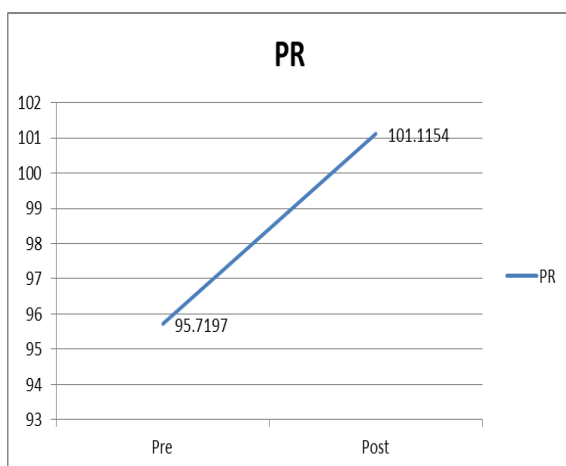


Table 99. t’ test for pre-post correlation of PR for the age group 9 – 12years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
PR	Pre	95.7197	188	15.88719	0.561	4.953	0.01
	Post	101.1154	188	15.97876			

It is observed that the **pretest** of average is **95.7197**and standard deviation is **15.88719** as well as **posttest** mean is **101.1154**and standard deviation is**15.97876**. The correlation value is **.561** and obtainedis **.4.953**which is significant on **.01** level and we can thusinterpret/obtain that our intervention is helpful to students to improvise their vital capacity.

Graph 63. Pre-post Mean difference of PI for age group 9 – 12years.

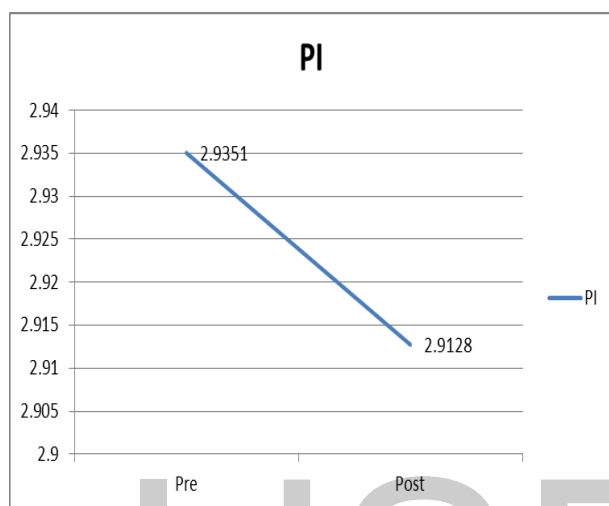


Table 100. t' test for pre-post correlation of PI for the age group 9 – 12years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
PI	Pre	2.9351	188	1.42076	0.135	0.112	.01
	Post	2.9128	188	2.52689			

It is observed that the **pretest** of average is **2.6351**and standard deviation is **1.42076** as well as **posttest** mean is **2.9128**and standard deviation is **2.52689**. The correlation value is **.135** and obtained is **.112**which is significant on **.01** level and we can thusinterpret/obtain that function of pulse index is not significant.

Graph 64. Pre-post Mean difference of OXY for age group 9 – 12years.

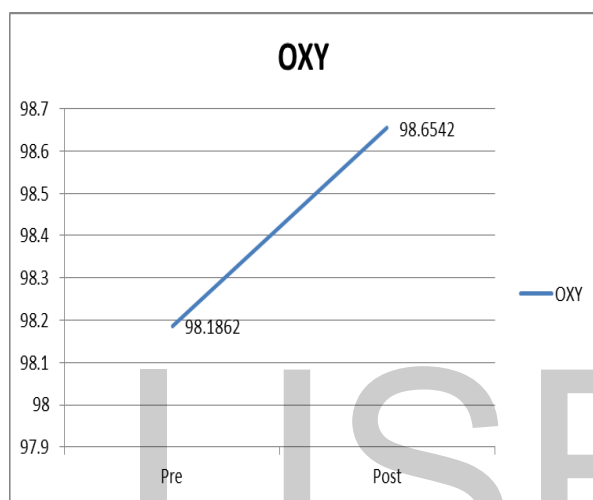


Table 101. t’ test for pre-post correlation of Oxy for the age group 9 – 12years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Oxy	Pre	98.1862	188	1.66191	0.017	2.702	.01
	Post	98.6542	188	1.66840			

It is observed that the **pretest** of average is **98.1862**and standard deviation is **1.66191** as well as **posttest** mean is **98.6543**and standard deviation is **1.66840**. The correlation value is **.017** and obtained is **2.702** **which** is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful for students to improvise vital function of lungs for exchange of gases i.e oxygen O<sub>2</sub> and carbon dioxide CO<sub>2</sub>.

Data of blood oxygen saturation (SPO<sub>2</sub>) OF AGE GROUP 5-12 years :

**Table 102. t’ test for pre-post correlation of SPO<sub>2</sub> for the age group 5 – 12years.**

	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)
SPO <sub>2</sub>	Pre	14.9661	90	1.51041	.426	5.535	.01
	Post	15.8398	90	1.25429			

It is observed that the **pre-test** of average SPO<sub>2</sub>-Blood oxygen saturation mean is **14.96** and standard deviation is **1.51** as well as **post-test** is **15.83** mean and standard deviation is **1.25**. The correlation value is **.426** and obtained **t** is **5.53**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their oxygen carrying capacity at cell level as per their requirement of age growth.

**Justifying the study :**

The role of Hb in the blood was elucidated by physiologist Claude Bernard. Each haem molecule can bind one O<sub>2</sub> molecule. Haemoglobin in blood shows oxygen carrying capacity of an individual. Good health requires an adequate amount of haemoglobin, the amount oxygen in the body tissue depends on how much haemoglobin is present in red cells, without haemoglobin tissue lack of oxygen and the heart and lungs must work harder to try to compensate, as per example, a

complete blood count shows total haemoglobin 13mg/dl. A pulse 11 mg/dl, then definitely their oxygen saturation level will be affected and ultimately it affects child growth. As per researchers result, it shows very significant pre-post correlation between haemoglobin and respiratory rate.

***Supported Research :***

Nearly two third children in Maharashtra are anaemic with over 40% having moderate or severe anaemia mainly caused by nutritional anaemia. Nutritional anaemia is not caused by a deficiency of iron, it is caused by deficiency of nutritious food. They aren't eating enough fruits and vegetables. This nutritional deficiency can lead to low haemoglobin. Study by **S. A. Mclellan**, (2004) from Oxford Journal of Medicine Vol. 4, have shown co-relation between Oxygen delivery and haemoglobin, and have mentioned that Oxygen must be transported effectively from the atmosphere to the tissues, in order to sustain normal metabolism. This review of research, specifically deals with the transport of oxygen from the lungs to non-pulmonary tissues. Low haemoglobin leads to physiological response to acute normovolaemic anaemia are increased cardiac output and increased oxygen extract ratio. He further mentioned that increased oxygen extraction by the tissue occurred during anaemia, affects the matching of oxygen delivery to oxygen supply. Contrary to this research, researchers study proved to be of ray of hope for betterment of our generation, researchers result have shown highly significant relation between pre-post intervention programme where haemoglobin levels have been significantly improved by improving other ratios of Respiratory rate (RR), Pulse rate (PR), Oxymeter, and effectively improvised childrens respiratory efficiency.

As per research published in the British Journal of Anaesthesia, (on-line ISSN 1743-1824) have concluded poor breathing pattern may mean that the carbon dioxide in blood remain high.

**Hypothesis 2 :**

**Individual Physical Growth Would Be Improvising Their Haemoglobin In The Body And Will Have Positive Effect Immunity Of An Individual.**

Table 103. Physiological Master Chart for Age Group 5 – 7 Years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	104.9623	103	7.74587	0.858	15.394	.01
	Post	110.9340	106	7.02142			
Wt	Pre	17.0745	106	3.42301	0.915	6.929	.01
	Post	18.0217	106	3.42183			
BMR	Pre	1036.3579	106	44.06111	0.933	12.755	.01
	Post	1056.1998	106	43.02615			
BMI	Pre	15.4976	106	2.46300	0.743	5.416	.01
	Post	14.6191	106	2.10342			
Hb.	Pre	10.7283	12	1.64226	0.424	3.981	.01
	Post	12.3958	12	0.90260			
RR	Pre	23.3905	105	3.15465	0.309	0.676	.01
	Post	23.1905	105	1.40120			
PR	Pre	104.4340	106	11.48914	0.258	0.403	.01
	Post	105.0000	106	12.20382			



PI	Pre	3.2660	106	1.50908	0.591	2.122	.01
	Post	2.9613	106	1.73230			
Oxy	Pre	97.3679	106	3.02159	0.100	2.643	.01
	Post	98.2358	106	1.84933			
FEV <sub>1</sub>	Pre	105.1698	106	33.70332	0.651	8.166	.01
	Post	129.1415	106	38.05296			
FEV <sub>2</sub>	Pre	108.09582	105	33.82919	0.641	7.932	.01
	Post	131.9143	105	38.23211			
FEV <sub>3</sub>	Pre	106.2857	105	34.14497	0.697	8.978	.01
	Post	132.0000	105	39.96152			
IFV <sub>1</sub>	Pre	11.0000	106	23.26821	0.435	3.037	.01
	Post	19.7264	106	30.99018			
IFV <sub>2</sub>	Pre	4.0326	92	1.01040	0.247	23.244	.01
	Post	10.6196	92	2.78474			
IFV <sub>3</sub>	Pre	4.0761	92	1.18816	0.109	21.183	.01
	Post	10.6196	92	2.84718			

The table shows significant t test and co-relation of pre –post score of each of the physiological variable i.e physical parameter i.eht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .01 and oxymetry.i.e SPO<sub>2</sub> test which clearly shows significant .009 oxygen carrying capacity of children with elevated haemoglobin i.e shows clear functional positive effect on age group 5-7 years .

Table 104. Physiological Master Chart for Age group 7 – 9 YEARS.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)

Ht	Pre	116.8421	171	7.75575	0.889	28.766	.01
	Post	124.0819	171	7.84139			
Wt	Pre	23.6257	171	5.28374	0.921	2.909	.01
	Post	24.1228	171	5.72015			
BMR	Pre	1115.6228	171	61.86381	0.933	9.853	.01
	Post	1133.4263	171	65.46849			
BMI	Pre	17.1569	171	2.47146	0.785	12.679	.01
	Post	15.5393	171	2.60389			
Hb.	Pre	11.7690	42	2.75446	0.861	1.502	.01
	Post	12.1500	42	1.51211			
RR	Pre	23.9415	171	3.59394	0.830	0.682	.01
	Post	23.7719	171	5.54028			
PR	Pre	101.8538	171	13.31371	0.571	0.9582	.01
	Post	102.8556	171	15.94482			
PI	Pre	3.6333	171	7.15311	0.985	2.303	.01
	Post	3.4006	171	7.46445			
Oxy	Pre	98.6842	171	5.78891	0.932	1.979	.01
	Post	99.0643	171	4.00756			
FEV <sub>1</sub>	Pre	149.1751	171	39.42073	0.474	9.383	.01
	Post	181.7544	171	48.30502			
FEV <sub>2</sub>	Pre	158.5380	171	40.02091	0.633	9.552	.01
	Post	185.9766	171	46.59979			
FEV <sub>3</sub>	Pre	162.4854	171	43.00949	0.649	7.602	.01
	Post	185.2632	171	49.47151			
IFV <sub>1</sub>	Pre	5.9871	171	1.40170	0.393	28.178	.01
	Post	11.4602	171	3.31589			
IFV <sub>2</sub>	Pre	5.2690	171	1.52166	0.579	30.424	.01
	Post	11.8889	171	3.44101			
IFV <sub>3</sub>	Pre	5.3158	171	1.44703	0.451	26.973	.01
	Post	12.1462	171	3.70163			

The table shows significant t test and co relation of pre –post score of each of the physiological variable i.e physical parameter i.eht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .01 and oxymetryi.e SPO<sub>2</sub> test which clearly shows significant .009 oxygen carrying capacity of children with elevated haemoglobin i.e shows clear functional positive effect on age group 7-9 years .

Table 105. Physiological Master Chart for Age group 9 – 12 YEARS.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	133.2819	188	9.80943	0.921	25.431	.01
	Post	140.5319	188	9.90619			
Wt	Pre	32.8245	188	8.97269	0.959	11.173	.01
	Post	35.0479	188	9.58080			
BMR	Pre	1233.5223	188	99.23069	0.964	16.790	.01
	Post	1267.9170	188	105.61965			
BMI	Pre	18.2634	188	3.62828	0.891	6.203	.01
	Post	17.5143	188	3.37967			
Hb.	Pre	11.2651	188	1.08340	0.452	3.724	.01
	Post	11.8909	188	1.01789			
RR	Pre	22.4043	188	2.60324	0.165	9.793	.01
	Post	20.2926	188	1.89414			
PR	Pre	95.7197	188	15.88719	0.561	4.953	.01
	Post	101.1154	188	15.97876			
PI	Pre	2.9351	188	1.42076	0.135	0.112	.01
	Post	2.9128	188	2.52689			

Oxy	Pre	98.1862	188	1.66191	0.017	2.702	.01
	Post	98.6542	188	1.66840			
FEV <sub>1</sub>	Pre	204.5745	188	49.72738	0.712	11.455	.01
	Post	238.3511	188	55.82578			
FEV <sub>2</sub>	Pre	215.6755	188	53.39306	0.719	8.883	.01
	Post	242.6064	188	57.05907			
FEV <sub>3</sub>	Pre	218.2979	188	55.70431	0.714	9.091	.01
	Post	248.4574	188	63.18010			
IFV <sub>1</sub>	Pre	6.0585	188	1.92139	0.475	24.743	.01
	Post	13.7447	188	4.82293			
IFV <sub>2</sub>	Pre	6.2234	188	2.08972	0.550	27.693	.01
	Post	14.9840	188	5.11940			
IFV <sub>3</sub>	Pre	6.1968	188	2.86281	0.527	26.681	.01
	Post	15.3511	188	5.45219			

The table shows significant t test and correlation of pre –post score of each of the physiological variable i.e physical parameter i.e ht, wt, bmr, bmi and vital capacity by showing pulmonary function i.e. Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>, FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e. IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .01 and oxymetry i.e SPO<sub>2</sub> test which clearly shows significant .009 oxygen carrying capacity of children with elevated haemoglobin i.e. shows clear functional positive effect on age group 9-12 years .

Data of blood oxygen saturation (SPO<sub>2</sub>) OF AGE GROUP 5-12 years :

**Table 106. t’ test for pre-post correlation of SPO<sub>2</sub> for the age group 5 –12 years.**

	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)
SPO <sub>2</sub>	Pre	14.9661	90	1.51041	.426	5.535	.01
	Post	15.8398	90	1.25429			

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It is observed that the **pre-test** of average **SPO<sub>2</sub>**-Blood oxygen saturation mean is **14.96** and standard deviation is **1.51** as well as **post-test** is **15.83** mean and standard deviation is **1.25**. The correlation value is **.426** and obtained **t** is **5.53**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their oxygen carrying capacity at cell level as per their requirement of age growth.

As per above, all the tables significant pre-post t test and correlation result can be drawn and as physical parameter i.e. Ht, Wt, BMR (basal metabolic rate), BMI (basal mass index) show growth of children in age group 5-12 years, in their developmental stage and shows significant result in oxygen carrying capacity. So clearly children fighting mechanism would be positively working high. Hence, hypothesis individual physical growth would be improving their haemoglobin in the body and positively affect immunity of an individual is **ACCEPTED**.

### ***JUSTIFYING THE STUDY:***

Children have to live longer, if a disease with a long latency period is manifested, living longer in this unpredictable environmental condition can be jeopardised. Immunity is innate and adaptive immunity is second in line of defence nutritional status and disciplined exercise can modulate the action of immune system. The science of nutrition and immunology is tightly linked. Nutritional deficiency can result in immunosuppression and dysregulation of immunity. Researchers study could be used in line of action for our future generation. Individual differences in age and rate of maturity are more common than similarities, even among children in the same family. As Johnson has pointed out, "The time clock which governs the developmental process in children is an individual one".

### ***Supported Research :***

Naturopathy as a preventive measure and always a choice of life science. Biochemistry and microbiologist researcher, in USA based study carried out by

**Catherine E. Ulbricht, Dawn Costa, (2012)** they examine Natural products for treatment on preventing influenza. Natural standard Research collaboration researcher found that including botanicals, minerals, and other substances produced by organisms – not only hold historical significance in various medical traditions, but they also form the basis of many modern-day drugs. On one hand, natural products are considered to be a form of complementary and alternative medicine (CAM); as with many CAM therapies, natural products are often used for primary disease prevention and treatment – or as adjuncts to conventional therapies – despite uncertain effectiveness or safety. On the other hand, natural products have given rise to numerous conventional drugs, which are widely used in mainstream medicine and compose the primary therapeutic strategies for numerous conditions (including influenza). In this review, the available evidence on the use of select natural products for the treatment or prevention of influenza is discussed. Finally, a brief overview of an established influenza drug with botanical origins is provided. Present study compare to this study provide an economical preventive lifestyle for common people and exposed them directly to nature during intervention programme.

**As Lohff B, Schaefer J, Nierhaus KH, Peters T, Schaefer T, Vos R. (1998),** reviewed Natural defences and auto protection: naturotherapy, an old concept of healing in a new perspective. Body has remarkable remperative power when left done – Recent Molecular – biological and Molecular – genetic research has shown that important cellular – based auto protective Mechanisms are mediated by heat shock proteins (HSP<sub>s</sub>) or stress-response proteins, also called react to extracellular stimuli by activating single transduction pathway which result in activating the genetic programme. The Phenomenon seen here is basically due to the body's own defense mechanism which make it capable of reacting harmful influences and allow it to stabilize a structure and or function of the body of the body. The “self-healing foxes of the body. According to **Mary Vishala, SND** Writer of “Guidance and Counseling” later childhood is a period of slow, steady and uniform growth until the changes of puberty begin. Development rate, although confirms and uniform, is very slowat this stage. Good and balanced diet is important for the child's good health growth and development. The better health and nutrition, the larger Children to be, age for age, as compared with those whose nutrition and health we poor. They develop a realize attitude they begin to accept and appropriate the hard realities of life and try adopt

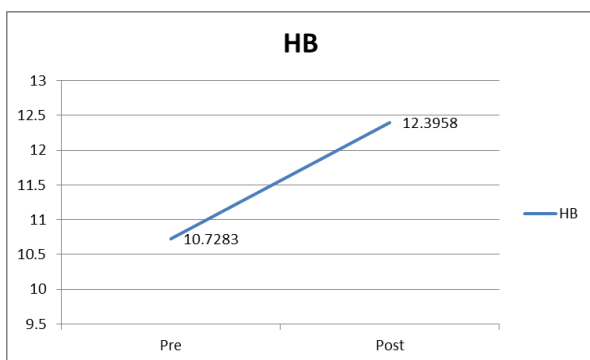
themselves to the real environment. Whereas other studies have examined children’s understanding of the role of Psychobiological labels such as tasty “Yummy” and not tasty (Yucky) foods on growth and illness (**Laxshmi Raman – Child development Research Vol. 2011, Article ID 638239**).

**Hypothesis 3 :**

**Haemoglobin Level In An Individual Would Be A Parameter Of An Individuals LifeStyle.**

**AGE GROUP 5-7 YEARS:**

Graph 65. Pre-post Mean difference of HB for age group 5 – 7years.



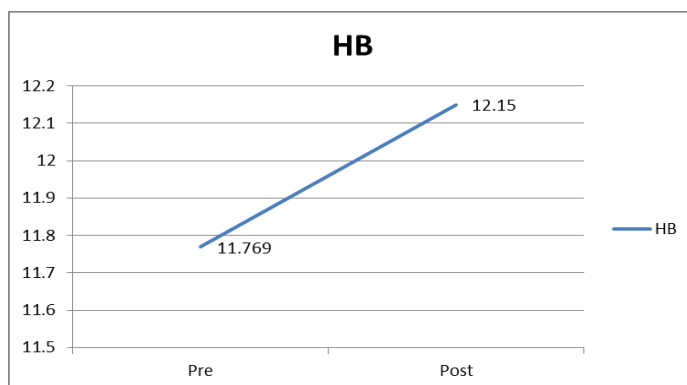
**Table 107. t’ test for pre-post correlation of HB for the age group 5 –7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Hb.	Pre	10.7283	12	1.64226	0.424	3.981	0.01
	Post	12.3958	12	0.90260			

It is observed that the **pretest** of average is **10.7283** and standard deviation is **1.64226** as well as **posttest** mean is **12.3958** and standard deviation is **1.90260**. The correlation value is **.474** and obtained **t** is **3.981**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improvise their vital capacity by elevating haemoglobin level and improvising child’s respiratory function.

**AGE 7-9 YEARS :**

Graph 66. Pre-post Mean difference of HB for age group 7 – 9 years.



**Table 108. t’ test for pre-post correlation of Hb for the age group 7 – 9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
	Pre	11.7690	42	2.75446	0.861	1.502	



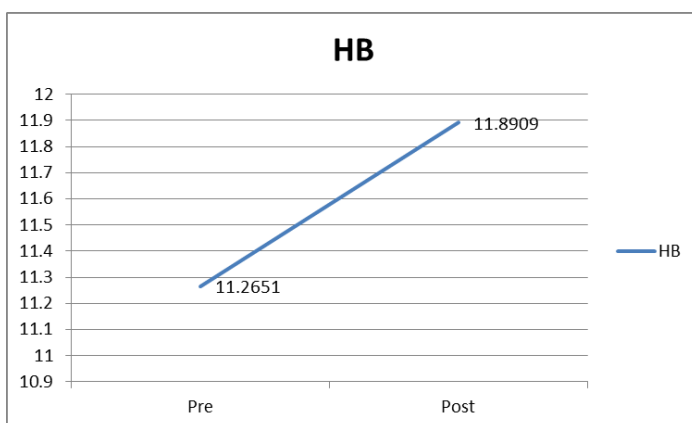
Hb.	Post	12.1500	42	1.51211			.01
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It is observed that the **pretest** of average is **11.7690** and standard deviation is **2.75446** as well as **posttest** mean is **12.1500** and standard deviation is **1.51211**. The correlation value is **.861** and obtained is **1.502**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity by elevating **haemoglobin** level and improving child's respiratory function.

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**AGE 9-12 YEARS :**

Graph 67. Pre-post Mean difference of HB for age group 9 – 12years.



**Table 109. t' test for pre-post correlation of Hb for the age group 9 –12 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Hb.	Pre	11.2651	188	1.08340	0.452	3.724	.01
	Post	11.8909	188	1.01789			

It is observed that the **pretest** of average is **11.2651** and standard deviation is **1.08340** as well as **posttest** mean is **11.8907** and standard deviation is **1.01789**. The correlation value is **.452** and obtained is **3.724**. This is significant on **.01** levels and we can thus interpret/obtain that our intervention is helpful to students to improvise their vital capacity by elevating haemoglobin level and improvising child’s respiratory function.



**DATA OF CBC (complete blood count) :**

Complete Blood Count (CBC) :

**Table 110. t’ test for pre-post correlation of CBC for the age group 5 –12 years.**

	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)
CBC	Pre	11.2811	90	1.13878	.425	5.535	.01
	Post	11.9401	90	.94595			

It is observed that the **pre-test** of average **CBC** (complete blood count) mean is **11.28** and standard deviation is **1.13** as well as **post-test** is **11.94** mean and standard deviation is **.94** the correlation value is **.425** and obtained **t** is **5.53**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their CBC (Complete blood count) as per their requirement of age growth.

Data of blood oxygen saturation (SPO<sub>2</sub>) :

**Table 111. t' test for pre-post correlation of SPO<sub>2</sub> for the age group 5 –12 years.**

	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)
SPO <sub>2</sub>	Pre	14.9661	90	1.51041	.426	5.535	.01
	Post	15.8398	90	1.25429			

It is observed that the **pre-test** of average **SPO<sub>2</sub>**-Blood oxygen saturation mean is **14.96** and standard deviation is **1.51** as well as **post-test** is **15.83** mean and standard deviation is **1.25** the correlation value is **.426** and obtained **t** is **5.53**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their oxygen carrying capacity at cell level as per their requirement of age growth.

***Justifying the study :***

Intervention based research programme had been conducted in M.K.E.S. English School, participating students were from age groups 5-12 years. pre-test physical

parameter has been obtained and haemoglobin test report collected as per their pre report, we can observe from above data that their haemoglobin was significantly low, as researcher has suggested minimum economical diet, after (post) intervention haemoglobin level was significantly high and pre- post correlation are most high i.e for age 9-12 years is .452, age 7-9 is .861, and age 5-7 is .424. This result clearly signifies socio-economical deteriorated lifestyle and post intervention shows their home environment significantly improved as it reflects in their physical parameter, which has also shown remarkably high pre-post correlation.

***Supported Study :***

**Diego G Peroni , Beatrice Bonomo ,et.al (2012)** How changes in nutrition have influenced the development of allergic diseases in childhood research on importance of nutrition in childhood has been carried out in Italy ,The increasing prevalence of allergic diseases in childhood in the last decades could be linked to concomitant dietary changes, especially with the modified and lower consumption of fruit, vegetables and minerals. The consumption of these foods by pregnant women and children in the first years of life seems to be associated with a reduced risk of asthma and related symptoms. Foods that can prevent the development of wheezing through their antioxidant effects contain vitamin C and selenium; blood levels of these elements correlate negatively with the risk of wheezing. Intake of vitamin E during pregnancy also appears to be correlated with a reduced risk of wheezing for the unborn child. Similarly, low intake of zinc and carotenoids by pregnant women is associated with an increased risk of wheezing and asthma in childhood. Fiber also has anti-inflammatory properties and protective effects against allergic diseases such as atopic dermatitis and asthma. The consumption of fat influences the development of the airways. Populations in Western countries have increased their consumption of n-6 PUFAs and, in parallel, reduced n-3 PUFAs. This has led to decreased production of PGE<sub>2</sub>, which is believed to have a protective effect against inflammation of the airways. Conflicting hypotheses also concern vitamin D; both an excess and a deficiency of vitamin D, in fact, have been associated with an increased risk of asthma. Further studies on the role of these substances are necessary before any conclusions can be drawn on a clinical level.

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**Hypothesis 4 ;**

**Every Human Would Have An Individual Physical Parameter Related To Environment.**

Study has been taken up on age group 5-12 years and its individual human growth period as researcher has segregated participants based on their age to form 3 groups between ages 5-7 ( early child hood) .7-9 (later child hood)and 9-12 ( pre puberty age). Researcher has carried out physiological and psychological test on these groups.

Table 112. Secondary Attendance of Physiological - Post data.

Section	Class	Total no. of Student	Post Physiological data	
Primary Age 5 – 7 Years.	Sr. Kg. A	46	22	0
	Sr. Kg. B	30	12	0
	Std 1A	40	36	1
	Std 1B	41	34	0
		157	104	1
Age 7 – 9 Years.	Std 2	72	59	1
	Std 3	64	48	4
	Std 4	58	53	2
		194	160	8
Secondary Age 9 – 12 years	Std 5	73	60	0
	Std 6	72	58	4
	Std 7	79	69	0
		224	187	4
		575	451	13

Total no. of students- 575

Total no. of students present for secondary physiological data 451

No. of students who attended only post physiological test were **13**

Numbers of data obtained during Second stage of intervention of physiological test, out of 575 students were 451. Numbers of students who attempted only post mid-test were 13.

Table 113. Physiological Master Chart for Age group 5 – 7 Years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	104.9623	103	7.74587	0.858	15.394	.01
	Post	110.9340	106	7.02142			
Wt	Pre	17.0745	106	3.42301	0.915	6.929	.01
	Post	18.0217	106	3.42183			
BMR	Pre	1036.3579	106	44.06111	0.933	12.755	.01
	Post	1056.1998	106	43.02615			
BMI	Pre	15.4976	106	2.46300	0.743	5.416	.01
	Post	14.6191	106	2.10342			
Hb.	Pre	10.7283	12	1.64226	0.424	3.981	.01
	Post	12.3958	12	0.90260			
RR	Pre	23.3905	105	3.15465	0.309	0.676	.01
	Post	23.1905	105	1.40120			
PR	Pre	104.4340	106	11.48914	0.258	0.403	.01
	Post	105.0000	106	12.20382			
PI	Pre	3.2660	106	1.50908	0.591	2.122	.01
	Post	2.9613	106	1.73230			
Oxy	Pre	97.3679	106	3.02159	0.100	2.643	.01
	Post	98.2358	106	1.84933			
FEV <sub>1</sub>	Pre	105.1698	106	33.70332	0.651	8.166	.01
	Post	129.1415	106	38.05296			
FEV <sub>2</sub>	Pre	108.09582	105	33.82919	0.641	7.932	.01
	Post	131.9143	105	38.23211			

FEV <sub>3</sub>	Pre	106.2857	105	34.14497	0.697	8.978	.01
	Post	132.0000	105	39.96152			
IFV <sub>1</sub>	Pre	11.0000	106	23.26821	0.435	3.037	.01
	Post	19.7264	106	30.99018			
IFV <sub>2</sub>	Pre	4.0326	92	1.01040	0.247	23.244	.01
	Post	10.6196	92	2.78474			
IFV <sub>3</sub>	Pre	4.0761	92	1.18816	0.109	21.183	.01
	Post	10.6196	92	2.84718			

The table shows significant t test and co-relation of pre –post score of each of the physiological variable i.e physical parameter i.e. ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>, FEV<sub>3</sub> at .001 significant and inspiratory flow volume i.e IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .001 and oxymetry i.e SPO<sub>2</sub> test which clearly shows significant .009 oxygen carrying capacity of children with elevated haemoglobin i.e shows clear functional positive effect on age group 5-7 years .

Table 114. Physiological Master Chart for Age group 7 – 9 YEARS.

	Test	Mean	N	Std. Deviation	Co - relation	t	Significance ( 2 – tailed)
Ht	Pre	116.8421	171	7.75575	0.889	28.766	.01
	Post	124.0819	171	7.84139			
Wt	Pre	23.6257	171	5.28374	0.921	2.909	.01
	Post	24.1228	171	5.72015			
BMR	Pre	1115.6228	171	61.86381	0.933	9.853	.01
	Post	1133.4263	171	65.46849			
BMI	Pre	17.1569	171	2.47146	0.785	12.679	.01
	Post	15.5393	171	2.60389			



Hb.	Pre	11.7690	42	2.75446	0.861	1.502	.01
	Post	12.1500	42	1.51211			
RR	Pre	23.9415	171	3.59394	0.830	0.682	.01
	Post	23.7719	171	5.54028			
PR	Pre	101.8538	171	13.31371	0.571	0.9582	.01
	Post	102.8556	171	15.94482			
PI	Pre	3.6333	171	7.15311	0.985	2.303	.01
	Post	3.4006	171	7.46445			
Oxy	Pre	98.6842	171	5.78891	0.932	1.979	.01
	Post	99.0643	171	4.00756			
FEV <sub>1</sub>	Pre	149.1751	171	39.42073	0.474	9.383	.01
	Post	181.7544	171	48.30502			
FEV <sub>2</sub>	Pre	158.5380	171	40.02091	0.633	9.552	.01
	Post	185.9766	171	46.59979			
FEV <sub>3</sub>	Pre	162.4854	171	43.00949	0.649	7.602	.01
	Post	185.2632	171	49.47151			
IFV <sub>1</sub>	Pre	5.9871	171	1.40170	0.393	28.178	.01
	Post	11.4602	171	3.31589			
IFV <sub>2</sub>	Pre	5.2690	171	1.52166	0.579	30.424	.01
	Post	11.8889	171	3.44101			
IFV <sub>3</sub>	Pre	5.3158	171	1.44703	0.451	26.973	.01
	Post	12.1462	171	3.70163			

The table shows significant t test and co relation of pre –post score of each of the physiological variable i.e physical parameter i.e.ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .001 and oxymetryi.e SPO<sub>2</sub> test which clearly shows significant .01 oxygen carrying capacity of children with elevated haemoglobin i.e shows clear functional positive effect on age group 7-9 years .

