Chapter-I
INTRODUCTION

“Yoga is not an ancient myth buried in oblivion. It is the most valuable inheritance of the present. It is the essential need of today and the culture tomorrow.”

Swami Satyananda Saraswati

Yoga is the science of right living and, as such, is intended to be incorporated in daily life. It works on all aspects of the person: the physical, vital, mental, emotional, psychic and spiritual.

The world yoga means ‘unity’ or ‘oneness’ and is derived from the Sanskrit word Yuj which means ‘to join’. This unity or joining is described in spiritual terms as the union of the individual consciousness with the universal consciousness. On a more practical level, yoga is a means of balancing and harmonizing the body, mind and emotions. This is done through the practice of Asana, Pranayama, Mudra, Bandha, Shatkarma and Meditation, and must be achieved before union can take place with the higher reality.

The science of yoga begins to work on the outermost aspect of the personality, the physical body, which for most people is a practical and familiar starting point. When imbalance is experienced at this level, the organs, muscles and nerves no longer function in harmony, rather they act in opposition to each other. For instance, the endocrine system might become irregular and the efficiency of the nervous system decrease to such an extent that a disease will manifest. Yoga aims at bringing the different bodily functions into perfect coordination so that they work for the good of the whole body.

From the physical body, yoga moves on to the mental and emotional levels. Many people suffer from phobias and neuroses as a result of the stresses and interactions of everyday living. Yoga cannot provide a cure for life but it does present a proven method for coping with it.
Swami Sivananda of Rishikesh explained yoga as an “… integration and harmony between through, word and deed, or integration between head, heart and hand”. Through the practices of Yoga, awareness develops of the interrelation between the emotional, mental and physical levels and how a disturbance in any one of these affects the others. Gradually, this awareness leads to an understanding of the more subtle areas of existence.

There are many branches of yoga: Raja, Hatha, Jnana, Karma, Bhakti, Mantra, Kundalini and Laya, to name but a few and many texts explain them in detail. Each individual needs to find those Yoga most suited to his/her particular personality and need. In the last half of this century, Hatha yoga has become the most well known and widely practiced of the systems. However, the concept of what constitutes yoga is broadening as more people take it up and this knowledge is spreading. In the ancient texts, Hatha Yoga consists of the Shatkarmas, cleansing practices only. Today, however, Hatha Yoga commonly embraces the practices of Asana, Pranayama, Mudra and Bandha as well¹.

**The Yoga sikhā Upanisad:-**

The union (yoga) of the Prana and Apana, of rajas (menstrual discharge) and Retas (human semen), of sun & moon in the body of the human soul and god- multitude of these dualities is called YOGA. The full meaning of this observation will be clearer to the reader after he has gone through this book. However, it may be noted, at the outset, that yoga is union of the human soul with god, which hardly needs any explanation².

**According to Yoga vasistha:-**

There are two methods of the destruction of the mind stuff one is yoga and the other Jnana and Yoga is the control of the natural runaway tendencies of the mind.

---

Maharsi Patanjali in his most celebrated Yoga Darsana defines Yoga as under:-

The restraint of the mind-stuff from taking various forms is yoga (Swami Vivekananda’s translation) or Yoga is the control of thought-waves in the mind (as translated by Swami Prabhavananda of Sri Ramakrsana Math). The Maharsi further observes:-“thereafter the soul abides in it’s real self”. In other words, yoga lies in being one’s real self.

\[
\text{Yogas citta vrtti nirodhah}
\]

– Patanjali Yoga Sutra I:2

Yoga happens when there is stilling (in the sense of continual and vigilant watchfulness) of the movement of thought without where which there is no movement.

\[
\text{Sa tu dirgha kala nairantarya satkara sevito drdhabhumih}
\]

– Patanjali Yoga Sutra I:14

But, when is one said to be well grounded in practice? When this spontaneous awareness or cosmic consciousness continues without interruption, for a long time, and one is devoted to it with all one’s being, in all sincerity and earnestness.

\[
\text{avidya smita raga dves bhinivesah klesah}
\]

– Patanjali Yoga Sutra II:3

The mind is results because of the many unresolved problems. The elements that disturb mental equilibrium and thus generate psychic distress are : ignorance of the truth concerning one’s self or egotism which seems to be the obvious truth in ignorance, and the belief in the separative individuality, psychological and unnatural extension of attraction and repulsion which, as neurological phenomena are natural, and blind clinging to the present physical “life”\(^3\).

Philosophy is variously defined in the dictionary as a study of truth or the principles underlying all knowledge, or a study of the most general causes of universe, or

\(^3\) Patanjali’s Vision of Oneness, An Interpretive Translation by Swami Venkatesananda. Dailyreadings.com/ys1-1.htm
a system guiding life. In this unit of study, it is both a product and process. As product it is a system of values. As a process it is a means of establishing that system of values. Thus, it becomes both means and an end. It tries to know things that are immediately and remotely concern of man. What is the real nature of man? What is the end of this life?

Philosophy deals with problems of the nature. The aim of Philosophy is to find out the knowledge of truth or study of the most general causes and principles of the universe.

For better understanding we can study the Philosophy into two ways.

1. **Western Philosophy**: In this Philosophy we found that they concerned human knowledge about each of the different problems. Branches of Western Philosophy are mentioned below:
   - Metaphysics
   - Epistemology
   - Logic
   - Ethics
   - Aesthetics

2. **Indian Philosophy**: Discusses the above branches but not separately. Every problem is discussed by the Indian Philosophers from all possible approaches. Indian Philosophy which only satisfied to its influencing devotion to the search for the truth. The Vedas are the earliest available records of Indian literature. On the basis of Vedas Indian Philosophy can be classified in two broad classes namely,

   A. **Heterodox (Nastika)**: This class does not believe in the authority of Vedas. This class can be further divided into the following areas:
      - Carvaka.
      - Buddha.

---

B. **Orthodox (Astika):** This class believes in the authority of Vedas. This class can be further divided into the following areas:

- Sankhya.
- Yoga.
- Nyaya.
- Vaisesika.
- Mimamsa.
- Vedanta.

If the philosophy is intellectual investigation, the Yoga is particularized experience. In Philosophy, the logical faculty is desired but in Yoga, devotional wisdom and purity of internal realization are the assets of the adherents. In Philosophy cognitive element regions supreme but in Yoga, along with cognitive elements affect and cognitive elements are also primarily needed. However, it does not mean that Yoga and Philosophy are poles apart because in Yoga that effort of wisdom for reaching the truth is inherent which evolves into the spiritual experience and not that devotion which negates the intellect. Moreover, the Indian Philosophy is not only conceptual and linguistic analysis, it is rather that system of thought which is formulated by logical thinking attained through intuitive experience.

**Patanjali's Ashtanga Yoga**

Yama-niyamasana-pranayama-pratyahara-dharana-dhyana-samadhayo stavangani,

– Patanjali Yoga Sutra II:29.

Yoga is a cultural heritage of India. It has long tradition. Yoga is a practical, methodical and a systematic discipline for unfolding the ultimate potentialities of mankind, handed down to us in the form of living tradition which has been systematized
around 2000 BC by the sage Patanjali in the name of Yoga Sutra, commonly known as “Astanga Yoga”. The ashtanga yoga basics include paying attention to each of the eight limbs, which are:

- Yama (principles or moral code);
- Niyama (personal disciplines);
- Asana (ashtanga yoga postures)
- Pranayama (yoga breathing);
- Prayahara (withdrawal of senses);
- Dharana (concentration on objects);
- Dhyan (meditation);
- Samadhi (salvation).

**ASANA**

“Hathasya prathamaangatvaadaasanam poorvamuchyate.
Kuryaattadaasanam sthairyamaarogyam chaangalaaghavam.”

“Prior to everything, asana is spoken of as the first part of hatha yoga.
Having done asana, one attain steadiness of body and mind, freedom from disease and lightness of the limbs.”

*Hatha Yoga Pradipika*

Asana means a state of being in which one can remain physically and mentally steady, calm, quiet and comfortable. In the Yoga Sutras of Patanjali there is a concise definition of yogasanas: “Sthiram sukham asanam” “Sthiram sukham asanam”, meaning that position which is comfortable and steady. So, we can see that yogasanas in this context are practiced to develop the practitioner’s ability to sit comfortably in one position for an extending length of time, as is necessary during meditation.

In raja yoga, asana refers to the sitting position, but in haatha yoga it means something more. Asanas are specific body positions which open the energy channels and
psychic centres. They are tools of higher awareness and provide the stable foundation for our exploration of the body, breath, mind and beyond. The hatha yogic also found that by developing control of the body through asana, the mind is also controlled. Therefore, the practice of asana is foremost in hatha yoga.

In the Yoga Sutras of Patanjali there is a concise definition of asanas: “Sthiram sukham Asanam”, meaning ‘that position which is comfortable and steady’. In this context, Asanas are practiced to develop the ability to sit comfortably in one position for an extended period of time, ability necessary for meditation. Raja yoga equates yogasana to the stable sitting position.

The hatha yogis, however, found that certain specific body positions, Asanas, open the energy channels and psychic centres. They found that developing control of the body through these practices, enabled them to control the mind and energy. Yogasanas became tools to higher awareness, providing the stable foundation necessary for the exploration of the body, breath, mind and higher states, for this reason, asana practice comes first in hatha yoga texts such as Hatha Yoga Pradipika.

In the yogic scriptures it is said that there were originally 84,00,000 asanas, which represent the 84,00,000 incarnations every individual must pass through before attaining liberation from the cycle of birth and death. These asanas represented a progressive evolution from the simplest form of life to the most complex: that of a fully realized human being. Down through the ages the great rishis and yogis modified and reduced the number of asanas to the few hundred known today. Through their practice, it is possible to side-step the karmic process and by pass many evolutionary stages in one’s lifetime, of these few hundred, only the eighty-four most useful are discussed in detail.
Animal postures

Many of the yogasanas described in this book are named after and reflect the movements of animals. Through observation, the rishis understood how animals live in harmony with their environment and with their own bodies. They understood, through experience, the effects of a particular posture and how the hormonal secretions could be stimulated and controlled by it. For example, by imitating the rabbit or hare in shashankasana they could influence the flow of adrenaline responsible for the ‘fight or flight’ mechanism. Through imitating animal’s postures, the rishis found they could maintain health and meet the challenges of nature for themselves.

Asanas and prana

Prana, vital energy, which corresponds to ki or chi in Chinese medicine, pervades the whole body, following flow patterns, called naadis, which are responsible for maintaining all individual cellular activity. Stiffness of the body is due to blocked prana and a subsequent accumulation of toxins. When prana begins to flow, the toxins are removed from the system ensuring the health of the whole body. As the body becomes supple, postures which seemed impossible become easy to perform, and steadiness and grace of movement develop. When the quantum of prana is increased to a great degree, the body moves into certain postures by itself and asanas, mudras and pranayamas occur spontaneously. (For further information on prana, see the section on pranayama or the Bihar School of Yoga publication Prana, Pranayama, Prana Vidya)

Asanas and kundalini

The ultimate purpose of yoga is the awakening of kundalini shakti, the evolutionary energy in man. Practising asanas stimulates the chakras, distributing the generated energy of kundalini all over the body. About thirty-five asanas are specifically geared to this purpose: bhujangasana for manipura chakra, sarvangasana for vishuddhi, sirshasana for sahasrara and so on. The other asanas regulate and purify the nadis facilities the conduction of prana throughout the body.
The main object of hatha yoga is to create balance between the interacting activities and processes of the pranic and mental forces. Once this has been achieved, the impulses generated give a call of awakening to *sushumna nadi*, the central pathway in the spine, through which the kundalini shakti rises to sahasrara chakra, thereby illumining the higher centres of human consciousness.

