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YOGA – A REMEDY TO RESPIRATORY ILLNESS

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Every human society, be it rural or urban, industrial or technologically advanced, is affected extremely by pollution of the air. Atmospheric pollution due to the increase in the concentration of gases other than oxygen in the air is responsible for various respiratory illnesses.

Breathing sustains life, but natural breathing brings health and happiness. It clears the mind and calms all the emotions and releases the vitalizing flow of energy within us. Many people with serious respiratory ailments have found a solution in Yoga. As the mind is calmed the hyper reactivity that causes diseases such as bronchial asthma and nasal allergy is reduced. Pranayama, an important aspect of Yoga, helps in strengthening the immune system, so chronic infections are less likely. Regular practice of Pranayama helps in improving the mechanical efficiency of our breathing and makes the most of our lung capacity.

Fable has it that the fish will be the last to discover that it can survive only in water. This discovery will be made too late, as the fish lies dying, having jumped out of the stream onto the dry earth. At times it would appear that man has made the same mistake about his physical environment, discovering its all embracing properties, only when it is almost too late to act upon that knowledge.

According to Altman and Chemeres (1980), the view that people were above Nature took root during the Industrial Revolution, when people developed many devices to control Nature. In time, people could control climate with air conditioners, heaters and the like. The environment no longer determined where people could build homes; they could dig deep wells for water and cut hillsides to make room for houses, construct roads and use modern means of transport. Their attitude was that the environment was something to be adapted, harnessed, and finally conquered.(2)

It would be no exaggeration to state that the Earth is a dying planet. Succumbing to the ravages of man, this only planet where life is known to exist, is being severely hit by pollution causing great anxiety among environmentalists and all those who are concerned about the safety of the mankind. (1)

Environmental degradation is threatening the lifeline of the human beings on this planet. It means overall lowering of environmental qualities due to adverse changes in the basic structure of the components of environment to such an extent that these affect all biological communities in general and the human society in particular.(3) Disasters that occur suddenly, and pollution or hazardous substances produced by naturally or by human activities are some of the causes of environmental degradation.

Several factors contribute towards environmental degradation. Among these the main ones are:

- ✓ Population explosion
- ✓ Poverty
- ✓ Modern technological development that is not environment friendly
- ✓ Uninhibited and excessive consumption of natural resources
- ✓ Indiscriminate use of chemical fertilizers and pesticides
- ✓ Industrialization
- ✓ Development of economic functions of man
- ✓ Deforestation
- ✓ Urbanization
- ✓ Lifestyle
- ✓ Earthquakes, Volcanoes, Floods

Because of man's ability and propensity to exploit the nature and its resource indiscriminately, environmental problems have assumed huge proportions and pose a stiff challenge for physical, biological as well as social sciences engaged in solving these problems. Industrial development has been the cause of grim problems like excessive consumption of scarce resources, disposal of huge amounts of hazardous garbage, acid rain and pollution that affect the very survival of living beings. Acid rain, deforestation, desertification, global warming, ozone layer depletion, pollution, radiation and species extinction are some of the major environmental problems facing the world today.

While the fight against environmental degradation in all its manifestations is being waged by scientists and environmentalists, for this paper, we shall restrict ourselves to studying the effects of air pollution on the human race and how best to cope with the problem.

AIR POLLUTION

The most important component of the biosphere is atmospheric air without which nobody can survive. There is nothing like 'pure air'. In fact, air is never in its pure state because gases like sulphur dioxide, carbon monoxide, hydrogen sulphide etc. are constantly added to air by natural processes like volcanoes, dusts etc. Air becomes polluted when the limits of these gases or pollutants exceed the permissible level either by natural or manmade activities. Air pollution is the contamination of air with smoke, dust and harmful gases. (3)

Sources of Air Pollution:

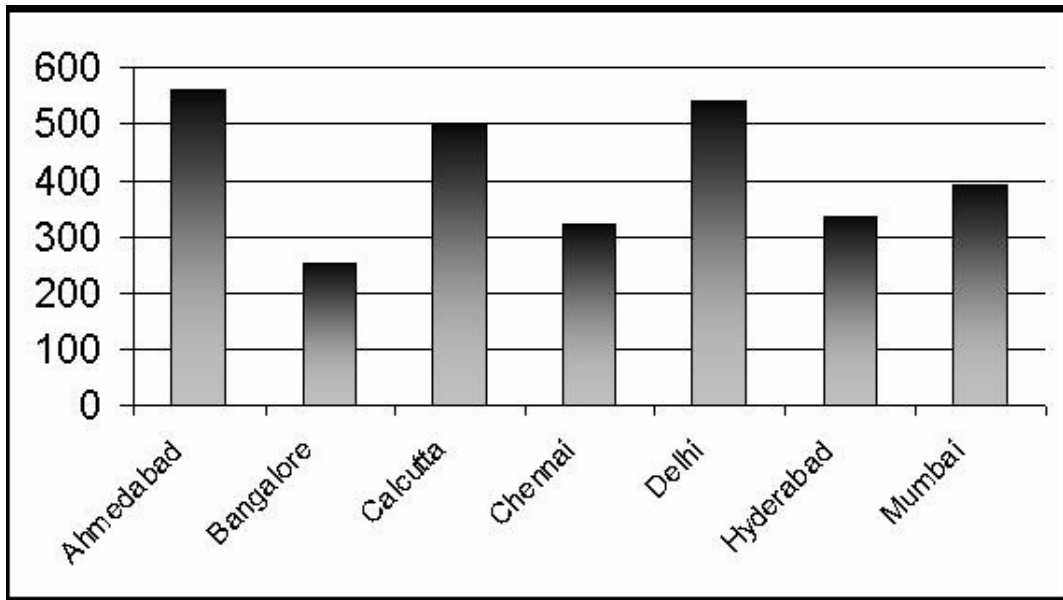
- Industrial Pollution by chemical plants, thermal and nuclear power plants, petroleum refineries, sugar mills, cement factories and like.

- Automobile Pollution by road, rail, water and air transports
- Natural causes like forest fire, eruption of volcanoes etc
- Domestic causes from heating and cooling devices, smoke from chimneys, smoking habits

India's Polluted Cities

A survey conducted on December 9, 2003 by the Eureka Forbes of Environment, revealed Ahmedabad, and Delhi are the most polluted cities of India with Mumbai occupying the third place (Fig 1). The Suspended Particulate Material (SPM) levels, which contribute to the pollution in the cities are given in Table 1

Figure 1



National Ambient Air Quality Standard : 200 µg/M³

<i>CITY</i>	SPM (microgram/cubic meter)
Ahmedabad	559
Bangalore	252
Calcutta	501
Chennai	323
Delhi	541
Hyderabad	337
Mumbai	393

Table 1: Source: Survey by Eureka Forbes of Environment

Effect of air pollution on human health

According to medical experts, severe air pollution and high SPM levels affect human health and cause many diseases. SPM pollution may result in dwindling levels of IQ among children and may even lead to heart attacks. Depletion in the ozone layer due to air pollution, causes aging of the skin and skin cancer, also suppresses the immune defence against tumors, increases the incidence of diseases like cataract formation in the eyes, measles, chicken pox, tuberculosis and leprosy and fungal infections. A variety of air pollutants have been found to cause many diseases such as nasal allergy, sore throat wheezes, asthma, chronic bronchitis, allergies, and lung cancer. (5)

Increasing incidence of respiratory illness in modern times has triggered studies of how yoga can help in handling this problem. Various studies have revealed that regular practice of Yoga can prevent and cure respiratory illness.