Table 115. Physiological Master Chart for Age group 9 – 12 YEARS.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	133.2819	188	9.80943	0.921	25.431	.01
	Post	140.5319	188	9.90619			
Wt	Pre	32.8245	188	8.97269	0.959	11.173	.01
	Post	35.0479	188	9.58080			
BMR	Pre	1233.5223	188	99.23069	0.964	16.790	.01
	Post	1267.9170	188	105.61965			
BMI	Pre	18.2634	188	3.62828	0.891	6.203	.01
	Post	17.5143	188	3.37967			
Hb.	Pre	11.2651	188	1.08340	0.452	3.724	.01
	Post	11.8909	188	1.01789			
RR	Pre	22.4043	188	2.60324	0.165	9.793	.01
	Post	20.2926	188	1.89414			
PR	Pre	95.7197	188	15.88719	0.561	4.953	.01
	Post	101.1154	188	15.97876			
PI	Pre	2.9351	188	1.42076	0.135	0.112	.01
	Post	2.9128	188	2.52689			
Oxy	Pre	98.1862	188	1.66191	0.017	2.702	.01
	Post	98.6542	188	1.66840			
FEV <sub>1</sub>	Pre	204.5745	188	49.72738	0.712	11.455	.01
	Post	238.3511	188	55.82578			
FEV <sub>2</sub>	Pre	215.6755	188	53.39306	0.719	8.883	.01
	Post	242.6064	188	57.05907			
FEV <sub>3</sub>	Pre	218.2979	188	55.70431	0.714	9.091	.01
	Post	248.4574	188	63.18010			
IFV <sub>1</sub>	Pre	6.0585	188	1.92139	0.475	24.743	.01
	Post	13.7447	188	4.82293			
IFV <sub>2</sub>	Pre	6.2234	188	2.08972	0.550	27.693	.01
	Post	14.9840	188	5.11940			
	Pre	6.1968	188	2.86281	0.527	26.681	

IFV <sub>3</sub>	Post	15.3511	188	5.45219			.01
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The table shows significant t test and co relationof pre –post score of each of the physiological variable i.e physical parameter i.e.ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .001 and oxymetryi.e SPO<sub>2</sub> test which clearly shows significant .01 oxygen carrying capacity of children with elevated haemoglobin i.e shows clear functional positive effect on age group 9-12 years .

As shown in table fifteen, physical parameter has been studied.Intervention data in pre-post correlation study has been collected in three stages that is exploratory stage, summarized stageand confirmatory stage. In the above table master chart of physical parameter of 575 children is presented as per this data and their outcome this hypothesis is **ACCEPTED**.

#### **Justification of the study :**

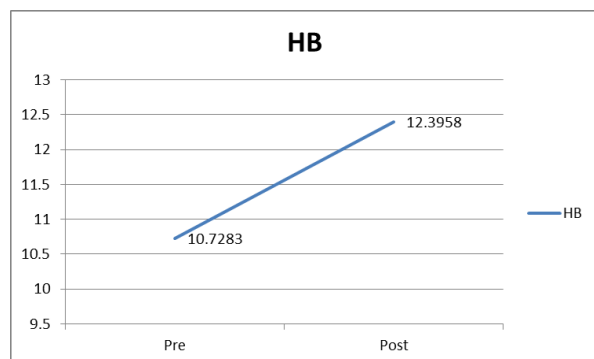
As per collected data of 575 children, this intervention has incorporated parents, teacher and their neighbours.Researcher has interacted and suggested *suryanamashkar,pranayama* and recommended diet –plan.The results of which we can see in students. Shown are fifteen physical parameter with pulmonary functional test and haemoglobin test shows their vital capacity, as their age wise correlation pre-post study justifies the hypothesis that every individual could be having individual parameter related to environment.

#### **Hypothesis 5:**

**Right Pattern Of Diet Could Be Related To Increased Haemoglobin Level In The Body.**

**AGE GROUP 5-7 YEARS:**

Graph 68. Pre-post Mean difference of HB for age group 5 – 7 years.



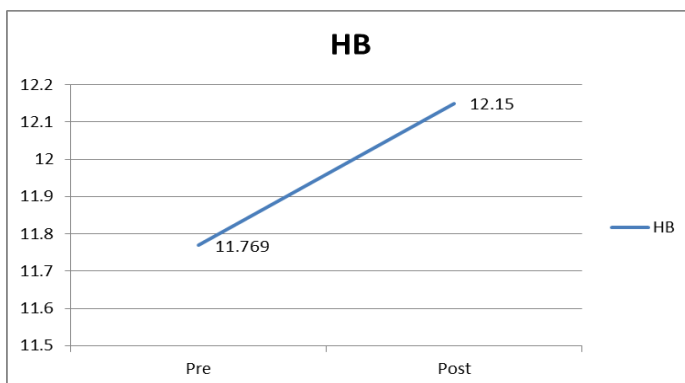
**Table 116. t’ test for pre-post correlation ofHb for the age group 5 –7 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Hb.	Pre	10.7283	12	1.64226	0.424	3.981	.01
	Post	12.3958	12	0.90260			

It is observed that the **pretest** of average is**10.7283** and standard deviation is **1.64226** as well as **posttest** mean is **12.3958** and standard deviation is **1.90260**. The correlation value is **.474** and obtained **t** is**3.981**.Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improvise their vital capacity by elevating haemoglobin level and improvising child’s respiratory function.

**AGE 7-9 YEARS :**

Graph 69. Pre-post Mean difference of HB for age group 7 - 9years.



**Table 117. t’ test for pre-post correlation ofHb for the age group 7 –9 years.**

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Hb.	Pre	11.7690	42	2.75446	0.861	1.502	.01
	Post	12.1500	42	1.51211			

It is observed that the **pretest** of average is **11.7690** and standard deviation is **2.75446** as well as **posttest** mean is **12.1500** and standard deviation is **1.51211**. The correlation value is **.861** and obtained is **1.502**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their vital capacity by elevating **haemoglobin** level and improving child’s respiratory function.

**AGE 9-12 YEARS :**

Graph 70. Pre-post Mean difference of HB for age group 9 – 12years.

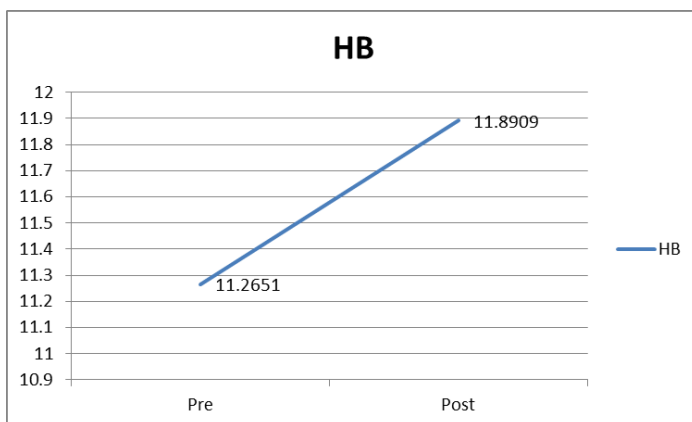


Table 118. t’ test for pre-post correlation ofHb for the age group 9 –12 years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Hb.	Pre	11.2651	188	1.08340	0.452	3.724	0.01
	Post	11.8909	188	1.01789			

It is observed that the **pretest** of average is **11.2651**and standard deviation is **1.08340** as well as **posttest** mean is**11.8907**and standard deviation is **1.01789**. The correlation value is **.452** and obtained is**3.724**.This is significant on **.01** levels and we can thusinterpret/obtain that our intervention is helpful to students to improvise their vital capacity by elevating haemoglobin level and improvising child’s respiratory function.

**DATA OF CBC (complete blood count) :**

Complete Blood Count (CBC) :

**Table 119. t’ test for pre-post correlation of CBC for the age group 9 –12 years.**

	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)
CBC	Pre	11.2811	90	1.13878	.425	5.535	.01
	Post	11.9401	90	.94595			

It is observed that the **pre-test** of average **CBC** (complete blood count) mean is **11.28** and standard deviation is **1.13** as well as **post-test** is **11.94** mean and standard deviation is **.94** the correlation value is **.425** and obtained **t** is **5.53**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their CBC (Complete blood count) as per their requirement of age growth.

Data of blood oxygen saturation (SPO<sub>2</sub>) :

**Table 120. t’ test for pre-post correlation of SPO<sub>2</sub> for the age group 9 –12 years.**

	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)
SPO <sub>2</sub>	Pre	14.9661	90	1.51041	.426	5.535	.01
	Post	15.8398	90	1.25429			

It is observed that the **pre-test** of average **SPO<sub>2</sub>**-Blood oxygen saturation mean is **14.96** and standard deviation is **1.51** as well as **post-test** is **15.83** mean and standard deviation is **1.25** the correlation value is **.426** and obtained **t** is **5.53**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their oxygen carrying capacity at cell level as per their requirement of age growth.

**Diet parameter :**

**Proposed Natural Diet Prescribed to the Sample to follow:**

- Eating Pattern:** Pro.Vit Baby Diet. Age group {5-12 years}
- Dietary Advice:** 40 days
- Water Intake:** 6 glass (small) water / 2 glass (warm)
- Advice:** Wheat 500gm, Soyabean 100gm, Methi 10 gm..  
Sheera: 1 Spoon Wheat , 1 Spoon Nachni,  
Jaggeri: 1 Spoon Ghee
- Morning:** hydrotherapy ----1 gl W.W [200 ml]  
1 gl N.W R.T
- Water:** Tulsi + Ajvain + Mint [balance water-100 ml]
- Raw Juice:** Carrot + Amla+ fresh Turmeric [100 ml]  
1 Almond + ½ Walnut +flour of wheat,soya, nachni,rajgeera  
Sheera – 1 Spoon
- Fruit:** 1 Anjir + Milk [50ml]
- Afternoon Lunch:** 1 Small Roti + Veg. + Dal + Rice + Salad (1 Tomato Slice)
- Water:** 1 Small glass + lemon (warm)
- Advice:** Hydrotherapy ----1 glw.w [200 ml]  
1 gln.w
- Evening Snacks:** Rawa + Nachni - Upma
- Fruits:** 2 Strawberries + Milk
- Juice:** Apple Juice [100 ml]
- Advice:** hydrotherapy ----1 glw.w [200 ml]  
1 gln.w



<b>NightSoup:</b>	Drumstick + RawPalak leaves Tomato+ basil leaves
<b>Dinner:</b>	Veg. Khichdi + dal khichdi + mint leaves
<b>Advice:</b>	Balance Water
<b>Herb:</b>	mint, basil, ajwain leaves (Balance Water)

( W.W----WARM WATER)

(N.W----NORMAL WATER ROOMTEMPRETURE)

Selection of pro-vit diet for subject has been selected from urli-kanchan diet ( ANNEXER-)

As shown in the above table,graph and recommended pro-vit diet, and their significant result of pre-post correlation factor and t test , intervention programme has shown highly effective result. As per result hypothesis, right pattern of diet could be related to increased haemoglobin level in the body is **ACCEPTED.**

#### ***JUSTIFICATION OF THE RESULT :***

The purpose of the study is to improve lifestyle through inculcation of routine and suggested easy, economical and effective diet plan by taking pre testof their physical health and haemoglobin test ,suggested plan is in three stages, modified as per their growth during intervention and educating parents and by giving them orientation work shop on hygiene and providing healthy cooking recipesandgiving multiple choice for diet in daily life.Making the intervention economical,easy to follow.Motivational plan has produced effective results.

#### ***Supported study :***

Department of Paediatric, University of Sao Paulo's correspondent researcher Jose has concluded that iron fortification can be added at home for their home food cooking and is effective to increase blood haemoglobin and ferritin in adult and children. They found that it can be very effective and simple to

supply iron to low socio economic families where the iron intake may be found to be low.

**Hypothesis 6:**

**Haemoglobin Level Of The Body Would Be Related To Childs Coping Up Capacity With Environment And Related Respiratory Efficacy.**

The parameter, physical body and vital capacity by pulmonary test i.e peak flow meter (PFEV), incentive spirometer (SPO<sub>2</sub>-IFV) and Oxymeter haemoglobin test shows estimate column which demonstrate co-relation of all variable significant by 2-tailed pre-post prove an effectiveness of intervention programme hence hypothesis haemoglobin level of the body would be related to child’s coping up capacity with environment and related respiratory efficacy **ACCEPTED.**

Table 121. Physiological Master Chart for Age group 5 – 7 YEARS.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	104.9623	103	7.74587	0.858	15.394	.01
	Post	110.9340	106	7.02142			
Wt	Pre	17.0745	106	3.42301	0.915	6.929	.01
	Post	18.0217	106	3.42183			
BMR	Pre	1036.3579	106	44.06111	0.933	12.755	.01
	Post	1056.1998	106	43.02615			
BMI	Pre	15.4976	106	2.46300	0.743	5.416	.01
	Post	14.6191	106	2.10342			
Hb.	Pre	10.7283	12	1.64226	0.424	3.981	.01
	Post	12.3958	12	0.90260			
	Pre	23.3905	105	3.15465	0.309	0.676	

RR	Post	23.1905	105	1.40120			.01
PR	Pre	104.4340	106	11.48914	0.258	0.403	.01
	Post	105.0000	106	12.20382			
PI	Pre	3.2660	106	1.50908	0.591	2.122	.01
	Post	2.9613	106	1.73230			
Oxy	Pre	97.3679	106	3.02159	0.100	2.643	.01
	Post	98.2358	106	1.84933			
FEV <sub>1</sub>	Pre	105.1698	106	33.70332	0.651	8.166	.01
	Post	129.1415	106	38.05296			
FEV <sub>2</sub>	Pre	108.09582	105	33.82919	0.641	7.932	.01
	Post	131.9143	105	38.23211			
FEV <sub>3</sub>	Pre	106.2857	105	34.14497	0.697	8.978	.01
	Post	132.0000	105	39.96152			
IFV <sub>1</sub>	Pre	11.0000	106	23.26821	0.435	3.037	.01
	Post	19.7264	106	30.99018			
IFV <sub>2</sub>	Pre	4.0326	92	1.01040	0.247	23.244	.01
	Post	10.6196	92	2.78474			
IFV <sub>3</sub>	Pre	4.0761	92	1.18816	0.109	21.183	.01
	Post	10.6196	92	2.84718			

The table shows significant pre –post score of each of the physiological variable i.e physical parameter i.e.ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e. Flow expiratory volume, FEV<sub>1</sub>,FEV<sub>2</sub>,FEV<sub>3</sub>at .01 significant and inspiratory flow volume i.e IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .01 and oxymetryi.e SPO<sub>2</sub> test which clearly shows significant .009 oxygen carrying capacity of children with elevated haemoglobin i.e shows clear functional positive effect on age group 5-7 years .

Table 122. Physiological Master Chart for Age group 7 – 9 YEARS.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	116.8421	171	7.75575	0.889	28.766	.01
	Post	124.0819	171	7.84139			
Wt	Pre	23.6257	171	5.28374	0.921	2.909	.01
	Post	24.1228	171	5.72015			
BMR	Pre	1115.6228	171	61.86381	0.933	9.853	.01
	Post	1133.4263	171	65.46849			
BMI	Pre	17.1569	171	2.47146	0.785	12.679	.01
	Post	15.5393	171	2.60389			
Hb.	Pre	11.7690	42	2.75446	0.861	1.502	.01
	Post	12.1500	42	1.51211			
RR	Pre	23.9415	171	3.59394	0.830	0.682	.01
	Post	23.7719	171	5.54028			
PR	Pre	101.8538	171	13.31371	0.571	0.9582	.01
	Post	102.8556	171	15.94482			
PI	Pre	3.6333	171	7.15311	0.985	2.303	.01
	Post	3.4006	171	7.46445			
Oxy	Pre	98.6842	171	5.78891	0.932	1.979	.01
	Post	99.0643	171	4.00756			
FEV <sub>1</sub>	Pre	149.1751	171	39.42073	0.474	9.383	.01
	Post	181.7544	171	48.30502			
	Pre	158.5380	171	40.02091	0.633	9.552	

FEV <sub>2</sub>	Post	185.9766	171	46.59979			.01
FEV <sub>3</sub>	Pre	162.4854	171	43.00949	0.649	7.602	.01
	Post	185.2632	171	49.47151			
IFV <sub>1</sub>	Pre	5.9871	171	1.40170	0.393	28.178	.01
	Post	11.4602	171	3.31589			
IFV <sub>2</sub>	Pre	5.2690	171	1.52166	0.579	30.424	.01
	Post	11.8889	171	3.44101			
IFV <sub>3</sub>	Pre	5.3158	171	1.44703	0.451	26.973	.01
	Post	12.1462	171	3.70163			

The table shows significant pre –post score of each of the physiological variable i.e physical parameter i.e.ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e. Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .01 and oxymetry i.e SPO<sub>2</sub> test which clearly shows significant .009 oxygen carrying capacity of children with elevated haemoglobin i.e shows clear functional positive effect on age group 7-9 years .

Table 123. Physiological Master Chart for Age group 9 – 12 YEARS.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	133.2819	188	9.80943	0.921	25.431	.01
	Post	140.5319	188	9.90619			
Wt	Pre	32.8245	188	8.97269	0.959	11.173	.01
	Post	35.0479	188	9.58080			
BMR	Pre	1233.5223	188	99.23069	0.964	16.790	.01
	Post	1267.9170	188	105.61965			
	Pre	18.2634	188	3.62828	0.891	6.203	

BMI	Post	17.5143	188	3.37967			.01
Hb.	Pre	11.2651	188	1.08340	0.452	3.724	.01
	Post	11.8909	188	1.01789			
RR	Pre	22.4043	188	2.60324	0.165	9.793	.01
	Post	20.2926	188	1.89414			
PR	Pre	95.7197	188	15.88719	0.561	4.953	.01
	Post	101.1154	188	15.97876			
PI	Pre	2.9351	188	1.42076	0.135	0.112	.01
	Post	2.9128	188	2.52689			
Oxy	Pre	98.1862	188	1.66191	0.017	2.702	.01
	Post	98.6542	188	1.66840			
FEV <sub>1</sub>	Pre	204.5745	188	49.72738	0.712	11.455	.01
	Post	238.3511	188	55.82578			
FEV <sub>2</sub>	Pre	215.6755	188	53.39306	0.719	8.883	.01
	Post	242.6064	188	57.05907			
FEV <sub>3</sub>	Pre	218.2979	188	55.70431	0.714	9.091	.01
	Post	248.4574	188	63.18010			
IFV <sub>1</sub>	Pre	6.0585	188	1.92139	0.475	24.743	.01
	Post	13.7447	188	4.82293			
IFV <sub>2</sub>	Pre	6.2234	188	2.08972	0.550	27.693	.01
	Post	14.9840	188	5.11940			
IFV <sub>3</sub>	Pre	6.1968	188	2.86281	0.527	26.681	.01
	Post	15.3511	188	5.45219			

The table shows significant pre –post score of each of the physiological variable i.e. physical parameter i.e. ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e. Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e. IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .01 and Oxymeter i.e SPO<sub>2</sub> test which clearly shows significant .009 oxygen carrying capacity of children with elevated haemoglobin i.e. shows clear functional positive effect on age group 9-12 years .

**DATA OF CBC (complete blood count) :**

Complete Blood Count (CBC) :

**Table 124. t’ test for pre-post correlation of CBC for the age group 5 –12 years.**

	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)
CBC	Pre	11.2811	90	1.13878	.425	5.535	.01
	Post	11.9401	90	.94595			

It is observed that the **pre-test** of average **CBC** (complete blood count) mean is **11.28** and standard deviation is **1.13** as well as **post-test** is **11.94** mean and standard deviation is **.94** the correlation value is **.425** and obtained **t** is **5.53**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their CBC (Complete blood count) as per their requirement of age growth.

Data of blood oxygen saturation (SPO<sub>2</sub>) :

**Table 125. t’ test for pre-post correlation of SPO<sub>2</sub> for the age group 5 –12 years.**

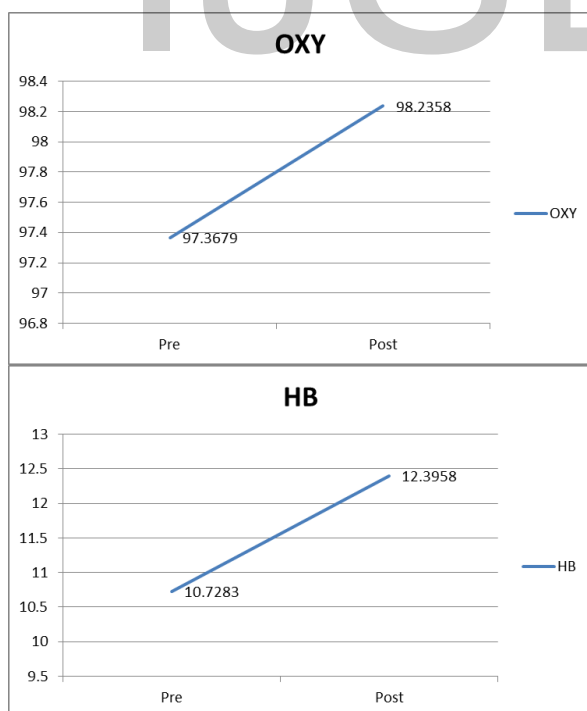
	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)
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SPO <sub>2</sub>	Pre	14.9661	90	1.51041	.426	5.535	.01
	Post	15.8398	90	1.25429			

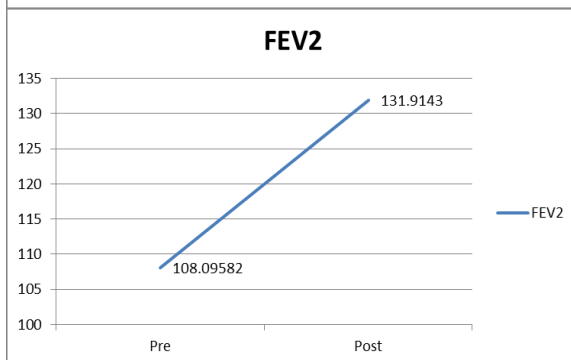
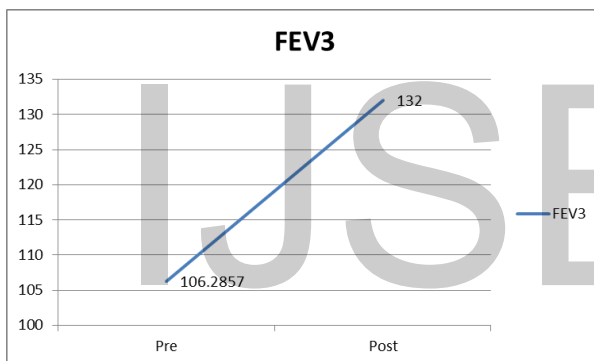
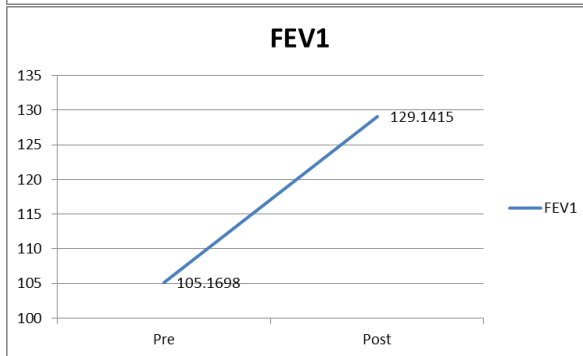
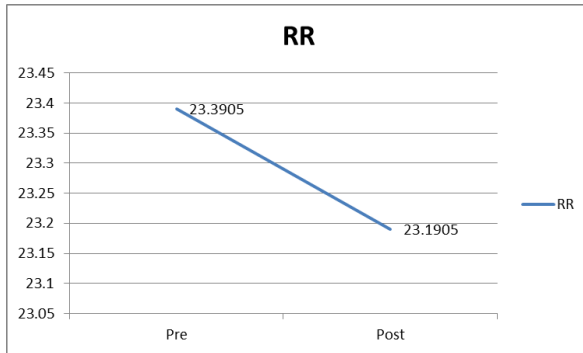
It is observed that the **pre-test** of average **SPO<sub>2</sub>**-Blood oxygen saturation mean is **14.96**and standard deviation is **1.51** as well as **post-test** is **15.83** mean and standard deviation is **1.25** the correlation value is **.426** and obtained **t** is **5.53**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improve their oxygen carrying capacity at cell level as per their requirement of age growth.

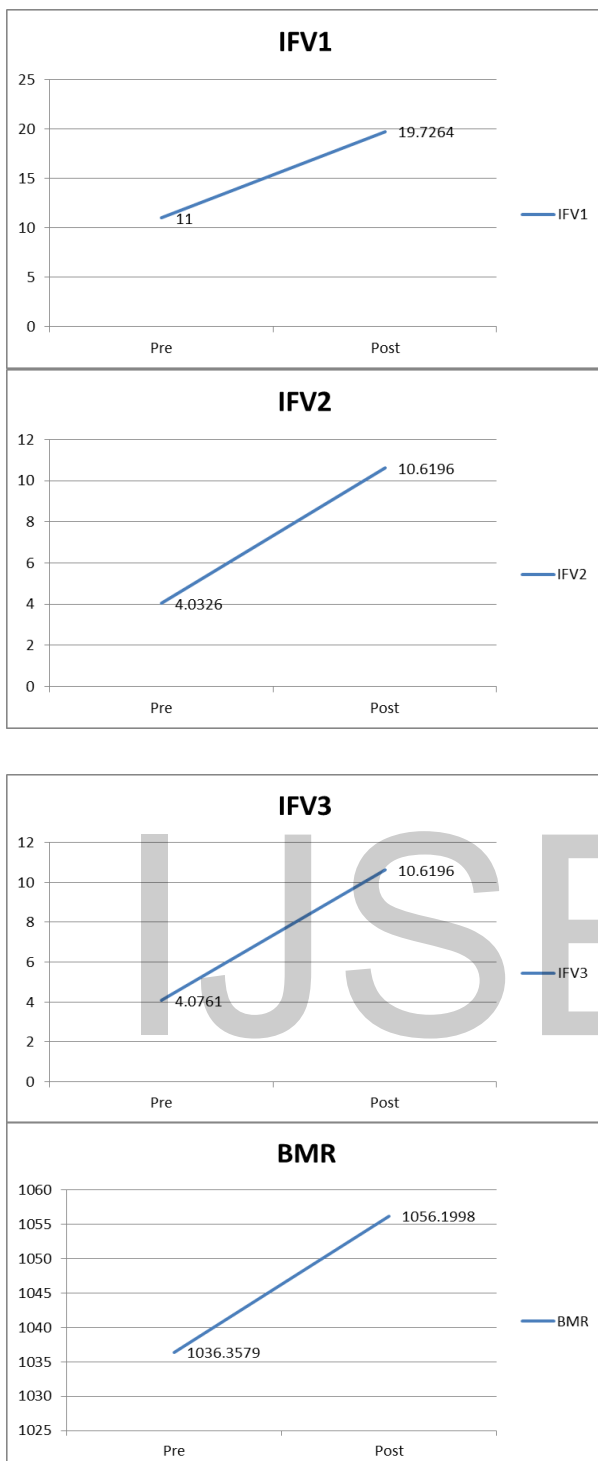
**Justification of studies :**

Graph 71. Age group 5-7 years vital capacity :









Above graphs, reflect significant view of childrens coping up capacity by showing significant result of pulmonary function parallel we can see haemoglobin correlation pre-post result, which clearly justify hypothesis. As per this justification hypothesis, *haemoglobin level of the body would be related to child’s coping up capacity with environment and related respiratory efficacy* is ACCEPTED

**Supported studies:**

Reference taken by Gayton and Hall, book of Medical Physiology (2006), has very well elaborated on role of haemoglobin in oxygen transport. Under normal conditions oxygen is carried to the tissue almost entirely by haemoglobin. An increase in carbon dioxide in the blood causes oxygen to be displaced from the haemoglobin (Bohr's effect), the haemoglobin (Hb g/dl) cells sense high concentration of carbon dioxide in tissue and release oxygen in such places where it is more required. Understanding scientific truth we can assume how much haemoglobin is important to merge with environment and respiratory function effectively. So normal range of haemoglobin transport carbon dioxide and other pollutant by not putting extra loads on lungs. The body with appropriate oxygen in blood i.e oxy haemoglobin (HbO<sub>2</sub>) in the total haemoglobin of the arterial blood.