Hatha yoga, therefore, not only strengthens the body and improves health but also activities and awakens the higher centres responsible for the evolution of human consciousness. (For a fuller discussion of chakras, nadis, and kundalini, see the chapter Psychic Physiology of Yoga).

**Asanas and the body-mind connection**

The mind and body are not separate entities although there is a tendency to think and act as though they are. The gross form of the mind is the body and the subtle form of the body is the mind. The practice of asana integrates and harmonises the two. Both the body and the mind harbor tensions or knots. Every mental knot has a corresponding physical, muscular knot and vice versa.

The aim of asana is to realize these knots. Asanas release mental tensions by dealing with them on the physical level, acting somato-psychically, through the body to the mind. For example, emotional tensions and suppression can tighten up and block the smooth functioning of the lungs, diaphragm and breathing process, contributing to a very debilitating illness in the form of asthma.

Muscular knots can occur anywhere in the body: tightness of the neck as cervical spondylitis, the face as neuralgia, etc. A well chosen set of asanas, combined with pranayama, shatkarmas, meditation and yoga nidra, is most effective in eliminating these knots, trackling them from both the mental and physical levels. The result is the release of dormant energy; the body becomes full of vitality and strength, the mind becomes light, creative, joyful and balanced.
Regular practice of asana maintains the physical body in an optimum condition and promotes health even in an unhealthy body. Through asana practice, the dormant energy potential is released and experienced as increased confidence in all areas of life.

**Asana and exercise**

Yogasana have often been thought as a form of exercise. They are not exercises, but techniques which place the physical body in positions that cultivate awareness, relaxation, concentration and meditation. Part of this process is the development of good physical health by stretching, massaging and stimulating the pranic channels and internal organs.

Although asana is not exercise it is complementary to exercise. Before the difference between the two can be understood, it is necessary to know a little about the latter. Exercise imposes a beneficial stress on the body. Without it the muscles waste, the bones become weak, the capacity to absorb oxygen decreases, insulin insensitivity can occur, and the ability to meet the physical demands of sudden activity is lost.

There are several differences in the way asana and exercise affect body mechanisms. When yogasanas are performed, respiration and metabolic rates slow down, the consumption of oxygen and the body temperature drop. During exercise, however, the breath and metabolism speed up, oxygen consumption rises, and the body gets hot. Yoga postures tend to arrest catabolism whereas exercise promotes it. In addition, asanas and designed to have specific effects on the glands and internal organs, and to alter electrochemical activity in the nervous system.

**Asanas classified**

The asanas are classified into three groups: beginners, intermediate and advanced. It is not necessary to perform all the asanas in a particular group. Regular practice of a balanced programme, tailored to individual needs is recommended for maximum benefit.
a) **The beginners group** should be performed by those who have never practiced yogasan as before, who are infirm in any way, weak or sick and who are therefore unable to perform the more difficult practices. This group consists of elementary techniques designed to prepare the body and mind for major and meditation asanas. These practices are in no way inferior to the advanced asanas and are very useful in improving physical health. Included in this group are the pawanmuktasana series, eye exercises, relaxation, premeditation and meditation poses, asanas performed from vajrasana, standing asanas, surya and Chandra namaskara.

b) **The intermediate group** consists of asanas which are reasonably difficult are recommended for people who can perform the beginners group without discomfort or strain. These asanas require a greater degree of steadiness, concentration and coordination with the breath. Included in this group are asanas performed from padmasana, backward and forward bending, spinal twisting, inverted and balancing asanas.

c) **The advanced group** is intended for people with extensive control over their muscles and nervous system, who have already mastered the middle group of asanas. Practitioners should not be too eager to start these asanas. It is preferable to practice these under the guidance of an adept.

**Dynamic and Static Asanas**

Dynamic practices often involve energetic movements of the body. They are not intended to develop muscles or make the body fitter but to increase flexibility, speed up circulation, loosen the muscle and joints, release energy blocks and remove stagnant blood from different parts of the body. These asanas tone the skin and muscles, strengthen the lungs, encourage movement in the digestive and excretory systems. Dynamic practices are particularly useful for beginners. They include series and postures such as pawanmuktasana series, surya namaskara, Chandra namaskara, dynamic paschimottasana and dynamic halasana.
Static practices are performed by intermediate and advanced practitioners. They have a more subtle and powerful effect on the pranic and mental bodies. They are performed with little or no movement, the body often remaining in one position for a few minutes. These asanas are intended to gently massage the internal organs, glands and muscles as well as to relax the nerves throughout the body. They are specifically concerned with bringing tranquility to the mind and preparing the practitioner for the higher practices of yoga, such as meditation. Some of them are particularly useful for inducing the state of sense withdrawal, pratyahara.

PRANAYAMA

\[ \text{tasmin-sati svasa-prasvasa-yor-gati-vicchedah prana-yamah,} \]

- Patanjali Yoga Sutra II:49.

tasmin- in that.
sati- while being.
svasa- inhalation.
prasvasa- exhalation.
yoh (→r)- 6th, possessive case suffix-dual of the two.
gati- motion, here rhythmic regular movement.
viccheda(h)- cut, interruption, break, (is).
pranayama (h)- pranayama(is).

Two Sanskrit words are combined in the word 'Pranayama' Prana and Ayama. ‘Prana’ means life force i.e Breath. ‘Ayama’ means development or control. Therefore Pranayama is the control of breath .Breath is the life force that sustains life. Nobody can survive more than a few minutes without air. When the breath stops, life ends .In simple terms pranayama may be called the control of the breath. Its essence lies in the modification of our normal process of breathing.

Breathing is an act in which we take air from the atmosphere into our lungs, absorb the oxygen from it into our blood, and expel the air again into the atmosphere together with carbon-di-oxide and water vapour. This act of inhalation and exhalation is repeated every four to five seconds. Thus normally we breathe about fifteen times every minute, Each
time taking about 500 ml. of air into the lungs. So we inhale and exhale approximately seven liters of air per minute.

TYPE OF PRANAYAMA

- Sukhapoorvaka Pranayama.
- Suryabhedhana Pranayama.
- Chandrabhedhana Pranayama.
- Ujjayi Pranayama.
- Bhastrika Pranayama.
- Nadishodhana Pranayama.
- Sitali Pranayama.
- Sitkari Pranayama.
- Sadanta Pranayama.
- Anuloma Viloma Pranayama.
- Bhamri Pranayam.
- Udgeet Pranayama.\(^5,6,7\)

Science of Breath

Life is absolutely depending upon the act of breathing. Breathing may be considered as the most important of all of the functions of the body, for, indeed, all the other functions depend upon it. Man may exist some time without eating; a shorter time without drinking; but without breathing his existence may be measured by a few minutes. Breathing is natural but correct habits of breathing provide a continued vitality and freedom from disease. An intelligent control of our breathing power helps to lengthen our days upon the earth by giving us increased vitality and powers of resistance.

As man has contracted improper methods and attitudes of walking, standing and sitting, which have robbed him of his birthright of natural and correct breathing. He has

---

\(^5\) Swami Kuvalayananda, “Pranayama”, Kaivalyadhram, Lonavala,9th ed..
\(^6\) Dr. P.D. Sharma., “Yogasana and Pranayama for Health”, Gala Publisher, Ahmedabad
\(^7\) www.google.com
paid a high price for civilization. The savage, today, breathes naturally, unless he has been contaminated by the habits of civilized man. The percentage of civilized men who breathe correctly is quite small, and the result is shown in contracted chests and stooping shoulders, and the terrible increase in diseases of the respiratory organs, including that dread monster, consumption, “the white scourge” (Rama et al., 1981).

The Occidental teaching show that the physical health depends very materially upon correct breathing. The Original teaches not only admit that their Occidental brothers are right, but say that in addition to physical benefit derived from correct habits of breathing, man’s mental power, happiness, self-control, clear-sightedness, morals, and even his spiritual growth may be increased by an understanding of the ‘Science of Breath.’

**Exoteric Theory of Breath**

The organs of respiration consist of lungs and the air passages leading to them. The lungs are two in number, and occupy the pleural chamber of the thorax, one on each side of the median line, being separated from each other by the heart, the greater blood vessels and the larger air tubes. Each lung is free in all directions, except at the root, which consists chiefly of the bronchi, arteries and veins connecting the lungs with the trachea and heart. The lungs are spongy and porous, and their tissues are very elastic. They are covered with a delicately constructed but strong sac, known as the pleural sac. One wall of pleural sac closely adheres to the lung, and the other to the inner wall of the chest, and that secretes a fluid which allows the inner surfaces of the walls to glide easily upon each other in the act of breathing.

The air passages consist of the interior of the nose, pharynx, larynx, windpipe or trachea, and the bronchial tubes. When we breathe, we draw in the air through the nose. The air is drawn into the lungs by the action of the diaphragm, a great, strong, flat, sheet-like muscle, stretched across the chest, separating the chest-box from the abdomen.

---

The blood starts on its arterial journey, bright red and rich, laden with life-giving qualities and properties. It returns by the venous route with waste matter of the system. The foul stream goes to the right auricle of the heart which in turn sends it on the lungs. The foul stream of blood is now distributed among the millions of tiny air cells in the lungs. A breath of air is inhaled and the oxygen of the air comes in contact with the impure blood through the thin walls of the capillary bed, where the CO₂ is forced out. The blood thus purified and oxygenated to the left auricle, then to the left ventricle and to all parts of our body.

It is true that unless fresh air in sufficient quantities reaches the lungs, the foul stream of venous blood cannot be purified. Consequently not only is the body thus robbed of nourishment, but the waste products that should have been destroyed are returned to the circulation and poison the system and death ensues. This, in fact, is an improper breathing which signifies imperfect nutrition, imperfect elimination and ill health. Imperfect breathing shallows respiration so that only a portion of the lungs cells are brought into play, and a great portion of the lung capacity is lost. On the other hand, in proper breathing, the blood is properly exposed to the air in the lungs and invigorates as well as strengthens, replacing the worn-out cells and tissue by new materials which Nature converts to her use.

**Esoteric Theory of Breath**

The physiological phase, as described above, is considered as exoteric (or external), whereas esoteric phase considers the internal and / or eternal principles as found in our ancient teaching and philosophies. In order to avoid misconceptions arising from the various theories, bringing the concept of 'Prana' (the Sanskrit term meaning Absolute Energy, the universal principle) is justified. The Prana i.e., vital force, is evident in all living entity. It is found in all forms of life, from the amoeba to man – from most elementary form of plant life to the highest form of animal life. it is the only aspect which differentiates the lifeless things from living beings. In fact, Prana is every where, in everything. Prana must not be confused with the Ego – that bit of Divine Spirit in
every soul, around which clusters matter and energy. Prana is merely a form of energy used by the Ego in its material manifestation. When Ego leaves the body, the Prana (being no longer under its control) responds only to the orders of the individual atoms forming the body. And as the body disintegrates and is resolved to its original elements each atom takes with it sufficient Prana to enable it to form new combinations, the unused Prana returning to the great universal storehouse from which it came.