YOGA

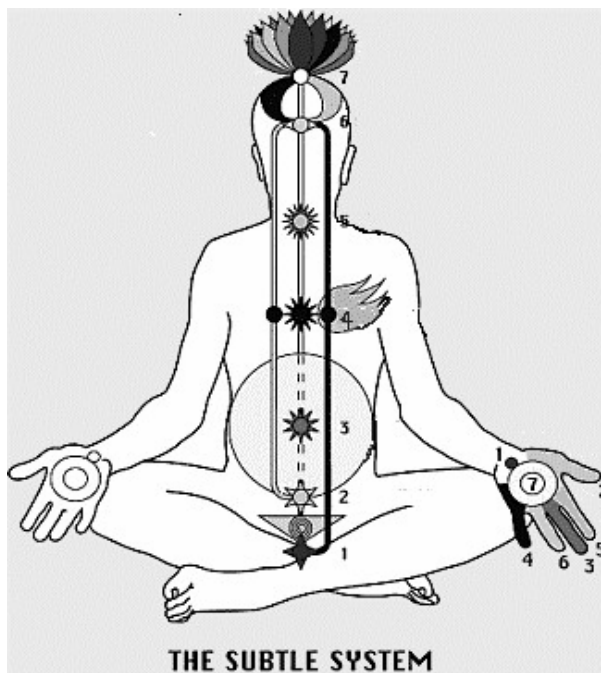
The word 'Yoga' comes from the Sanskrit word 'Yuj' which means to join. Yoga is a science of life to develop the sixth sense to its fullest and to enable and equip man to enjoy a peaceful and blissful life. Yoga is an ancient system, which brings harmony in body and mind. 'Yoga is skill in action' states the Bhagavad Gita, the best known of all the Indian philosophical works. Yoga comprises not only of exercises for improving the 'skill' of the body, it also comprises of techniques that act on the mind and emotions, and provides a complete philosophy for living. (4)

Patanjali, often called the "father of Yoga", believed that each individual is a composite of matter (prakriti) and spirit (purusha). In a succinct definition, he says "Yogah Chitha Vritti Nirodhah" meaning, "Yoga means controlling the activities of the mind".

Patanjali's Ashtanga Yoga has eight aspects as:

1. Yama or Moral code
2. Niyama or Nonattachment
3. Asana or Posture
4. Pranayama or Regulation of Breathing
5. Pratyahara or Control of Senses
6. Dharana or Concentration
7. Dhyana or Meditation
8. Samadhi or Contemplation

Fig 2 THE SUBTLE SYSTEM – CHAKRAS



- 1. Mooladhara Chakra**
- 2. Swadishthana Chakra**
- 3. Manipuraka Chakra**
- 4. Anahata Chakra**
- 5. Visuddhi Chakra**
- 6. Agnya Chakra**
- 7. Sahasrara Chakra**

Inside every human being there is a network of nerve and sensory organs that interprets the outside physical world. At the same time, within an individual resides a subtle system of channels (nadis) and centres of energy (chakras), which looks after his physical, intellectual, emotional, and spiritual being. Each of the seven chakras has several spiritual qualities. These qualities are intact within the individual, and even though they might not always be manifest, they can never be destroyed. Kundalini is the name of a sleeping dormant potential force in the human organism and it is situated at the root of the spinal column. When the Kundalini or latent energy, is aroused as a result of practising asanas, pranayama and meditation, it makes its way upwards through each chakra one after the other. Whenever it reaches a new Chakra, the Yogi attains a higher state of consciousness. The chakras are interconnected with the different areas of the brain. With the awakening of the Kundalini there is an awakening of the silent areas of the brain.

Yoga is fundamentally different from conventional medical practice in its approach to healthcare. Instead of trying to reduce the cause of disease to a single factor and to correct it using a specific cure, yoga aims to treat illness by improving health on all levels simultaneously and restoring inner harmony. Ill health occurs when the total balance of perfect health is disturbed. Yoga contains elements that address problems at every level – asanas that relax and tone the muscles and massage the internal organs, pranayama that slows breathing and regulates the flow of prana, relaxation and meditation that act to calm the mind and emotions culturing to heal the spirit. Every element of yoga brings benefits throughout, and also acts to amplify the effect of the other types of practices.