**HYPOTHESIS 7 :**

**Positive Stimulation Of Mind Would Be Showing Elevated Effect On Total Health Of The Body.**

Table 126. Physiological Master Chart for Age group 5 – 7 YEARS.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	104.9623	103	7.74587	0.858	15.394	.01
	Post	110.9340	106	7.02142			
Wt	Pre	17.0745	106	3.42301	0.915	6.929	.01
	Post	18.0217	106	3.42183			
BMR	Pre	1036.3579	106	44.06111	0.933	12.755	.01
	Post	1056.1998	106	43.02615			
BMI	Pre	15.4976	106	2.46300	0.743	5.416	.01
	Post	14.6191	106	2.10342			
Hb.	Pre	10.7283	12	1.64226	0.424	3.981	.01
	Post	12.3958	12	0.90260			
	Pre	23.3905	105	3.15465	0.309	0.676	

RR	Post	23.1905	105	1.40120			.01
PR	Pre	104.4340	106	11.48914	0.258	0.403	.01
	Post	105.0000	106	12.20382			
PI	Pre	3.2660	106	1.50908	0.591	2.122	.01
	Post	2.9613	106	1.73230			
Oxy	Pre	97.3679	106	3.02159	0.100	2.643	.01
	Post	98.2358	106	1.84933			
FEV <sub>1</sub>	Pre	105.1698	106	33.70332	0.651	8.166	.01
	Post	129.1415	106	38.05296			
FEV <sub>2</sub>	Pre	108.09582	105	33.82919	0.641	7.932	.01
	Post	131.9143	105	38.23211			
FEV <sub>3</sub>	Pre	106.2857	105	34.14497	0.697	8.978	.01
	Post	132.0000	105	39.96152			
IFV <sub>1</sub>	Pre	11.0000	106	23.26821	0.435	3.037	.01
	Post	19.7264	106	30.99018			
IFV <sub>2</sub>	Pre	4.0326	92	1.01040	0.247	23.244	.01
	Post	10.6196	92	2.78474			
IFV <sub>3</sub>	Pre	4.0761	92	1.18816	0.109	21.183	.01
	Post	10.6196	92	2.84718			

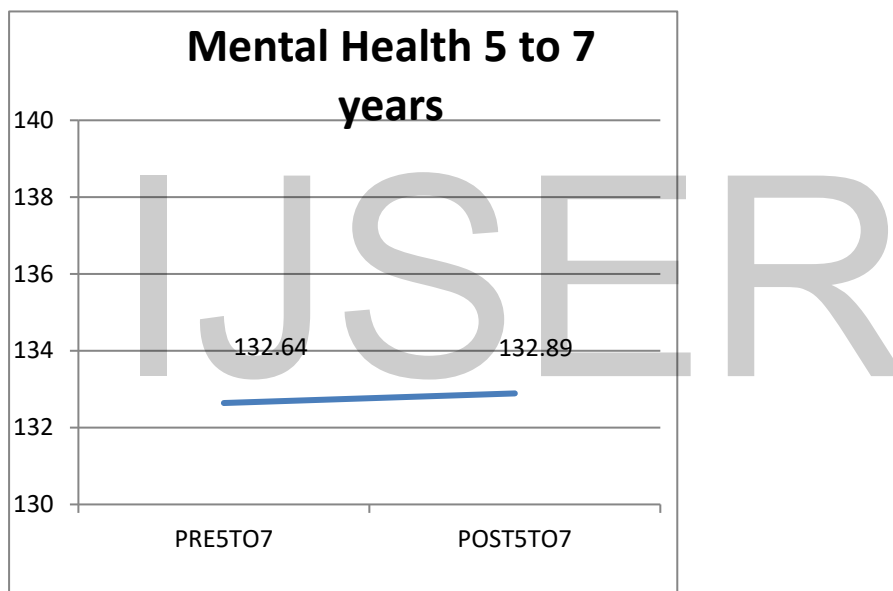
The table shows significant pre –post score of each of the physiological variable i.e. physical parameter i.e.ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e. Flow expiratory volume, FEV<sub>1</sub>,FEV<sub>2</sub>,FEV<sub>3</sub>at .001 significant and inspiratory flow volume i.e. IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .001 and oxymetryi.e. SPO<sub>2</sub> test which clearly shows significant .009 oxygen carrying capacity of children with elevated haemoglobin i.e. shows clear functional positive effect on age group 5-7 years .

MENTAL HEALTH INVENTORY (M.H.I) :

**Table 127. t’ test for pre-post correlation ofMHI for the age group 5 –7 years.**

		Mean	N	Std. Deviation	Correlation	t	Sig. 2-tailed
MHI 5 – 7 years.	Pre	132.64	28	12.08217	.337	.095	.925
	Post	132.89	28	7.60708			

Graph 72. Pre-post Mean difference of MHI for age group 5 – 7



The obtained t value is **0.095** which is very low and insignificant. There is no significant difference between pre and post situations in terms of mental health of the age group 5 to 7. As per graph mental health of children have shown elevated effect which mention that continuation of this intervention can show positive result on mental health of children.

Table 128. Physiological Master Chart for Age group 7 – 9 Years.

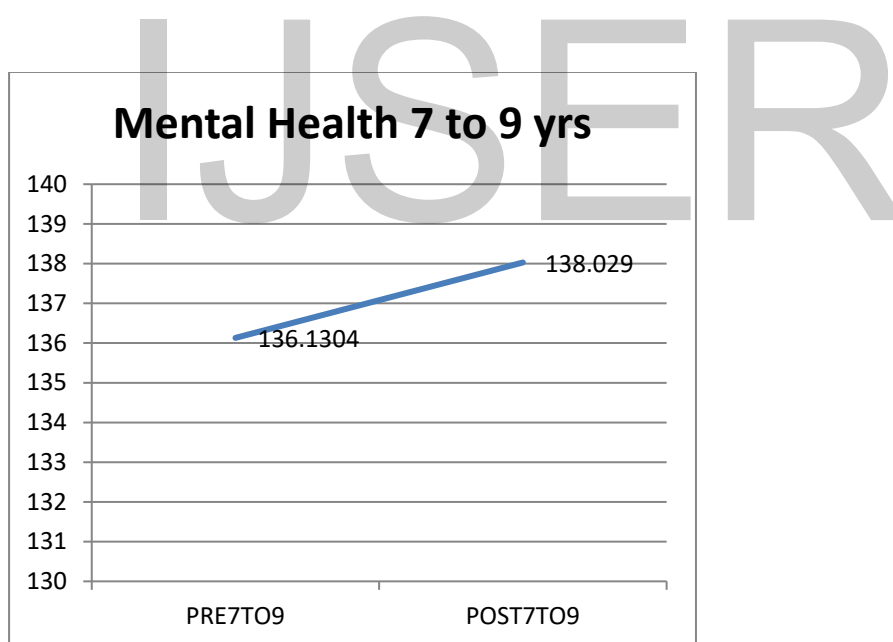
	Test	Mean	N	Std.	Co -	T	Significance
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				Deviation	relation		( 2 – tailed)
Ht	Pre	116.8421	171	7.75575	0.889	28.766	.01
	Post	124.0819	171	7.84139			
Wt	Pre	23.6257	171	5.28374	0.921	2.909	.01
	Post	24.1228	171	5.72015			
BMR	Pre	1115.6228	171	61.86381	0.933	9.853	.01
	Post	1133.4263	171	65.46849			
BMI	Pre	17.1569	171	2.47146	0.785	12.679	.01
	Post	15.5393	171	2.60389			
Hb.	Pre	11.7690	42	2.75446	0.861	1.502	.01
	Post	12.1500	42	1.51211			
RR	Pre	23.9415	171	3.59394	0.830	0.682	.01
	Post	23.7719	171	5.54028			
PR	Pre	101.8538	171	13.31371	0.571	0.9582	.01
	Post	102.8556	171	15.94482			
PI	Pre	3.6333	171	7.15311	0.985	2.303	.01
	Post	3.4006	171	7.46445			
Oxy	Pre	98.6842	171	5.78891	0.932	1.979	.01
	Post	99.0643	171	4.00756			
FEV <sub>1</sub>	Pre	149.1751	171	39.42073	0.474	9.383	.01
	Post	181.7544	171	48.30502			
FEV <sub>2</sub>	Pre	158.5380	171	40.02091	0.633	9.552	.01
	Post	185.9766	171	46.59979			
FEV <sub>3</sub>	Pre	162.4854	171	43.00949	0.649	7.602	.01
	Post	185.2632	171	49.47151			
IFV <sub>1</sub>	Pre	5.9871	171	1.40170	0.393	28.178	.01
	Post	11.4602	171	3.31589			
IFV <sub>2</sub>	Pre	5.2690	171	1.52166	0.579	30.424	.01
	Post	11.8889	171	3.44101			
IFV <sub>3</sub>	Pre	5.3158	171	1.44703	0.451	26.973	.01
	Post	12.1462	171	3.70163			

The table shows significant pre –post score of each of the physiological variable i.e. physical parameter i.e.ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e.Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e. IFV<sub>1</sub>,IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .01 and oxymetryi.e. SPO<sub>2</sub> test which clearly shows significant .009 oxygen carrying capacity of children with elevated haemoglobin i.e. shows clear functional positive effect on age group 7-9 years .

**MENTAL HEALTH INVENTORY (M.H.I) :**

Graph 73. Pre-post Mean difference of MHI for age group 7 - 9years.



**Table 129. t’ test for pre-post correlation ofMHI for the age group 7 –9 years.**

		Mean	N	Std. Deviation	Correlation	t	Sig. 2-tailed

MHI 7 – 9 years.	Pre	136.1304	69	8.29052	.092	1.466	.147
	Post	138.0290	69	7.66768			

The obtained t value is 1.47 which is low and insignificant. There is no significant difference between pre and post situations in terms of mental health of the age group of 7 to 9. As per graph mental health of children have shown elevated effect which mentions that continuation of this intervention can show positive result on mental health of children.



Table 130. Physiological Master Chart for Age group 9 – 12 Years.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	133.2819	188	9.80943	0.921	25.431	.01
	Post	140.5319	188	9.90619			
Wt	Pre	32.8245	188	8.97269	0.959	11.173	.01
	Post	35.0479	188	9.58080			
BMR	Pre	1233.5223	188	99.23069	0.964	16.790	.01
	Post	1267.9170	188	105.61965			
BMI	Pre	18.2634	188	3.62828	0.891	6.203	.01
	Post	17.5143	188	3.37967			
Hb.	Pre	11.2651	188	1.08340	0.452	3.724	.01
	Post	11.8909	188	1.01789			
	Pre	22.4043	188	2.60324	0.165	9.793	

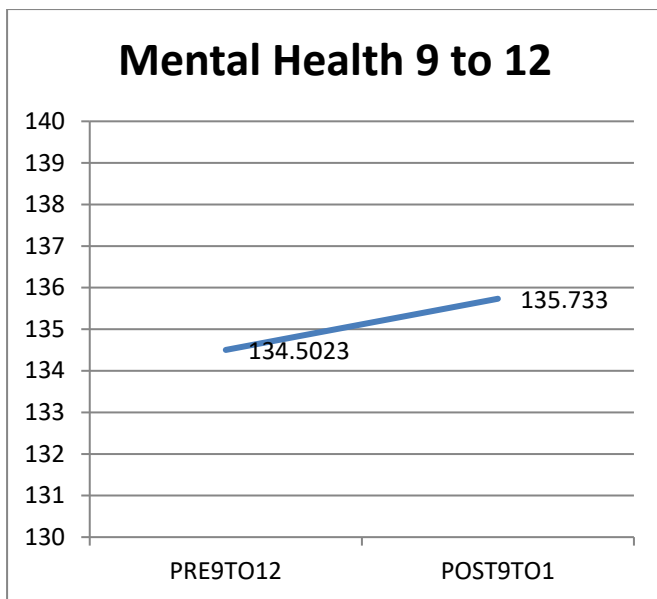


RR	Post	20.2926	188	1.89414			.01
PR	Pre	95.7197	188	15.88719	0.561	4.953	.01
	Post	101.1154	188	15.97876			
PI	Pre	2.9351	188	1.42076	0.135	0.112	.01
	Post	2.9128	188	2.52689			
Oxy	Pre	98.1862	188	1.66191	0.017	2.702	.01
	Post	98.6542	188	1.66840			
FEV <sub>1</sub>	Pre	204.5745	188	49.72738	0.712	11.455	.01
	Post	238.3511	188	55.82578			
FEV <sub>2</sub>	Pre	215.6755	188	53.39306	0.719	8.883	.01
	Post	242.6064	188	57.05907			
FEV <sub>3</sub>	Pre	218.2979	188	55.70431	0.714	9.091	.01
	Post	248.4574	188	63.18010			
IFV <sub>1</sub>	Pre	6.0585	188	1.92139	0.475	24.743	.01
	Post	13.7447	188	4.82293			
IFV <sub>2</sub>	Pre	6.2234	188	2.08972	0.550	27.693	.01
	Post	14.9840	188	5.11940			
IFV <sub>3</sub>	Pre	6.1968	188	2.86281	0.527	26.681	.01
	Post	15.3511	188	5.45219			

The table shows significant pre –post score of each of the physiological variable i.e. physical parameter i.e.ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e. Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e. IFV<sub>1</sub>,IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .01 and oxymetryi.e SPO<sub>2</sub> test which clearly shows significant .009 oxygen carrying capacity of children with elevated haemoglobin i.e. shows clear functional positive effect on age group 9-12 years .

Mental health inventory (M.H.I) :

Graph 74. Pre-post Mean difference of MHI for age group 9 – 12years.



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**Table 131. t’ test for pre-post correlation ofMHI for the age group 9 – 12years.**

		Mean	N	Std. Deviation	Correlation	t	Sig. 2-tailed
MHI 9 – 12 years.	Pre	134.5023	221	7.34267	.148	1.888	.060
	Post	135.7330	221	7.50492			

The obtained t value which is 1.88 is low and insignificant. There is no significant difference between pre and post situations in terms of mental health of the age group

of 9 to 12. As per graph mental health of children have shown elevated effect which mentions that continuation of this intervention can show positive result on mental health of children.

**Table 132. summarised stage attendance of psychological - Post data.**

Section	Class	Total Student	Only Post
Primary Age 5 – 7 Years	Sr. Kg. A	46	NA
	Sr. Kg. B	30	NA
	Std 1A	40	8
	Std 1B	41	6
		157	14
Age 7 – 9 Years	Std 2	72	9
	Std 3	64	8
	Std 4	58	53
		194	70
Secondary Age 9 – 12 years	Std 5	73	73
	Std 6	72	70
	Std 7	79	77
		224	220
	TOTAL	575	304

Total no. of Student- **575.**

Received psychological Post Data- **304.**

Number of students who attempted psychological mental health inventory during secondary stage were 304. As per data we can see number of students who attempted from age group 5-7 years were 14,7-9 years were 70, and 9-12 years were 220.

***Justification of result :***

This graph shows total mental health of children, as per individual mental health inventory by Dr A.K. Srivastava attempted by age group 5-12 years.

The table shows significant pre-post co relation and results of children's physical growth, this is a clear evidence that school based intervention programme could significantly motivate and stimulate positive mind in children though individual mental health. Group motivational intervention programme has shown positive effect on children's physical fitness which can be hypothesised as stimulation of positive mind can show positive physical growth. With this justification this hypothesis is **ACCEPTED**.

#### **Supported research :**

The following studies will further clarify that it has become increasingly apparent that multidisciplinary approaches synthesizing biological, socio-cultural, Psychological and family perspective are necessary to better understand complication and healthy functioning of children . Unsurprisingly, school was dominant in the literature as one of the key influences on children and young people's knowledge, attitudes and behaviours relating to the environment (**Gayford, 2009; Girlguiding UK, 2010; Ipsos Mori/DEA, 2008; Nicholls and Lee, 2006; Ofsted, 2009; vInspired, 2009; Wilson and Snell, (2010)**). As children and young people spend much of their time at school, this is an important sphere of their life to explore. Furthermore, the former government's emphasis on making all schools sustainable seems to have resulted in a focus on the effectiveness and impact of 'learning for sustainability'.

Timothy D. Nelson\*, Ph.D, Eric R. Benson, M.A., and Chad D. Jensen, M.A. University of Kansas, Clinical Child Psychology Program (2012), Negative Attitudes Toward Physical Activity: Measurement and Role in Predicting Physical Activity Levels Among Preadolescents Objectives To describe the development and validation of a measure of negative attitudes toward physical activity and examine the association between these attitudes and self-reported physical activity among preadolescents. This is the research which shows strong argument for hypothesis that positive mind can be stimulated through this kind intervention group programme.

### **Hypothesis 8:**

#### **Recommended Naturopathic Lifestyle Would Be Working As A Future Remedial Measure.**

Researchers recommended lifestyle for children of M.K.E.S. English school, i.e. a complete concept and principle of NATUROPTHY, diet and physical exercise based on yoga i.e. *suryanamashkar* and *pranayama*.

This recommended lifestyle has shown significant results, the obtained t value of physiological parameter of age group 5-7 years been shown in following table and correlation of pre and post results, which is an evidence of this intervention programme and prove to be recommended future remedial measure and this evidence proved acceptance of hypothesis i.e. recommended Naturopathic lifestyle would be working as a future remedial measure.

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### स्वस्थ रहने के आसान तरीके

- प्रातः ५.०० १ ग्लास गुनगुना पानी और १ ग्लास सादा पानी पीजिए ।  
उसके बाद आप अपना नियमित व्यायाम करे ।
- प्रातः ६.३० बेलेस वॉटर - तुलसी के पत्ते, फुदीना और थोडासा अजवाईन पानी में उबालकर घर के सारे सदस्य को दिजिए  
उससे सर्दी, जुकाम, खांसी, दमा, मंदाग्नि आदि विकारों में यह लाभकारक है ।
- प्रातः ७.०० नींबू और मधु को १ ग्लास पानी में मिलाकर पिजिए ।
- प्रातः ८.०० गाजर और आंवला और हल्दी का रस, छोटा ग्लास (१५०मिली) पिजिए ।  
फलाहार : पपैया और सूका मेवा हितकर है ।
- सुबह ११बजे आप दलिया ले सकते हो । गेहूँ और नाचणी को रोटी बनाकर आप नास्ते में ले सकते हो ।
- दोपहर १२.३० ताजे दही का १ ग्लास मट्ठा पी लीजिए उसके बाद कच्ची सबझियों का कच्चा सलाड लीजिए ।  
उसके १५ मिनट बाद आप अपना भोजन अच्छी तरह चबाकर शांत मन से करिये ।
- दोपहर ३.०० आप नारियेल पानी पी सकते हो या २ ग्लास सादा पानी ।
- शाम ५.०० पपैया, सफरचंद, चौकू, केला, तरबुज, खरबूजा इसमें से कोई भी दो फल खा सकते है ।
- शाम ७.०० सूप – शेकटे का शींग, टमाटर  
शेकटे के शींग को कूकर में बाफ के उसको छान लीजिए । फिर उसमें पालक /मेथी / फुदीना को डालकर पी सकते है ।
- रात ८.०० बजे से पहले अपना भोजन करना स्वास्थ्य के लिए हितकर है ।  
सोने से पहले १ ग्लास गुनगुना पानी पीना चाहिए ।

विशेष नोट : आवला, कच्ची हल्दी और तुलसी इसका रस दिन में २ बार घमच लेने से

**व्यायाम :** सभी प्रकार के व्यायाम एक साथ न करे या तो २ दिन दौडना, २ दिन सूर्यनमस्कार, ३ दिन चलना घूमना (३ से ५ किमी)

### प्राकृतिक और योगिक चिकित्सा

अम्लता के रोगी यदि आहार चिकित्सा का पालन करने के साथ ही निम्न उपायों की भी मदद लें तो उन्हें शीघ्र लाभ मिलता है –

१. प्रातःकाल गहरी साँस लेने का अभ्यास एवं नियमित रूप से टहलना ।
२. हल्के योगासनो का अभ्यास । किसी योगचिकित्सक के परामर्श से आसनों का एक क्रम बनाकर उनका नियमित अभ्यास करना चाहिए ।
३. रोजाना नहाने से पहले शुष्क घर्षण ।
४. अनावश्यक मानसिक तनाव एवं चिन्ता को दूर करते हुए शवासन, योगनिद्रा एवं शिथिलीकरण का नियमित अभ्यास ।

अम्लता शायद शारीरिक से कहीं अधिक मानसिक विकार है । इससे मुक्ति पाने के यह आवश्यक है कि हम अपनी दिनचर्या को प्रकृति के अनुरूप ढालें । प्रातःकाल उठने से लेकर रात को सोने तक एक व्यवस्थित दिनचर्या, संतुलित खान पान, तनाव एवं चिन्ता से रहित कार्य शैली हमें न केवल मानसिक रूप से अपितु शारीरिक रूप से भी स्वस्थ बनाती है । इसलिए मन में दृढ़निश्चय कर अपनी जीवन शैली को बदल डालिए । प्रकृति के नजदीक आइए । अम्लता के साथ-साथ अन्य रोग भी स्वयं आपसे दूर हो जाएंगे ।

निम्नलिखित पदार्थ रक्त को प्रदूषित करते हैं और एसीडोसिस तथा एलर्जियों के लिए कारण होते हैं :  
शराब, काफी, चाय, चाकलेट, सफेद चीनी, मैदा, मांसाहार, अंडा, पनीर, अपूर्ण विश्राम तथा निद्रा, अपेक्षा से अधिक काम अथवा व्यायाम, चिन्ता, क्रोध, ईर्ष्या, नशीली दवाएँ, आपरेशन आदि ।

निम्नलिखित चीजें शरीर को सुस्थिति में रखती हैं और उसमें क्षारीयता बढ़ाकर अच्छा स्वास्थ्य प्रदान करती हैं ।  
ये हैं ताजी कच्ची सब्जियाँ, ताजे फल, त्वचा को खुली हवा का सम्पर्क, पूरी नींद सोना, पूर्ण विश्राम, व्यायाम तथा भावनाओं को स्वस्थ और नियंत्रित रखना ।

### प्राणायाम के लाभ

1. प्राण के नियंत्रण करने से मन पर नियंत्रण होता है ।
2. फेफड़ों को प्रतिवार शुद्ध वायु मिलती है जिससे रक्त के दूषित पदार्थों का निष्कासन होकर रक्त अधिक मात्रा में शुद्ध होता है । हृदय के कार्य में सहायता प्रदाय होती है ।
3. फेफड़ों के प्रत्येक वायु कोष क्रियाशील हो जाते हैं जिससे पूरे दिन ताजगी मिलती रहती है ।
4. हृदय, फेफड़ों, यकृत, अग्नाशय और आँतों की शरीर क्रियात्मक मालिश होती है । इस तरह प्राणायाम से हृदयरोग, (क्रियात्मक) रक्तदोष, धातुदोष, माइग्रेन, अवसाद, कुंठा, नपुंसकता, नाड़ीदोष, दुरिचंता, तनाव, अल्सर, मधुमेह, कब्ज एवं अन्य मनोशाारीरिक बीमारियों से निजात मिलती है ।

### लोम-विलोम प्राणायाम के लाभ (नाडी शोधन प्राणायाम)

1. पहले पद्मासन की स्थिति में बैठिये ।
2. अपने दोनों हाथों को घुटनों पे रखकर अपनी रीढ़की हड्डी को सीधा रखकर बैठिये ।
3. आँख बंद रखिये और शरीर को ढीला रखिये ।
4. बाएँ हाथ को बाएँने घूँटनो पर रखे ।
5. दाहने हाथ सहित के अंगूठे से अपने दाहिनी तरफ से नाक बंद करे ।
6. बाईं और से गहरी और हल्की साँस ले ।
7. साँस को दाहिनी और से धीरे धीरे छोडिये ।
8. अनामिका से बाएँ तरफ से नाक बंद करे और दाहिनी तरफ से साँस ले ।
9. अंगूठे का प्रयोग दाइनी तरफ से नाक बंद करने के लिए करे और अनामिका का प्रयोग बाईं ओप से नाक बंद करने के लिए करे ।



### नाडी बंद – प्राणायाम

आराम से पद्मासन की स्थिति ग्रहण करे ।



1. आराम ।
2. पहले अपनी पूरी साँस को मुँह खोलकर बाहर निकालो ऐसा दो बार करे ।
3. फिर पूरी साँस को बाहर से अंदर की और ले और मुँह को गुब्बारे कि तरह फुलाएँ ।
4. फिर अपने दोनों हाथों के अंगूठे से अपने दोनों नाक के शिरो को बंद करे । और पाँच तक गिनति करीए ।
5. बिना साँस छोडे उसी अवस्था में अपने कंठे को उठाकर शर को उपर की और को जाए ।
6. धीरे धीरे अपनी इसी अवस्था को कायम रखते हुए सर का नीचे की ओर ले जाईए और पाँच तक गिनती किजिए ।
7. धीरे अपनी सामान्य अवस्था में आइये ।
8. हाथ नीचे रखकर मुँह से साँस को न निकाले और नाक से धीरे धीरे साँस छोडिये ।
9. यह प्राणायाम दो बार दिन में अवश्य करे ।

1 Week	2 Week	3 Week	4 Week
5	10	15	20

**फायदे :** माईग्रेन, सरदर्द, तनाव मुक्त, दिमागी उथलपथल को शांत रखना है । स्वरग्रंथि सुदृढ बनाता है ।

बच्चों को पढ़ाई में ध्यान केंद्रित करने में सहाय करता है । गुस्से को नियंत्रित करता है ।



### Benefits of Surya Namaskar

Surya Namaskar should be done facing the early morning mild sunlight.

**Aadityasya namaskaram ye kurvanti dine dine |  
Janmaantarsahasreshu daridryam nopajaayate**

12  
Exhale and release back to mountain

1  
Begin in mountain

2  
Raise hands overhead, press pubic bone forward, tighten buttocks, open chest, inhale

3  
Forward fold, tail bone up, hands next to feet, exhale

4  
Right foot back to lunge - press heel of back foot, lengthen spine, inhale

5  
Bring left foot back to plank position - long spine, hold breath in

6  
Drag knees, chin and chest to floor, exhale

7  
Sweep forward to cobra, inhale

8  
Lift tailbone to downward dog, exhale

9  
Right foot forward to lunge, inhale

10  
Left foot forward to forward fold, exhale

11  
Lengthen spine, reaching out and up, press pelvis forward, opening chest, inhale

Meaning :  
It is said that the person who does Surya Namaskar is untouched by poverty for his thousand lifetimes.

**Benefits of Surya Namaskar**

- A. It improves the blood circulation of all the important organs of the body.
- B. Improves the functioning of the heart and lungs.
- C. Strengthens the muscles of the arms and waist.
- D. Makes the spine and waist more flexible.
- E. Helps in reducing the fat around the abdomen and thus reduces weight.
- F. Improves digestion.
- G. Improves concentration power.



## **As you Go away from Nature, Nature Go away from you**

### **PRECAUTIONS**

- Wash vegetables and fruits properly before cutting, as they contain pesticides and contaminants.
- As far as possible, eat wholesome fruits and vegetables along with the peel.

### **ADOPT**

- Early to bed and early to rise habit.
- Fasting once every week with juices and adequate water.
- Eat to live, not live to eat.
- Nature cure in case of illness, as well as for good health.

### **POINTS TO REMEMBER**

- Food occupies sixth place in following requisites for living.
- Adequate space
- Pure air
- Pure water
- Sunshine
- Exercise/physical work
- Food
- During are more dangerous than diseases.
- Those who are regular in food, exercise and sleep/rest, never fall sick.
- Water is the medicine and diet is the drug.
- Fasting is an important factor in any cure.
- Hurry, worry and curry makes a man ill.

### **POINTS AT A GLANCE**

- All healing powers are within your body.
- Nature cure is the safest and the most permanent cure.
- Do not eat if ill, tired, in pain, in a tense state or in a hurry.
- Food taken in sickness feeds the disease, not the patient.
- Drink water half an hour before or one hour after your meals.
- Good health depends on a well-balanced diet and a happy attitude towards life.
- Drugs, tobacco and alcohol are the other poisons that have to be condemned.
- Drink at least eight to twelve glasses of water everyday.
- Keep at least three hours gap between dinner and bedtime.
- Money can buy medicine, not health.
- Nature is rich, let her enrich you.
- A disciplined life makes you live long and happy.
- Tea and coffee may stimulate you for a short time, but ultimately they depress you.
- Yoga has a complete message for humanity. It has a message for the body, the mind and the soul.
- Naturopathy and yoga are like two wheels of a cart.
- Your guide during your period of treatment is your doctor.
- Have faith in him and your terms for change of diet and treatment.
- Go for a stroll after, for fifteen to twenty minutes.
- Eating according to your day-to-day appetite, but fill only three-fourth of your stomach.
- Avoid smoking, tea, coffee, alcohol, drugs, soft drinks and other bad habits.

**Stay Healthily, Happily & Peacefully.**

## **As you Go away from Nature, Nature Go away from you**

Home-remedy alternative are the basis of natural healing, a concept that's been around for thousands of years. There are ways you can treat many common health problems yourself-ways that don't require a lot of money, are effective, and can be done simply & safely at home.

### **MAINTAIN**

#### **Water**

- Drink one to three glasses of warm/cold water in squatting position after rising from the bed in the morning.
- Drink at least eight to twelve glasses of water everyday, with a frequency of one glass every two hours.

#### **Vital Factors**

- Breathe deeply and keep an erect posture always.
- Cultivate the habit of passing bowel motion twice a day.\*
- Bathe twice a day with cold/natural water.\*

#### **Rest**

- After every meal, pass urine, and relax in vajrasana for five to fifteen minutes.
- Sleep on a medium/hard bed with a thin pillow.
- Forget your worries and be relaxed when you go to bed.
- Cultivate the habit of sleeping on abdomen or on the right side.

### **REDUCE/MODERATE**

- Salt, sweets, spices, chillies, pulses (dal), ghee, cream, butter, ice cream, cooked food, potato and nuts.
- High heel footwear, weights, strenuous exercise, etc.

### **AVOID**

- Smoking, tea, coffee, alcohol, drugs, soft drinks, tobacco chewing, paan, zarda and other bad habits.
- White flour (maida), white sugar, polished rice.
- Non-vegetarian food.
- Tinned/dried/adulterated/coloured/flavoured/synthetic/artificial food.
- Refined/deodorized/bleached/hydrogenated (Vanaspati) oils.
- Food when in fear, worry, anxiety, and when not hungry.
- Very hot and very cold food.
- Air/water/noise pollution.
- Harmful cosmetics, medicated soaps and creams.
- Drinking water during meals and within half an hour before and upto one hour after.
- Late dinner.
- Heavy meals.
- Late sleeping
- Sleeping on the left side and on the back.

### **PRACTISE**

- Gargling with lukewarm saline water once a day.
- Wash your eyes with triphala water daily in the morning and in the evening, for sparkling eyes.
- Do "varmana dhauti" (kunjil/vomiting) once a week.
- Take enema, if constipated.
- Massage and sunbath, once a week.
- Do gentle massage over palate (roof of mouth) daily.
- Splash water, twice daily, on forehead and eyes, keeping your mouth full of water.
- Spend some time in laughing and singing daily.

### **Justification of the result :**

The word lifestyle is not restricted in its contextual use to suggest upper or higher class alone. Climate change can increase rates of malnutrition, allergies, respiratory diseases and emerging children's health issues, we live in a world in which greater and more frequent environmental extremes are likely, so researcher recommends Naturopathic Lifestyle. There could be pattern of universal population as per their geographical and climatic condition, where variation of diet will be there, but today yoga and its benefit has been proven worldwide.

### ***Supported research:***

According to **UNICEF, 2011** survey and research the available international evidence suggest that along with west and central Africa, India also has highest underweight prevalence and anaemic adolescence. The **2002 WHO** reports states that childhood malnutrition is the widest spread and pervasive primary risk factor for the major diseases of children. Researchers recommended intervention would prove to be beneficial to curb the lack faced due to malnutrition.-

**Hypothesis9:**

**Exercise And Appropriate Diet Would Be Positively Improving Child’s Health.**

The parameter estimate column demonstrates co-relation of all variable significant by 2-tailed pre-post proving an effectiveness of intervention programme hence hypothesis, exercise and appropriate diet would be positively improving child’s health is **ACCEPTED**.