Prana is the name by which we designate a universal principle which is the essence of all motion, force or energy, whether manifested in gravitation, electricity, the revolution of the planets, and all forms of life, from the highest to the lowest. It may be called as Force or Energy in all forms, and that principle which, operating in a certain way, causes that form of activity which accompanies Life.

This great principle is in all forms of matter, and yet it is not matter. It is in the air, but it is neither the air nor one of its chemical constituents. Animal and plant life breathe it in with the air, and yet if the air contained it not they would die every though they might be filled with air, it is taken up by the system along with the oxygen and yet is not the oxygen.

Prana is in the atmospheric air, but it is also elsewhere, and it penetrates where the air cannot reach. The oxygen in the air plays an important part in sustaining animal life, and the carbondioxide plays a similar part with plant life, but Prana has its own distinct part to play in the manifests of life, aside from the physiological functions.

In ordinary breathing we absorb and extract a normal supply of Prana, but by controlled and regulated breathing (generally known as Yogic breathing) we are enabled to extract a greater supply, which is stored away in the brain and nerve centres, to be used when necessary. We may store away Prana, just as the storage battery stores away electricity. The many powers attributed to advanced occultists are due largely to their knowledge of this fact and their intelligent use of this stored-up energy. It is well known in Yoga that by certain forms of breathing the practitioners establish certain relations
with the supply of Prana and many draw on the same for what they require. Not only do they strengthen all parts of their body in this way, but the brain itself may receive increased energy from the same source and latent faculties be developed and psychic powers attained. One who has mastered the science of storing away Prana, either consciously or unconsciously, often radiates vitality and strength which is felt by those coming in contact with him, and such a person may impart this strength to others, and give them increased vitality and health.

In fact, the oxygen in the air is appropriated by the blood and is made use of by the circulatory system. The Prana in the air is appropriated by the nervous system, and is used in its work. And as the oxygenated blood is carried to all parts of the system, building up and replenishing, so is the Prana carried to all parts of the nervous system, adding strength and vitality. If we think of Prana as being the active principle of what we call ‘vitality’, we may be able to form a much clearer idea of what an important part it plays in our lives. Just as is the oxygen in the blood used up by the wants of the system, so the supply of Prana taken up by the nervous system is exhausted by our thinking, willing, acting etc., and in consequence constant replenishing it necessary. Every thought, every act, every effort of the will, every motion of a muscle, uses up a certain amount of what we call nerve force, which is really a form of Prana. To move a muscle the brain sends out an impulse over the nerves, and the muscles contracts, and so much Prana is expended. When it is remembered that the greater portion of Prana acquired by man comes to him from the air inhaled, the importance of proper breathing is readily understood.

**Yogic Approach to Breathing**

According to Yogic principles, respiration has been classified into the following methods:

a) **High Breathing**

This form of breathing is, physiologically, known as Clavicular Breathing or Collar-bone Breathing. Breathing in this way elevates the ribs and raises the collar bone and shoulders, at the same time drawing in the abdomen and pushing its contents up
against the diaphragm, which in turn is raised. Through this type of breathing a minimum amount of air enters the lungs. In addition to this, the diaphragm being raised, there can be no expansion in that direction.

High breathing is probably the worst form of breathing known to man and requires the greatest expenditure of energy with the smallest amount of benefit. It is an energy-wasting, poor-returns plan. It is quite common among the Western races and they use it ignorantly.

b) Mid Breathing

This method of respiration is known as Rib Breathing or Intercostal Breathing, and is found less objectionable than High Breathing. Here the diaphragm is pushed upward, and the abdomen drawn in. The ribs are raised somewhat, and the chest is partially expanded.

c) Low Breathing

This form of respiration is far better than either of the two preceding forms, and of recent years many scientists have extolled its merits, and called abdomen breathing, deep breathing, diaphragmic breathing etc.

d) Yogic Breathing

In Yogic terminology ‘complete breath’ includes all the good points of high breathing mid breathing and low breathing, which we have been practicing for many centuries. It brings into play the entire respiratory apparatus, every part of the lungs, every air-cell, and very respiratory muscle. The entire respiratory organism responds to this method of breathing, and the maximum amount of benefit is derived from the minimum expenditure of energy.

Here the chest cavity is increased to its normal limits in all directions and every part of the machinery performs its natural work and functions. All the respiratory muscles are called into play. Inter-costal muscles of the ribs help to increase the space in which the lungs may expand to the fullest. Certain muscles hold the lower ribs firmly in position, while other muscles bend them outward. The diaphragm is under perfect control and is able to perform its functions properly to the maximum degree of service. As a
result, the diaphragm controls the function of the lowest ribs and draws them slightly downward, while other muscles hold them in place and the inter-costal muscles force them outward, which combined action increases the mid-chest cavity to its maximum. In addition to this muscular action, the upper ribs are also lifted and forced outward by the inter-costal muscles, which increases the capacity of the upper chest to its fullest extent. This method has reciprocal advantages and it is known as superior method of breathing.

**e) Pranayamic Breathing**

From this description of Puraka, Kumbhaka and Rechaka, one can clearly understand all the salient features of the technique of ‘Basic pattern of Pranayamic breathing’. Which is summarize as follows:

The main important features of Pranayamic breathing includes:

I. deep and excessively slow inhalation and more slow exhalation, intervened with the phase of inner retention of breath,

II. full conscious control at every stage,

III. maintenance of increased internal pressure with the help of Bandhas,

IV. heightened awareness of all the internal sensations associated with this act of breathing.

The excessive prolongation of Puraka and Rechaka is brought about mainly by two maneuvers. One involves the active control, exercised over the muscles of the chest, thoracic diaphragm, abdomen and pelvic diaphragm. The second one involves the creation of finally controlled, resistance, to the air-flow at three points of the air passage:

a) At the entry point – by closing one nostril as in the practice of Anuloma-Viloma or Suryabhedana Pranayama.

b) At the junction of nasopharynx and oropharynx by tightening the free border of the soft palace as in the practice of Bharamari Pranayama.

c) At the level of vocal cords – by partial closure of the glottis as in Ujjayi Pranayama.
The detailed description of these maneuvers is given in the next part, at relevant places while describing the different types of Pranayamic breathing. Here one has to remember that these obstructions created in the air passage are kept fully under control and are very finely regulated, in a very precise manner.

“Children are the wealth of tomorrow- take care of them if you wish to have a strong India”

---Pandit Jawaharlal Nehru

The health of children has become a matter of great concern all over the world and the WHO, UNO as well as UNESCO have been stressing the importance of developing the potential that is there in our greatest resource-the children of the world. The art and science of Yoga has a lot to offer for the children in terms of their health as well as complete well being. Yoga offers us a tool by which we can provide a safe and healthy future for our beloved children. Yoga is both preventive as well as therapeutic for health problems that face children and is also rehabilitative in many situations. It is also important to understand the special needs of the children when teaching them Yoga and methods to create and interest in them for this great jewel of our cultural heritage.

HEALTH NEEDS OF CHILDREN:

Children are a unique segment of our population and have very specific health needs. It is pitiable that more than 40% of deaths are seen in the child population under the age of 5 years. Childhood is the age of both physical and mental growth and also has stressful periods such as puberty and adolescence that affect the health of the growing child and youth.

Some of the important health problems facing the child population are:
1. Growth and endocrine disorders
2. Infectious diseases
3. Handicaps
   a. Physical handicaps
   b. Neurological handicaps
   c. Sensory handicaps
   d. Social handicaps
4. Congenital disorders
5. Chronic diseases of the respiratory tract and heart
6. Neurological disorders
7. Liver and renal disorders
8. Psychological disorders
9. Skin diseases
10. Children also need also an outlet for their creativity and abundant energy and if this youthful energy isn’t canalized properly it may result in various socially deviant behaviors such as truancy and juvenile delinquency.

BENEFITS OF YOGA FOR CHILDREN:

Yoga is appreciated and enjoyed by children of all ages, however a children’s Yoga session is vastly different to an adult's class. The key to being successful when introducing Yoga to children is in the way it is presented to them.

Child care professionals have discovered a new tool in helping calm a roomful of excited children. Introducing yoga benefits children’s physical co-ordination, makes them stronger and helps concentration. Yoga is an ancient practice that helps create sense of union in body, mind and spirit. The classical techniques of Yoga date back more than 5,000 years. Yoga is a system of physical and mental exercise which has since spread throughout the world. The word Yoga means “to join or yoke together.” Traditionally yoga was passed down from the teacher to the student without records. That is until the great sage Patanjali wrote the first detailed exposition of yoga called the sutras. Yoga is a whole system and is built on three main structures: exercise, breathing and meditation. Regular daily practice of these structures of Yoga produces a clear, bright mind and a
strong, capable body. Children can safely practice meditation and simple breathing exercises as long as the breath is never held. These techniques can greatly help children learn to relax, concentrate, and reduce impulsiveness. Children trained in these techniques are better able to manage emotional upsets and cope with stressful events.

Yoga helps body awareness and alignment, improves focus and builds strength.

The particular manner in which the techniques are taught and practiced today depends on the approach passed down in the line of teachers supporting the individual practitioner. As more people became known about the beneficial effects of Yoga, it gained acceptance and respect as a valuable method for helping in the management of stress and improving health and well-being. Many physicians now recommend Yoga practice to patients. These techniques can greatly help children learn to relax, concentrate and reduce impulsiveness.

1. Prevention is better than cure: The practice of Yoga from early childhood helps prevent numerous disorders and even if the disorders or disease does occur at a later stage of life, the child would have the knowledge as well as the where with al to apply the practice necessary to control, limit or cure the health problem. Improved immunity is a well documented benefit of Yoga practice and this strengthened immunity in addition to the Yogic hygiene and cleanliness developed through practice of Yama and Niyama helps prevent numerous infections from settling down in the child’s system.

2. At the physical level Asanas, Kriyas, Mudras and Pranayama stabilize and balance the energies of the children and thus contribute to a proper usage of this energy. This is important as otherwise the energies of the child get used up in trivial and unhealthy pursuits of modern life.

3. Yoga helps to develop all systems of the human body (cardiovascular, respiratory, digestive, eliminative, endocrine, nervous and musculoskeletal) thus strengthening,
cleansing and purifying the body so that it is brought under our conscious will. Various disorders such as Asthma and diabetes can be controlled by a regular practice of Yoga.

4. Children suffering from ATHD (attention deficit hyperactivity disorder) as well as mental retardation and other mental disabilities can be helped by a practice of the asanas and Pranayamas that help develop better coordination, concentration, mental calmness as well as attention span. In children having epilepsy, Yoga helps to reduce the duration and frequency as well as the severity of the attack.

5. In Yoga, all possible body positions are explored and the body is exercised standing, sitting, lying down (front, side and back) and even upside down! This creates an acute awareness of the entire body, strengthens the body systems and develops flexibility of the body.