The essence of yoga therapy is both preventive and curative. Daily practice of a complete yoga can restore one's natural balance and harmony, bringing positive good health to all parts of our life – physical, mental and spiritual.

Research studies report that many people with serious respiratory ailments have found a solution in Yoga. As the mind is calmed the hyper-reactivity that causes diseases such as bronchial asthma and nasal allergy is reduced. Yoga also strengthens the immune system, so chronic infections are less likely. Finally, if the lungs are permanently damaged, as in chronic bronchitis, yoga teaches how to improve the mechanical efficiency of our breathing and make the most of our lung capacity. (7)

PRANAYAMA

To breathe is to live. Life is entirely dependent on the breath; all living things, including plants, must have air to live. 'Life is nothing but a series of breaths' says a Hindu proverb. Breath is ever-present, from the moment a baby fills its lungs, to the last gasp of a dying man. (6)

A vital scientific and therapeutic aspect of yoga is Pranayama. Pranayama is the breathing process or the control of the motion of inhalation, exhalation and the retention of vital energy. 'Prana' is the vital force which pervades the whole cosmos. It is in all things and is the bio energy that activates the human organism; the life within the seed that makes it grow. It is closely related to the air we breathe, which is our main source of prana. However, air is only the physical vehicle to be used and manipulated in the process of extraction of prana. 'Yama' means 'control' and pranayama is that group of techniques that aims at stimulation or balancing the vital energy. They purify the pranic body and remove blocks, allowing energy to flow freely. Pranayama brings deeper benefits than the simple mechanical effect of exercising the lungs. It teaches us to use every part of our lungs, stimulates our lung tissues, relaxes our chest muscles and energizes the entire system. Pranayama also has a calming effect working with meditation to bring us harmony and peace.

All the life force or Prana lies as dormant potential energy called the 'prana shakthi' or 'Kundalini'. It resides at the 'mooladhara chakra'. According to yoga, this prana flows from the mooladhara chakra up the spinal column to the 'Ajna chakra', which is situated between the eyebrows. The prana also gets distributed to the whole body through a different set of nerve channels so that it reaches every atom of the body.

During Pranayama, inhalation (puraka) stimulates the system and fills the lungs with fresh air; retention (kumbhaka) raises the internal temperature and plays an important part in increasing the absorption of oxygen; exhalation (rechaka) causes the diaphragm to return to the original position and air full of toxins and impurities is forced out by the contraction of intercostal muscles. The success of Pranayama depends on proper ratios being maintained between inhalation, exhalation and retention.

Air polluted by petrol fumes, and lack of sunshine due to the thick layer of immobile smoke hanging over cities caused by industries etc are responsible for the generally felt deficiency. The temperature and climate affecting our body make it normal for the individual to feel totally exhausted at the end of each season of the year. We feel particularly tired and worn

due to the build-up of toxins formed by each physical or intellectual effort made when atmospheric pressure is very low or when there are sudden changes in temperature; we seem to lack air and vital energy decreases especially when the weather is sultry. Pranayama practice can combat this general build-up of toxins which paralyzes the muscles and nerves. Pranayama first clears the body completely of toxins, and then recharges it with healing oxygen that stimulates the circulation.

HOW TO BREATHE PROPERLY

While we may live without eating for several days, and without drinking for many hours, how many minutes can we last without breathing? Man must breathe not only merely to live; but he should do so in such a way that he maintains constant vitality and avoids illness. Unfortunately, the number of people who know how to breathe properly is very small. Most of the people breathe in a very haphazard way as may be seen by cramped chests, stooping shoulders. It has been noted that unsatisfactory breathing habits can lead to respiratory illness, decreased resilience and shortening of life.