Table 133. Physiological Master Chart for Age group 5 – 7 YEARS.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	104.9623	103	7.74587	0.858	15.394	.01
	Post	110.9340	106	7.02142			
Wt	Pre	17.0745	106	3.42301	0.915	6.929	.01
	Post	18.0217	106	3.42183			
BMR	Pre	1036.3579	106	44.06111	0.933	12.755	.01
	Post	1056.1998	106	43.02615			
BMI	Pre	15.4976	106	2.46300	0.743	5.416	.01
	Post	14.6191	106	2.10342			
Hb.	Pre	10.7283	12	1.64226	0.424	3.981	.01
	Post	12.3958	12	0.90260			
RR	Pre	23.3905	105	3.15465	0.309	0.676	.01
	Post	23.1905	105	1.40120			
PR	Pre	104.4340	106	11.48914	0.258	0.403	.01
	Post	105.0000	106	12.20382			
PI	Pre	3.2660	106	1.50908	0.591	2.122	.01
	Post	2.9613	106	1.73230			
Oxy	Pre	97.3679	106	3.02159	0.100	2.643	.01
	Post	98.2358	106	1.84933			
FEV <sub>1</sub>	Pre	105.1698	106	33.70332	0.651	8.166	.01
	Post	129.1415	106	38.05296			
FEV <sub>2</sub>	Pre	108.09582	105	33.82919	0.641	7.932	.01
	Post	131.9143	105	38.23211			
FEV <sub>3</sub>	Pre	106.2857	105	34.14497	0.697	8.978	.01
	Post	132.0000	105	39.96152			

IFV <sub>1</sub>	Pre	11.0000	106	23.26821	0.435	3.037	.01
	Post	19.7264	106	30.99018			
IFV <sub>2</sub>	Pre	4.0326	92	1.01040	0.247	23.244	.01
	Post	10.6196	92	2.78474			
IFV <sub>3</sub>	Pre	4.0761	92	1.18816	0.109	21.183	.01
	Post	10.6196	92	2.84718			

The table shows significant pre –post score of each of the physiological variable i.e. physical parameter i.e.ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e. Flow expiratory volume, FEV<sub>1</sub>,FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e. IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .001 and oxymetry.i.e SPO<sub>2</sub> test which clearly shows significant .009 oxygen carrying capacity of children with elevated haemoglobin i.e. shows clear functional positive effect on age group 5-7 years .

Table 134. Physiological Master Chart for Age group 7 – 9 YEARS.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	116.8421	171	7.75575	0.889	28.766	.01
	Post	124.0819	171	7.84139			
Wt	Pre	23.6257	171	5.28374	0.921	2.909	.01
	Post	24.1228	171	5.72015			
BMR	Pre	1115.6228	171	61.86381	0.933	9.853	.01
	Post	1133.4263	171	65.46849			
BMI	Pre	17.1569	171	2.47146	0.785	12.679	.01
	Post	15.5393	171	2.60389			
Hb.	Pre	11.7690	42	2.75446	0.861	1.502	.01
	Post	12.1500	42	1.51211			
RR	Pre	23.9415	171	3.59394	0.830	0.682	.01
	Post	23.7719	171	5.54028			
PR	Pre	101.8538	171	13.31371	0.571	0.9582	.01
	Post	102.8556	171	15.94482			
PI	Pre	3.6333	171	7.15311	0.985	2.303	.01
	Post	3.4006	171	7.46445			
Oxy	Pre	98.6842	171	5.78891	0.932	1.979	.01
	Post	99.0643	171	4.00756			

FEV <sub>1</sub>	Pre	149.1751	171	39.42073	0.474	9.383	.01
	Post	181.7544	171	48.30502			
FEV <sub>2</sub>	Pre	158.5380	171	40.02091	0.633	9.552	.01
	Post	185.9766	171	46.59979			
FEV <sub>3</sub>	Pre	162.4854	171	43.00949	0.649	7.602	.01
	Post	185.2632	171	49.47151			
IFV <sub>1</sub>	Pre	5.9871	171	1.40170	0.393	28.178	.01
	Post	11.4602	171	3.31589			
IFV <sub>2</sub>	Pre	5.2690	171	1.52166	0.579	30.424	.01
	Post	11.8889	171	3.44101			
IFV <sub>3</sub>	Pre	5.3158	171	1.44703	0.451	26.973	.01
	Post	12.1462	171	3.70163			

The table shows significant pre –post score of each of the physiological variable i.e. physical parameter i.e.ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e. Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .01 and oxymetry i.e. SPO<sub>2</sub> test which clearly shows significant .01 oxygen carrying capacity of children with elevated haemoglobin i.e. shows clear functional positive effect on age group 7-9 years .

Table 135. Physiological Master Chart for Age group 9 – 12 YEARS.

	Test	Mean	N	Std. Deviation	Co - relation	T	Significance ( 2 – tailed)
Ht	Pre	133.2819	188	9.80943	0.921	25.431	.01
	Post	140.5319	188	9.90619			
Wt	Pre	32.8245	188	8.97269	0.959	11.173	.01
	Post	35.0479	188	9.58080			
BMR	Pre	1233.5223	188	99.23069	0.964	16.790	.01
	Post	1267.9170	188	105.61965			
BMI	Pre	18.2634	188	3.62828	0.891	6.203	.01
	Post	17.5143	188	3.37967			
Hb.	Pre	11.2651	188	1.08340	0.452	3.724	.01
	Post	11.8909	188	1.01789			
RR	Pre	22.4043	188	2.60324	0.165	9.793	.01
	Post	20.2926	188	1.89414			

PR	Pre	95.7197	188	15.88719	0.561	4.953	.01
	Post	101.1154	188	15.97876			
PI	Pre	2.9351	188	1.42076	0.135	0.112	.01
	Post	2.9128	188	2.52689			
Oxy	Pre	98.1862	188	1.66191	0.017	2.702	.01
	Post	98.6542	188	1.66840			
FEV <sub>1</sub>	Pre	204.5745	188	49.72738	0.712	11.455	.01
	Post	238.3511	188	55.82578			
FEV <sub>2</sub>	Pre	215.6755	188	53.39306	0.719	8.883	.01
	Post	242.6064	188	57.05907			
FEV <sub>3</sub>	Pre	218.2979	188	55.70431	0.714	9.091	.01
	Post	248.4574	188	63.18010			
IFV <sub>1</sub>	Pre	6.0585	188	1.92139	0.475	24.743	.01
	Post	13.7447	188	4.82293			
IFV <sub>2</sub>	Pre	6.2234	188	2.08972	0.550	27.693	.01
	Post	14.9840	188	5.11940			
IFV <sub>3</sub>	Pre	6.1968	188	2.86281	0.527	26.681	.01
	Post	15.3511	188	5.45219			

The table shows significant pre –post score of each of the physiological variable i.e. physical parameter i.e.ht,wt, bmr, bmi and vital capacity by showing pulmonary function i.e. Flow expiratory volume, FEV<sub>1</sub>, FEV<sub>2</sub>,FEV<sub>3</sub> at .01 significant and inspiratory flow volume i.e. IFV<sub>1</sub>, IFV<sub>2</sub>, IFV<sub>3</sub> as well significant at .01 and oxymetry i.e SPO<sub>2</sub> test which clearly shows significant .01 oxygen carrying capacity of children with elevated haemoglobin i.e. shows clear functional positive effect on age group 9-12 years .

***Table of prescribed diet:***

Table 136. No of student received Diet plan

2 Section	Class	Total no. of Students	Received Post-diet plan.

<b>Primary</b> <b>Age 5 – 7 Years.</b>	<b>Sr. Kg. A</b>	<b>46</b>	<b>26</b>
	<b>Sr. Kg. B</b>	<b>30</b>	<b>12</b>
	<b>Std 1A</b>	<b>40</b>	<b>38</b>
	<b>Std 1B</b>	<b>41</b>	<b>35</b>
		<b>157</b>	<b>111</b>
<b>Age 7 – 9 Years.</b>	<b>Std 2</b>	<b>72</b>	<b>64</b>
	<b>Std 3</b>	<b>64</b>	<b>56</b>
	<b>Std 4</b>	<b>58</b>	<b>57</b>
		<b>194</b>	<b>177</b>
<b>Secondary</b> <b>Age 9 – 12 years</b>	<b>Std 5</b>	<b>73</b>	<b>67</b>
	<b>Std 6</b>	<b>72</b>	<b>62</b>
	<b>Std 7</b>	<b>79</b>	<b>77</b>
		<b>224</b>	<b>206</b>
	<b>TOTAL</b>	<b>575</b>	<b>494</b>

TOTAL NO. STUDENT 575

TOTAL NO OF STUDENT RECEIVED DIET PLAN 494

**Diet Parameter :**



### Proposed Natural Diet Prescribed to the Sample to follow:

- Eating Pattern:** Pro.Vit Baby Diet. Age group {5-12 years}
- Dietary Advice:** 40 days
- Water Intake:** 6 glass (small) water / 2 glass (warm)
- Advice:** Wheat 500gm, Soyabean 100gm, Methi 10 gm..  
Sheera: 1 Spoon Wheat , 1 Spoon Nachni,  
Jaggeri: 1 Spoon Ghee
- Morning:** **hydrotherapy ----1 gl W.W [200 ml]**  
**1 gl N.W R.T**
- Water:** Tulsi + Ajvain + Mint [balance water-100 ml]
- Raw Juice:** Carrot + Amla+ fresh Turmeric [100 ml]  
1 Almond + ½ Walnut +flour of wheat,soya, nachni,rajgeera  
Sheera – 1 Spoon
- Fruit:** 1 Anjir + Milk [50ml]
- Afternoon Lunch:** 1 Small Roti + Veg. + Dal + Rice + Salad (1 Tomato Slice)
- Water:** 1 Small glass + lemon (warm)
- Advice:** hydrotherapy ----1 glw.w [200 ml]  
1 gln.w
- Evening Snacks:** Rawa + Nachni - Upma
- Fruits:** 2 Strawberries + Milk
- Juice:** Apple Juice [100 ml]
- Advice:** Hydrotherapy ----1 glw.w [200 ml]  
1 gln.w
- Night Soup:** Drumstick + RawPalak leaves  
Tomato+ basil leaves
- Dinner:** Veg. Khichdi + dal khichdi + mint leaves
- Advice:** Balance Water
- Herb:** mint, basil, ajwain leaves (Balance Water)

( W.W----WARM WATER)

(N.W----NORMALWATER ROOMTEMPRETURE )

Selection of pro-vit diet for subject been selected from urli-kanchan diet ( ANNEXER-)

**DATA OF CBC (complete blood count) :**

Complete Blood Count (CBC) :

**Table 137. t’ test for pre-post correlation ofCBC for the age group 5 –12years.**

	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)
CBC	Pre	11.2811	90	1.13878	.425	5.535	.01
	Post	11.9401	90	.94595			

It is observed that the **pre-test** of average **CBC** (complete blood count) mean is **11.28**and standard deviation is **1.13** as well as **post-test**is **11.94** mean and standard deviation is **.94** the correlation value is **.425** and obtained **t** is **5.53**. Which is significant on **.01** level andwe can thus interpret/obtain that our intervention is helpful to students to improvise their CBC (Complete blood count) as per their requirement of age growth.

Data of blood oxygen saturation (SPO<sub>2</sub>) :

**Table 138. t’ test for pre-post correlation ofSPO<sub>2</sub> for the age group 5 –12 years.**

	Test	Mean	N	Std. Deviation	Correlation	t	Sig. (2-tailed)

SPO <sub>2</sub>	Pre	14.9661	90	1.51041	.426	5.535	.01
	Post	15.8398	90	1.25429			

It is observed that the **pre-test** of average **SPO<sub>2</sub>**-Blood oxygen saturation mean is **14.96** and standard deviation is **1.51** as well as **post-test** is **15.83** mean and standard deviation is **1.25** the correlation value is **.426** and obtained **t** is **5.53**. Which is significant on **.01** level and we can thus interpret/obtain that our intervention is helpful to students to improvise their oxygen carrying capacity at cell level as per their requirement of age growth.

***Justification of results :***

The reason of significant result is as per child group motivational therapy has shown potential of positive health i.e. complete growth of fitness by achieving child’s vital capacity to merge with environment by supporting food therapy i.e. pro-vit diet. Physical fitness is achieved by *Suryanamskar* and *pranayama* regularly inculcating in children’s lifestyle.

***Supported study:***

The above result is supporting the previous studies such as, Physical fitness, physical exercise and physical activity are Complete growth of children demand for both diet and physical activity to support this statement research was carried out in Germany by **Manfred James Müller, Inga Koertzinger, Mareike Mast, Kristina Langna (1999)** with problematic Physical activity and diet in 5 to 7 years old children. Conclusions carried out was In 5 to 7 years old children, overweight is associated with physical inactivity, unhealthy eating habits and a low social status. Primary prevention efforts should be directed to low income families. As per Manfred James research, it supports researchers hypothesis since results drawn were from low income family children who have achieved positive health by following intervention .

**FB Ortega, JR Ruiz, MJ Castillo and M Sjo (2010)** from Department of Physiology, School of Medicine, University of Granada, Granada, Spain and Unit for Preventive Nutrition, Sweden. This review aims to summarize the latest developments with regard to physical fitness and several health outcomes in young people. Research of FB Ortega as well came out as helpful as this kind of intervention programme have proved an importance of preventive measure in complete aspects of exercise and diet.

#### 4.4 Discussion.

The present study was aimed at to explore the efficiency of naturopathy as therapy in intervention form for children in age group 5 – 12 years, from M. K. E. S. English School, Malad West, Mumbai. This age group domains according to their development and skill stages as, physical growth, gross motor skills, linguistic skills, cognition and social and emotional growth.

This age group was found to be most suitable for the subject as the prevalence of medical treatment is the highest in the age group 5 – 12 years. When the growth spurt of puberty is interfered with the illness, poor nutrition or prolonged emotional tension, there is a delayed fusion of the bones and children will not attain their full height. The exposure that influence children's health begins before conception reflecting parent's diet and other environmental exposure and continue through pregnancy, childhood and adolescence. Children may be an especially vulnerable sub-population because of their developing physiological and psychological anticipated long term exposure.

The record report of UNICEF added to produce the stage of world's children (2011) on the distinct challenges adolescence face today in protection, education and health, psychological issue or problem, account for a large proportion of the disease burden among young people in all society.

Hence this study is progressively more effective. It provides remedies for physical and psychological ailment and the world of remedies is seeking reprieve in alternative systems of therapy.

The subjects were from lower middle class and middle class, where either parent was well versed with English, the teachers of these students were required to fill out the Mental Health inventory (M.H.I) rating scale – IV check list norms and clinical

interpretation by Dr. A. K. Srivastava and Jagdish, based on which they were included into the study.

The present study consists of 3 stages, which were carried out over a period of 8 months, i.e. June 18, 2012 to January 18, 2013 approximately. Intervention was carried out during school hours i.e. morning 8.00 am to 1.00 pm afternoon, during physical exercise training *SuryanamaskarandPranayam* was practised.

Intervention programme has been designed as complete concept to construct an economical lifestyle i.e. Naturopathic Diet plan, *SuryanamaskarandPranayam*, as exercise for body and mind. Sasi kumar et.al (2011) results showed that systolic Blood pressure PEF (Pulmonary Expiratory Flow Rate) and FVC (Flow Volume Capacity) increased significantly and Respiratory rate (RR), Heart rate (HR) and diastolic blood pressure decreased significantly after the practice of *Suryanamaskar*.

Researchers intervention programme has applied this practise to school to improvise physical sports and overall performance of students. There have been concrete evidence ( Bal jinder Singh Bal, 2010) on effect of lung function after *Pranayam* on the vital capacity and ventilator volume with health respiration and sports performance, this is a kind of repetitive subject in research. So the researcher's effort is to provide a complete scenario of health and right lifestyle to children by incorporating diet and yoga as an intervention programme. This programme was extended to parents, so that they could be trained for *SuryanamaskarandPranayam*, and could perform the exercises everyday and encourage their children to do so, in order to develop a healthier parent-child relationship and a healthy, suitable lifestyle..

This intervention programme was completed in January 2013. Researcher opened intervention result of Pre -post effect to parents, children, teachers and principal, and eminent doctors in all the field of medicines, the researcher invited Municipal Councillor Dr. Ram Barot. While considering the Psychological and Physiological Intervention of children in age group 5 – 12 years., it was observed that before intervention, during Pre-test of Physiological parameter i.e. their Height, Weight were not as per their age, they were frequently absent in school with complain of cough, cold, stomach pain and headache. As per Post result, acquired after an 210 days of intervention were followed by children i.e. of right food habit, *SuryanamasakrandPranayam* they have incorporated in their daily life even parents and neighbour used to follow this pattern, children have shown significant result which can be identified in data and in graph. Researcher has specially focused on the

pulmonary function and overall health of children in age group 5 – 12 years. Researcher has shown significant result of lung function by comparing from pre-test to Post test. All chronic pain, suffering and disease are caused from a lack of Oxygen at the cell level (Prof. A. C. Gayton, M.D. the text book of Medical Physiology). Researcher has positively shown children's haemoglobin (g/dl) level significantly higher than pre-test which clearly indicate that the supply of oxygen at cellular level has increased and that showed a clear significant growth in physical parameter. Further, researcher can claim that if children's release of oxygen level could sense high concentration of carbon in tissues, then definitely children could healthily merge with the present environment.

Researchers study has proved the natural way of adaptation and adjustment; which is the law of Nature. By this justification researchers experimental research i.e. efficiency of naturopathy in day to day life of children could be proven to be the most evidence based applicable research. Along with 575 children their family, neighbours, and relatives made up to 10,000 people, who were indirectly participants of this intervention programme.

Parents were regularly called for orientation and training of *Suryanamaskar*, *Pranayama* and to provide healthy diet recipes, so families could learn and enjoy living life in healthier and happy way with their children. However, overall the mean score at the time of post-test of the mental health inventory group tended to be not significant than physiological growth for children in age group 5 – 7 years, 7 – 9 years and 9 – 12 years. Since graph shows that growth of psychological health was significantly upward so researcher suggested continuing complete health programme for longer period, which will show further improvement in future. Maybe healthy mental conditions of children and would help in achieving complete health.

As per final report and recommendation of malnutrition monitoring committee (MMC) 2009-2012 of Maharashtra, there must be a move to home based care to prevent malnutrition. This research could be one of the solutions to prevent malnutrition. Despite innumerable schemes and programmes and large expenditure on nutrition, the impact has not been proportionate. Beneficiaries do not utilise the scheme optimally, hence do not receive the benefits. Therefore, such school based programmes would increase the beneficiaries. There is a need for increasing concerns

transparency and monitoring of allocated funds. Responsibility to be fixed and communicated clearly.

Result showed a solution to present and future problem of our children's basic survival through grass root level interventional programme. Result has shown that global warming can be positive when human efforts more in right direction of nature.

The researcher's purpose to declare intervention result was to make children and parents ready to live a life, which is suitable to the conditions, and so that parents can keep motivating their children to follow this lifestyle in future. In addition, prepare them to face unruly and unpredictable environmental conditions by making them healthy and resistant to environmental changes.

IJSER

## CHAPTER 5

### SUMMARY IN BRIEF:

#### Introduction

The present study's aim is at finding out the effect of 'Naturopathy' on Physiological and Psychological factor on Respiratory system of children in age group 5 – 12 years, when environmental conditions are unfavourable and averse to healthy living. The Physiological aspect has been measured by Body parameter like Age, Height, Weight, BMR, BMI. Vital parameter being measured by using laboratory instrument; Oxymeter test (O<sub>2</sub>), Fingertip Begin 2B FDA 510(k), Spirometer test (EFEV), Hudson cc/sec, Peak flow meter test (PFEV) Personal Best Full range peak flow meter (60-810 L/min), Psychological parameter is tested by selecting tool constructed by Jadgish and A K Srivastava, i.e. Mental health inventory, which integrate the personality, autonomy group oriented attitudes and environmental mastery.

For the statistical analysis, appropriate statistics for pre-post experimental co-relation the comparison paired 2 - tailed t test have been used for data analysis. The summary of the thesis is presented in chapter-wise format.

#### Statement of Research Problem.

Researcher proposes the problem which is related to psycho-physiological aspects and its effects on respiratory system among children through Naturopathy. The title of the problem is "Psycho-Physiological aspect and its effect on respiratory system through naturopathy on children age group 5 – 12 years positively link to Global warming".

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Signature of Supervisor  
(with stamp)

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Signature of Candidate

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Signature of Head/Principal  
(with stamp)



## **Chapter 1 : Introduction.**

Respiration is key factor for an individual to live. O<sub>2</sub> and CO<sub>2</sub> are two keys, which allow individuals to breathe, when present in environment, and since the quality of environment is depleting, researcher can say that lifestyle of humans is deteriorating and our present generation is affected the most, as they have to acquire fitness and immunity by working on vitality.

The present study therefore is an attempt to explore the efficiency of 'Naturopathy' as therapy in intervention for children in age group 5 – 12 years. Researcher has tried to answer question on sustainability of life when all other researchers are working to save earth. Are we trying enough for our children to live healthily and happily? There still are favourable conditions and systems to merge children's bodily functions with future climatic conditions.

What is the best lifestyle and why we are not implementing it during their developmental stage?

When we talk about vitality then nature is the only option we have, i.e. preventive measures taken by Nature cure. For decades, medication has helped to treat and reduce the symptoms of diseases. Though medical treatment seems to offer a quick fix, it is only a short term limited solution to a complex multifaceted problem. Medication only covers, some symptoms and does not actually get to the root of the problem. After the drug is discontinued the symptoms tend to reappear and vitality is well deteriorated. Drug therapy is effective over prolonged use, however this comes with its share of side effects.

There has been an incessant search for progressively more effective remedies for physical and psychological ailments and the world of remedies is seeking reprieve in alternative systems of therapy.

This chapter elaborates on physiological and psychological aspect of respiratory system and its effect on children in age group 5 – 12 years. It describes its symptomatology, etiologic, physiology and psychological disorder associated with respiratory function and their efficacy with present climate and suggested lifestyle for children as preventive measure which can be described as psycho-physiological

aspect . A Physiological aspect has been measured by Body parameter like Age, Height, Weight, BMR, BMI. Vital parameter being measured by using laboratory instrument; Oxymeter test (O<sub>2</sub>), Fingertip Begin 2B FDA 510(k), Spirometer test (EFEV), Hudson cc/sec, Peak flow meter test (PFEV) Personal Best Full range peak flow meter(60-810 L/min) ,Psychological parameter is tested by selecting tool constructed by Dr.Jadgish and A K Srivastava, i.e. Mental health inventory, which integrate the personality, autonomy group oriented attitudes and environmental mastery.

This study is to provide reliable information on pulmonary function which would aid the diagnostic process and students follow up. The researcher's motive is to introduce preventive strategy to reduce the impact of global climate change on children's health. The intervention methods employed in the study are also outlined in brief. The discussion is ensured by the statement of the problem, the significance of the present research and the hypothesis which have been derived from the objectives of the study.

## **Chapter 2. Naturopathy as intervention on physiological and psychological inter-relation : Theoretical Underpinning.**

This chapter will explain various dimensions of the physiological and psychological aspect and its effect on respiratory system through naturopathy on early childhood, later childhood and puberty. This stage is regarded as the stage of rapid physical and mental development. This chapter is structured with view that it will shape the understanding and the need of inculcating naturopathic lifestyle as a preventive measure.

The nutritional status of children does not directly reflect the socio economic status of the family and social well being of the community but also the efficiency of the health care system and the influence of the surrounding environment.

In UNESCO it is recorded that in India one fifth of the population consist of children between 5 and 14 years, which includes the primary and secondary school age. School age is considered as a dynamic period of growth and development because children undergo physical, mental, emotional and social changes. In other words the foundation of good health and sound mind are laid during the school age period. Hence, the present study was formulated with the objective to assess and find the

major socio – economical co-relations of nutritional statistics and lifestyle in school age children.

How all these factors are related and links to each other:

(description):

Factor selected by researcher, is with complete concept to reach to complete goal of well being of children. Selected factor are children in age group 5 -12 years with three major factors, i.e. Physio-psychological parameter, nutritional and environmental factor. Humans carry genes and take birth with default mechanism, but development stage allows them to bring changes and improve health. Height, weight, BMI, BMR., this are the basic development keys to analyse and design further investigation. For developmental growth, children between age 5 – 12 years require amount of energy as per their expenditure, so body composition is directly connected to nutrition. To achieve complete health only body or mind cannot be worked and left alone, another physical parameter BMI, BMR, i.e. body composition is very crucial factor for children to pass as a healthy child. Body composition is interrelated or directly related to stimulant of brain and nutrition intake.

The preamble of WHO's charter define health as a state of complete physical, mental and social well being. Not merely the absence of disease or infirmity. Thus health is a broader concept including physical, social and mental health. Childhood seen as foundation for individual development both physiologically and psychologically and is taken to define life time. Childhood is an, milestone for physical vitality and personality along with mental growth.

The eminent evolutionary biologist and theorist E. O. Wilson, in the Prologue of his book, he defines, Biophilia as “the inhale tendency” to focus on life and life like process. So life of any living thing is interrelated as per this theory. Researcher has connected physiological psychological and interrelated with environment and how our natural love for life helps sustain life.

Life Process starts with birth. Birth of a human respire to live and respiration i.e. breath is directly connected to environment, i.e. O<sub>2</sub> and CO<sub>2</sub>. Researcher has taken up present condition and its effect on children as they grow, if their physical parameter is not as per development then their mental growth also gets affected and this way

researcher has connected life process which researcher has described through diagram.

### **Chapter 3 Survey Of Litreture :**

The second chapter, review of literature, helps the researcher in deciding the direction of the research. A collective body of works done by earlier scientists is technically called the literature (A K Singh 2004). Researcher thought that any scientific investigations starts with a review of literature. It is primary stage towards research. The researcher attempts a close or an in-depth revealing of the review of literature. The research is mostly problem oriented whether it is Psychological, Sociological or Philosophical. Not merely the research, but the review of literature is also the major source to alter, include and exclude which and what form of research done earlier in the same area. Awareness for knowledge of such research prevents unnecessary repetition of documentation of the same thing. Likewise, constantly flourishing developing research also revises and remoulds the documentation according to the demand of time. In this way, review of literature is helpful in identifying variable relevant for research and avoiding of repetition.

Synthesis of prior work, determining meaning differences and relationship between Physiological and Psychological variable keeping this view in mind researcher has carefully studied the literature and review of researchers related to the urban students an conducted intervention onstudents of M. K. E. S. English School, Mumbai.

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## 2.3 Psychological aspects and effects:

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## Chapter 4 Objective and research methodology of the study :

### 1 Research type - Experimental research

This section describes the method used to study the variables and test the hypothesis. Thus, it is a description of the sample selected, the tools used, the procedure employed.

#### Sample :

The sample for the study consist of 575 children, from Mumbai citys, M.K.E.S English School located in Malad West, the participants were from age group 5-12 Years.

**Table 139. Participant student’s total data Age - Gender wise.**

Section	Class	Age	Total no. Of Student	Male	Female
Primary	Sr. Kg	5years	76	42	34
	Std. 1	6-7years	81	42	39
	Std. 2	7-8years	72	43	29
	Std. 3	8-9years	64	40	24

	Std. 4	9-10years	58	32	26
<b>Secondary</b>	Std. 5	10-11years	73	45	28
	Std. 6	11-12years	72	41	31
	Std. 7	12-13years	79	52	29
		<b>TOTAL</b>	<b>575</b>	<b>335</b>	<b>240</b>

TOTAL NO OF SUBJECT: **575**

NO OF FEMALE PARTICIPANT: **240**

NO OF MALE PARTICIPANT: **335**

### **3.2 Objectives of research:**

1. To study the mental health and body quotient of children in age group 5-12years and to enhance their vital capacity.
2. To compare the present environmental effects with prescribed lifestyle among children between 5-12 years.
3. To study the environmental element CO<sub>2</sub> and O<sub>2</sub> affects mental health and BQ of children 5-12years age group suffering from respiratory system.
4. To study especially with children in age group 5-12,years the human body in balance with the natural environment by controlling the bodily environment through the complete process of naturopathy which deals with body and mind.
5. To compare natural environment and bodily environment and individuals merging capacity, in children of age group 5-12 years.
6. To compare haemoglobin level and oxygen level of children in age group 5-12 years with their respiratory function.
7. To study haemoglobin levels and oxygen levels in the body and parameter of children in age group 5-12 years.
8. To study pre and post effects of natural remedies and conduct counselling of children in age group between 5-12years.

### 3.3 Hypotheses:

1. Oxygen level of body would depend on the haemoglobin level of an individual.
2. Individual physical growth would improve their haemoglobin in the body and will positively affect immunity of an individual.
3. Haemoglobin level in an individual would be a parameter of an individual life style.
4. Every individual would have own pattern related to environment.
5. Right pattern of diet would be related to increased haemoglobin level in body.
6. Haemoglobin level of the body would be related to a child's coping up capacity with an environment and related effect.
7. Positive stimulation of mind would show elevated effect on total health of the body.
8. Recommended life style would work as a future remedial measure.
9. Exercise and appropriate diet would positively improve children's total health.

### 3.4 Variables:

#### IV -Independent Variable:

- |                               |  |
|-------------------------------|--|
| 1 Body Parameter:             | Age, Wt, Ht, BMR, BMI  |
| 2 Diet Parameter:             | Herbal therapy,<br><br>Diet therapy  |
| 3 Respiratory Parameter:      | Oximetry test (SPO <sub>2</sub> )<br><br>Spirometry test<br><br>Peak flow meter test |
| 4 CBC (Complete Blood Count): | Hemoglobin (Oxygen Carrier)  |

#### DV -Dependant variable:

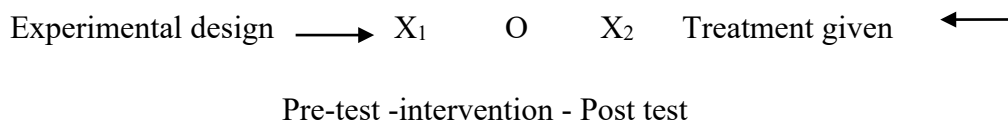


Psychological and Physiological factor

1. Genetic factor
2. Adjustment
3. Personality
4. Home environment
5. Climate

**Research Design (Pre and post) :**

Group	Test	Treatment	Test
Experiment	Pre	Yes	Post



Pair‘t‘ statistics - with description for gain score treatment.

**Research tools:**

1) **Mental health inventory (MHI) constructed by Jagdish and A K Srivastava,** mental health-For the present purpose of developing the inventory, mental health is defined as person's ability to make positive self-evaluation, to perceive the reality, to integrate the personality, autonomy group oriented attitudes and environmental mastery.

**2) Physiological Test:**

CBC (Complete Blood Count) – Hb-transport oxygen from lungs to tissue.

Incentive Spirometry (SPO<sub>2</sub>) – spirometer directly measures flow and volume of air.

Peak Flow Meter (PFEV) : To measure expiratory lung capacity.

Oximetry test – pulse oximetry may be substituted for arterial blood gases in children under 12 years of age.

BMR (Basal Metabolic Rate) : To measure amount of calories per day your body burn.

BMI (Body Mass Index): Is a relationship between height and weight that is associated with body fat and health risk.

Ht (Height) :To measure growth of subject relative age.

Wt (Weight) : To measure body's relative mass .

Chapter 5 Data Analysis , Finding And Discussion ,conclusion :

Hypothesis 1:

Oxygen Level Of Body Would Depend On The Haemoglobin Level Of An Individual.

Accepted

Hypothesis 2:

Individual Physical Growth Would Improve Their Haemoglobin In The Body And Positively Affect Immunity Of An Individual.

Accepted

Hypothesis 3:

Haemoglobin Level In An Individual Would Be A Parameter Of An Individual Lifestyle.

Accepted

Hypothesis 4;

Individual Physical Growth Would Improve Their Haemoglobin In The Body And Positively Affect Immunity Of An Individual.

Accepted

Hypothesis 5:

Right Pattern Of Diet Would Relate To Increased Haemoglobin Level In The Body.

Accepted

Hypothesis 6:

Haemoglobin Level Of The Body Would Be Related To Childs Coping Up Capacity With Environment And Related Respiratory Efficacy.