6. Yoga is isometric and internal. It is a contest between our inherent inertia and the power of the will. Parts of the body are pitted against one another and a unique harmony of body, mind and breath is developed. This internal struggle when handled successfully deepens the consciousness of not only the working of the body but also of the mind and emotions.

7. Pressure created on the internal organs during various Asanas such as Pavanamuktasana, Karnapidasana and Ardha Matsyendrasana helps tone up the entire abdominal area and all organs therein. This helps in relieving functional abdominal pain, juvenile diabetes mellitus and other hepatic and renal disorders of childhood.

8. Yoga seeks balance, which is lacking in most other sporting activity. A tennis player may develop the muscles of the dominant arm but the rest of the body is neglected. Through Yoga all aspects of the body are cultivated equally. Flexibility, balance, control, strength and endurance are all developed by the concept of Loma Viloma, which means to balance the opposites. For example, if we bend forward then we must bend backward also. If we perform a practice on the right side then we must balance it by performing it on the left
side also. Children suffering handicaps benefit from these types of balanced practices that help them to improve and sometimes regain lost power and function of the affected body part. Polio affected limbs as well as paralysed limbs can be benefited immensely as Yoga is able to give a sense of direction in this regard.

9. In the science of Yoga, body movement and breath must be synchronized. The body is lifted on the incoming breath and lowered on the outgoing breath. Bhastrikas or the ‘bellows breath’ activate the solar plexus, which is an energy reservoir, as well as strengthen the diaphragm thus producing strength, vitality and endurance. Pranayamas such as Mukh Bhastrika stimulate the internal cleansing of toxins. Breath is directly related to the energy levels, life span, quality of emotions, state of mind and the clarity and subtlety of thoughts. This use of breath power with the body can bring about revolutionary effects on the performance of the child and improve their state of mind, emotions and all round health. Concentration, memory and attention span are all improved thus leading to improved academic performance in slow learners.

10. Pranayama has been shown to improve lung function, heart function, cognition and helps develop an integrated personality. Pranayamas also help in improving memory and attention span as well as in reducing the stress levels.

11. Children are prone to glandular imbalance and Yoga stimulates and strengthens the endocrine system and it counteracts the body stiffness, changes in skin tone and hair, which are common problems due to glandular imbalance. Proper and proportional growth and development are helped by the Yoga practice that utilised all body parts equally. Yoga has a homeostatic influence on the psycho-neuro-immuno-endocrine system and thus both the hypo as well as the hyper functioning of the system is controlled and equilibrium is attained. This fosters positive and anabolic growth in the children so that the genetic potential can be attained in fullness of time.

12. Yoga has a lot to offer to children through the field of relaxation. In the real world, there is a lot of PUSH, PUSH and PUSH. There is very little room for relaxation in the arena.
Yoga teaches us that there has to be balance. The concept is known as ‘spandishpan’ or ‘exertion-relaxation-exertion-relaxation’ in an alternating rhythm. The art of relaxation as taught in Yoga can provide a counterfoil to the extreme stress of competitive pressures, fostering mental, emotional and physical health.

Finally they may be unable to continue other sporting activities throughout their life but can definitely continue the practice of Yoga till a very ripe age that they will attain through living Yoga.

Yoga engages the heart, mind and body through its unique blend of physical yoga, social skills games and counseling techniques. It helps children develop emotional intelligence, communication skills, trust and empathy. It nurtures teamwork and leadership. It provides for a calmer and more productive learning environment.

TEACHING YOGA TO CHILDREN:

Many children get ‘put off’ by Yoga when they encounter Yoga teachers who don’t know the needs of children and try to treat them as ‘mini adults’. The following points are important when trying to introduce the Yoga to this age group.

1. Yoga is fun. This is the feeling children should have when they enter a Yoga class. Yoga games, play Yoga, simple animal poses and animal movements as well as an opportunity to make animal sounds as in the Simha Nada or Gardhabakriya are very important to create and sustain interest in the children.

2. Yoga must be presented in a wholistic manner and essay as well as elocution presentations on Yoga must be encouraged to stimulate interest in the ‘concepts of Yoga’

3. Fancy dress as well as drawing and art events based on Yoga also help stimulate their creativity and their understanding of Yoga is depended.

10 http://www.totalbodyyoga.com/Photos_Kids.htm (other site)
13 http://www.earthmamasweb.com/articles/child/yoga.html
4. Emphasis should be on movement initially and the worst thing to do is to put them in an Asana for too long a time at the beginning. I once had a Yoga teacher at school who put the children in Sirsasana for 5 minutes at the start of every class and the children were totally put off on Yoga for life.

5. The correlation between breath and movement must be emphasized. This will also help the children to occupy their mind in the present as well as balance their emotional and mental instabilities.

6. Adequate relaxation at the end of the class is a must as that is the time of the class that they get the maximum benefits of all the practices. Rewards should be given for the children who can stay in the relaxation without moving etc to give them a goal that they can strive to attain.

7. A ‘carrot’ approach is to be followed by offering small rewards for discipline, performance as well regularity in class to motivate the children to continue their practice.

8. Advise on diet and avoidance of the pitfalls of modern vices must be explained in a jovial manner to help them inculcate the values in their daily life.

9. Periodic discussions with the parents are important to gauge the response of the child to the Yoga class. Any difficulties can be clarified and home practice checked.

10. An attitude of helping parents and elders through the concept of Karma Yoga should be encouraged to build a happy family.

11. Parents should be encouraged to take up a practice of Yoga as then the Yoga family can practice together and this emotional and psychical bonding will go a long way in fostering wonderful relations at home. A happy home makes a happy child.

12. Importance of prayer and the power of the Mantra can be taught to the children at the appropriate time, as this will give them emotional and mental strength.

**YOGA SPORT AS A TOOL TO REACH CHILDREN:**

Yoga in its wholistic sense can never be competitive, and there exists no objective measurement by which one person can be declared more Yogic than another. Therefore the term “competitive Yoga” is a paradox and has no real meaning. However the proficiency of the Sadhak can be compared with that of another in the performance of the
Asanas, Kriyas, Mudras, Pranayamas and the Shat Karmas. Yogasana (Yoga Sport) competitions are a ‘fact’ in today’s Yoga world and are mushrooming up in all directions. When conducted efficiently and when the competitors approach them with the right Yogic attitude of ‘Nishkama Karma’, i.e., selfless action, then the Yogasana competitions have a lot to offer. They stimulate the young minds and give them an outlet for the competitive spirit, drive and energy. The youngsters learn to take the ‘win’ with the same equanimity (Samabhava) as the ‘loss’. They learn to accept that on any given day someone else may be better than them. They learn to accept the ‘highs’ with the ‘lows’ and realize that proper planning, dedicated and disciplined practice and enthusiastic participation is more important than the result. The youngsters are stimulated to intense practice and thus develop amazing body skills, which they may not develop otherwise. The competitions provide a meeting point for the youngsters to meet and interact positively with others having similar interests. Formation of a group of similar minded children can reinforce the individual’s practice whenever it slackens due to any reason. Positive ‘peer pressure’ creates a back up to counter any inertia that may hinder the practitioner in their Sadhana. Due to competition, the child is shaken out of the complacency that tends to creep in when the practice of Yoga becomes a habit as monotonous as the brushing of teeth in the morning. They make sure that they don’t miss their practice and put in extra energy and time to keep in shape. The competitive edge sharpens and focuses the body awareness, thus fostering greater accuracy and perfection that in turn stimulates the real Yogic growth.

IMPORTANT YOGA PRACTICES FOR CHILDREN:

1. **Play Yoga:**

   Children can be allowed to watch their parents and siblings do Yoga practices from the young age as theirs stimulates a ken interest in the child’ mind. When they are ready they can be introduced to basic units of Yoga practices such as Chatus Pada Asanas and Kriya (moving around on all fours where movement is a key element help to enthuse the child to the Yoga fold. Loosening exercise and the Suryanamaskar as excellent tolls
for working with small children. Pawanamukta Kriya is an excellent introductory practice for small children.

2. **Asanas:**

Children find Asanas depicting animals of great interest and so asanas like Ushtrasana, Shashahasana, Simhasana with Simha Nada, Gardhabakriya with Nada, Mayurasana, Bakasana, Kokilasana, Bhujangasana. Later on more difficult asanas may be introduced to induce interest and creativity in the children. The complicated Asanas also give the child a sense of achievement and positive self-image. Specific Asanas may also be used for the specific health disorders and these should be done in an individual “one-on-one” setting for maximum benefit. One legged balancing postures such as Vrikshasana and Natarajasana help develop the concentration ability of the children while ‘head below the heart’ postures such as Padahasthasana, Padotannasana, Dharmikasana, Sashangasana. Mehruasana help induce a healthy flow of blood in the head region and are useful to improve memory and attention span. Shavasana is an excellent remedy for the stress that faces the modern child in the way of unrealistic educational expectations of teachers and parents. Asanas such as Ushtrasana and Bhujangasana are useful in children suffering Bronchial Asthma as they help to expand the chest in a proper manner. The groups of asana termed the Hathenas are an excellent group of practices for the benefit of asthmatic children and those suffering any sort of breathing disorder. Of course attention must also be focused on a healthy diet of citrus fruits and avoidance of mucus forming products such as chocolate and modern snacks for children that need balancing of psychical imbalances the group of poses termed the Loma Viloma is an excellent remedy.

3. **Pranayamas:**

Kukkuriya Pranayama (dog panting breath) is an all time favourite with children. This is an excellent practice for toning up the abdominal organs and digestion will never be a problem with such children. Mukha Bhastrika (cleaning breath) improves reaction time and thus is useful in all activities of the children including sports. The cooling Pranayamas are very useful in summer camps for the children if they are finding the heat intolerable and in addition to the Savitri and Pranava Pranayamas are beneficial in
calming down hyperactive children. Vibhaga Pranayama (sectional breathing) teaches children how to breathe properly and relieves many breath related disorders. Surya Pranayama is useful in the asthmatic child as it helps to relieve the bronco-constriction that is the hallmark of the disease. Children love to make sounds and the Brahmari Pranayama fulfils that need in addition to bringing about a serene calm.

4. **Kriyas:**

Children enjoy adventure and if the Shat Karmas are presented as an adventure they readily take them up as a challenge. It is not necessary that they do all of them but the Jala Neti and Kunjala Kriya are useful in those suffering from respiratory disorders. Older children can perform Kapalabhati and Nauli while all children can be taught Trataka as a concentration-improving practice. Modern children suffer numerous eye related problems and Trataka and the Neti are highly beneficial for such children along with a diet rich in Vitamin A and C.