Jnana mudra

This position of the fingers is practiced throughout the Pranayama exercises.

In this mudra, the index fingers are curled and folded so that they touch either the top or the roots of their respective thumbs. (8)

A few exercises of Pranayama have been selected for this paper. These exercises are easy and take a few minutes to practice them. Any person can practice this everyday and prevent themselves from getting respiratory illnesses.

Yogic Breathing

Inhale by first expanding the abdomen and then the chest in one slow, smooth motion until the maximum possible amount of air has been drawn into the lungs. Then exhale and allow the air to passively escape from the lungs. This should be accompanied by a feeling of letting go and relaxation.

The whole movement should be smooth (no jerks) from the abdomen to the chest, like a wave. This procedure should be repeated for all inhalations and exhalations during the entire day.

NADI SHODHANA PRANAYAMA (Alternate Nostril Breathing)

How To Do?

Sit comfortably in any comfortable posture. Sit erect. Be calm and close your eyes. The left hand is in Jnana Mudra. Close the right nostril with the right thumb. Now inhale slowly through the left nostril for a count of 5 and fill your lungs. After complete inhalation, close both nostrils and retain the air in the lungs for another count of 5. Then press the left nostril with the ring finger of the same hand and close the left nostril. Open the right nostril; exhale slowly for a count of 5. After complete exhalation, repeat the process by slow inhalation through the right nostril, retention and exhalation through the left nostril for the same counts by closing the right nostril with the right thumb. This process is one round of Nadi Shodhana Pranayama. Practice 5 rounds everyday. Make sure there is no sound as the air passes through the nostrils.

What good can this do?

1. Cleanses and tones up entire nervous system.
 2. People suffering from cough and cold benefit greatly.
 3. Heart is strengthened.
 4. Blocked nostrils are cleared.
 5. Removes mental tension and worries.
 6. Induces feeling of peace.
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KAPALBHATI (Forceful Exhalation)

How To do?

Sit comfortably in any comfortable posture with your fingers in jnana mudra. Sit erect. Inhale through both nostrils, and release contracting the middle and lower abdomen portions. Release the contractions quickly and immediately follow with another inhalation. Inhale passively and effortlessly. Gradually increase the frequency After the round take a deep breath and gradually exhale.

What good can this do ?

1. Cleans capillaries of the remotest part of the body.
2. Purifies the frontal portion of the brain.
3. Aids in combating asthma, diabetes, and chronic bronchitis besides other nervous disorders.
4. Cleans the nasal passages.

This pranayama exercise is found to be very effective as a remedy for respiratory illness. Those suffering from pulmonary or cardiac disorders should undertake this exercise only under the guidance of experienced teachers of Yoga.

BHRAMARI (Humming Bee Breath)

How To Do?

Sit comfortably in any comfortable posture. Sit erect. Inhale slowly and deeply through the nose. Let the inhalation caress the throat area. Then gently plug the ears with the respective index fingers and close the eyes. Exhale slowly producing a long and continuous humming sound. Enjoy the sound and vibrations produced during these breathing techniques. This is one round. Start with 5 rounds and slowly increase the number.

What good can this do?

1. Promotes a clear voice and is recommended for singers, teachers.
 2. Clears the throat and nasal passage of infections.
 3. Makes an impact on the mind, producing peace and joy.
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Conclusion

The ultimate goal of yoga is to find perfection in life. By integrating yoga into our life, we begin with the awareness of ourselves in our present condition and come to know the

potentials and possibilities that exist within us, and then use those strengths to reach a higher awareness in life. Pranayama, which is a component of Yoga, is one of the best remedies to tackle respiratory illness caused by air pollution and other naturally occurring respiratory illness. The effect of these exercises can be best achieved when practiced at the start of each day. Pranayama when practiced in combination with asanas, and meditation help the body and the mind to meet every situation that arises in life from moment to moment.

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