Accepted

Hypothesis 7:

Positive Stimulation Of Mind Would Show Elevated Effect On Total Health Of The Body.

Accepted

Hypothesis 8:

Recommended Naturopathic Lifestyle Would Work As A Future Remedial Measure.

Accepted

Hypothesis9:

Exercise And Appropriate Diet Would Positively Improve Child's Health.

Accepted

## **5.2 Limitations of study:**

This study has been limited to:-

1. The sample was restricted to only 5 – 12 years old students, hence no comparison or generalization, in terms of age is possible. However, further research using 2 – 5 years subject is requisite.
2. The effect of the therapist, variable could be studied, as there was only one therapist, who worked with both the intervention groups. It would be interesting to study with different therapist of other gender to have yielded varying results.
3. There were limitation for obtaining CBC report, as obtaining report was on parents willingness and child's readiness.
4. Area of study has been restricted to Mumbai city only.
5. There was the limitation regarding the size of the sample. The sample size was

limited. So the finding of this research cannot be generalized.

6. Medium socio-economic status background of the subject was taken.

### 5.3 Suggestion for future research:-

1. This research can become a guideline for future researcher by changing variable and parameter.
2. This study has shown an effective way of getting healthy by introducing complete concept of health in school children in mass number get motivation and understand importance of health in today's unpredictable modernization.
3. Researchers study shows that lower vital capacity of children are at a higher risk of psychological disturbance which may influence the development of respiratory diseases.
4. Researcher could open up promising evidence that in infancy to late middle childhood with asthma stressful events, can exacerbate and can worsen airway inflammation.
5. Researcher's depth of study will improvise lifestyle, which otherwise asthma stressful events can exacerbate and can enhance airway inflammation in infants to children in late middle childhood.
6. Climate scientist Roger Pielke sr. at the University of Colorado. He has mentioned that the role of added carbon dioxide as a major contributor in climate change has been firmly established. As per this prediction researchers research would be playing a great role of awareness about their lifestyle pattern.
7. Researchers research has introduced better lifestyle that could bring accomplished relationship between a child and parent, so if such health programs are taken up by schools, a positive result can be achieved.
8. *Pranayama* and *Suryanamskar* with right diet and habit seems to hold a lot of promise especially for children and those adults who are looking for drugless and painless life without economical pressure.
9. World Health Organization (WHO) 2013, has also taken up children as their future goal and promoting worldwide health programme for children at the current stage this research promises easy economical and complete way of achieving health.
10. When modernization has taken a grip on children's mind and action, National Institute Of Mental Health (2013) has also reported that they need to establish such

programme which could enhance children's mental health. So, this intervention programme promises positive results by including parents, teachers together serving children in day to day life.

11. This study identified a number of variables important to children's complete concept based programmes and raises number of questions which would benefit more research and generate promising secured life for our generation.
12. This study is important because it provides new insights into children's day-to-day routine based importance of health. This study provides overwhelming evidence of the importance of children's mental and physical health.

## 5.4 Implications:-

It suffice to say at this point that there are many ways and solutions to a problem. Only implication can make concrete positive change and revolution.

This intervention could be implied at a national level as school programme for children's overall growth, as this research is economical and easy, not time consuming; in return provides mental growth by doing *Pranayam* and *Suryanamaskar* and following healthy diet in daily life.

Parents are the main support of children, so implication of programme in school will reach out not only to children but also their homes, providing grass root solutions.

School is a foundation of children's life and future. Strategies for implementing researcher's interventions will be head start. An initiative that strives to give opportunity to Socio-economically vulnerable children through school, with the influence of new technology and resources more and more tools and channels are introduced in school to be more effective in disseminating information and knowledge to the students. However, this is restricted to only a few privileged schools. The need of the hour is to facilitate and support the government schools children with such innovative resources.

This intervention is a holistic way of return to nature, by achieving complete health. During this programme, researcher has improvised and inculcated research based programme and projects at competitive level, so not only has this intervention worked on health, but also in imparting knowledge and privilege to these children with higher international standard of education.

The latest WHO report health behaviour of school aged children (HSBC) 2009-2010. On social determinants of health of young people shows widespread inequalities in children and adolescent health. The report gives policy – makers an opportunity to get and serve the health of the next generation. This report has covered 39 countries and collected data from 11, 13 and 15 year olds, on 60 topics related to their health and well-being, social environments and behaviour.

The key message to take out of the study is that “Addressing the social determinants of health inequalities in childhood and adolescent can enable young people to maximize their health and well-being, ensuring that these inequalities do not extend into adulthood, with all the potential negative consequence for individual and society”.

As family affluence – unsurprisingly family affluence is associated with a healthier lifestyle, fruit vegetable intake, breakfast and healthy tiffin consumption and physical activity. As this research intervention, around the year, has worked as protective factor, support from family, classmates and community protect young people from negative influence and help children to remain motivated and focused around the year.

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- [www.wfmh.org.](http://www.wfmh.org)
- [www.biomedcentrl.com.](http://www.biomedcentrl.com)
- [www.sunsign-online.com.](http://www.sunsign-online.com)

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Phone: 2865 3006 (Primary)  
2861 8550 (Secondary)

Malad Kandivli Education Society's

## M.K.E.S. ENGLISH SCHOOL

Bhavishya Bharat Campus, Gate No. 2, S. V. Road,  
Malad (West), Mumbai - 400 064.

E-mail: mkes\_malad@hotmail.com (Primary) / mkeses@gmail.com (Secondary)

15/6/12

TO WHOMSOEVER IT MAY CONCERN

Shilpa N. Desai Research Scholar of JJT University Rajasthan been conducting her Intervention Programme in our school M.K.E.S Primary English Medium School .

On Go .In.Green . good health as her title of the problem is "Psycho –Physiological aspects and its effect on Respiratory system through Naturopathy on children age group 5-12.Positively link to global warming".

She has been given permission to work on her Intervention Programme for year 2012-2013 from the month of June 2012 to May 2013.All the best for her future

Endeavour.

IJSER

C. S. Ravani  
HEADMISTRESS  
M.K.E.S. ENGLISH SCHOOL  
S.V.Road, Malad (W),  
Mumbai-400 064



Phone: 2865 3006 (Primary)  
2861 8550 (Secondary)

Malad Kandivli Education Society's

## M.K.E.S. ENGLISH SCHOOL

Bhavishya Bharat Campus, Gate No. 2, S. V. Road,  
Malad (West), Mumbai - 400 064.

E-mail: mkes\_malad@hotmail.com (Primary) / mkeses@gmail.com (Secondary)



30.01.2013

### TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mrs. Shilpa Niraj Desai** has successfully conducted a "Go-Green, Good Health" Programme in our school from June 2012 to December 2012.

Through this intervention programme "Psycho-physiological Aspects and its effect on Respiratory System through Naturopathy", I wish to state that our students and parents have greatly benefitted with respect to their children over all health and fitness.

I wish her all success in every further endeavours that she may undertake.

**HEADMISTRESS**  
**M.K.E.S. ENGLISH SCHOOL**  
Bhavishya Bharat Campus, Gate No. 2,  
S. V. Road, Malad (W),  
Mumbai-400064.



SR.KG - DIV. - A			
S.No.	NAME	S.No.	NAME
01	AHER SHEETAL R	19	BAGDE DRUSHTANT R
02	BHATT UNNATI J	20	BHAGAT HARSHIT D
03	CHAUDHARY SHRIYA M	21	BHATI MAHESH G
04	DAKA NAMRATA R	22	BHUSHANKAR PIYUSH S
05	DANGODRA VIDHI N	23	CHAURASIYA SURAJ M
06	DEY VIDHI D	24	CHOUDHARY DILKHUSH S
07	DHILOD NOOPUR D	25	GOHIL NAYAN S
08	KAUNDER KARUNYA K	26	HARI SELVABHARATHI M
09	MANTRI SUDNYA S	27	HUDKE TARUN M
10	MUNJANI NISHTHA T	28	JALVI ONKAR K
11	PANCHAL SHIVANI R	29	MAKWANA NISHIKET Y
12	PARMAR DHANVI D	30	MALLICK ABUNASIM B
13	PATEL KHUSHI J	31	MUSANI ARSHAD Y
14	PATEL SABA S	32	PANDE KAMAL A
15	SARSAMBE SUPRIYA S	33	PATEL MAYUR L
16	SINGH BHOOMI D	34	PATEL SHUBH S
17	SINGH RIDDHI A	35	PRAJAPATI ANURAG A
18	VARMA ARUSHI S	36	RAJBHAR AJITKUMAR A
		37	SANGHVI RAHUL A
		38	SHAH ZAID Z
		39	SINGH JASWINDER M
		40	SODA AYUSH M
		41	SONDAGER KRRISH N
		42	SOODHA JATIN S
		43	SOTA AYAN A
		44	TIWARI PAVAN M
		45	VARMA ARYAN S
		46	WAKODE SHUBHAM B

SR.KG - DIV. - B			
S.No.	NAME	S.No.	NAME
01	BHIL PRIYANKA R	16	CHOUHARY MUKESH R
02	CHOTALIYA SHIVANGI A	17	GADWAL MOHD. ASHRAF I
03	GUPTA SONAM S	18	GAUD RUDRA D
04	HATHWAL RUCHITA R	19	GUPTA DHRUV C
05	KANDU LAXMI D	20	JOSHI SHLOK H
06	KANDU NANDINI D	21	MUKHIYA DIL KHUSH A
07	KHAIRE DIVYA AJAY	22	PATEL REZWAAN D
08	KOUNDAR JAYASHRI V	23	PRASAD AMRESH N
09	MOURYA GOURI R	24	SINGH SURAJ P
10	NARKAR SAKSHI P	25	SORATHIA FRHAAN H
11	PRABHU NIDHI U	26	TRIVEDI KRISHNA J
12	SINGH APARNA R	27	VYAS ABHISHEK S
13	SINGH NESHA V	28	YADAV ANURUDRA R
14	SINGH POOJA K	29	YADAV KISAN R
15	VISHWAKARMA ANUSHAKA P	30	YADAV RUDRA R

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1 <sup>st</sup> STANDARD (I) - DIV. - A			
S.No.	NAME	S.No.	NAME
01	BATAW UDITA S	21	ANNAWADIA KRISHNA B
02	CHOVE PURVA H	22	BHAVSAR RUSHABH R
03	GARJE SHRASHTI D	23	CHOUDHARY LAKSHAY M
04	GUPTA NEHA B	24	DEVRSUKAR PARTH A
05	GUPTA SNEHA A	25	GHAG PRATHAMESH P
06	JAMWAL SOUMYA N	26	GUPTA HITESH D
07	MONDHE RASHMI S	27	JAISWAL SIDDHESH R
08	MUJPUA EKTA R	28	KIDECHA JATAN N
09	NANDU MAHEK B	29	MAKHARIA SIDDHARTH S
10	PARMAR MOUSMI M	30	MANE AVISHKAR K
11	RATHOD VRUSHTI K	31	PATEL AAYUSH A
12	SAHA MONASREE S	32	PATEL DARSHAN D
13	SHAH BHAVYA P	33	PRAJAPATI HENIL P
14	SHAH RENU R	34	RAVAL MANTHAN S
15	SHUKLA ADITI D	35	SIDHATAR MUHAVIYA M
16	SINGH PARI D	36	SINGH KISHAN P
17	SOKIYA AASIYA A	37	TAILOR GAURAV D
18	SOLANKI BHAVIKA J	38	TURAKHIA MIHIR A
19	VAN DRASHTI M	39	WAGHELA HARSH J
20	YADAV SHRUTI V	40	ZALA PARTH S

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1 <sup>ST</sup> STANDARD (I) - DIV. - B			
S.No.	NAME	S.No.	NAME
01	BHAGAT SALU M	20	ARUNDUDHIYA YOGESH R
02	DEDHIA RASHI H	21	CHAUDHARY ARJUN P
03	GOLE DIVYA L	22	DAMKIWALA MOHD. FAIZ M
04	JAJAL NEHA D	23	DHILOD RITESH D
05	MEMON SANIYA S	24	GUNJAN ANIL U
06	MORI RIYA S	25	GUPTA SURAJ R
07	PARMAR MANSI G	26	JOSHI KARTIK N
08	PATEL BHAVI M	27	KODTE PIYUSH S
09	RUPALI H	28	MAKWANA SHIVANG D
10	SEN PALAK G	29	MOTLA RAVI N
11	SHAH KHYATI J	30	PATEL AMANULLAH A
12	SHAIKH FALAK I	31	PATEL MOKSH M
13	SHETH DISHA A	32	RAM BIKIKUMAR B
14	SINGH ARPITA A	33	SHETTIYAR VIJAYRAJ N
15	SINGH HARSHITA A	34	SHUKLA PIYUSH K
16	SOJWAL VINITA V	35	SIDHATAR MUSAIB M
17	SOKIYA MUSKAN R	36	SINGH HARSHVARDHAN A
18	UPADHYAY MANSI Y	37	SINGH PIYUSH D
19	VISHWAKARMA JYOTHI LAXMI R	38	TANNA DHRUVIL K
		39	YADAV ANAND R
		40	ZHA GAURABH J

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2 <sup>nd</sup> STANDARD (II)		2 <sup>nd</sup> STANDARD (II)	
S.No.	NAME	S.No.	NAME
01	BALGARASIA SHRUTI K	30	AHIRE GHANSHYAM R
02	BHAGAT NISHA N	31	BHANDARI PARLAD S
03	CHAUHAN NEHA S	32	CHAVAN NITESH S
04	CHAURASIYA NISHA M	33	CHAWDA HARSHIT N
05	CHINTAKUNTA HARSHIKA S	34	CHOBADIA AARYA D
06	DAS TRASHA R	35	CHOUDHARI HEET R
07	GORANI KRISHNA A	36	DALAL DAKSH M
08	GUPTA PALAK C	37	GUPTA AMAN S
09	GUPTA PRACHI T	38	GUPTA SANTOSH S
10	GUPTA SHREJAL R	39	JAMADAR ARYAN A
11	JAIN PALAK S	40	KAMAT SHIVNARAYAN S
12	JHA ANJU M	41	KARANJKAR NIKHIL R
13	JHA MANJU M	42	KORIA NIKUNJ P
14	MAHOVIA BHOOMI N	43	LOHAR HIMANSHU M
15	MAICHA HETAL D	44	MAKWANA PARTH M
16	NANNAN MAHEK B	45	MAMTORA KARAN D
17	ORAON LAXMI B	46	MISHRA AKHIL S
18	PUROHIT EKTA C	47	MISTRY BHUMIT S
19	SAPA RESHMA F	48	MUNJANI TARUN D
20	SHAH SHRUTI P	49	NALAWADE OMKAR T
21	SINGH MUSKAN K	50	NANDWANA AADITYA H
22	SOLANKI SAKSHI P	51	PAREKH SANKET H
23	SONI VEERA K	52	PARMAR PARTHIVA D
24	THACKER MAHEK A	53	PASTE CHIRAG A
25	TRIPATHI JAGRITI C	54	PATEL MOHIT G
26	VARMA SUCHI A	55	PATEL PARTH R
27	VITHALANI ISHITA H	56	PATEL RUTVIK L
28	YADAV RUCHI A	57	PATEL TAKSHIL M
29	YADAV RUCHI K	58	PRAJAPATI ANANDKUMAR A
		59	SAHAL NIHAR R
		60	SARAF PREM U
		61	SATHVARA KARAN N
		62	SHAH AKSHAT N
		63	SHAH HAST H
		64	SHAH RAHUL R
		65	SHARMA TANISH V
		66	SHINDE PRATYUSH P
		67	SINGH ABHISHEK R
		68	VADHIYA PREET D
		69	VISHWAKARMA MOHIT R

3 <sup>rd</sup> STANDARD (III)		3 <sup>rd</sup> STANDARD (III)	
S.No.	NAME	S.No.	NAME
01	CHAUDHARY KARISHMA V	25	ANNAWADIA HITESHKUMAR B
02	CHAUDHARY PAYAL M	26	ASHARA RAJ Y
03	CHAWDA KHUSHI S	27	ATHWAL RONAK V
04	CHUDASAMA VRUSHALI K	28	BAGDE VIKRAM R
05	KADAM LAVANYA A	29	BALAGARASIYA MEET K
06	KANOJIA RIYA R	30	BEG AARSALAN A
07	LEWIS RUTH P	31	BHARADWAJ VISHAL C
08	MEHTA ARPITA D	32	BHATI SHUBHAM G
09	MONDHE KHUSHI S	33	CHAURASIA ADITYAKUMAR S
10	ORAON RAJKUMARI B	34	CHETTIYAR VINOD V
11	PARMAR ARCHI R	35	CHOUDHARY RAHUL S
12	PATNAIK SUDEEPITA P	36	DARJI DHRUV A
13	PUNABIA HEENA D	37	DEGDA BRIJESH V
14	RAWAL MANIYA B	38	DHODIA SAMEER R
15	SAGAR SWATI Z	39	GUPTA SHUBHAM S
16	SHAH PURVA H	40	JAIN MEET L
17	SHAH SHOBHA B	41	JAIN PRATHAM V
18	SIRCONDA GAYATRI N	42	MAKWANA KRUSHANG M
19	SOLANKI DISHA J	43	MALI DHIRAJ S
20	SOLANKI HINAL S	44	MANSURI AMAAN A
21	SONDAGAR RIYA N	45	MISHRA KAPIL S
22	SOLANKI KHUSHI N	46	MUJPPURA RUSHABA R
23	YADAV RICHA S	47	NARPALI AFTAB F
24	YADAV SHWETA B	48	PASWAN SUNIL S
		49	PATEL DARSHAN H
		50	PATEL DEV H
		51	RAI PRINCE G
		52	RANE DEV V
		53	SINGH ARPIT A
		54	SINGH AYUSH D
		55	SOLANKI ANSH S
		56	TIWARI OM S
		57	VANDRA PRANAY H
		58	VINERKAR OM S
		59	YADAV ANUJKUMAR B
		60	YADAV DHIRAJ C
		61	YADAV ROHIT B

4 <sup>th</sup> STANDARD (IV)		4 <sup>th</sup> STANDARD (IV)	
S.No.	NAME	S.No.	NAME
01	BHAGAT KASHISH R	27	ARABIYANI FAIZAN R
02	BHATT MAITRI J	28	BHAGAT UMASHANKAR D
03	CHHADVA VIDHI H	29	BHIL OMKAR R
04	CHOUHAN HARSHITA R	30	CHETTIYAR YOGESH N
05	DABHI HETAKSHI D	31	CHOUDHARI YASH K
06	DHAMECHA KRISHA C	32	GAURI RAHUL R
07	GADANI RIDDHI V	33	GUPTA NIKHIL S
08	KANOJIA KHUSHI R	34	HINGOL GAURAV S
09	MADHUMITHA M	35	KAKLOTTER NEEL M
10	MAJELI AARANSI M	36	KAMAT ARJUN S
11	MAMTORA KHUSHI V	37	LONDHE ANIKET B
12	MANE ANUSHKA K	38	MADHANI SENKY B
13	MANIHAR ASIYA K	39	MOHBIYA AKSHAY N
14	MISHRA JANVI K	40	PANDEY ADARSH V
15	NANANI DEVANSI B	41	PANDEY ANIKET S
16	PATEL DEVANSHI M	42	PARMAR KARAN G
17	PATEL KASHISH M	43	PARMAR NIHAR S
18	PRAJAPATI NANDITA N	44	PATEL NEIL Y
19	PUROHIT YASHODA B	45	PATEL SAJJAD I
20	RAI ANJALI G	46	PATEL SHANKAR M
21	RAO KALPANA D	47	PURBIYA KAUSHIK D
22	RAMANEY SHARON S	48	PUROHIT PRINCE C
23	SAVLA CHARMI H	49	RAI PRINCEKUMAR S
24	SOJWAL VISHAKHA V	50	RATHOD MIHIR I
25	TRIVEDI KRATI J	51	SHAH DHRUV M
26	UPADHYAY KANAK S	52	SHAH HARSH N
		53	SINGH TAPAN J
		54	SINGH VIKRAM J
		55	TANDON MITHILESH V
		56	VARMA SHREY R
		57	VIGNESH MURUGAN
		58	VIGNESH MUTHU



JJTU university PhD programme

BY (research scholar) SHILPAN .DESAI

Enrolment No -20114552

M.K.E.S. English School. Malad(West). MUMBAI

YOUR CONCIOUS IS MY LIGHT KINDLYENLIGHTEN IT

I ..... agree for intervention programme taken up  
by Shilpa Desai.

NAME :

AGE:

ADDRESS :

OCCUPATION :

TEL. NO RESI :

OFFICE :

“Regularity is the essence of Progress”

Date : \_\_\_\_\_ Signature : \_\_\_\_\_





Data Collected and Compile by Mrs. Shilpa N. Desai (Research Scholar) for  
JJT University Phd Programme  
Enrollment No. 20114552  
M.K.E.S HIGHS SCHOOL, MALAD (WEST), MUMBAI - 400 064.

No. \_\_\_\_\_

Case No. \_\_\_\_\_

**R | U | N | R | I | F**

**PATIENT HISTORY SHEET**

Name of the Patient \_\_\_\_\_ Age \_\_\_\_\_  Male  Female

Address \_\_\_\_\_

Date of Admission: \_\_\_\_\_ Weight: \_\_\_\_\_ Kgs. Height \_\_\_\_\_ cms. Date of Discharge: \_\_\_\_\_

1. Write in chronological order about your complains / symptoms & duration. e.g. Bodyache / fatigue / urine, sweating, Diarrhoea, etc.

Complaints	Duration
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

\* Please  from Q. No. A to E whichever is applicable.

- A. How treated? Ayurved / Homeopathy / Nature Cure / Yog / Allopathic \_\_\_\_\_
- B. Which Medicine you are taking? Any allergy know? \_\_\_\_\_
- C. Past history of major illness : e.g. Joint Pain / Jaundice / Typhoid / Operation \_\_\_\_\_
- D. Family history of major illness: B.P. / Diabetes / Asthma etc. (mother / father, brother, sister, chacha, mama children) \_\_\_\_\_

E. Personal History:

Birth Date: / / , Blood Group: A/B/AB/O/Rh: +ve / -ve, Mother Tongue -

Zodiac Sign: (Moon Sign) Aries / Taurus / Gemini / Cancer / Leo / Virgo / Libra / Scorpio / Sagittarius / Capricorn / Aquarius / Pisces.

Occupation: \_\_\_\_\_ Distance from home to office \_\_\_\_\_ Working Hrs. \_\_\_\_\_

Res / Relaxation / Sleep \_\_\_\_\_ Hrs. Sound / Disturbed \_\_\_\_\_

When do you to bed? \_\_\_\_\_ When do you wakeup? \_\_\_\_\_

Do you get dreams? Yes / No. Do you remember dreams? Yes / No.

What is your ambition? \_\_\_\_\_

What are your Hobbies? Reading / Music / Singing / Games / Treking / Movies / TV Exercise / Yoga / Nothing

How is your attitude? Joyous / Friendly / Easy going / Nervous / Depression / Jealous / Co-operative / Reserve Think too much / Stressful / Non co-operative.

Do you believe in God - Yes / No. (Puja, Meditation, Yoga Practice) Yes / No.

2. Diet- Vegetarian                      Mix                      Weekly                      1, 2, 3, days/daily
- Breakfast- Time: 7 8 9 10 - Hot Drinks / Cold / Bread / Veg. / Sandwich / Idli / Wada / Dosa / Toast / Biscuits / Roti / Poha / Upama / Fruits / Juices / Dates / Nuts / Eggs / Meat / Fish / Nothing / Specify
- Lunch- Time: 11 12 12 Roti / Dal / Rice / Veg. Salad / Chatni / Soup / Sandwich
- Dinner- Time: 6 7 8 9 10 - As above or anything else?
- Do you take cold drinks- Cola / Orange / Soda / Beer / Icecream
- Do you like spicy food / Snacks; fried / Refined food? Yes / No.
3. Urinary Complaints - Normal / Excess / Less / frequently? / get up at night? / Burning / Obstruction / Dribbling
4. Bowel Habits -Clear / Satisfaction / Formed Stool / liquid / semisolid / with mucus / Blood / Worms / Constipation Frequency / Stool floats on water seal or stick / stick to the pan?
5. Exercise - Specify / Walking / Jogging / Running / Aerobics / Yoga / P.T. / Gym / Heath Club / Swimming
6. Habits - Tea of Coffee more than 2 cups / Tabacco / Smoking. How many cigarettes? Alcohol - daily/weekly
7. Family life - Happy / Disturbed / Adjustment?
- Relation with family members - Normal / Disturbed. With wife / Children / Parents / Brother - sister / Relatives.
8. Social Life: Mix with the people, neighbour / like loneliness / isolation? How many friends? Difference with people, office staff, colleagues?
9. Are you satisfied with the work you are doing? Y / N
10. How is the environment at the place of your occupation? Co-operative / Non co-operative / friendly / Stressful / Tiring / Boring / Suppressive / Dominating.
11. How is your sexual life - Married / Unmarried / Widow / Widower/ Remarriage : Satisfactory / Unsatisfactory/ Painful / Extra Marital. Contraception - Condoms / Copper T / Pills / Pessaries / Rhythm Method
12. For Women / Girls:
- Age at menarche - 11, 12, 13, 14, 15 Yrs. Menstrual cycle: Regular / Irregular / Painful / Menopause
- Menstrual flow - 2, 3, 4, 5, No. of days / Normal / Scanty / Heavy / Foul smelling / White discharge. before menses any abortion, MTP? When? How many times? \_\_\_\_\_

Signature

## CLINICAL FINDINGS

(TO BE FILLED IN BY THE ASHRAM'S DOCTOR AT THE TIME OF ADMISSION)

### GENERAL EXAMINATION:

- External appearance - Normal / Nervous / Depressed / Anxious / Thin / Medium / Obese / Type A - B - C
- Obesity - Generalised / Gynoid / Android / Central / Hypothyroid / Any Other -
- Gait - Normal / Slow Steps / Tremors / Hemiplegic / Spastic / Limping / Waddling / Facies
- Peripheral Pulse - ( /min.) Regular / Regularly Irregular / Low Vol / High Vol / Atherosclerotic / Anacrotic / Missing / Dicrotic / Collapsing / Alternans / Paradoxus / Bigeminus
- B. P. - Sitting: ( / mm. of Hg), Recumbent: ( / mm of Hg)  
Standing: ( / mm. of Hg),
- Nails - Normal / Pink / Pale / Pitting / Ridging / Beau's lines / Paronychia / Koilonychia / Onychomycosis / Clubbing / Cynosis / Dystrophy / Psoriatic / nail biting
- Conjunctive - Normal / Pink / Pale / Cloudy / Xerosis / Bitot Spot / Kajaal Sign / Pterigium / Icterus / Haemorrhage / Congested.
- Mouth - Breath - Normal / Foetor oris / Stomatitis / Ulcer / Lips -
- Tongue - Normal / Pink / Pale / Stomatitis / Glossitis / Fissured / Coated / Leucoplakia Ulcers / Geographic / Glossy / Thrush / Dry / Micro - Macroglossia
- Throat - Palate - Tonsils - Pharynx -
- Teeth - Normal / Unhygienic / Stained / Tartar / Carries / Mottled Fluorosis / Artificial / Extra / Symmetrical / Asymmetrical / Cavities / Filling / Missing I - C - Pm - M
- Gingivae - Gingivitis / Hypertrophy Bleeding / Aphthous Ulcer / Pyorrhoea / Receding
- Hairs - Normal / Grey / Sparse / Bald / Hairline - Normal Abnormal / Psoriasis / Eczema / scalp / Pityriasis capities / Seborrhoea capities / Alopecia / Hirsutism / Type Male - Female
- Skin - Normal Complexion / Dry / Wrinkled / Patches / Dermatitis / Loss of Luster / Eczema / Oily / lesions / Pitting oedema on feet - eyes / Psoriasis / Acne / Rash / Purpura / Lichen
- Eyes - Rt. Myopia / Hypermetropia / Presbyopia / Squint / Cataract - Lt. Rt / IOL / Diabetic  
Lt. Hypertensive retinopathy / Degeneration / Pterigium / Glaucoma / Style / Icterus Arcus Senilis / Xanthelesma / Diminished vision Rt. Lt. / Blind Rt. - Lt. Opacity
- Ears - Discharge / Tenderness / Drums / Deafness - Conductive - Neural  
Rt. Lt.
- Nares - Discharge - Mucoid - Watery - Mucopurulent - Haemorrhagic / Cavity - / Polyps / Turbinates - Conchae / Posterior Nasal discharge / Septum  
Rt. Lt.
- Liver - Palpable / Not Palpable / Cervical / Sub Mandibular / Sub Occipital / Supraclavicular / Axillary / Supratrochlear / Inguinal / Firm, hard, matted, Suppuration.
- Deformities - Genu varum / Valgum / Swelling, small joints Hands / Feet / Wasting / Spasm / Any Other

## SYSTEMIC EXAMINATION

CARDIO VASCULAR SYSTEM : HEART SOUNDS - Normal / JVP- Oedema -  
Systolic murmur - early midsystolic - pansystolic - Machinery / Diastolic murmur - early diastolic - middiastolic -  
presystolic  
'Mitral' 'Tricuspid' Aortic' 'Pulmonary'  
RESPIRATORY SYSTEM : RR - /min. Thoracic / Abdomino thoracic / Vesicular - bronchial - Broncho  
vesicular / Cavemous / Rhonchi / Stridor / Rales- Fine - Coarse  
TVF - VR -

ALIMENTARY SYSTEM :

CENTRAL NERVOUS SYSTEM : Higher Functions - Normal / Abnormal, Orientation Consciousness  
Speech- Memory Intelligence  
Reflexes- Rt. BJ / TJ / BR / Knee / AJ / Plantar / CR / AR - exaggerated / Slow  
Lt. BJ / TJ / BR / Knee / AJ / Plantar / CR / AR - exaggerated / Slow  
Powder- Rt. Gr. 0, 1, 2, 3, 4, 5 -  
Lt. Gr. 0, 1, 2, 3, 4, 5  
Sensations  
Cranial Nerves - Cerebellar signs

MUSCULO SKELETAL SYSTEM : Affected Joints - Knee / Hip / Ankle / Shoulder / Elbow / Wrist / Inter  
phalangeal - fingers / Toes  
Pain / Tenderness / Swelling / Inflammed / Crepitus / Stiffness /  
Deformity  
Restricted - Flexion, Extention, Rotation, Pronation, Supination

URO GENITAL SYSTEM :

ENDOCRINE SYSTEM :

PSYCHIATRIC FINDINGS :

SKIN AND APPENDAGES :

BLOOD AND BLOOD FORMNG ORGANGS :

LYMPHATIC SYSTEM :

IMMUNE SYSTEM :

SURGICAL DISORDERS :

**INVESTIGATIONS -**

Parameter	On Adm.	On Dis.	Parameter	On Adm.	On Dis.
Hb gms %			Sr. Chol. mg. %		
R. B. C./C. mm.			LDL mg. %		
W. B. C./C. mm.			VLDL mg. %		
Neutro			HDL mg. %		
Lympho			TRG mg. %		
Eosino			T 3		
Baso			T 4		
Mono			TSH		
Plateles			LFT		
Smear Abn. Cells			UREA mg. %		
E.S.R. - 1 hr. mm.			CREAT mg. %		
BSL.- F. mg. %			Uric Acid mg. %		
P.P. mg. %			RA Test		
URINE R. Sugar			HIV 1/2		
Ketone					

X-RAY CHEST:

X-RAY SPINE - CERVICAL:

LUMBER:

USG ABD / PELVIS:

CT SCAN/ MRI:

**DIAGNOSIS - Provisional / Confirmed -**

**Associated Diseases - 1.**

2.