5. **Mudras:**

Bhujangini Mudra and Brahma Mudra are helpful as stress relievers in school going children though all children enjoy them for their ‘play’ value. The Chin, Chinmaya, Adhi and Brahma Mudras are also useful in helping them to learn the sectional breathing in a proper manner. These Mudras also help them understand how the body affects the mind in a somato-psychic manner. Topsy Turvy Mudras such as Viparita Karani are not recommended in children before puberty or at least the age of ten years due to their powerful influence on the gonadal and other endocrine glands. Older children as they go into the adolescence can be taught the Oli Mudras if they are ready as these are wonderful tools for the transmutation of sexual urges into the higher Ojas and Tejas. However they are very powerful practices and must be taught by a competent Guru to the ‘well prepared’ and ‘able’ youth.
6.  **Relaxation:**

Relaxation is a must for modern children who face stress in so many ways. Unrealistic expectations at home, at school and powerful peer pressures virtually drive them mad. Shavasana and various relaxation practices form it can be taught to them, breath awareness in Shavasana is a basic teaching that must be taught to them, children must be made realise that the benefits of all the practices come to them only when they relax at the end of a class. Kaya Kriya is an excellent body relaxer that helps children relax all aspects of the musculoskeletal system while the Marmanasthanam Kriya keeps them in conscious relaxation. Older children may be taught higher practices such as Yoga Nidra and the Anuloma Viloma Kriyas as required. They must also realise that ‘coming out’ of the relaxation is as important as the relaxation itself and that there is a way to ‘go in’ and ‘come out’ of the relaxation.

7.  **Yoga theory:**

Children must be exposed to the various Yogic concepts that have guided man towards shaping his life and the interpersonal relationships in his social life. Vasudeiva Kudumbakam (The whole world is one family) is an excellent concept, which helps children to understand that division on the basis of class, creed, religion and geographical distribution are all 'man made' obstructions towards oneness. Pancha Kosha (the concept of our five sheaths or bodies) helps them understand how all their actions, emotions and even thoughts can influence their surroundings. Chaturvidha Purusharthas (the four legitimate goals of life) shows them how to set legitimate goals in their life and then work towards attaining them in the right way, following Dharma to attain Artha (material prosperity), Kama (emotional prosperity) and finally the attainment to the real goal of life, Moksha (spiritual prosperity). The concept of Chatur Ashramas helps them know how, what and when to perform the various activities in life. Concepts such as the Pancha Klesha (Avidya -ignorance, Asmita -ego, Raaga -attraction, Dwesha -repulsion and Abinivesha -urge to live at any cost) help them understand how these psycho-physiological afflictions control their life.
Concepts of Karma Yoga such as Nishkama Karma (selfless action) and Karmasu Koushalam (skill in action) teach them 'to do our best and leave the rest’. Children must be enabled to realise that a great artist, doctor, worker, singer or sportsman can be a Yogi by performing doing their duty to perfection and without care for the rewards of the action, even if they do not practice any Asana or Pranayama. If the children are taught about the concept of Samatvam and the Development of a complete personality who is neither affected by praise nor blame through development of Vairagya (detachment), they will be stimulated to aim to follow such ideals in their life. Such a child is a boon to society and a pleasure to live and work with.

Children must be exposed to the concepts of Yama and Niyama in order to provide a strong moral and ethical foundation for their personal and social life. This will guide their attitudes with regard to the right and wrong in life and in relation to their self, family unit and the entire social system. While the Yamas teach them to say a big "NO" to their lower self, the Niyamas guide them with the "DO’S" and help say a big "YES" to their higher self and the higher impulses. They must be helped to realise that even when we are unable to live the Yama and Niyama completely, even the attempt by them to do so will bear fruit and make each one of us a better person and help them to be of value to those around them and a valuable person to live with in our family and society. These are values, which need to be introduced to the youth in order to make them aware and conscious of these wonderful concepts of daily living, which are qualities to be imbibed with joy, and not learnt with fear or compulsion. The parents and teachers can by example show their children the importance of these qualities and when the children see the good examples of their parents and teachers living there principles they will surely follow suit sooner than later.14,15,16,17,18,19

17 Dr. Swami Gitananda Giri, “Yoga: Step-By-Step”, Satya Press, Ananda Ashram, Pondicherry
18 Dr. Swami Gitananda Giri and Meenakshi Devi Bhavanani. “Yoga and Sports”, Satya Press, Ananda Ashram, Pondicherry
Bera, T.K, Kundu, B.N, Panda, B.N, The present system of education is information-oriented not character-based. It has become consumerist in nature and makes one's personality in such a way so that the students become selfish, self-centered, irreverent and cynical in their future lives. There is, therefore, a real need of such education that inculcates basic values such as truth, love, honesty, humility, compassion, forbearance and justice. Here we can think of Yoga education, which has base in Indian philosophy. In this article, research based information available so far has been analyzed critically and suggested inclusion of Yoga in the curriculum of school education along with some suitable Strategies for Curriculum Design, Transaction and Implementation of Yoga in Schools²⁰.

Reddy M. Venkata, Yoga is a living science that has evolved over thousands of years and continues to evolve in accordance with the needs of humanity. Yoga education works on the basis of a realization that there exists a larger purpose behind human existence and it helps this process of human evolution. It provides us rich experiences and experience-tested explanations “related to the holistic process of yoga education”. As education is moving from a strictly psychological to a spiritual description, the yogic approach may provide a more comprehensive and meaningful backdrop. Yoga education is an attempt at hastening this process of human evolution. It is basically a culture of consciousness. The ultimate goal of human endeavour is to experience the final beatitude i.e. to contact the higher levels of consciousness.

YOGA EXPERIMENTS ON SCHOOL CHILDREN

There are very few experiments conducted on the effect of yoga on school children, like Dr. M.L. Gharote and Dr. S.K. Ganguly, “Survey of minimum muscular


fitness on school children” (1975), Dr. A.M. Moorthy, “effect of selected yogic asanas and physical exercises on flexibility (1982), Dr.K.V.Panse, “An experiment in increasing body height by yoga.” (Newstime -1990) and Dr. K.J.R . Murthy and Dr. B.K.Sahay,” To study the mechanisms involved that bring about changes in school children”.

Central project

The central council for research in yoga and naturopathy, (new delhi) had sanctioned a project to the vermana institute in 1982-1985 to study the mechanisms involved that bring about changes in school children. for this purpose, the vemana yoga research institute selected two local schools.

Need for conditioning school atmosphere

The quality of work done in school depends upon the mental readiness of the students for work. The first requisite is therefore basic conditioning of the mind of the student to be receptive to the experience available in school. This kind of approach makes students more respectful to their teachers, the teacher being responsible to a large extent for providing positive and constructive interaction.

Five basic needs

By closely observing the lifestyle and needs of people in both the east and the west, yoga propagators have synthesized the ancient wisdom of yoga into five basic principles that can easily be incorporated into a school pattern of living to provide the for a long and healthy life. The five principles are:

1. Proper exercise

   Spiritual life begins when we start meditation, but to be able to sit well in meditation, with our concentration undisturbed by stiffness or pain, we first need to strengthen the body. yoga asanas are designed to stretch and tone the muscles and ligaments, keep the spine and joints flexible, improve circulation and purify the nervous
system and internal organs. Once the latent spiritual powers are awakened by practicing the asanas, we are prepared for the higher aspects of yoga.

2. **Proper breathing**

Practices of pranayama clean out the entire respiratory system, recharging every cell of the body with vibrant energy. They regulate the flow of vital energy or prana, which is the source of all activity, whether physical or mental, the channels to spiritual awareness, leading us quickly to the attainment of consciousness.

3. **Proper relaxation**

How can we know of the spiritual world, if we are dominated by stress and anxiety of the modern age. How can we keep the mind calm while we remain victims of our senses and uncontrolled emotions. The yogis of India were aware of the subtle planes beyond the physical.

4. **Proper diet**

You are what you eat. For your mind to be satvic (guna), you must eat nothing but satvic food that pass into your body. Whilst the grosser parts of the food we eat go to maintain the physical body, the subtle parts build the mind. A pure mind, sustained on a satvic diet, is conducive to noble thoughts and hence noble actions.

5. **Positive thinking and meditation**

Meditation is the key to spiritual enlightenment. Through meditation alone can we dwelve into our minds.

Through meditation we can obtain infinite knowledge, peace and bliss. Through meditation alone we can learn to remove all negative thoughts.

**Methods and materials**

Vemana yoga research institute undertook a project namely, “to study the mechanisms involved that bring about changes in school”, a study involving over 120 school students aged about 8 to 13 years in twin cities. Students and yogic practices were

**The parameters studied**

1. Biochemical: blood sugar, blood urea, serum cholesterol, serum proteins, serum calcium, etc.
2. Hormonal: plasma corestisol, insulin, T3, T4 growth hormone, etc.
3. Anthropometric data.
4. Lung functions.
5. Nutritional- skin fold thickness.

**Aim of the studies**

These studies were aimed at revealing the following.

1. Improving the general physique and well-being.
2. Increasing the resistance power to combat infection,
3. Increasing the body height and lung capacity.

The aim of the scheme was to study different yogic practices systematically in selected volunteers (school children) in order to evaluate the fats on different organs and mechanisms that operated in different practices.

**Increasing body height and lung capacity**

In our study, after 3 months of practice, the children in the experimental group had a height increase of 3.69 cm compared to only 0.27 cm in the control group. The physical characteristics of the school children studied were as follows.

**Experimental group**

3.69 cm increase in height was seen in school children who practiced halasana after 3 months and 2 cm increase was seen in children who practiced naukasana for 3
mounths. About 1 cm increase in height was seen in children who practiced paschmottanasana, Suryachandrabedha, Shalabhasana, Sarvangasana separately.

**Control group**

Only 0.27 cm increase in height was seen in school children who did not practice yoga.

**Experimental group**

Increase in peak expiratory flow rate (PEFR) by about 40L/min after three months of hlasana practice was seen. About 40L/min increase in PEFR was seen in children who practiced Suryachandrabedha after 3 months of practice.\(^{21}\)

**Telles Shirley,** Mental health in children has many dimensions such as having healthy interactions with peers and teachers, and being able to focus attention on specific activities (e.g., studying) while remaining calm. Another aspect of increasing importance is the sense of self-esteem, which is often associated with a child’s body image and eating behaviors. Yoga is an ancient Indian way of life which includes practicing certain postures, breathing techniques, and meditation. Several studies have shown that yoga practiced for varying durations (from 10 days to 6 months) can favorably influence hand steadiness as an indicator of concentration [1], and the hand grip strength, the degree of optical illusion, and finger dexterity [2]. Yoga practice also improved the performance of children in a spatial memory task [3] and in a cancellation task requiring selective attention [4]. It is of importance to note that yoga practice improves these functions and also reduces physiological signs of mental stress (e.g., a reduced skin resistance value, reduced heart and breath rates with rhythmic breathing) in children [5]. Apart from children with normal health, 20 sessions of yoga led to improvement in boys with diagnosed ADHD, based on five aspects of the Conner’s Parents Rating Scales (i.e., Emotional lability, and Restless/Impulsive behaviors, among others) [6]. Yoga practice has also been shown to have a positive effect on self-concept and eating behaviors [7,8].

In the first study [7], 16 weeks of a healthy lifestyle helped obese adolescent girls to lose weight and significantly influenced their emotional/external/and restrained eating. The second study [8] assessed the effect of yoga practice on youth at risk of developing Type 2 diabetes mellitus. Apart from a weight loss (2 kg after twelve weeks), some of the children showed improved self-esteem. Finally, 12 yoga sessions helped inner-city children in Bronx, New York to have an improved sense of wellbeing and fewer negative behaviors in response to stress [9]. Hence yoga practice has diverse and useful applications in improving the mental health in children22,23,24,25,26,27,28,29,30,31.