3.

4.

ECG:

ANGIOGRAPHY:

STRESS TEST:

THALLIUM PERFUSION:

2 D / 3 D ECHO / COLOUR DOPPLER

**Doctor's Signature**

**IMPROVEMENT CRITERIA-** (Specify in terms of percentage of relief felt.)

General Well Being - Yes / No

Appetite - Normal / Less / Not good

Sleep - Normal / Disturbed

Exercition - Normal / Not Normal

Flatulence / Dyspepsia - Less

Pain - No Pain / Less / No Improvement

O/A

O/D

Pulse / min :		
B. P. mm. of Hg		
Respiration / min:		
Weight Kg	ANALOGUE SCALE (0 - Normal, 10- Worst)	
Joint Swelling -	0 _____ 10	0 _____ 10
Joint Movement- ROM - Degree	10 20 30 40 50 60 70 80 90 100	10 20 30 40 50 60 70 80 90 100
Pain Scale -	0 _____ 10	0 _____ 10
Skin Lesions	0 _____ 10	0 _____ 10
Stress Scale -	High      Medium      Low	High      Medium      Low
Subjective assessment -	10 20 30 40 50 60 70 80 90 100	10 20 30 40 50 60 70 80 90 100
Exercise Tolerance: Rounds / kms.		
Exertional dyspnoea:		
Menstrual complaints:		

**OBESITY**

Body Mass Index : (Weight Kgs / Height (mtrs.)<sup>2</sup> =

Under wt. < 18.5, Normal 18.5 - 24.9, Over wt. > 25, Preobese 25-29.9, Obese Class 3 > 40

Normal - Males < 1, Females < 0.85

Waist / Hip ratio :

Abdominal Circumference:

Arm circumference:

Diet F -	/ED -	/SD -	/CD -	Raw -
Response	1 - NR / ST / REL / RM / CWM/	Control - For diagnosis		
Response	2 - NR / ST / REL / RM / CWM/	Control - For associated disease		
Response	3 - NR / ST / REL / RM / CWM/	Control - For associated disease		
Response	4 - NR / ST / REL / RM / CWM/	Control - For associated disease		

Remarks:

Signature

## “GOOD HEALTH” go-In Green ‘DIET PROGRAMME’

**NARENDRA. V. DESMUKH**  
Guide

**Shilpa. N. Desai**  
M.S.Msc  
(Research Scholar)  
Enrollment No. 20114552

रुग्ण को पूरा नाम _____	र.नं. _____	उम्र _____
प्रवेश दिनांक: _____	निर्गमन दिनांक _____	परिणाम _____
लक्षण/निदान :		
प्रवेश पर	वजन	किलो
निर्गमन पर	किलो	मि.

### आहार और उपचार

प्रातः ५.००	उषः पान २००-४००	पानी २००-४००	मेथी + पानी २० २००	मनुका + पानी २० २००
प्रातः ७.००	निंबु + मध + पानी १/२ + रच + २००	काढा + दूध + गुड १०० + १०० + १०	मनुका + पानी २० + २००	
प्रातः ८.००	निंबु + मध + पानी १/२ + रच + २००	दूध + मट्ठा १००-२००	गाजर रस / दुधी रस / कोबी रस / काकडी रस / पालक धनीया १००-२००	
		तुलसी रस / अहुळसा रस / हल्दी रस / दुर्वा रस / अद्रक रस + मध / कच्चे आलू का रस / गेहूँ ज्वारे का रस २०-४०	१०	१० + २
	आवला रस/ ५०-१००	निम पत्ती रस/ १०-२०	मोसंबी रस / संत्रा रस / अंगूर सर / पायनॅपल रस १००-२००	
फलाहार	नाश्ते में पोहा, उप्पीट, नमकीन, पराठा न लें। केवल रसाहार, फलाहार, दुध, मट्ठा, सुका मेवा लेना हितकर है।			
	बादाम २-४-६	खजूर २-४-६	कालीमनुका १०-२०	अंगूर पपया १००-२००
			सफरचंद १-२	आम २-४
			अंजीर २-४	केला २-४
			चिजू १	अनार १-२
				सिताफल १-२
	► भोजन में एक ही अनाज का प्रयोग करें। उदा. रोटी या चावल या भाकरी या आलू या अंकुरित मूंग। रोटी के साथ सब्जी, सलाद, छांछ, चटनी, मखन, घी ले सकते हैं। रोटी + छोले + राजमा आलू संयोग अच्छा नहीं।			
सुबह ११.००	पानी २००-४००	निंबु + मध + पानी १/२ + रच + २००	नारीयल पानी / नीरा / मोसंबी / संत्रा रस / अंगूर रस / पायनॅपल रस १००-२००-४००	
	दलिया १००	रोटी-गेहूँ / ज्वार / बाजरा / नाचणी / खारकरा १-२-३	दाल-चावल/कढी-मट्ठा - खिचडी १००-२००	
	वरई-भगर १००-२००	अंकुरित / मटकी/उबले मुंग ५०-१००-२००	उबला / भुना आलू १-२-३	रताळु (शक्करचंद) सुरण १००-२००
			मश्रुम १००	
	उबला गाजरा / उबली सब्जी / दुधी सब्जी १००-२००	कचुंबर सलाद / ग्रीन सलाद ५०-१००-२००	कच्चाआहार/सामान्यआहार १००-२००	
	चावलका मांड (भाताजी पेज) कॉर्न सुप / टोमॅटो सुप / मश्रुम सुप / सब्जी सुप / मुग सुप / कुळीथ सुप १००-२००-४००			
	मट्ठा / दही २००-४००	खोबरा १०-२००	मखन / चटनी/धी १०-२०	मोसमी फल पपया/चिजू २००-३००
			अंजीर/केला २-४	सिताफल/रामफल १-२
	अमृद/अनार १-२	द्राक्षा २५०	आम २-४	नाशपती/सफरचंद १-२-३
			मोसंबी/संत्रा २-४	टरबुज/खरबुज २००-३००
	मनुका २०-४०	खजूर ४-६-८	बदाम २-४-८	किशमिश २०-४०
दोपहर १.००	पानी २००-४००	निंबु + मध पानी १/२ + रच + २००	नारीयल पानी / नीरा/मोसंबी/संत्रा रस/अंगूर रस २००-४००	मट्ठा / दही २००-४००
दोपहर ३.००	पानी २००	काढा/दुध/पानी १०० + १०० + १०	निंबु + मध पानी १/२ + रच + २००	नारीयल पानी/नीरा/मोसंबी/संत्रा/अंगूर रस/पायनॅपल रस १००-२००
				आवला रस ५०-१००
	मट्ठा २००-४००	गाजर रस / दुधी रस / कोबी रस / काकडी रस / पालक धनीया/ १००-२००	हल्दी/तुलसी/अहुळसा रस १०-२०	गेहूँ ज्वारे का सर ५०-१००

प्रातः ५.३०	: पानी २००-४००	निंबू + मध + पानी १/२ +रच + २००	नारीयल पानी/नीरा/मोसंबी/संत्रा/अंगूर रस/पायनेपल रस १००-२००-४००					
	: रोटी-गेहूँ/ज्वार/बाजरा/नाचणी/खाकरा १-२-३		दाल-चावल/कढ़ी-मट्ठा - खिचडी १००-२००					
	: अंकुरीत मुंग / मटकी / उबले मुंग / कच्चा आहार १००-२००		उबला /भुना आलु १००-२००	सुरण मश्रूम १००-२००	दलिया + सब्जी १०० १००			
	: उबला गाजर/उबली सब्जी/दुधी सब्जी १००-२००		सब्जी सुप/मुग सुप / कुकीथ सुप १००-२००		कचुंबर सलाद / ग्रीन सलाद ५०-१००			
	: चावलका मांड (भाताजी पेज) कॉर्न सुप / टोमॅटो सुप / मश्रूम सुप/ १००-२००-४००		मट्ठा/दही खोबरा / चरणी २००-४००		२०-४०			
	: मरखन घी १०-२०	मोसमी फल २००-३००	पपया/चिकु/अंजीर २०० २-४	केला/सिताफल/रामफल १-२	अमृद/अनार १-२	नाशपती/सफरचंद २०-४०		
	: द्राक्ष २५०	आम २-४	मोसंबी / सत्रा १-२-३	चरबुज / खरबुज २००-३००	मनुका २०-४०	खजूर ४-६-८	बदाम २-४-८	किशमिश २०-४०
रातः ८.००	: निंबू + मध + पान १/२ +रच + २००	दुध १००-२००						
उपचार	: सभी प्रकार के उपचार एक साथ न ले । कटी स्नान के बाद स्नान या बाष्प स्नान सर्जित है । रक्तचाप, हृदय रोग से पिडीत रुग्ण गरम टब बाथ, स्टीम बाथ न ले ।							
सुबह ५ से ७	: उत्थान / प्रार्थना /योगाभ्यास / व्यायाम / धूमना १-२-३ कि.मी /दौडना / मालीश / सूर्यस्नान ५.३० /६.१५/७.३०							
सुबह ८ से १२	: मिट्टी लेप/सर्वांग मिट्टी लेप/निम डूश/एनिमा/स्नान/निम जल स्नान/अर्धटब स्नान / पूर्ण टब स्नान/ कटीस्नान/बाष्प स्नान /अस्थमा बाथ/मेहन स्नान/रीठ स्नान/सौना/मिट्टी पट्टी/चुंबक चिकित्सा/ फिजिओथेरेपी/एक्युप्रेसर/न्युरोथेरेपी/रंग चिकित्सा							
दोपहर ३ से ५	: लोकल स्टीम / लपेट / सर्वांग चादर लपेट / पेटकी-छाती की-गिली-उनी लपेट / गलेकी-संधी जोड़ों की लपेट ठंडा गरम सेक/कटी स्नान रीठ स्नान/न्युरोथेरेपी/एक्युप्रेसर/एक्युपंचर/किडनी पैक/G.H.Pack/ बर्फ का मसाज/राई सेक/इप्सम सॉल्ट / (नमक) रंग चिकित्सा/फिजिओथेरेपी.							
शाम ७ से ९	: प्रार्थना /पाद स्नान ठंडा / पाद स्नान गरम / चंद्र स्नान / विश्राम							
<b>योगासन</b>								
बैठकर	अंमंत्रोच्चार योगमुद्रा उष्ट्रासन पादांगुष्ठासन	प्रार्थना पर्वतासन ब्रह्ममुद्रा सिंहासन	अर्धपङ्गासन वक्रासन श्वानासन वीरासन	पङ्गासन पश्चिमोत्तासन मार्जरासन उष्ट्रासन	सुख्रासन मंडुकासन शशांकासन सुप्तवज्रासन	स्वस्तिकासन अर्धमत्स्येन्द्रासन जानुशिरासन गाठियाँ निरोधक व्यायाम	बज्रासन गोमुख्रासन आकर्षधनुरासरन हस्तसंचालन	
लेटकर	मकरासन उत्थानपादासन सेतुबन्धसन	भुजंगासन पवनमुक्तासन अर्धचक्रासन	शलभासन वीपरीतकरणी मेरुदण्डासन	नौकासन सर्वांगासन कटिआसन	धनुरासन हलासन नौकासन	शवासन मत्स्यासन पादसंचालन		
खड़े होकर	पूरक व्यायाम उत्कटासन अर्धकटिचक्रासन	ताडासन त्रिकोणासन चन्द्रासन	गरुडासन वीरासन वक्षस्थलविकास	वृक्षासन पादहस्तासन हस्तसंचालन	सन्तुलनासन तिर्थकताहासन पादसंचालन	नटराजासन अर्धचन्द्रासन		
सूर्यनमस्कार	१. ॐ नमो भगवते वासुदेवाय । २. ॐ नमो भगवते वासुदेवाय । ३. ॐ नमो भगवते वासुदेवाय । ४. ॐ नमो भगवते वासुदेवाय । ५. ॐ नमो भगवते वासुदेवाय । ६. ॐ नमो भगवते वासुदेवाय । ७. ॐ नमो भगवते वासुदेवाय । ८. ॐ नमो भगवते वासुदेवाय । ९. ॐ नमो भगवते वासुदेवाय । १०. ॐ नमो भगवते वासुदेवाय । ११. ॐ नमो भगवते वासुदेवाय । १२. ॐ नमो भगवते वासुदेवाय ।							
प्राणायाम	ॐ कार सूर्यभेदन उज्जयी	श्वासनिरीक्षण सीत्कारी	दीर्घश्वासन शितली	जलदश्वासन भस्त्रिका	अनुलोमविलोम धामरी	पूरक-रेचक-कुंभक मूर्च्छा प्लाविणी		
षट्कर्म	नेती	धौती	बस्ति	नौली	त्राटक	कपालभाती		
बंध	ज्ञानमुद्रा भुजंगीनीमुद्रा तडागीमुद्रा	चिनमुद्रा भूचरीमुद्रा महामुद्रा	भैरवमुद्रा आकाशीमुद्रा अश्विनीमुद्रा	हृदयमुद्रा समुखीमुद्रा वज्रली	शाम्भवीमुद्रा उनमानीमुद्रा सिंहमुद्रा	नासिकागृही प्राणमुद्रा काकीमुद्रा योगमुद्रा		
। ध्यान - ॐ कार, मानसपूजा, सगुण साकार ध्यान ।।								
अन्य सूचनाएँ : चिकित्सा के पश्चात १०/३० दिन के बाद संपर्क करें ।				चिकित्सक के हस्ताक्षर				



### उपयुक्त नियम

- ❖ स्वस्थ व्यक्ति वह है जो स्व में स्थित होता है। आहार, विहार, विचार, निद्रा, ब्रह्मचर्य आदि जीवन से जुड़ी हुई प्रवृत्तियों में संतुलन रखने से ही स्वास्थ्य का लाभ होता है।
- ❖ सुबह सूर्योदय से पहले ११ घंटा ब्रह्म मुहूर्तपे जागना उचित हैं। नीम, बबुल, खैर, आघाटा, आदि वनस्पतियोंका दातून करना चाहिये।
- ❖ उषःपान : प्रातः २०० से ४०० मिली (१से २ग्लास) शीतल जल प्राशन करना स्वास्थ्यकारक है। प्रकृती और ऋतुओं के अनुसार दिनभर पानी की मात्रा बदल सकती है। भोजन से पूर्व या पश्चात और भोजन के दरम्यान पानी पीने से पाचनक्रिया बिगडती है।
- ❖ मुखमार्जन: शौच आदि क्रियाओं के बाद उम्र, ऋतु, बल, व्याधी के अनुसार व्यायाम, योगाभ्यास करना चाहिये।
- ❖ प्रार्थना: प्रार्थना, ईश्वरस्मरण से मनोबल, मन:शांति बढेगी। शरीरस्वास्थ्य के लिये आत्मशुद्धि और मानसिक स्वास्थ्य जरूरी है।
- ❖ अभ्यंग : हेमंत-शिशिर, ऋतु में सरसों के तेल से, वसंत-ग्रीष्म ऋतु में तिल/खोबरे के तेल से अभ्यंग या मालिश करें। अभ्यंग से कांती सतेज होती है। आमवात, गाठियावात, चर्मरोग, बुखार आनेपर, चर्मरोग और महिलाएं मासिक धर्म में मालिश न करें।
- ❖ स्नान: शीतल जब श्रेष्ठ हैं। नदी, सरोवर में तैरने से व्यायाम और स्नान दोनों का लाभ होता है। शिशिर ऋतु में गरम पानी से स्नान कर सकते हैं। स्वास्थ्य के लिये दिन में दो बार स्नान करना चाहिए।
- ❖ विहार: वसंत-ग्रीष्म ऋतु में सफेद या हल्के रंग के वस्त्र परिधान करें। हेमंत - शिशिर ऋतु में उनी वस्त्र का उपयोग करें। ज्यादा व्यायाम करना, देर रात तक जागना, ज्यादा टी.वी सिनेमा देखना, संगीत सुनना, अनुचित अशिष्ट शब्द बोलना, सुनना, देखना, स्वास्थ्य के लिए हानिकारक हैं।
- ❖ निद्रा: रात्री ९.०० बजे से सुबह ४-५ बजे तक निद्रा पर्याप्त हैं। बाल, गर्भवती स्त्री, वृद्ध, शारीरिक श्रम करने वाले व्यक्ति, दिन में नींद ले सकते हैं। ग्रीष्म-वर्षा में वात प्रकोप से दूर रहने के लिए दोपहर में नींद ले सकते हैं। निद्रा लेते समय क्रोध, चिंता आदि विकारों से दूर रहें।

### प्राकृतिक आहार विधी

- ❖ दिन में दो बार प्रमुख भोजन लेना चाहिए। प्राकृतिक सात्विक आहार लाभदायक हैं। भोजन में एक ही अनाज का प्रयोग करें। उबला या भूना आलू, सूरण, अंकुरित मूंग, रोटी की जगह ले सकते है।
- ❖ भोजन के समय शांती होनी चाहिए। शारीरिक श्रम, भय, क्रोध, शोक, होने पर भोजन न लें। शारीरिक और मानसिक शांती होनेपर ही भोजन करना चाहिए, भूख न होनेपर भोजन नहीं लेना चाहिए। भोजन के पश्चात विश्राम जरूरी हैं। शाम को थोडा घूम सकते है।
- ❖ सुबह १० से १२, रात्री ६ से ८ बजे तक भोजन का समय श्रेष्ठ हैं। म्मुख्य भोजन के दरम्यान चाय, कॉफी पीना, नमकीन खाना, आदि कारणोंसे पाचन क्रीया कमजोर होती है।
- ❖ सतेज फल, सब्जियां, अंकुरित अनाज, दूध, दही, छांछ, मख्यन, फलों के रस, अद्रक, धनिया, खोबरा, जीरा, हल्दी, से बने व्यजन आदि सात्विक आहार लेना चाहिए।
- ❖ तली हुई गरिष्ठ चीजें, मसालेदार तीखे पदार्थ, आचार, पापड, मिष्ठान्न, मांसाहार, शराब, तंबाकु, घी, आईस्क्रिम, रिफाईंड, रेडिमेड फास्ट फूड, डिब्बा बंद पदार्थ, इ. राजसिक और तामसिक गुण होने के कारण वर्जित हैं।
- ❖ भोजन भरपेट न करें। अन्न पदार्थ अच्छी तरह से चवण करके खाना चाहिए ताकि पाचक स्राव उत्पन्न होने में मदद मिलें। भोजन के साथ तरल पदार्थ लेना, पापड, मिर्च, मसाले, आचार, निंबू, लेना उचित नहीं है।
- ❖ मट्ठा, छांछ, दही, ४ से ५ घंटे मे जमा हुआ मधूर सरात्मक होना चाहिए। ज्यादा समय होने पर दही खट्टा और कफवर्धक होता है। मट्ठा या दही में सुंठ या अद्रक, जीरा मिलाने से पाचन सुलभ हो जाता है।
- ❖ पकाया हुआ खाना और कच्चा अलगसे लेना चाहिए। बहुतसे खाद्य पदार्थ एकसाथ खाने से पाचन शक्ती का व्यय होता है। जिन व्यक्तियों को वायू की शिकायत हैं, वे फल चूसकर खा सकते हैं। अरहर, प्याज, बैंगन, आलू, नमकीन, तले हुए तीखे पदार्थ न लें।
- ❖ उपवास: रोग दूर करने का सरल उपाय :- अनियमित तथा गलत-विहार का परिणाम पाचन संस्थापर होता हैं। अपक्व आहार रस शरीरस्थ अन्य धातुओंका नैसर्गिक रूप से पोषण नहीं कर पाता और विषद्रव्य के रूप में कोषों में जमा होकर रोगों के लक्षण उत्पन्न करता है।

- ❖ भारतवर्ष में पायः सभी धर्मों में उपवास का विशेष स्थान है। उपवास करना चाहिए। उपवास काल में ठंडा शीतल जय प्यास जितनी लगे उतनाही लेना चाहिए। वर्षा और सर्दियों के मौसम में गुनगुना पानी पी सकते हैं। उपवास में ज्यादा शारीरिक, मानसिक श्रम करना नहीं चाहिए। मूँह का स्वाद बिगडना, मल-मूत्र प्रवृत्ति में दुर्गंध, रोगों के लक्षणों में उभार, बुखार आना, शरीर में हलकापन आना आदि शारीरिक शुद्धी के लक्षण महसूस होते हैं। १ से ३ दिन के उपवास सिर्फ पानी या नींबू शहद पानी या मोसंबी, संत्रा जैसे फलों का सर लेकर करना चाहिए। तीव्र रोग, जैसे सरदर्द, बदहजमी, खांसी, बुखार, आदि में छोटा उपवास से लाभ होता है। लंबे उपवास प्राकृतिक चिकित्सा केंद्र में चिकित्सक की निगरानी में करने चाहिए। उपवास के बाद तुरंत भोजन नहीं करना चाहिए। प्रथम मोसंबी रस, नींबूपानी या सब्जियों का सूप लेनेकी आवश्यकता होती है। रसाहार का पाचन ठीक तरह से होनेपर, उबली सब्जी, पपीता, चावल का मांट, मुलायम चावल, आदि खाद्य पदार्थों का क्रमशः पाचन शक्ती का विचार कर के उपयोग कर सकते हैं।
- ❖ रसाहार : उपवास काल में शरीर की जीवनशक्ती क्रियाशील होती है और रोगों को शरीर से बाहर निकालने में जुट जाती है। मंदाग्नि, अपचन, संधिवात, सरदर्द आदि बीमारियों में रसाहार उपयुक्त हैं। रसीले फलों को चूसकर खाना स्वास्थ्य और पाचन की दृष्टी से उत्तम हैं। नारियल पानी, नीरा, संत्रा, मोसंबी, अंगूर का उपयोग रसाहार में होता है। फलों का सर मशीन से निकाला जाता है या महीन कपड़े में फल रखके निचोडके रस बना सकते हैं। फलों का रस धीरे धीरे चूसकर प्राशन करें। मात्रा - १०० से २०० मिली। फलों के सर के अभाव में साग-सब्जियों के सूप का उपयोग कर सकते हैं। मूंग का पानी, चावल का मांड या ताजे छांछ का उपयोग हो सकता है।
- ❖ तुलसी का काढा: तुलसी के १० पत्ते, २-३ हरी चाय के पत्ते, अद्रक लेकर २०० मिली पानी में अच्छी तरह उबालिये। छानकर थोडी गुड की राब मिलाकर ले सकते हैं। सर्दी, जुकाम, खांसी, दमा, मंदाग्नि आदि विकारों में यह लाभकारक हैं।
- ❖ अमृत गुड की राब: १ किलो गुड २५० मिली पानी में घूरकर मिलाकर चार से छह घंटों के बाद मंद आंच पर उबाले और थोडा गाढा होने पर आंच से उतरे। ठंडा होनेपर पानी, दूध या अन्य पदार्थों के साथ आसानी से घुल जाता है। यह राब आठ दिन के अंदर उपयोग में लानी है।
- ❖ कच्चे सब्जी का रस: लोकी, गाजर, मेथी, टमाटर, ककडी, पालक धनिया, आदि वस्तुओं को कूटकर या मिक्सी में अच्छी तरह घोट के रस निकाला जाता है। व्यक्ति की उम्र, पाचनशक्ती, सात्म्य का विचार करके कच्चे रसों की मात्रा ५० मिली तक हो सकती है। साग सब्जियां ताजी होनी चाहिए। पाचन शक्ती कमजोर हो या संग्रहणी के रोगियों में कच्चा रस सावधानी से देना चाहिए।
- ❖ सूप: मेथी, धनिय, पालक, चवलाई, आदि हरी सब्जियाँ १०० ग्राम + गाजर, टमाटर, लौकी, तुरई आदि शाह १०० ग्राम किसनीपर कसी हुई + २०० मिली पानी मिलाकर कूकर में रख दे। उबालने के बाद ठंडा होने पर अच्छी तरह मसलकर कपडे से छान लें। इसमें थोडा अद्रक और नींबू, सेंधा नमक, जीरा, करिपत्ता मिलाने से सूप गुणकारी तथा स्वादिष्ट बनता है।
- ❖ कचुंबर (सलाद): ऋतुमान का विचार करके गाजर, टमाटर, बीट, ककडी, मूली, पत्ताभोगी, धनिया, पालक, लहसून, आदि पदार्थ अच्छी तरह चबाकर खाना चाहिए। ताजे कचुंबर में मौजूद जीवनसत्व, खनिजतत्व शरीर के संतुलित पोषण के लिए आवश्यक होते हैं। आंतों को तंदुरस्त रश के कब्जियत मिटाने में मदद होती है।
- ❖ व्यंजन: साग सब्जियां उबालकर खाने से क्षारीय गुणधर्म कम हो जाते हैं। मंदाग्नि होने पर उबली सब्जी खाना अनिवार्य होता है। उबलि सब्जियों में सात्विक स्वाद लाने के लिए अद्रक, धनिया, खोबरा, जीरा, हल्दी, जैसे व्युतओं का उपयोग कर सकते हैं। इसी में एक छोटी हरी मिर्च या शिमला मिर्च डाल के चटनी बना सकते हैं। लौकी, परवल, तुरई, घीया, टिंडा, हरी सब्जियां पाचन में हल्की होती हैं।
- ❖ दही: कुनकुने दूध में आवश्यकता अनुसार जामन डाल के तही बनाया जाता है। ग्रीष्म ऋतु में दही जल्दी बन जाता है। चार से छह घंटों में जमाया हुआ दही मधुर, कषाय रसात्मक होता है। कफ व्याधी में दही न लें। मंदाग्नि होनेपर दही के बदले छांछ ले सकते हैं। दही में अद्रक या सुंठ मिलाने से कफकर गुण कम होते हैं, और पाचन में आसानी होती है।
- ❖ तक्र: दही घोलकर मखन निकाल के उसमें एक चौथाई पानी डालकर तक्र (छांछ) बनाया जाता है। छांछ हल्का और अग्निदीपक होता है। मूत्रकष्टता, अतिसार, ग्रहणी, असरुची, तृष्णा, अर्श, आदि रोगों में लाभकारक होता है।
- ❖ मट्ठा: दही घोलकर मट्ठा बनाते हैं। दहीजन्म पदार्थ वसंत और ग्रीष्म ऋतु में ज्यादा लाभकारक होते हैं। वर्षा, शिशिर ऋतुओं में रुग्ण की अवस्था देखकर इनका उपयोग होना चाहिए।

#### गांधीजी के विचार

कुदरती उपचार में जीवन-परिवर्तन की बात आती है। जिस जगह शरीर-सफाई और ग्राम-सफाई हो, युक्ताहर हो और योग्य व्यायाम हो, वहां कम से कम बीमारी होती है। और अगर चित्तशुद्धी भी हो, तो कहा जाता है कि बीमारी असंभव हो जाती है। रामानाम के बिना चित्तशुद्धी हो नहीं सकती।

#### प्राकृतिक नियमों का पालन कीजिये।

दिनचर्या, ऋचर्या सीखिये।

स्वास्थ्यकर जीवनपद्धती

विकसित कीजिये।

## POST TEST

Dr.Narendra V. Deshmukh (Guide)

THE MALAD KANDIVLI EDUCATION SOCIETY'S M.K.E.S. ENGLISH SCHOOL,  
Malad (West), Mumbai – 400064.

Mrs.Shilpa N.Desai (Reserch Scholar) JJT University - Enrollment No.20114552  
MENTAL HEALTH INVENTORY

Class : \_\_\_\_\_

Date : \_\_\_\_\_

Roll No.: \_\_\_\_\_

Name of Student : \_\_\_\_\_

मानसिक स्वास्थ्य की सूची

डॉ. जगदीश और डॉ. ए.के. श्रीवास्तव

निर्देश:

इस सूची एक मनोवैज्ञानिक जांच के लिए मतलब है. यह रोजमर्रा की जिंदगी में खुद के बारे में अपनी भावनाओं से संबंधित बयान के एक नंबर के होते हैं. आप के बयानों की प्रत्येक जवाब के लिए चार विकल्प मिल गया है. चार विकल्प प्रतिक्रियाओं, यानी 'हमेशा' या तो चुनें 'अक्सर', 'शायद ही कभी,' और 'कभी जो सबसे उपयुक्त अपनी भावनाओं और विचारों की आवृत्ति का संकेत मिलता है. किसी भी बयान अनुत्तरित मत छोड़ो.

क्रम संख्या बयान	हमेशा	अक्सर	शायद ही	कभी कभी
1 मैं आत्मविश्वास की कमी महसूस करते हैं.				
2 मैं बहुत आसानी से उत्साहित हैं.				
3 मैं किसी भी विषय पर त्वरित निर्णय लेने में सक्षम नहीं हूँ				
4 मैं अपने पड़ोसियों के साथ स्नेह और लगाव है.				
5 मैं अपने आप को परिस्थितियों के अनुसार ढालना.				
6 मुझे लगता है कि मैं आत्म - सम्मान खो रहा हूँ				
7 मैं के लिए एक लंबे समय के लिए छोटी सी बात के बारे में भी चिंता का उपयोग करें.				
8 मैं अपने अगले कदम के बारे में निर्णय लेने में सक्षम नहीं हूँ				

9 में दूसरों के साथ पूरा करने में संकोच करते हैं.				
10 में अपने कर्तव्य प्रतिकूल परिस्थितियों में भी अच्छी तरह से करते हैं.				
11 मुझे लगता है कि मैं पूरी तरह से मेरे विभिन्न कर्तव्यों प्रदर्शन में अपनी क्षमताओं का उपयोग करने में सक्षम नहीं हूँ				
12 मैं प्रतिकूल परिस्थितियों में, वास्तविक तथ्यों को ध्यान में रखते हुए बिना काम करते हैं.				
13 मैं जलन महसूस हो रहा है.				
14 मैं असुरक्षित महसूस करते हैं.				
15 में मेरी जिम्मेदारियों के बारे में बहुत चिंतित हूँ				
16 मैं उदास / उदास लग रहा है.				
17 में सामाजिक मामलों में महत्वपूर्ण भूमिका निभाते हैं.				
18 में मुश्किल समय में भी अपने तर्क का उपयोग.				
19 मुझे लगता है कि दूसरों के साथ अपने संबंधों को संतोषजनक नहीं हैं				
20 मेरी जिम्मेदारियों मेरे लिए बोझ की तरह कर रहे हैं.				
21 मैं हीन भावना से ग्रस्त हैं.				
22 में कर रहा हूँ और कल्पना की दुनिया में खो जाता है.				
23 में अपने भविष्य के बारे में चिंतित हूँ				
24 मेरे दोस्त / रिश्तेदार मुझे मुश्किल समय में मदद करने के लिए तैयार रहते हैं.				
25 में अपने भविष्य के बारे में निश्चित योजना बनाते हैं.				
26 में हूँ शोड़ी सी प्रतिकूल बातों से भी नाराज.				
27 में निर्णय आसानी से कठिन परिस्थितियों में भी ले.				

28 मैं इस तरह के व्यवहार के रूप में मेरे दोस्त मेरे से उम्मीद नहीं पा रहा हूँ				
29 मैं मेरे जीवन के पहलुओं के साथ सबसे अधिक संतुष्ट हूँ				
30 मेरे मित्रों और सहकर्मियों मेरे लिए सम्मान है।				
31 मेरा विश्वास अत्यधिक मात्रा में बदलता है।				
32 मैं हमेशा के लिए समस्या से लड़ने के लिए तैयार है।				
33 मैं या लोगों को मुद्दे के बारे में तथ्यों और मैदान के अभाव में भी छाप बनाने।				
34 मुझे मेरे काम में पूरी तरह से ध्यान केंद्रित करने में सक्षम नहीं हूँ				
35 मुझे लगता है कि विपरीत सेक्स की ओर झुका है।				
36 मैं अपनी समस्याओं को खुद हल।				
37 मैं पूरी तरह से अपने समुदाय के महत्वपूर्ण कार्यों में सहयोग करते हैं।				
38 मैं अपने विरोधाभासी विचारों के साथ हैरान हूँ				
39 मैं भले ही वे मेरी इच्छा के विपरीत हैं तथ्यों के आधार पर निर्णय लेते हैं।				
40 मैं किसी भी कार्य को करने के लिए लंबे समय के लिए जारी रखने के लिए सक्षम नहीं हूँ				
41 मुझे लगता है अपने आप को अपने मित्रों / समूह के बीच सुरक्षित।				
42 मैं निराश नहीं हो जाते हैं तब भी जब मैं असफल हो।				
43 मैं अपने आप को समाज के लिए उपयोगी मानते हैं।				
44 मैं मेरे छोटे comings के दृश्य में बिना कुछ लिए कामना।				
45 मैं उचित तर्क से भी प्रभावित नहीं करते।				
46 मैं ऐसा निर्णय लेने के रूप में मैं करने के लिए ले जाना चाहता हूँ करने में सक्षम नहीं हूँ				

47 मैं काल्पनिक आपदाओं के डर लग रहा है.			
48 मुझे लगता है कि इस दुनिया में एक जीवन को पारित करने के लिए पर्याप्त जगह है.			
49 मैं को लगता है कि मैं निश्चित रूप से अपने उद्देश्यों को प्राप्त करने के उत्साह से भरा लग रहा है.			
50 मैं दैनिक जीवन की आम चिंता के साथ निराश नहीं करते.			
51 मैं क्षण भर के मेरा मूड बदलता है.			
52 मैं खुद तय करते हैं मैं क्या और कैसे करना चाहिए.			
53 मुझे लगता है कि मेरे समूह समुदाय के साथ अपने अंतरंगता धीरे - धीरे बढ़ रही है.			
54 मैं जिम्मेदारी लेने में खुशी महसूस करते हैं.			

IJSER

**POST TEST**

Dr.Narendra V. Deshmukh (Guide)  
THE MALAD KANDIVLI EDUCATION SOCIETY'S M.K.E.S. ENGLISH SCHOOL,  
Malad (West), Mumbai – 400064.  
Mrs.Shilpa N.Desai (Reserch Scholar) JJT University - Enrollment No.20114552  
MENTAL HEALTH INVENTORY

Class : \_\_\_\_\_ Date : \_\_\_\_\_

Roll No.: \_\_\_\_\_

Name of Student : \_\_\_\_\_

Dr. Jagdish and Dr. A.K. Srivastava

**Instructions:**

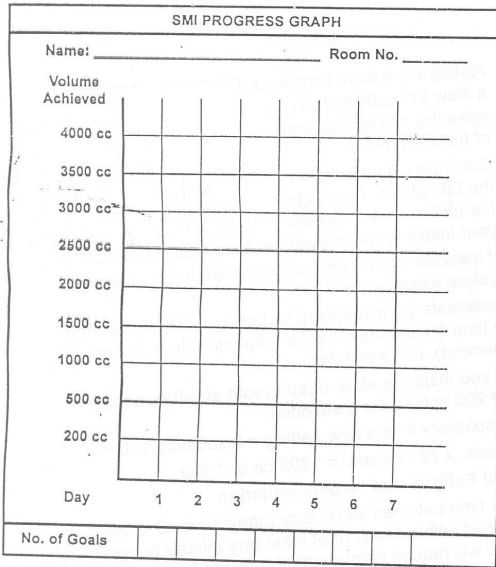
This inventory is meant for a psychological investigation. It consists of a number of statements relating to your feelings about yourself in everyday life . you have got four alternatives to respond each of the statements. Choose either of the four alternatives responses, i.e. 'Always', 'often' 'Rarely', and 'Never' which most suitably indicate the frequency of your feelings and views. Do not leave any statement unanswered.

Sr. No.	Statements	Always	Often	Rarely	Never
1	I feel lack of confidence.				
2	I get excited very easily.				
3	I am not able to take quick decision on any subject.				
4	I have affection and attachment with my neighbors.				
5	I mould myself according to circumstances.				
6	I feel that I am losing self-respect.				
7	I use to worry even about trivial matter for a long time.				
8	I am not able to take decision about my next step.				
9	I hesitate in meeting with others.				
10	I do my duty well even in adverse circumstances.				
11	I feel that I am not able to fully utilize my abilities in performing my different duties.				
12	In adverse circumstances, I act without keeping in view of the real facts.				

13	I feel irritation.				
14	I feel to be insecure.				
15	I am much worried about my responsibilities.				
16	I feel depressed / dejected.				
17	I play important role in social ceremonies.				
18	I utilize my reasoning even in difficult times.				
19	I feel that my relations with others are not satisfactory				
20	My responsibilities are like burden to me.				
21	I suffer from inferiority complex.				
22	I am and used to be lost in world of imagination.				
23	I am an anxious about my future.				
24	My friends/relatives remain ready to help me in the difficult times.				
25	I make definite plans about my future.				
26	I am enraged even by the slightest unfavorable talks.				
27	I take decision easily even in difficult circumstances.				
28	I am not able to behave in such a way as my friends expect from me.				
29	I am satisfied with most of the aspects of my life.				
30	My friends and colleagues hale respect for me.				
31	My confidence varies highly in quantity.				
32	I am always ready to fight the problems.				
33	I make impressions about people or issue even in absence of facts and grounds.				
34	I am not able to concentrate fully in my works.				
35	I feel inclined towards opposite sex.				



36	I solve my problems myself.				
37	I fully cooperate in the important functions of my community.				
38	I am perplexed with my contradictory thoughts.				
39	I take decisions on the basis of facts even though they are contrary to my wish.				
40	I am not able to continue any task for long.				
41	I feel myself secured amidst my friends/group.				
42	I do not become hopeless even when I fail.				
43	I consider myself useful for society.				
44	I aspire for something without having in view of my short comings.				
45	I do not get influenced even by reasonable arguments.				
46	I am not able to take such decision as I want to take.				
47	I am afraid of imaginary calamities.				
48	I feel that this world is a place good enough for passing life.				
49	I feel full of enthusiasm to think that I will certainly achieve my objectives.				
50	I do not get disappointed with the common worries of daily life.				
51	My mood changes momentarily.				
52	I myself decide what and how I should do.				
53	I feel that my intimacy with my group community is increasing gradually.				
54	I feel pleasure in taking responsibilities.				



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Research Triangle Park, NC 27709 USA  
(919) 544-8000 (866) 246-6990

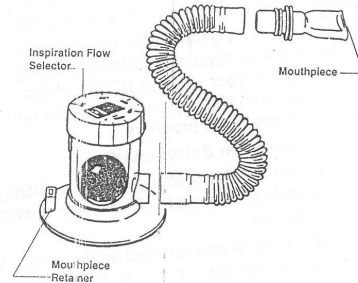
**HUDSON RCI®**



REF 1750

**Incentive Spirometer**

U.S. PATENT NO. 4,232,683



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# USER

**INCENTIVE SPIROMETRY**

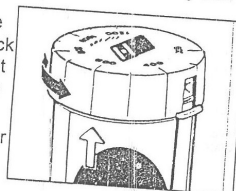
**What is SMI?**

**Sustained Maximal Inspiration (SMI)** is a technique used to prevent small airway collapse (atelectasis). The SMI technique consists essentially of a slow, deep breath for a few seconds to work the lungs. By increasing lung expansion and strengthening your cough effort, you will decrease the accumulation of unwanted secretions in your lungs.

**Incentive Spirometry** is a goal-oriented exercise using SMI to promote bronchial hygiene in ridding the lungs of unwanted secretions. Your Hudson RCI Incentive Spirometer is designed to visually encourage you and allow you to monitor your own progress.

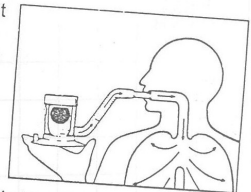
**How do I use my Incentive Spirometer?**

1. It is best to perform an SMI in an upright (i.e., sitting) position. Your doctor or therapist will advise you which position is best for you.
2. If your doctor or therapist has advised settings, follow his or her directions. You may select an inspiratory flow setting by turning the spirometer top to match the black numbers with the black arrow. Choose a setting that allows you to pull the ball to the top of the spirometer.
3. Place the mouthpiece in your mouth and, from a normal



resting expiration, inspire at a slow yet sufficient rate to raise the ball off the bottom of the spirometer.

4. Continue inspiring to keep the ball afloat. The longer the ball is up, the greater your inspired volume will be.
5. If instructed to do so, hold this breath for a few seconds before exhaling.



To calculate your inspired volume, multiply your inspiratory time (in seconds) by the inspiratory flow setting (in cc/second). For example:

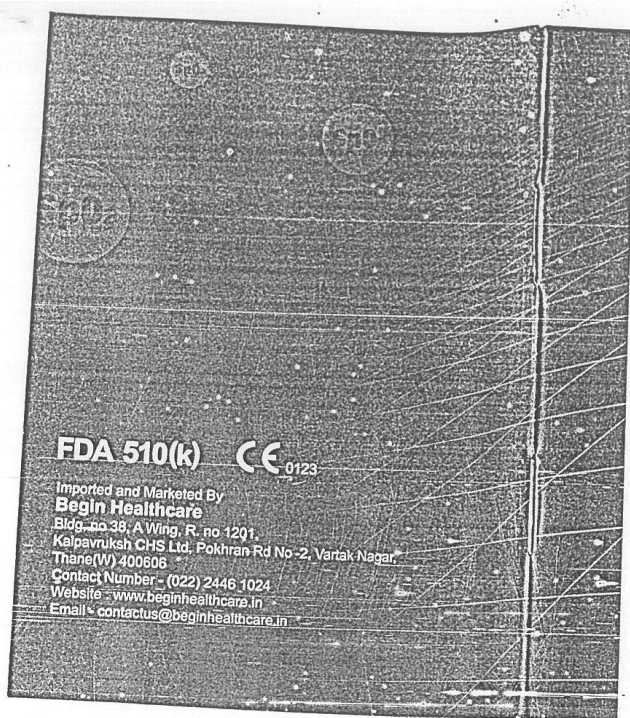
If you inspire a slow, deep breath at a flow setting of 200 cc/sec. for 5 seconds:  
 inspiratory time x flow setting = inspiratory volume  
 5 sec. x 200 cc/sec. = 1000 cc or 1 liter

**Avoid Fatigue and Hyperventilation**

Allow time between inspiratory maneuvers. One SMI repeated with a break of at least one minute between efforts will reduce fatigue and the risk of hyperventilation. Follow your clinician's instructions carefully.

As your condition improves, you may rotate the flow selector to a larger number to achieve greater volumes. Follow your clinician's instructions carefully.

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*Begin!*  
Fingertip Oximeter  
User Manual



For Begin 2A/2B

IJSER

### Instructions to User

Dear Users,

Thank you very much for purchasing our product. Please read the manual very carefully before using this device. Failure to follow these instructions can cause measuring abnormality or damage to the oximeter.

The manual is published in English and we have the ultimate right to explain the Manual. No part of this manual may be photocopied, reproduced or translated into another language without the prior written consent. We reserve the right to improve and amend it at any time without prior notice.

Version of the Manual: Ver 1.0

Revised date: May 6, 2011

All rights reserved.

### Notes

- The contents contained in this manual are subject to change without notice.
- Information furnished by our company is believed to be accurate and reliable. However, no responsibility is assumed by us for its use, or any infringements of patents or other rights of third parties that may result from its use.

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# IJSER

### Instructions for Safe Operations

- Check the device to make sure that there is no visible damage that may affect user's safety or measurement performance with regard to sensors and clips. It is recommended that the device should be inspected minimally once a week. When there is obvious damage, stop using the device.
- Necessary maintenance must be performed only by qualified service technicians. Users are not permitted to maintain it by themselves.
- The oximeter cannot be used together with devices not specified in User Manual.

### Cautions

- Explosive hazard **DO NOT** use the oximeter in environment with inflammable gas such as some ignitable anesthetic agents.
- **DO NOT** use the oximeter while the testee is under MRI or CT scanning.

### Warnings

- An uncomfortable or painful feeling may appear if using the oximeter continuously on the same place for a long time, especially for poor microcirculation patients. It is recommended that the oximeter

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should not be applied to the same location for longer than 2 hours. If any abnormal condition is found, please change the position of oximeter.

- **DO NOT** clip this device on edema or tender tissue.
- The light (the infrared light is invisible) emitted from the device is harmful to the eyes, so service technician or testee should not stare at the light.
- The local law must be followed when disposing of the device.

### Attentions

- Keep the oximeter away from dust, vibration, corrosive substances, explosive materials, high temperature and moisture.
- The device should be kept out of the reach of children.
- If the oximeter gets wet, please stop using it and do not resume operation until it is dry. When it is carried from a cold environment to a warm and humid environment, please do not use it immediately.
- **DO NOT** operate the button on the front panel with sharp materials.
- **DO NOT** use high temperature or high pressure steam disinfection on the oximeter. Refer to

III

User Manual for Fingertip Oximeter

Chapter 9 for instructions of cleaning and disinfection.

**Declaration of Conformity**

The manufacturer hereby declares that this device complies with the following standards:

IEC 60601-1

ISO 9919

and follows the provisions of the council directive MDD93/42/EEC.

*Caution: U.S. federal law restricts this device to sale or use by or on the order of a physician.*

IV

User Manual for Fingertip Oximeter

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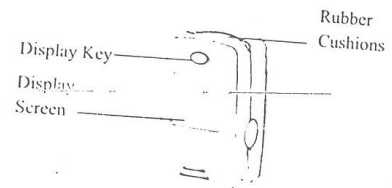
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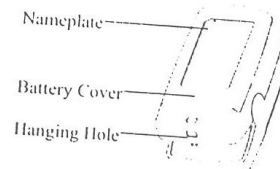
User Manual for Fingertip Oximeter

**I Overview**

**I.1 Appearance**



**Figure 1 Front View**



**Figure 2 Rear View**

1.2 Name

Name: Fingertip Oximeter

1.3 Intended Use

This Fingertip Oximeter is intended for measuring the pulse rate and functional oxygen saturation (SpO<sub>2</sub>) through patient's finger. It is applicable for spot-checking SpO<sub>2</sub> and pulse rate of adult and pediatric patients in homes and clinics.

1.4 Feature List

Explanation of abbreviations:

Mark: "x" this function is available, "-" without this function.

Display type: X-Y-Z

- └─ L=monochrome, D=dual color, C=full color
- └─ L=LCD, O=OLED.
- └─ S=segment, D=dot-matrix.

Note: The finger clip of Style D2 is suitable for small fingers, especially for pediatric patients.

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User Manual for Fingertip Oximeter

Model	Style A	Style B	Style B1	Style B2	Style B3	Style B5
Function	S-L-M	S-L-M	D-L-C	D-O-M	D-O-D	D-L-D
Display type	x	x	x	x	x	x
SpO <sub>2</sub>	x	x	x	x	x	x
PR	x	x	x	x	x	x
PI	x	x	x	x	x	x
Plethysmogram	x	x	x	x	x	x
Auto on	x	x	x	x	x	x
Auto off	x	x	x	x	x	x
Alarm	x	x	x	x	x	x
Low voltage indication	x	x	x	x	x	x
Multi-directional display	x	x	x	x	x	x

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2 Battery Installation

Figure 3 Battery Installation

1. Refer to Figure 3, insert two AAA size batteries into the battery compartment properly.
  2. Replace the cover.
- △ Please make sure that the batteries are correctly installed, or incorrect installation may cause the device not to work.

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User Manual for Fingertip Oximeter

Function	Model	Style C	Style C1	Style C2	Style D2	Style E
Display type	D-O-C	D-O-C	D-O-C	D-O-C	D-O-C	D-O-C
SpO <sub>2</sub>	x	x	x	x	x	x
PR	x	x	x	x	x	x
PI	x	x	x	x	x	x
Plethysmogram	x	x	x	x	x	x
Auto on	x	x	x	x	x	x
Auto off	x	x	x	x	x	x
Alarm	x	x	x	x	x	x
Alarm setting	x	x	x	x	x	x
Pulse beep	x	x	x	x	x	x
Low voltage indication	x	x	x	x	x	x
Multi-directional display	x	x	x	x	x	x


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User Manual for Fingertip Oximeter


### 5 Display Screen




Measuring screen  
(Style A/ B)



PI display screen  
(Style B)



Default measuring screen  
(Style B1/ B2/B3/ B5/  
C1/C2/D2 /E)



SpO<sub>2</sub>&PI display screen  
(Style B1/ B2/B3/  
B5/C1/C2/D2)

SpO <sub>2</sub> alm Lo	85
PR alm Hi	120
PR alm Lo	50
Pulse beep on	
Save, exit menu	
Restore default	

Setup menu screen  
(Style C1)

Note: The "Setup menu screen" of PC-60C1 shows the factory default alarm limits setting value which is different from other models.  
Low limit setting range: 30-60bpm  
High limit setting range: 100-240bpm  
Low limit setting range : 85 % ~ 95%

User Manual for Fingertip Oximeter

For your oximeter, SpO<sub>2</sub> and PR symbols are imprinted on the front panel and its corresponding value displays on display screen below the symbol. ( see figure 5)




Figure 5




Figure 6

Short time press display key, display screen (including values,pulse intensity histogram, pulse beat symbol and waveform) will be flipped 180°. ( see figure 6)

Note: The two figures both show that SpO<sub>2</sub> value is 99% and PR value is 86bpm.

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User Manual for Fingertip Oximeter

### 6 Instructions for Operation

- The finger should be put in properly and correctly.
- Do not shake the finger. Keep at ease during measurement.
- Do not put wet finger directly into sensor.
- Avoid placing the device on the same limb which is wrapped with a cuff for blood pressure measurement or-during venous infusion.
- Do not let anything block the emitting light from device.
- Vigorous exercise and electrosurgical device interference may affect the measuring accuracy.
- The orientation-sensor works on the basis of the gravity. A small movable metal ball is built in the orientation-sensor for detecting the orientation of the oximeter. When you want to change the oximeter's display direction, if you move the oximeter too slowly, the movable metal ball will also move slowly because of not enough acceleration. Consequently the response of orientation detection would be delayed. Please move the oximeter with a bit of force if you want to change the display direction (such as bend/extend your finger quickly), so an acceleration is provided to the orientation-sensor for quick sensing the orientation change.

User Manual for Fingertip Oximeter

### 7 Technical Specifications

• Using enamel or other makeup on the nail may affect the accuracy of measurement.

• If the first reading appears with poor waveform (irregular or not smooth), then the reading is unlikely true, the more stable value is expected by waiting for a while, or a restart is needed when necessary.

Note: Due to the working principle of orientation sensor used in Oximeter, there is a small metal ball which is movable within its compartment of the orientation-sensor. Therefore you can hear a slight "clatter" sound when you wave or shake the oximeter. It is normal and not caused by unwanted part.

**A. Power supply requirement:**  
2 x LR03 (AAA) alkaline batteries  
Supply voltage: 3.0VDC  
Operating current: ≤40mA

**B. SpO<sub>2</sub> Parameter Specifications**  
Transducer: dual-wavelength LED sensor  
Measurement wavelength:  
Red light: 663 nm, Infrared light: 890 nm.  
Maximal optical output power: less than 1.5mW maximum average

User Manual for Fingertip Oximeter

Measuring range: 35-99%

Measuring accuracy:  
Not greater than 3% for SpO<sub>2</sub> range from 70% to 100%  
\*NOTE: Accuracy defined as root-mean-square value of deviation according to ISO 9919.

C. Pulse Rate Parameter Specifications  
Measuring range: 30bpm~240bpm  
Accuracy: ±2bpm or ±2% (whichever is greater)

D. Perfusion-Index (PI) Display  
Range: 0%~20%

E. Preset alarm limits  
SpO<sub>2</sub> alarm: Lower limit: 90%  
Pulse Rate alarm: Upper limit: 120bpm  
Lower limit: 50bpm

F. Alarm setting (for StyleC1)  
SpO<sub>2</sub> alarm limit  
Low limit setting range: 85%~95%  
Pulse Rate alarm limit  
Low limit setting range: 30~60bpm;  
High limit setting range: 100~240bpm;  
SpO<sub>2</sub> alarm: default low limit: 85%  
Pulse Rate alarm:

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User Manual for Fingertip Oximeter

default high limit: 120bpm  
default low limit: 50bpm

G. Audible & visual alarm function  
When measuring, if SpO<sub>2</sub> value or pulse rate value exceeds the preset alarm limit, the device will alarm automatically and the value which exceeds limit on the screen will flash.

H. Environment requirement  
Operating Temperature: 5°C~40°C  
Operating Humidity: 30%~80%  
Atmospheric pressure: 70kPa~106kPa

I. The performance under low perfusion condition  
The accuracy of SpO<sub>2</sub> and PR measurement still meet the precision described above when the modulation amplitude is as low as 0.6%.

J. Resistance to interference of surrounding light:  
The difference between the SpO<sub>2</sub> value measured in the condition of indoor natural light and that of darkroom is less than ±1%.

K. Resistance to 50Hz/60Hz interference:  
SpO<sub>2</sub> and PR are precise which have been tested by BIO-TEK pulse oximeter simulator.

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User Manual for Fingertip Oximeter

L. Dimensions: 66 mm (L) × 36 mm (W) × 33 mm (H)  
Net Weight: 60g (including batteries)

M. Classification  
The type of protection against electric shock:  
Internally powered equipment.  
The degree of protection against electric shock:  
Type BF applied parts.  
The degree of protection against harmful ingress of liquids: Ordinary equipment without protection against ingress of water.  
Electro-Magnetic Compatibility: Group I, Class B

8 Accessories  
A. A lanyard  
B. Two batteries  
C. A pouch  
D. An External SpO<sub>2</sub> Probe (optional)  
E. A User Manual  
F. Quality Certificate  
Note: The accessories are subject to change. Detailed items and quantity see the Packing List.

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User Manual for Fingertip Oximeter

9 Repair and Maintenance

9.1 Maintenance  
The life of this device is 5 years. In order to ensure its long service life, please pay attention to the maintenance.

- Please change the batteries when the low-voltage indicator lightens.
- Please clean the surface of the device before using. Wipe the device with alcohol first, and then let it air dry or wipe it dry.
- Please take out the batteries if the oximeter will not be used for a long time.
- The recommended storage environment of the device:  
ambient temperature: -20°C~60°C, relative humidity 10%~95%, atmospheric pressure: 50kPa~107.4kPa.
- The oximeter is calibrated in the factory before sale, there is no need to calibrate it during its life cycle. However, if it is necessary to verify its accuracy routinely, the user can do the verification by means of SpO<sub>2</sub> simulator, or it can be done by the local third party test house.

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User Manual for Fingertip Oximeter

⚠ High-pressure sterilization cannot be used on the device.

⚠ Do not immerse the device in liquid.

⚠ It is recommended that the device should be kept in a dry environment. Humidity may reduce the life of the device, or even damage it.

**9.2 Cleaning and Disinfecting Instruction**

- Surface-clean sensor with a soft cloth by wetting with a solution such as 75% isopropyl alcohol, if low-level disinfection is required, use a 1:10 bleach solution.
- Then surface-clean with a cloth saturated with clean water and dry with a clean, soft cloth.

**Caution:** Do not sterilize by irradiation steam, or ethylene oxide.

Do not use the sensor if it is damaged.

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User Manual for Fingertip Oximeter

**10 Troubleshooting**

Trouble	Possible Reason	Solution
Display direction doesn't change or changes insensitively.	Maybe the oximeter is not used for a long time, the movable metal ball within the orientation-sensor can not move freely.	Please shake the oximeter with a certain force to make the movable metal ball move freely. If the problem still exists, maybe the orientation-sensor is not working properly. Please contact the local service center.

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User Manual for Fingertip Oximeter

Trouble	Possible Reason	Solution
The SpO <sub>2</sub> and Pulse Rate display instable	1. The finger is not placed far enough inside. 2. The finger is shaking or the patient is moving.	1. Place the finger correctly inside and try again. 2. Let the patient keep calm.
Can not turn on the device	1. The batteries are drained or almost drained. 2. The batteries are not inserted properly. 3. The device is malfunctioning.	1. Change batteries. 2. Reinstall batteries. 3. Please contact the local service center.
No display	1. The device will power off automatically when it gets no signal for 8 seconds. 2. The batteries are almost drained.	1. Normal. 2. Change batteries.

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User Manual for Fingertip Oximeter

**Appendix**

**I Key of Symbols**

Symbol	Description
%SpO <sub>2</sub>	Pulse oxygen saturation
♥ BPM/PR	Pulse rate (beats per minute)
PI%	Perfusion Index (%)
	Pulse intensity bargraph
	Low battery voltage
	Serial number
	Date of manufacture
	With Type BF applied part
	Warning — See User Manual
	Disposal of this device according to WEEE regulations

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### स्वस्थ रहने के आसान तरीके

- प्रातः ५.०० १ ग्लास गुनगुना पानी और १ ग्लास सादा पानी पीजिए ।  
उसके बाद आप अपना नियमित व्यायाम करे ।
- प्रातः ६.३० ब्रेलेस वॉटर - तुलसी के पत्ते, फुदीना और थोडासा अजवाईन पानी में उबालकर घर के सारे सदस्य को दिये  
उससे सर्दी, जुकाम, खांसी, दमा, मंदाग्नि आदि विकारों में यह लाभकारक हैं ।
- प्रातः ७.०० नींबू और मध को १ ग्लास पानी में मिलाकर पिजिए ।
- प्रातः ८.०० गाजर और आंवला और हल्दी का रस, छोटा ग्लास (१५०मिली) पिजिए ।  
फलाहार : पपैया और सूका मेवा हितकर है ।
- सुबह ११बजे आप दलिया ले सकते हो । गोहूँ और नाचणी को रोटी बनाकर आप नास्ते में ले सकते हो ।
- दोपहर १२.३० ताजे दही का १ ग्लास मट्ठा पी लिये उसके बाद कच्ची सब्जियों का कच्चा सलाड लिये ।  
उसके १५ मिनट बाद आप अपना भोजन अच्छी तरह चबाकर शांत मन से करिये ।
- दोपहर ३.०० आप नारियेल पानी पी सकते हो या २ ग्लास सादा पानी ।
- शाम ५.०० पपैया, सफरचंद, चीकू, केला, तरबुज, खरबूजा इसमें से कोई भी दो फल खा सकते है ।
- शाम ७.०० सूप – शेकटे का शींग, टमाटर  
शेकटे के शींग को कूकर में बाफ के उसको छान लिये । फिर उसमें पालक /मेथी / फुदीना को  
डालकर पी सकते है ।
- रात ८.०० बजे से पहले अपना भोजन करना स्वास्थ्य के लिए हितकर है ।  
सोने से पहले १ ग्लास गुनगुना पानी पीना चाहिए ।

विशेष नोट : आंवला, कच्ची हल्दी और तुलसी इसका रस दिन में २ बार चमच लेने से

**व्यायाम :** सभी प्रकार के व्यायाम एक साथ न करे या तो २ दिन दौडना, २ दिन सूर्यनमस्कार, ३ दिन चलना घूमना (३ से ५ किमी)

### प्राकृतिक और योगिक चिकित्सा

अम्लता के रोगी यदि आहार चिकित्सा का पालन करने के साथ ही निम्न उपायों की भी मदद लें तो उन्हें शीघ्र लाभ मिलता है –

१. प्रातःकाल गहरी साँस लेने का अभ्यास एवं नियमित रूप से टहलना ।
२. हल्के योगासनो का अभ्यास । किसी योगचिकित्सक के परामर्श से आसनों का एक क्रम बनाकर उनका नियमित अभ्यास करना चाहिए ।
३. रोजाना नहाने से पहले शुष्क घर्षण ।
४. अनावश्यक मानसिक तनाव एवं चिन्ता को दूर करते हुए श्वासन, योगनिद्रा एवं शिथिलीकरण का नियमित अभ्यास ।

अम्लता शायद शारीरिक से कहीं अधिक मानसिक विकार है । इससे मुक्ति पाने के यह आवश्यक है कि हम अपनी दिनचर्या को प्रकृति के अनुरूप ढालें । प्रातःकाल उठने से लेकर रात को सोने तक एक व्यवस्थित दिनचर्या, संतुलित खान पान, तनाव एवं चिन्ता से रहित कार्य शैली हमें न केवल मानसिक रूप से अपितु शारीरिक रूप से भी स्वस्थ बनाती है । इसलिए मन में दृढ़निश्चय कर अपनी जीवन शैली को बदल डालिए । प्रकृति के नजदीक आइए । अम्लता के साथ-साथ अन्य रोग भी स्वयं आपसे दूर हो जाएंगे ।

निम्नलिखित पदार्थ रक्त को प्रदूषित करते हैं और एसीडोसिस तथा एलर्जियों के लिए कारण होते हैं :

शराब, काफी, चाय, चाकलेट, सफेद चीनी, मैदा, मांसाहार, अंडा, पनीर, अपूर्ण विश्राम तथा निद्रा, अपेक्षा से अधिक काम अथवा व्यायाम, चिन्ता, क्रोध, ईर्ष्या, नशीली दवाएँ, आपरेशन आदि ।

निम्नलिखित चीजें शरीर को सुस्थिति में रखती हैं और उसमें क्षारीयता बढ़ाकर अच्छा स्वास्थ्य प्रदान करती हैं । वे हैं ताजी कच्ची सब्जियाँ, ताजे फल, त्वचा को खुली हवा का सम्पर्क, पूरी नींद सोना, पूर्ण विश्राम, व्यायाम तथा भावनाओं को स्वस्थ और नियंत्रित रखना ।

### प्राणायाम के लाभ

1. प्राण के नियंत्रण करने से मन पर नियंत्रण होता है ।
2. फेफड़ों को प्रतिवार शुद्ध वायु मिलती है जिससे रक्त के दूषित पदार्थों का निष्कासन होकर रक्त अधिक मात्रा में शुद्ध होता है । हृदय के कार्य में सहायता प्रदाय होती है ।
3. फेफड़ों के प्रत्येक वायु कोष क्रियाशील हो जाते हैं जिससे पूरे दिन ताजगी मिलती रहती है ।
4. हृदय, फेफड़ों, यकृत, अग्नाशय और आँतों की शरीर क्रियात्मक मालिश होती है । इस तरह प्राणायाम से हृदयरोग, (क्रियात्मक) रक्तदोष, धातुदोष, माइग्रेन, अवसाद, कुंठा, नपुंसकता, नाड़ीदोष, दुश्चिंता, तनाव, अल्सर, मधुमेह, कब्ज एवं अन्य मनोशारीरिक बीमारियों से निजात मिलती है ।

### लोम-विलोम प्राणायाम के लाभ (नाडी शोधन प्राणायाम)

1. पहले पद्मासन की स्थिति में बैठिये ।
2. अपने दोनों हाथों को घुटनों पे रखकर अपनी रीढ़की हड्डी को सीधा रखकर बैठिये ।
3. आँख बंद रखिये और शरीर को ढीला रखिये ।
4. बाएँ हाथ को बाएँने घुँटनो पर रखे ।
5. दाहने हाथ सहित के अंगूठे से अपने दाहिनी तरफ से नाक बंद करे ।
6. बाई और से गहरी और हल्की साँस ले ।
7. साँस को दाहिनी और से धीरे धीरे छोडिये ।
8. अनामिका से बाएँ तरफ से नाक बंद करे और दाहिनी तरफ से साँस ले ।
9. अंगूठे का प्रयोग दाइनी तरफ से नाक बंद करने के लिए करे और अनामिका का प्रयोग बाई औप से नाक बंद करने के लिए करे ।



### नाडी बंद – प्राणायाम

आराम से पद्मासन की स्थिति ग्रहण करे ।



1. आराम ।
2. पहले अपनी पूरी साँस को मुँह खोलकर बाहर निकालो ऐसा दो बार करे ।
3. फिर पूरी साँस को बाहर से अंदर की और ले और मुँह को गुब्बारे कि तरह फुलाएँ ।
4. फिर अपने दोनों हाथों के अंगूठे से अपने दोनों नाक के शिरो को बंद करे । और पाँच तक गिनति करीए ।
5. बिना साँस छोडे उसी अवस्था में अपने कंदे को उठाकर शर को उपर की और को जाए ।
6. धीरे धीरे अपनी इसी अवस्था को कायम रखते हुए सर का नीचे की ओर ले जाईए और पाँच तक गिनती किजिए ।
7. धीरे अपनी सामान्य अवस्था में आइये ।
8. हाथ नीचे रखकर मुँह से साँस को न निकाले और नाक से धीरे धीरे साँस छोडिये ।
9. यह प्राणायाम दो बार दिन में अवश्य करे ।

1 Week	2 Week	3 Week	4 Week
5	10	15	20

**फायदे :** माइग्रेन, सरदर्द, तनाव मुक्त, दिमागी उधलपथल को शांत रखना है । स्वरग्रंथि सुदृढ बनाता है । बच्चों को पढ़ाई में ध्यान केंद्रित करने में सहाय करता है । गुस्से को नियंत्रित करता है ।



### Benefits of Surya Namaskar

Surya Namaskar should be done facing the early morning mild sunlight.