Matthew, There is a growing epidemic sweeping the nation that is affecting our most valuable and precious resource - our children. With adults making poor lifestyle and family choices, a trickle down effect has reached our youth. As a result, the percentage of overweight or obese children is growing at an alarming rate. 30% of children and 15% of adolescents are now considered overweight or obese.

While there are many contributing factors that make weight management among this population increasingly difficult, the most common are calorie-laden foods, lack of exercise, and stressful events within the family or at school. Unfortunately, a vast majority of today's children prefer playing video games or television to going outside to play with their friends. Separation or divorce sometimes causes children to feed their emotions with junk food.

This behavior leads to a multitude of problems, chief among them are health risks. Complication such as diabetes, hypertension, and heart disease show up much earlier in children who are overweight. Perhaps equally as damaging are the long-term

---

22 Telles Shirley, “Effect Of Yoga On Mental Health In Children”, Director of Research, Patanjali Yogpeeth, Maharishi Dayanand Gram, Near Bahadarabad, Haridwar 249402, Uttarakhand, India.
27 Percept Mot Skills 1997; 84(1); 251-57.
29 J Adv Nurs 2009 65(8); 1670-5.
psychological effects. Self-esteem and self-concept plummets causing these children a
great deal of emotional pain, especially among females.

The question is how to address this growing problem. Credible reviews about
diets on weight loss are a good source for available strategies and tools to help with
managing weight. But one of the many challenges in weight management of children and
adolescents is finding some type of physical activity that interests them.

Often times an overweight child feels embarrassed or self-conscious playing team
sports. And because engaging in strenuous physical activity is more difficult for
overweight children, they often give up feeling defeated.

YOGA - A FEASIBLE OPTION FOR CHILDREN

That's why yoga is a viable alternative for these children and adolescents. Because
yoga can be performed in relative privacy and is less strenuous than other sports,
overweight children are often more willing to choose yoga as a form of exercise.

But does yoga actually contribute to weight loss? And more importantly, is the
weight loss significant enough to deter serious health issues? A pilot study conducted at
the University of Texas says yes. The principle investigator of the study, Sandra
Benavides, concluded that Ashtanga yoga might be beneficial as a weight loss strategy.
The primary objective of the study was to determine the effect of yoga on weight in
children and adolescents. The secondary objective was to determine the impact of
participation in yoga on self-concept and psychiatric symptoms such as depression or
anxiety.

Methodology

In the pilot study children and adolescents, ages 8 to 15 years participated
specifically in Ashtanga yoga. This type of yoga is composed of a series of asanas, or
postures, connected with a breathing technique pranyama that links the movements of
one posture to the next. Through these movements either a flexibility or strength challenge is presented to the children.

At the end of each yoga session children engage in 5 to 10 minutes of meditation or relaxation. Ashtanga yoga is often referred to as power yoga because it is more aerobic than other yoga methods.

The children were eligible to participate only if they had at least one of the following risk factors for type 2 diabetes as defined by the American Diabetic Association: overweight, first-degree relative with type 2 diabetes, or Hispanic/African-American descent.

Once eligibility was determined, the children were invited to attend an introductory yoga session. Children received their own yoga mat. Their weight and height were recorded and their body mass index (BMI) was determined. The participants also underwent a fasting laboratory analysis where their serum concentrations of glucose, total cholesterol (TC), high-density lipoprotein (HDL), and triglycerides were analyzed. At the end of the 12-week program the same tests were repeated if they were initially abnormal.

These children practiced yoga three days a week for 12 weeks for approximately one hour and 15 minutes. The same instructor taught all classes in order to ensure consistency and quality control. There were no dietary or activity restrictions at any time during the study.

**Results**

**Weight loss**

Out of a total of 30 children, 14 completed the study. The average age of these children was 11.7 ± 1.5 years. The average initial weight was 61.2 kg with an average BMI of 26.4 kg/m2. The mean baseline weight was 61.2 and decreased to 59.2, which correlated with changes in BMI from 26.4 to 25.6. On average, participants had a 2
kg weight loss. The most significant weight loss was achieved by a 13-year-old female who lost 5.9 kg.

**Lab findings**

At the initial laboratory screening two participants had abnormal lipid panels. After the 12-week study, the lipid profiles in both of these participants improved. In addition, the total cholesterol decreased and HDL increased.

**Psychiatric results**

Also, of the 14 participants completing the study, three initially had low self-esteem scores while two had very low self-esteem scores. After the study, four of these five participants showed improvement. Three children showed elevated symptoms of depression that improved after the study. Two participants with elevated symptoms of anxiety at baseline showed improvements.

**The Significance**

The study is the first to be published that uses yoga to address the problems of overweight children and adolescents. As mentioned earlier, overweight children are at risk for many diseases that can carry on into adulthood, particularly type 2 diabetes. Therefore, weight management in childhood may be the cornerstone for overall health in adulthood.

It's also important to note that no other study has evaluated the role of yoga in any disease state.

The weight loss found in this study is consistent with the desired weight loss of 1 kg per month for children and adolescents. The results may be attributed to the increase aerobic activity of Ashtanga yoga. Not only is aerobic activity important for weight loss, but is essential for good health in general.
Also significant is the overall improvements in self-concept seen in six participants. Three patients had improvements in symptoms of depression and anxiety decreased in both participants with elevated anxiety. Not only were children provided a weight loss strategy, but according to one parent, practicing yoga also increased her daughter's self-confidence.

It's possible such positive outcomes may be due to the calming effects of yoga. For example, one child with irritable bowel syndrome demonstrated lower anxiety after 4 weeks of Hatha yoga at home as compared to a control group. Another study determined that Sahaja yoga in adolescents with attention deficit hyperactivity disorder (ADHD) leads to lower rates of anxiety and higher self-esteem.

Three participants in the Ashtanga yoga study displayed worsening in self-concept and/or depression. According to the principle investigator of the study, this could be attributed to the fact that yoga positions may be more difficult for some. They could have had a hard time achieving certain poses or perhaps didn't progress as quickly as their peers. Therefore, they had a diminished view of their capabilities. With practice, however, they could have improved their techniques and developed a more accepting view of their limitations. However, none of the participants experienced an increase in anxiety.

**Conclusion**

Based on the findings of this study, it appears yoga may be a weight loss alternative in children and adolescents. After the 12-week program, most children lost an average of 2 kg. This is consistent with other weight loss programs.

In addition, participants showed improvement in self-concept and depression. This suggests that Ashtanga yoga may provide positive mental health benefits. Larger control studies are needed to fully determine the short and long term benefits of yoga in
children and adolescents. Currently a Yoga program is incorporated in American schools. Overweight and obese children can certainly benefit from these programs.32

**Tricia Mc Millan**, if you are dissatisfied with your height, blame your parents. Then stand in front of a mirror and observe your own contribution to your short stature. Take note of a forward slump, locked knees, sloped shoulders, sagging neck and tilted pelvis. Now stand up straight -- you might instantly gain a couple of inches. But you'll notice how difficult it is to maintain that posture because you are so used to slouching. Yoga cannot change your genes, but it can teach you to carry yourself properly, and help make good posture second nature.

**Your Height**

Your height is determined by your genes, barring any kind of illness or nutritional deficiency that might stunt your growth. Your bones are genetically programmed to grow to a certain point and stop, and yoga cannot change that. Nothing can change that, except certain types of surgery, but these surgeries are painful and involve a long recovery time, so they are usually reserved for cases where a bone deformity is present.

**Height vs. Carriage**

Even though it is not generally possible to increase the height of your skeleton, other factors contribute to the appearance of height. You can improve your posture and alignment so you can stand taller, carrying your body at its full height. For example, if you sit at a desk all day and go home and sit on the couch all night, you've probably developed a slight curvature of the spine and a roundness to your shoulders. The bones themselves aren't necessarily deformed, but the muscles that hold you erect have become lax and stretched out to the point that your body naturally assumes this position because it has become comfortable to you. Even when you stand up, you probably retain much of that slump, making you look shorter than you are. Yoga can help reverse this process so you can regain your true height.

Posture and Height

Spine lengthening and good posture is at the core of yoga. Even in Mountain pose, where you are just standing up with your hands by your sides, you are still actively lifting the top of your head toward the ceiling and pushing the soles of your feet into the floor. This helps stretch out your spine and get you comfortable with erect carriage. Inverted poses can actually decompress your vertebrae the same way an inversion table does. Most poses, or asanas, reinforce good posture through movement and breath work, and vigorous vinyasas and strength poses help you strengthen the muscles that hold you in your body's natural position.

Yoga and Alignment

When you have had poor posture for a while, you have likely fallen into bad habits. For example, standing with your hips cocked and your weight on one foot, or tilting your pelvis forward when you walk. These habits originate with poor posture, and they can visually decrease your height. Practicing yoga regularly helps align your shoulders, hips, pelvis and head, and teaches you how to move within your body's natural range of motion. Your body becomes stronger, more flexible and supple. You'll find that as your alignment improves and you stretch your spine, your posture will improve as well. You'll notice yourself standing taller, with both feet planted firmly on the ground. Not only will you look taller, but you'll also develop the grace of movement that comes with a tuned body.

Stueck M, Gloeckner N., The latest research work showed a clear increase in stress consequences for younger children related to experience, behaviour and health (among other things, fear to fail and psychosomatic disorders). In contrast, only a few stress-handling programmes are available specifically for children; a large part covers stress-handling training courses orientated to behaviour and cognition. The aim of the Training of Relaxation with Elements of Yoga for Children technique introduced and evaluated is the communication of self-control and relaxation based on experience using

33 www.livestrong.com/article/399461-does-yoga-increase-height
breathing exercises, imagination journeys and specifically selected yoga techniques for children. This stress-handling programme has been investigated by means of a test/control/group design with 48 pupils of the fifth grade. During a pre/post comparison with three measuring times one could give proof that the training will increase emotional balance in the long term and reduce fears. Feelings of helplessness and aggression were clearly reduced. Beyond this, the participants transferred the learned breathing techniques and self-instructions to situations beyond school, in order to relax after the lessons, to improve well-being and to control negative feelings. The effects found out here indicate that yoga is suited for children as an independent control method.34

Kauts Amit & Sharma Neelam, Academic performance is concerned with the quantity and quality of learning attained in a subject or group of subjects after a long period of instruction. Excessive stress hampers students’ performance. Improvement in academic performance and alertness has been reported in several yogic studies. The main objective of the study was to assess the effect of yoga on academic performance in relation to stress. The study started with 800 adolescent students; 159 high-stress students and 142 low-stress students were selected on the basis of scores obtained through Stress Battery. Experimental group and control group were given pre test in three subjects, i.e., Mathematics, Science, and Social Studies. A yoga module consisting of yoga asanas, pranayama, meditation, and a value orientation program was administered on experimental group for 7 weeks. The experimental and control groups were post-tested for their performance on the three subjects mentioned above.

The results show that the students, who practiced yoga performed better in academics. The study further shows that low-stress students performed better than high-stress students, meaning thereby that stress affects the students’ performance.35

Kauts Amit & Sharma Neelam, Concentration means wholeness unity, equilibrium. It is the focusing of attention upon a particular object. Memory is an ability

to recall or remember past events or previously learnt information or skills. The process of concentration of attention and a power of recalling (memory) are the major factors in learning. Improvement in concentration and memory has been reported in several yogic studies. The main objective of the study was to assess the effect of yoga module on Concentration and Memory.