**Aadityasya namaskaram ye kurvanti dine dine |  
Janmaantarsahasreshu daridryam nopajaayate**

**12** Exhale and release back to mountain

**1** Begin in mountain

**2** Raise hands overhead, press pubic bone forward, tighten buttocks, open chest, inhale

**3** Forward fold, tail bone up, hands next to feet, exhale

**4** Right foot back to lunge - press heel of back foot, lengthen spine, inhale

**5** Bring left foot back to plank position - long spine, hold breath in

**6** Drag knees, chin and chest to floor, exhale

**7** Sweep forward to cobra, inhale

**8** Lift tailbone to downward dog, exhale

**9** Right foot forward to lunge, inhale

**10** Left foot forward to forward fold, exhale

**11** Lengthen spine, reaching out and up, press pelvis forward, opening chest, inhale

**Meaning :**  
It is said that the person who does Surya Namaskar is untouched by poverty for his thousand lifetimes.

**Benefits of Surya Namaskar**

- A. It improves the blood circulation of all the important organs of the body.
- B. Improves the functioning of the heart and lungs.
- C. Strengthens the muscles of the arms and waist.
- D. Makes the spine and waist more flexible.
- E. Helps in reducing the fat around the abdomen and thus reduces weight.
- F. Improves digestion.
- G. Improves concentration power .

## **As you Go away from Nature, Nature Go away from you**

Home-remedy alternative are the basis of natural healing, a concept that's been around for thousands of years. There are ways you can treat many common health problems yourself-ways that don't require a lot of money, are effective, and can be done simply & safely at home.

### **MAINTAIN**

#### **Water**

- Drink one to three glasses of warm/cold water in squatting position after rising from the bed in the morning.
- Drink at least eight to twelve glasses of water everyday, with a frequency of one glass every two hours.

#### **Vital Factors**

- Breathe deeply and keep an erect posture always.
- Cultivate the habit of passing bowel motion twice a day.\*
- Bathe twice a day with cold/natural water.\*

#### **Rest**

- After every meal, pass urine, and relax in vajrasana for five to fifteen minutes.
- Sleep on a medium/hard bed with a thin pillow.
- Forget your worries and be relaxed when you go to bed.
- Cultivate the habit of sleeping on abdomen or on the right side.

### **REDUCE/MODERATE**

- Salt, sweets, spices, chillies, pulses (dal), ghee, cream, butter, ice cream, cooked food, potato and nuts.
- High heel footwear, weights, strenuous exercise, etc.

### **AVOID**

- Smoking, tea, coffee, alcohol, drugs, soft drinks, tobacco chewing, paan, zarda and other bad habits.
- White flour (maida), white sugar, polished rice.
- Non-vegetarian food.
- Tinned/dried/adulterated/coloured/flavoured/ synthetic/artificial food.
- Refined/deodorized/bleached/hydrogenated (Vanaspati) oils.
- Food when in fear, worry, anxiety, and when not hungry.
- Very hot and very cold food.
- Air/water/noise pollution.
- Harmful cosmetics, medicated soaps and creams.
- Drinking water during meals and within half an hour before and upto one hour after.
- Late dinner.
- Heavy meals.
- Late sleeping
- Sleeping on the left side and on the back.

### **PRACTISE**

- Gargling with lukewarm saline water once a day.
- Wash your eyes with triphala water daily in the morning and in the evening, for sparkling eyes.
- Do "varmana dhauti" (kunjil/vomiting) once a week.
- Take enema, if constipated.
- Massage and sunbath, once a week.
- Do gentle massage over palate (roof of mouth) daily.
- Splash water, twice daily, on forehead and eyes, keeping your mouth full of water.
- Spend some time in laughing and singing daily.

## **As you Go away from Nature, Nature Go away from you**

### **PRECAUTIONS**

- Wash vegetables and fruits properly before cutting, as they contain pesticides and contaminants.
- As far as possible, eat wholesome fruits and vegetables along with the peel.

### **ADOPT**

- Early to bed and early to rise habit.
- Fasting once every week with juices and adequate water.
- Eat to live, not live to eat.
- Nature cure in case of illness, as well as for good health.

### **POINTS TO REMEMBER**

- Food occupies sixth place in following requisites for living.
- Adequate space
- Pure air
- Pure water
- Sunshine
- Exercise/physical work
- Food
- During are more dangerous than diseases.
- Those who are regular in food, exercise and sleep/rest, never fall sick.
- Water is the medicine and diet is the drug.
- Fasting is an important factor in any cure.
- Hurry, worry and curry makes a man ill.

### **POINTS AT A GLANCE**

- All healing powers are within your body.
- Nature cure is the safest and the most permanent cure.
- Do not eat if ill, tired, in pain, in a tense state or in a hurry.
- Food taken in sickness feeds the disease, not the patient.
- Drink water half an hour before or one hour after your meals.
- Good health depends on a well-balanced diet and a happy attitude towards life.
- Drugs, tobacco and alcohol are the other poisons that have to be condemned.
- Drink at least eight to twelve glasses of water everyday.
- Keep at least three hours gap between dinner and bedtime.
- Money can buy medicine, not health.
- Nature is rich, let her enrich you.
- A disciplined life makes you live long and happy.
- Tea and coffee may stimulate you for a short time, but ultimately they depress you.
- Yoga has a complete message for humanity. It has a message for the body, the mind and the soul.
- Naturopathy and yoga are like two wheels of a cart.
- Your guide during your period of treatment is your doctor.
- Have faith in him and your terms for change of diet and treatment.
- Go for a stroll after, for fifteen to twenty minutes.
- Eating according to your day-to-day appetite, but fill only three-fourth of your stomach.
- Avoid smoking, tea, coffee, alcohol, drugs, soft drinks and other bad habits.

**Stay Healthily, Happily & Peacefully.**





राष्ट्रीय प्राकृतिक चिकित्सा संस्थान  
"बापू भवन", ताडीवाला रोड, पुणे - 411 001.

**NATIONAL INSTITUTE OF NATUROPATHY**  
(Govt. of India, Ministry of Health & Family Welfare,  
Department of AYUSH)  
"Bapu Bhavan" Tadiwala Road, PUNE - 411 001  
Phone : 020-26059682 / 3 / 4 / 5 Fax : 020 26059131  
Email : ninpune@vsnl.com Website : www.punenin.org

**To Whomsoever it may concern**

Smt. Shilpa N. Desai, Research scholar of JJTU, Rajasthan, was permitted to conduct  
Observational study for introduction of Naturopathy for her research purpose. She has been  
Attending our OPD for case study and the Library regularly for 06.00hrs. a day for six days in this  
Institute During June 2012.

Place:- Pune

Date:- 06/06/12

  
Dr. Babu Joseph

(Director)



अच्छे स्वास्थ्य के लिए निसर्गोपचार पढ़ें / Read NISARGOPACHAR *Varia* for better health





राष्ट्रीय प्राकृतिक चिकित्सा संस्थान  
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Ref. No.:NIN/ROP/2009-10/4457

14/09/2009

To,

Mrs. Shilpa N. Desai  
B-1, 2, Giriraj, Modern Usha Colony,  
Evershine Nagar, Malad(west),  
Mumbai - 400064.

**Sub:** 7 Days Re-Orientation Programme in Naturopathy from 5<sup>th</sup> to 11<sup>th</sup> Oct 2009.

Dear friend,

I am glad to inform that you have been selected for the 7 days Re-Orientation Programme in Naturopathy organised by NIN, Pune from 5<sup>th</sup> to 11<sup>th</sup> Oct 2009. You may report at NIN on 4<sup>th</sup> Oct 2009 before 5 pm or you may reach the venue **Nisargopachar Ashram, Urulikanchan, Pune** directly on 5<sup>th</sup> Oct 2009 before 8 am.

Boarding and Lodging will be taken care by us. Your travelling expenses up to II A/C Rail Fare (to and fro) will be reimbursed by NIN (strictly on production of the tickets).

Early information regarding your itinerary will be highly appreciable.

Thanking you.

Yours faithfully,

**DR. BABU JOSEPH**  
DIRECTOR

For further contacts:  
Dr. P. Palaniswamy, Prog. Co-ordinator.  
09422548333  
09271259560

अच्छे स्वास्थ्य के लिए निसर्गोपचार पढ़ें / Read NISARGOPACHAR for better health



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## To whomsoever it may concern

NIN congratulates research scholar Ms. Shilpa Desai for her efforts in organizing the Naturopathy workshop at M.K.E.S school for the students of age group 5-12 years and their parents.

The one-day workshop was on topics such as diet, acupressure, yoga and hydrotherapy in daily life with special emphasis to respiratory disorders, its prevention and cure. It was an interesting experience to have the parents and students participated keenly from morning to evening. Ms. Shilpa Desai simultaneously held an exhibition of variety of dishes explaining the scientific value, therapeutic uses and importance in maintaining good health. Participation of the students in the exhibition as well as seminar was unique.

NIN wishes Ms. Shilpa Desai success in all her future endeavors.

15.09.2012.



*Babu Joseph*  
15/09/12.  
(DR. BABU JOSEPH)  
Director

अच्छे स्वास्थ्य के लिए निसर्गोपचार पढ़ें / Read NISARGOPACHAR *वार्ता* for better health

  
**SCHOOL BUZZ**



**M K E S English School**

M K E S English School in Malad (W) recently organised a Good Health- "Go in green" programme under the guidance of research scholar Shilpa N Desai. In this programme, people of different age groups had their respiratory systems checked. This was done using instruments such as spirometer, peakflow meter and oxymeter that measured the amount of gas exchanged according to the height and weight of each individual. This was followed by a diet plan. The event aimed to spread awareness among parents regarding the health of their children.

IJSER

04

It's not just a place where you get to learn Newton's Relativity. It's also a place where you can think beyond classroom. Hence we say, **SCHOOL IS COOL!**

# Healing the natural way

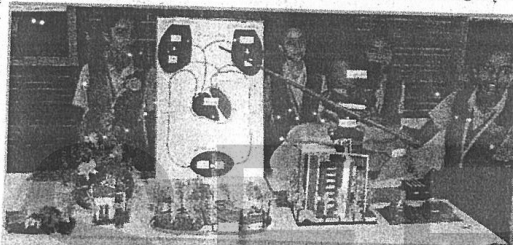
ALIZISHAAN KHATRI

**M**KES English School, Malad (W) ventured deep into the recesses of alternative medicine via their 'Go Green - Good health' programme to unravel the clandestine science of naturopathy before an audience of 800 students and 1,000 parents.

Naturopathy is a form of medicine which relies on the body's vitalism and boosts inherent healing with minimal

and the importance of natural diet. Explaining the fundamental principle of naturopathy, Dr Joseph said, "The body has the power to heal itself. Naturopathy aims to positively catalyse the body's healing process through a

students' profound understanding of the subject. Prominent exhibits included an indigenous contraption to test the power of the human lungs and a science demonstration illustrating the role of acids in the digestion



Students demonstrate working of a science project

Pics: Alizishaan Khatri



A display of healthy food put up by students

use of surgery and drugs. A powerpoint presentation acquainted the audiences with the basic know-how of naturopathy before the students came up on stage to present their understanding of the subject via a street play titled 'NO Junk. Go Green.' Dr Babu Joseph, director of National Institute of Naturopathy, Pune gave the audiences a comprehensive description about the scope, methods and features of naturopathy. Subsequent speakers illustrated various facets of naturopathy such as Hydrotherapy, Acupressure

proper diet and complete rest (physiological, physical, sensory and mental)."

Shilpa Desai, naturopathy research scholar addressed the audience about combating respiratory diseases through naturopathy. "Exposing children to naturopathy at an early age greatly boosts their immunity thus helping them prevent and fight any diseases," she said.

A mini-exhibition showcasing healthy recipes (salads and juices), posters, slogans, yoga postures and simple science experiments effectively illustrated the

**The body has the power to heal itself. Naturopathy aims to positively catalyse the body's healing process through proper diet and complete rest**

process. Chaya Ravani, headmistress expressed her concern about the alarming increase in obesity amongst growing children and attributed it to excessive intake of junk food and lack of physical activity. Voicing her approach to placate this problem, she said "We aim to make the students conscious about their own health and train them to relish green vegetables."

# Taste of

ROSHAN KOKAHE

**S**t. Arnold's High School recently conducted cultural day celebration to pay tribute to the country's culture and tradition and to give the children a break from the routine of academics.

Various competitions that triggered the creative side among children were conducted to help them display talent. The school conducted folk dance, western dance, creative advertisement and fashion show for its students. All the four houses of the school put up amazing performances to compete with one another for the title. The aim of the celebration was to enlighten children about the rich culture of the country through the medium of performances. The folk dance competition witnessed some of the traditionally striking performances. Assamese bamboo dance, Maharashtraan lavanis and folk dances of various other states of India were performed. Jitesh Kadam, judge of the folk dance competition appreciated the talented young children. He said, "Children have infinite talent hidden in them and it is heart-warming to see the fact that the younger generation manages to blend their skills and their interests with folk tunes that our country is blessed with. It is dif-

Stude

# Promoting y



Dignitaries at inaugural of Science Con

SHREYA JOSHI

New Horizon Scholars School, AI recently hosted the 20th National Children's Science Congress (NCSC 2012) for the second consecutive year. Navi Mumbai Science Foundation (NMSF) was the coordinator for the district level event. Energy: explore, harness & conserve was the focal theme for the event. Around 400 students divided in 85 teams partici-



Shweta, Near Kachpada Bus Stop, Link Road, Malad (West), Mumbai - 400 064  
Tel No : 28807575 / 2881 9167 / 2882 4751

7<sup>th</sup> Feb 2012

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mrs. Shilpa N. Desai** was working at **THE CHILDREN'S HOSPITAL, MUMBAI**, from July 2011 to November 2011 for her observational study.

During this period she has counseled the parents of the patients, giving dietary advice according to the specific needs of the child. On follow up these patients showed a positive response and feedback.

During her course with us she has conducted a talk on Child development to a group of 25 parents. The talk was well appreciated by all the parents due to the informative content.

We wish her all the very best in her future endeavors.

**Dr. M.B. Pereira**  
MD; DCH

The Children's' Hospital, Mumbai.  
Shweta, 10 Khandelwal Layout,  
Linking Road, Malad west,  
Mumbai 400064.



**Dr. Vasant Khataav**

M.D.(BOM),D.C.H.

**Sr. Consultant Paediatrician**

President - I.A.P. Mumbai Branch (1998)

Founder President - B.P.N.I. MH State

President - Suvidya Prasarak Sangh



Hosp. Mob. : 9324 579 429

**MOTHER &  
CHILD HOSPITAL &  
RESEARCH CENTRE**

*We examine children up to age of 18 years*

Name : \_\_\_\_\_ Age :- \_\_\_\_\_ Date : \_\_\_\_\_  
Wt : \_\_\_\_\_  
Height/Lt \_\_\_\_\_ CMS  
Head O \_\_\_\_\_ CMS

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that MRS. SHILPA N. DESAI was working at  
**DR. KHATAV'S MOTHER & CHILD NURSING HOME AND  
RESEARCH CENTER** from 25<sup>th</sup> Dec. 2011 to 8<sup>th</sup> Feb, 2012 for her  
observational study.

During this period she has counseled the parents of the patients,  
giving dietary advise according to the specific needs of the child. On  
follow up these patients showed a positive response and feedback.

She has taken sincere efforts to connect with child's parents.

We wish her all the very best in her future endeavors.

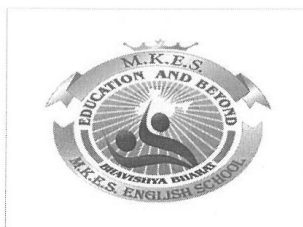


**KHATAV HOSPITAL** : Arunoday Shopping Centre, Market Lane, Borivali (West), Mumbai - 400 092 India.

**TEL. : 6710 4444 / 6710 4445 / 6710 4446 / 6710 4447 • PCO. : 28934662**

Email : khatavhospital@gmail.com / drvakhatav@gmail.com

**Consulting Hours**  
10 AM TO 2 PM  
6 PM TO 8 PM  
by Appointment only  
Except Sat. Evening & Sunday



THE SCHOOL ADVISOR, HEADMISTRESSES, STAFF & STUDENTS

OF

THE MALAD KANDIVLI EDUCATION SOCIETY'S  
**M.K.E.S. ENGLISH SCHOOL**  
Bhavishya Bharat Campus, Gate No.2, S.V.Road,  
Malad (W), Mumbai 400 064.

**Cordially invite you to their Naturopathy  
"Go Green - Good Health Programme."**

Date: 14<sup>th</sup> Sep 2012 at 10.30 a.m. onwards.

Venue: At Jagmohandas Gokaldas Memorial Hall,  
Bhavishya Bharat Campus, Malad (W)

**Chief Guest: Dr. Babu Joseph,**  
Director of NIN, Pune (Dept. of Ayush)

**Guest of Honour: Dr. Shailendrakumar J. Garg,**  
(Secretary of Malad Kandivli Education Society)

Your presence at the function will be greatly appreciated

**Kalpana Dogra**  
Headmistress

**Otilia D'Souza**  
School Advisor

**Chhaya Ravani**  
Headmistress

**Shilpa desai**  
Research scholar

# PROGRAMME

01	Lighting of lamp	10.45 am
02	Welcome Speech /Introduction	10.50 am
03	Power Point Presentation- shilpa desai	10.55 am
04	No junk....Go green (skit)	11.00 am
05	Introduction on Naturopathy by Dr. Babu Joseph	11.05 am
06	Orientation on Hydrotherapy by Dr.Dhananjay Arankalle	11.30 am
07	Acupressure in daily life by Dr.Satyanath & Dr.Avantika Nanda	12.00 noon
08	Natural Diet by Dr Hayandavi Salwa	2.00 pm
09	Prevention is better than cure by Dr. Babu Joseph	2.30 pm
10	Respiratory Diseases and Nature Cure by Shilpa Desai	3.00 pm
11	Vote of Thanks	4.00 pm







## "GO-IN-GREEN" GOOD HEALTH PROGRAMME

JJTU university phd programme

BY (research scholar) SHILPA.N .DESAI

Enrollment no-20114552

M.K.E.S HIGH SCHOOL ,MALAD(w),MUMBAI

FEED- BACK FORM BY PARENTS

	YES	NO	
1. Do You Think This Kind Of Health Programme Should Take Up By Schools?	<input type="checkbox"/>	<input type="checkbox"/>	
2. Will You Appreciate Initiative Of Your School For "Go-In Green"?	<input type="checkbox"/>	<input type="checkbox"/>	
3. Did You Feel Your Lifestyle Has Been Influence By This Programme?	<input type="checkbox"/>	<input type="checkbox"/>	
What rate would you like to give this Programme?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Good  v.good  excellent

sign



THE HEADMISTRESSES, STAFF & STUDENTS

OF

THE MALAD KANDIVLI EDUCATION SOCIETY'S

**M.K.E.S. ENGLISH SCHOOL**

Bhavishya Bharat Campus, Gate No.2, S.V.Road,  
Malad (W), Mumbai 400064.

*Cordially invite you for Naturopathy  
"Intervention Result"*

*"Go Green - Good Health Programme."*

Date: 18 Jan 2013 at 9.00am to 10.30am.

Venue: At Jagmohandas Gokaldas Memorial Hall,  
Bhavishya Bharat Campus, Malad (W)

**Chief Guest - Dr. Ram Barot**

**Guest of Honour - Mr. Guntant bhai Parekh**

*Your presence at the function will be greatly appreciated*

*Kalpana Dogra - Primary  
Headmistress*

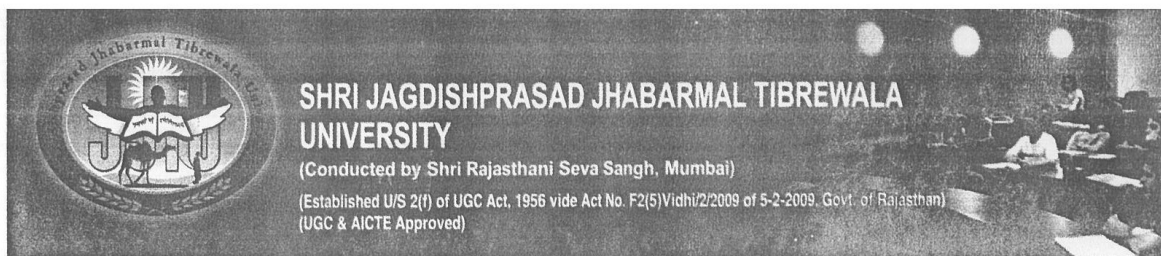
*Chhaya Ravani - Secondary  
Headmistress*

*Shilpadesai  
Research Scholar*

# PROGRAMME

01	Lighting of lamp	09.00 am
02	Welcome and introduction of the guests	09.15 am
03	Power Point Presentation-Shilpa Desai (Research Scholar)	09.20 am
04	Children....mind mirror	9.45 am
05	Parents.....feed back	9.55 am
06	Teachers.....view	10.00am
07	Principals.....desk	10.05am
08	Doctors facts file	10.20 am
09	Enlightment by dr.deshmukh(guide)	10.25 am
10	Chief guest desk	10.30 am





## SHRI JAGDISHPRASAD JHABARMAL TIBREWALA UNIVERSITY

(Conducted by Shri Rajasthani Seva Sangh, Mumbai)

(Established U/S 2(f) of UGC Act, 1956 vide Act No. F2(5)Vidhi/2/2009 of 5-2-2009, Govt. of Rajasthan)  
(UGC & AICTE Approved)

JJTU/Dean/201

Date 22.01.2.13

To Whom it may concern

It gives me immense pleasure to write this letter of appreciation as Dean of JJTU as being witness of Shilpa Desai Enrolment no. 20114552 Intervention result programme concluded on 18<sup>th</sup> January, 2013 at M.K.E.S. English School, on her research problem.

This programme were attended and inaugurated by Chief guest Dr. Ram Barot (Municipal Counsellor), Guide of research scholar Dr. Deshmukh, well known Doctor from the field of medicine, Child specialist, Ayurveda doctor, Naturopathy doctors, intervene children's parents, Principle, staff & children of M.K.E.S. School. Total 400 peoples were present for research scholar Shilpa Desai intervention result programme.

Research scholar Shilpa Desai has presented Power Point Presentation & Intervin children demonstration of Suryanamskar & Pranayam of children age group 5 – 12yrs, of M.K.E.S. School. It was very commendable demonstration by children, participant intervin parents have shared their experience being a part of this intervention during entire year. It was very impressive as according to that parent this research was very effective as it has touched their life & their neighbours & relatives as well adopted this life-style & followed and found positive result. Participant student's has also shared their experience and how they have improved not only by their health but as well as person and they got to know means of Naturopathy & good health. Present Doctors has also given very positive comment on this intervention result programme & recommended diet that all the school should incorporate such complete health programme in their school. Research scholar's guide Dr. Narendra V. Deshmukh had also given commendable speech and his comment on presentation & demonstration.

Being present in this intervention programme of research scholar Shilpa Desai been remain with me as an very memorable moment, as it was very eye-opening that 575 children from middle class family has learnt to live their life-style, particularly in this not so predictable environment. 575 children's family, neighbours, relatives, this way more than 10,000 people were an indirect participant of this intervention programme, which is very commendable. I congratulate researcher scholar Shilpa Desai for her social cause based research programme, which will help society & our future generation.

Yours Truly

A handwritten signature in blue ink is written over a circular official stamp of JJTU University. The stamp contains the text 'JJTU University' and some illegible details.

**Mumbai Office:**

C/o. Shri Rajasthani Seva Sangh J. B. Nagar, Andheri (E), Mumbai - 400 059. (MAH.)  
Tel : +91-22-32710403 / 9323973505 / 9819695239 Fax : +91-22-28224926  
Email : srss1986@yahoo.co.in / srss1986@gmail.com Website : www.jjtu.ac.in



Phone: 2865 3006 (Primary)  
2861 8550 (Secondary)

Malad Kandivli Education Society's

## M.K.E.S. ENGLISH SCHOOL

Bhavishya Bharat Campus, Gate No. 2, S. V. Road,  
Malad (West), Mumbai - 400 064.

E-mail: mkes\_malad@hotmail.com (Primary) / mkeses@gmail.com (Secondary)

29.01.2013

It gives me immense pleasure to write this letter of recommendation for **ShilpaNiraj Desai** who successfully completed her intervention programme "Psycho-physiological Aspects and its effect on Respiratory System through Naturopathy" on children (5-12 yrs) – positively linked to global warming. I got a chance to assess her skills when she dealt with the psychological problems of school-going children as a part of her intervention study.

She also conducted a seminar on the "Go-Green, Good Health" to motivate children and parents and enable them to inculcate naturopathy based lifestyle in their day-to-day activities. She has also conducted Steve-Parker's demonstrations so that children could understand some basic concepts with ease. She had also invited Dr.Babu Joseph, Director, National Institute of Naturopathy and his team of senior researchers to the seminars. After the seminar, they really appreciated her concept and praised her research efforts.

Shilpa Desai has collaborated with our school as part of her PhD intervention programme. She has brought about a profound change in the physiological and psychological parameters of our students who have actively participated in her effort (June 2012 to January 2013). She has taken Parent-Orientation seminars and one-to-one counseling of each student that participated in her study. She has documented all the parameters herself and analysed the results accurately. She has successfully dealt with children with learning disability and behavioral modification problems. Her study has led to improvement in the lifestyle of the middle-class and lower-middle class families on the whole. She has also demonstrated that this effect can spread over a larger group of people associated with children.

Her knowledge and understanding of fundamentals coupled with her dedication, versatility and thirst for knowledge makes me believe that she has great potential for doing good research. I would also recommend that other schools should introduce such complete health care concepts to achieve improvement in children's health and well-being.

HEADMISTRESS

M.K.E.S. ENGLISH SCHOOL

Bhavishya Bharat Campus, Gate No. 2,  
S. V. Road, Malad (W),  
Mumbai-400064.



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E-mail: mkes\_malad@hotmail.com (Primary) / mkeses@gmail.com (Secondary)

This data has been authentically collected and checked by school authorities for following classes.

Sr.KG – A & B, Std – I – A & B, Std. – II, Std – III & Std. - IV

  
Mrs. Kalpana Dogra  
Head-Mistress – Primary

IJSER



Phone: 2865 3006 (Primary)  
2861 8550 (Secondary)

MALAD KANDIVALI EDUCATION SOCIETY'S

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During the intervention programme, she introduced "Go-In-Green" concept. She along with the school teacher guided a bunch of students to develop a model of this concept. This was presented as a school project in P-Ward Science exhibition, where this concept won the first prize among 110 participating schools. She has also demonstrated good leadership skills in guiding the students and also inculcated a sense of team-work and discipline.

She also conducted a seminar on the "Go-In-Green Good Health" to motivate children and parents and enable them to inculcate naturopathy based lifestyle in their day-to-day activities. She has also conducted Steve-Parker's demonstrations so that children understand some basic concepts with ease. She had also invited Dr.Babu Joseph, Director, National Institute of Naturopathy and his team of senior researchers to the seminars. After the seminar, they really appreciated her concept and praised her research efforts. This project we have share with British Council, Connecting Classroom.

Under her guidance, we had prepared project for National Science Congress. The theme of the project Energy and Society. We had made project for Gender –wise energy consumption Title was "Awake , Arise and Act".

Shilpa Desai has collaborated with our school as a part of her PhD intervention. She has brought about a profound change in the physiological and psychological parameters of our students who have actively participated in her effort (June 2012 to January 2013). She has taken Parent-Orientation seminars and one-to-one counselling of each student that participated in her study. She has documented all the parameters herself and analysed the results accurately. She has successfully dealt with children with learning disability and behavioural modification problems. Her study has led to improvement in the lifestyle of the middle-class and lower-middle class families on the whole. She has also demonstrated that this effect can spread over a larger group of people associated with the child in this research intervention programme.

Her extensive knowledge and understanding of fundamentals coupled with her dedication, versatility and thirst for knowledge makes me believe that she has great potential for doing good research. I would also recommend that other schools should also introduce such complete health care concepts to achieve overall improvement in children's health and well-being.

*C.S. Ravani*  
Mrs .Chaya Ravani  
Headmistress – secondary



Phone: 2865 3006 (Primary)  
2861 8550 (Secondary)

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31/1/13

Physiological and Psychological Data of Secondary std 5<sup>th</sup> to 7<sup>th</sup> has been authentically checked by school authorities.

C.S. Ravani

Mrs. Chhaya Ravani  
Headmistress- Secondary

# IJSER