The study started with 800 adolescent students; 159 high stress students and 142 low-stress students were selected on the basis of scores obtained through Stress Battery. Experimental group and control group were given pre-test to assess their concentration as well as short term memory. A yoga module consisting of yoga asanas, pranayama, meditation, prayer and a value orientation programme was administered on experimental group for 7 weeks. The experimental and control groups were post-tested for their performance in concentration and memory tests. The results show that the students, who practiced yoga module yielded higher concentration levels and exhibited better short term memory36.

**Palsane. M. N.** The history of the last four hundred years in Europe has been a simultaneous growth in political freedom, economic prosperity, intellectual advancement and social reform; but it has also been a slow and sure decay of traditional religious morality and social order. The other orientation cultivated through religion and philosophy over the millenia has been lost in just four hundred or less years. The psychological benefits of Yoga include - (1) impulse control, cultivation of an attitude of detachment, gaining control over the excitation and its potential fall out, thereby maintaining neurophysiological balance; (2) meditation is useful in clarifying goals and resolving internal conflicts. Motivational and attitudinal orientation of the prescription in Yamas and Niyamos are such as to take care of most of the stress producing situations in life; (3) Yoga provides a rational and empirical system of thought and living. Anything that causes disturbances can be examined in the light of yoga; (4) in Yoga like modern psychotherapies deemphasising of ego involvement is prescribed for many abnormal conditions, anxieties and stresses; (5) "Freedom from bondage" in yoga signifies one's

36www.zenithresearch.org.in/images/stories/pdf/2012/May/ZIJMR/1_ZIJMR_Vol2_Issue5_May%202012.pdf
liberation from all kinds of fixations and attributes as well as continual feeling of freedom and knowledge\(^\text{37}\). The desire to share the benefits of yoga with others comes very naturally to most of us, once we have caught a glimpse of some of its potential for ourselves. If you have children at home, or come into regular contact with youngsters, you have most probably thought about sharing some of your yogic experiences with them too. Well, the good news is that they can benefit from all the different aspects of yoga as much as we do. Often, they actually make a lot quicker progress, and the effects of yoga are intensified. The big difference between yoga for children and yoga for adults lies in the choice of exercises, and the way they are taught.

**Statement of the Problem**

The purpose of the study was to investigate the “Effect of Asanas and Pranayama on Selected Anthropometric and Psycho-Physiological Variables of School Going Children”.

**Objectives**

- To study the effect of Asanas on Anthropometric and Psycho-Physiological variables of school going children.
- To study the effect of Pranayama on Anthropometric and Psycho-Physiological variables of school going children.
- To study the combination effect of Asana Pranayama on Anthropometric and Psycho-Physiological variables of school going children.
- To compare the effect of Asanas and Pranayama and their combination on Anthropometric and Psycho-Physiological variables of school going children.
- To compare the three treatments and its effect on the selected variables.

Delimitations

1. The study was delimited to the practice of following selected Asanas.
   - Surya Namaskar.
   - Sarvangasana.
   - Matsyasana.
   - Halasana.
   - Bhujangasana.
   - Shalvhasana.
   - Dhanurasana.
   - Chakrasana.
   - Ardha Masyendrasana.
   - Paschimottanasana.
   - Vajrasana.
   - Yogamudra.
   - Standing kati chakrasana.
   - Tadasana.
   - Shavasana.

2. The study was delimited to the following selected Pranayama techniques.
   - Anuloma Vilom pranayama.
   - Bhastrika pranayama.

3. The study was delimited to the following Anthropometric Measurement.
   - Height.
   - Weight.
   - B.M.I. (Body mass index).
   - Body fat percentage (%).

4. The study was also delimited to the Psychological Variables.
   - Self concept.
     - Behaviour.
     - Intellectual and school status.
     - Physical appearance and attributes.
• Anxiety.
• Popularity.
• Happiness and satisfaction.

- Anxiety.
- Stress.

5. The study was delimited to the following measures of **Physiological Variables**.
   - Vital capacity.
   - Peak flow rate.
   - Resting pulse rate.
   - Resting respiratory rate.
   - Maximum breath holding time.
     - Positive breath holding time.
     - Negative breath holding time.

6. The study was delimited to school going male students of West Delhi in age group of 8-10 years.
7. The study was also delimited to 120 school going male students of West Delhi.
8. The study was confined to 12 weeks of training programme.

**Limitations**

1. The quantum of yogic practice beyond regular programme was recognized as limitation of the study.
2. The personal habits of the subjects which can not be controlled by the research scholar was also considered as a limitation.
3. In case of highly motivated individuals with the desire to perform better than others, couldn’t be controlled and therefore was also considered as a limitation of the study.
4. Further, effect of uncontrollable factor like rest, sleep, diet, health that might affect selected psycho-physiological variables of school going children was accepted as a limitation of this study.
Hypothesis

The research scholar has substantially gone through available literature on Asanas and Pranayama on selected anthropometric and psycho-physiological variables and on the basis of his own understanding it was hypothesized:

H1 There will be a significant effect of Asanas Practice on selected Anthropometric and Psycho-Physiological variables of school going children.

H2 There will be a significant effect of Pranayama Practice on selected Anthropometric and Psycho-Physiological variables of school going children.

H3 There will be a significant effect of Asana Pranayama Practice on selected Anthropometric and Psycho-Physiological variables of school going children.

H4 There will not be any significant deference among three treatment groups.

Definitions and Explanations of Terms

Asanas

Asana is an “Ekagrata” on physical plane. Just as an “Ekagrata” puts an end to the fluctuations of mind so also asana puts an end to the mobility of the body by reducing the infinitely possible positions to a single posture. Asana means holding the body in a particular posture to bring stability to the body and poise to the mind.38

Surya Namaskar

Surya Namaskara is an ancient system of Indian exercise. It includes the regular routine of prayer and worship. One of the means of honoring the sun is through the dynamic asana sequence Surya Namaskar (better known as Sun Salutation)39.

38 http://en.wikipedia.org/wiki/asana
Sarvangasana

Sarvangasana or Shoulderstand, is an inverted asana (pose) in hatha yoga. Considered the "queen" of asanas, an especially important and beneficial pose. Its name in Sanskrit literally means "posture of the complete body."

Matsyasana

Matsyasana, or Fish Pose, is a Yoga posture. It is commonly considered a counter-pose to Sarvangasana, or shoulder stand, specifically within the context of the Ashtanga Vinyasa Yoga Primary Series. The posture itself is in the category of backbends, where the practitioner lies on his or her back and lifts the heart (anahata) chakra by rising up on the elbows and drawing the shoulders back. The neck is lengthened, and the crown of the head Sahasrara chakra is "pointed" toward the wall behind the practitioner.

Halasana

Halasana - hala (plow) and asana (pose), Sanskrit, is a yoga posture in which the practitioner lies on the floor, lifts the legs, and then places them behind the head. This pose can put significant strain on the cervical spine, which does not normally undergo this type of stress, and can cause injury if not performed properly.

Bhujangasana

Bhujangasana, or Cobra pose is a hatha yoga posture. The name comes from the Sanskrit words bhujanga (snake, serpent) and asana (pose). Bhujangasana may strengthen the spine stretch the chest, shoulders, and abdomen, firm the buttocks, and relieve stress and fatigue. Traditional texts say that Bhujangasana increases body heat, destroys disease, and awakens kundalini. Bhujangasana is often followed by Salabhasana. Common postural errors during this pose include over-arching the neck and lower back. One

40 www.theholisticcare.com/asana/Yoga%30sarvangasana.htm
41 http://en.wikipedia.org/wiki/matayasana
42 http://en.mimi.hu/yoga/halasana.html
recommendation is to keep the gaze directed down at the floor and focus on bringing movement into the area between the shoulder blades (the thoracic area, or middle back).

Shalvhasana

It is a form of back bend, or spine stretch, using the strength of the upper and middle back to lift the weight of the legs as high as possible from a starting position face down on the floor. Most people find Salabhasana to be a very "strong" i.e. difficult and challenging posture to practice, and as such it not only improves flexibility and coordination, but also has strength and stamina benefits.

Dhanurasana

Dhanurasana, or Bow pose also known as Urdva Chakrasana is a yoga pose in which the practitioner lies on the belly, grasps the feet, and lifts the legs into the shape of a bow. Backward extension of the spine is achieved with the back muscles, not by leverage with the arms. The spine is extended fully from the hips to the head before moving into this or any pose. The inverted pose is Chakrasana (Urdhva Dhanurasana), the counter pose is Halasana or Sarvangasana.

Chakrasana

Chakra means wheel in Sanskrit and asana means posture or seat. There are two chakrasanas. The standing chakrasana or 'The Wheel Posture' and the supine chakrasana. Chakrasana is a basic pose for beginners and is said to improves the elasticity of the spine, flexibility of the hip joints. Yoga proponents say that the regular exercise of this asana makes the body resilient, the waist slim. It is also said to be helpful in removing the rigidity of the joints of the ribcage and increasing the capacity of lungs.
**Ardha Matsyendrasana**

Having placed with the right foot at the root of the left thigh, let the toe be grasped with the right hand passing over the back, and having placed the left foot on the right thigh at its root, let it be grasped with the left hand passing behind the back. This is the asana, as explained by Sri Matsyanatha. It increases appetite and is an instrument for destroying the group of the most deadly diseases. Its practice awakens the Kundalini, stops the nectar shedding from the moon in people." Swartmarama, says, in the Hatha Yoga Pradipika.\(^{47}\)

**Paschimottanasana**

Paschimottanasana translated as "intense dorsal stretch", is a seated asana. Together with Padmasana (lotus), Siddhasana (half-lotus) and Vajrasana (lightning-bolt pose), this position is an accomplished pose according to the Shiva Samhita. It was advocated by 11th century yogi Gorakshanath.\(^{48}\)

**Vajrasana**

Vajrasana Sanskrit for "diamond throne" may refer to: Vajrasana monastery, an alias of the Mahabodhi Temple, or Bodh Gaya temple Vajrasana (temple), a style of temple architecture originated from the Vajrasana monastery Vajrasana (yoga), a yoga posture.\(^{49}\)

**Yogamudra**

Yoga Mudra is practiced in the Lotus Pose. If you are unable to practice it in Padmasana, then practice it in Ardha Padmasana or in sukhasana (easy pose). If this is also not possible, then sit in Vajrasana. After being seated either in the Lotus position or in Sukhasana, bring both the hands at the back. Grab the wrist of one hand with the other hand. Make a fist with the hand which has been grabbed. At this stage keep the hands loose and let them rest on the back. Keep the spine straight. Look in front while keeping

\(^{47}\) http://health.indianetzone.com/yoga/1/ardha_matsyendrasana.htm  
\(^{48}\) http://www.indianetzone.com/1/types_paschimottanasana.htm  
\(^{49}\) http://en.wikipedia.org/wiki/vajrasana
the neck and head straight upward. Exhaling slowly, start lowering the head till forehead touches the ground. You have to synchronize exhaling with the bending of upper area of the body towards the ground. Let the head come down only as far as it can easily be lowered. If possible, touch the ground with the forehead. By the time the head has touched the ground, exhalation should be completed. Hold the breath in that position. Now tighten the hands and gradually raise them (in grabbed form) upwards as high as possible without excessive strain. Stay in this position for 6 to 8 seconds. Do not allow your buttock to leave the ground during its practice. If it becomes easy to touch the ground with forehead, then gradually try to touch the ground with nose and chin. Start inhaling while lowering down the hands and gradually return to earlier pose. Loosen the hands and the body. Rest for six to eight seconds. After resting, make a few more rounds by following the same process\textsuperscript{50}.

**Standing kati chakrasana**

Stand erect with the feet about 2 feet apart. Stretch the arms sideways at shoulder level. In Cyclic Meditation we stretch consciously and systematically and then relax using standing postures like Pada Hastasana, Ardha Chakrasana and Ardhakati Chakrasana and also using sitting asanas like Shashankasana and Ushtrasana\textsuperscript{51}.

**Tadasana**

Tadasana, with 'tada' meaning 'mountain', is regarded as one of the most beneficial postures in yoga. Though it seems to be quite simple, a person has to undergo lots of practice to attain the perfect tadasana posture. The asana is believed to provide not only physical, but mental benefits as well. It helps a person improve his posture and also promotes confidence as well as happiness. A basic yoga posture, Tadasana can also be used as the starting point for other asanas that are performed in a standing position\textsuperscript{52}.

\textsuperscript{50} http://www.indianetzone.com/1/types_Yogamudra.htm
\textsuperscript{51} http://health.indianetzone.com/yoga/1/ Standing kati chakrasana.htm
\textsuperscript{52} http://www.indianetzone.com/1/types/trasanad.htm
Shavasana

Shavasana “corpse pose”, alternately spelled shavasana, and also known as mrtasana) is a yoga asana often used to begin and conclude a yoga session. It is a relaxing posture intended to rejuvenate body, mind and spirit. While shavasana is a good way to reduce stress and, it is not recommended for meditation as it has a tendency to induce sleepiness. Drowsiness or restlessness of the mind while in shavasana may be counteracted by increasing the rate and depth of breathing53.

Pranayama

"Extension of the prana or breath“. Pranayama means a pause in the movement of breath. In sanskrit prana- means breath and ayama-means a pause. In pranayama, breathing is elevated to a controlled, extended process of exhalation and inhalation. This generates the cosmic energy of prana, the life-force that provides the strength, power, and vitality required for any activity. pranayama is the science of breath control. it is a deliberate technique of inhalation ,rotation of breath ,exhalation and the suspension of breath in exhalation54.

Anulom viloma

Pranayama which performed for the purification of tubular channels is called Anulom viloma pranayama55.

Bhastrika Pranayama

In Sanskrit Bhastrika means 'bellows'. Rapid succession of forcible expulsion is a characteristic feature of Bhastrika,just as a blacksmith blows his bellows rapidly, soalso you should move your breath rapidly56.

53 http://www.reference.com/browse/shavasana
55P.D. Sharma, “Yogasana and Pranayama for Health”, Gala Publisher, Ahmedabad, p.119.
56 http://ayurveda-foryou.com/yoga/bhastrika_pranayama.html
Height

Height is the measurement of vertical distance, but has two meanings in common use. It can either indicate how "tall" something is, or how "high up" it is. Height is measured along the vertical (y) axis between a specified point and another point.\(^57\)

Weight

"Weight" is commonly used to mean "mass."\(^58\)

Body fat percentage

Body fat is a lipid (fat) produced in the body, and this may be influenced by diet, exercise and genetics. Body fat percentage is that percentage of body mass that is not made up of bone, muscle, connective tissue and fluids; that is, everything else. A person's total body fat percentage is the total weight of the person's fat divided by the person's weight. The resulting number reflects both essential fat and storage fat.

Essential fat is that amount of fat necessary for maintenance of life and reproductive functions. The percentage for women is greater than that for men, due to the demands of childbearing and other hormonal functions. Essential fat is 2–5% in men, and 10–13% in women. Storage fat consists of fat accumulation in adipose tissue, part of which protects internal organs in the chest and abdomen. The minimum recommended total body fat percentage exceeds the essential fat percentage value reported above. A number of online tools are available for calculating estimated body fat percentage. Arguably, body fat percentage is the superior gauge of an individual's fitness level, as it is the only body measurement which directly calculates the particular individual's body composition without regard to the individual's height or weight. The widely-used body mass index (BMI), on the other hand, simply makes blanket assumptions as to what every individual of a certain height should ideally weigh, regardless of the body composition which makes up that weight. The BMI gives particularly inaccurate information with regard to individuals with above-average lean muscle mass, classifying such individuals

\(^{57}\) http://en.wikipedia.org/wiki/Height
\(^{58}\) http://en.wikipedia.org/wiki/weight
as "overweight" or "obese" despite the fact that their body fat percentage would indicate they are in excellent physical condition.

**Body Mass Index**

The body mass index (BMI), or Quetelet index, is a statistical measure of body weight based on a person's weight and height. Though it does not actually measure the percentage of body fat, it is used to estimate a healthy body weight based on a person's height. Due to its ease of measurement and calculation, it is the most widely used diagnostic tool to identify weight problems within a population, usually whether individuals are underweight, overweight or obese. It was invented between 1830 and 1850 by the Belgian polymath Adolphe Quetelet during the course of developing "social physics". Body mass index is defined as the individual's body weight divided by the square of his or her height. The formulae universally used in medicine produce a unit of measure of kg/m². BMI can also be determined using a BMI chart, which displays BMI as a function of weight (horizontal axis) and height (vertical axis) using contour lines for different values of BMI or colors for different BMI categories.

**Self-Concept**

The self-concept scales include the Total score and the six domain scales. The six domain scales measure specific aspects of self-concept. They can also be used to assess strengths and weaknesses in self-image. On all scales, higher scores indicate favorable self-concept (i.e., high degree of self-esteem or self-regard), whereas lower scores are associated with more negative self-concept.

**Behavioral**

The Behavioral scale measures admission or denial of problematic behaviors in home and school settings. In the Very Low range he endorsed pervasive negative feelings about his own behavior. He is likely to feel that he frequently causes trouble, acts aggressively, and is unable to comply with the standards of conduct set by his parents and/or teachers. Very

---

59 www.google.com
60 www.google.com
low Behavioral scores can be associated with a variety of psychological syndromes, especially disruptive behavior disorders such as conduct disorder, oppositional defiant disorder, and attention-deficit/hyperactivity disorder. but acknowledged a few negative feelings as well. These specific aspects of his emotional experience can be discerned by examining the item responses\textsuperscript{62}.

**Intellectual and school status**

The Intellectual and school status scale represents a youngster’s self-assessment of intellectual abilities and academic performance. The items also cover general satisfaction with school and future expectations about achievement. in the Low range He acknowledged numerous perceived difficulties in school-related tasks. Depending on the item responses, these problems may be academic and/or behavioral in nature. He may have a general sense that he does not fit in well at school and does not have the necessary “smarts” to succeed in his schoolwork. A low Intellectual and school status score may have varying significance depending on the child’s prior history of academic achievement. In youngsters with a record of high achievement, a low Intellectual and school status score may indicate unrealistically high expectations from themselves or their parents. In youngsters with a record of low academic achievement or a history of learning or behavioral problems in school, a low Intellectual and school status score may reflect an internalization of the disappointment of parents, teachers, and other authority figures. Screening for learning disability and/or attention-deficit/hyperactivity disorder should be considered for this child\textsuperscript{63}.

**Physical Appearance and Attributes**

The Physical Appearance and Attributes scale measures a youngster’s appraisal of his or her physical appearance, as well as attributes such as leadership and the ability to express ideas. in the Average range He seems to have relatively balanced feelings about his

\textsuperscript{62,63,64,65,66} http://portal.wpspublish.com/pdf/ph2.pdf
physical appearance and strength. His specific positive and negative self-appraisals can be discerned by examining the item responses.\textsuperscript{64}

**Anxiety**

The Anxiety scale assesses anxiety and dysphonic mood. Individual items tap a variety of specific emotions, including worry, nervousness, shyness, sadness, and fear. In the Average range, he endorsed mostly positive mood states, considered to be within normal limits. The nature of these concerns can be clarified by examining the item responses.\textsuperscript{65}

**Popularity**

The Popularity scale represents a youngster’s evaluation of his or her social functioning. The items tap perceived popularity, ability to make friends, and inclusion in activities such as games and sports. In the Low Average range, he endorsed a mixture of positive and negative feelings with regard to his peer relationships.\textsuperscript{66}

**Happiness and Satisfaction**

The Happiness and Satisfaction scale assesses general feelings of happiness and satisfaction with life. This child’s in the Above Average range. He evaluated himself and his life circumstances in a generally positive way. He reported an overall sense of well being. He would tend to describe himself as cheerful, satisfied, lucky, and able to get along well with others.\textsuperscript{67}

**Stress**

The word 'stress' is defined by the Oxford Dictionary as "a state of affair involving demand on physical or mental energy". A condition or circumstance (not always adverse), which can disturb the normal physical and mental health of an individual. In medical parlance 'stress' is defined as a perturbation of the body's homeostasis. This

\textsuperscript{67,68} http://portal.wpspublish.com/pdf/ph2.pdf
demand on mind-body occurs when it tries to cope with incessant changes in life. A 'stress' condition seems 'relative' in nature. Extreme stress conditions, psychologists say, are detrimental to human health but in moderation stress is normal and, in many cases, proves useful. Stress, nonetheless, is synonymous with negative conditions. Today, with the rapid diversification of human activity, we come face to face with numerous causes of stress and the symptoms of stress and depression.68

The body’s reaction to mental or physical challenges69.

A physical, chemical or emotional factor causing mental tension; possible factor in causing disease70.

**Vital capacity**

Clarke has described . “vital capacity as the largest volume of air that can exhale, after the deepest possible inhalation”71.

**Peak flow rate**

Peak flow rate is the flow rate during maximum flow phase of the expired air followed by maximum voluntary inspiration.

**Resting pulse rate**

Bert and taylor stated that the resting pulse rate is pressure change transmitted as wave through the arterial wall and blood column to the periphery while the person is at rest72.

**Resting respiratory rate**

Respiration is act of breathing by using the diaphragm and abdominal muscles73.
Breath holding time

As defined by Moses, “Breath holding time is the duration of time, through which one can hold his breath without inhaling and exhaling”74

Positive holding time

When the breath is hold after forcefully inhaling the air.

Negative holding time

When breath is hold after forcefully exhaling the air.

Significance of the study

This study will be significance in the following ways:

1. The findings of the study may enable us to properly develop the programme which will facilitate the development of the children.
2. The findings of the study may help us to understand better the role of Asanas in the proper development of children.
3. The study may enable the children to manage their stress.
4. This study may enable us to develop the programme for school children and to put Asanas as an important aspect in the curriculum which will help to development of the psychological aspects of the school children.
5. This study may also further help in the improvement of the physiological variables in view of physical fitness of the school going children.
6. This study may improve the anthropometric variables of school going children.
7. This study may be helpful to remove the existing common psychological problems i.e. stress, tension and anxiety for school going children.
8. This study may provide guidelines and reference for future research in larger population.

---