

Know Yourself Series - Health

Why do we fall sick?

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Dedicated to

The divine soul who made me appreciate the Power of life Divine.

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Introduction

Disease is a very agonizing and uncomfortable experience. No individual ever wants to fall sick or suffer from disease of any sort. Human beings of the civilized and modern times cannot afford to fall sick and waste valuable productive time lying in the bed. Man does whatever possible to avoid, control and suppress the suffering and keep fit and fine all through his life. He is always anxiously looking for ways and means to escape from falling sick.

Disease besides being an agonizing and uncomfortable suffering for the individual it has an adverse effect on productivity and earning capacity of the individual and a burden on the nations' economy. For example, a study conducted by economic think-tank ICRIER (Indian Council for Research on International Economic Relations - an autonomous non-profit research organisation engaged in policy oriented research) reveals that companies in India are losing as many as 51 working days in a year due to illness of its employees. A majority of workers with low incomes were afflicted by diseases like diarrhea, influenza, dengue and malaria as well as chronic infectious diseases like tuberculosis and HIV/AIDS. On the other hand, senior-level executives with high incomes were afflicted with lifestyle diseases like heart ailments, diabetes, hyper tension, stroke and emotional stress. India is spending around Rs.12,000 crores annually on prevention, control and cure of chronic diseases like Tuberculosis alone. This is not a typical situation of developing countries like India, even well developed countries like USA are also suffering from the loss of work days due to illness. According to studies conducted in the United States of America on an average the U.S. population in the age group of 24 to 54 years loses 1.5 days per month due to illness or about 6.7 days per month of cut back on work due to illness. This in turn amounts almost 2.5 billion illness related work loss or work cutback days per year. United States of America almost spends around 15 per cent of GDP on health, where as Switzerland and Germany allocate around 11 percent of their GDP to health, respectively, and France 10.5 percent of its GDP.

These figures however staggering they may appear are still like the tip of an iceberg. There are still millions and billions of people who are unable to avail any of the health schemes devised by Governments. There are millions and billions of people engulfed by poverty not only due to lack of necessary incomes to get medical treatment for their diseases but also because diseases reduce their chances of finding work, and thus are driven into utter poverty.

Such being the burden of disease, developing a comprehensive understanding about diseases, its causes, prevention and cure and ways and means adapted by human body to keep itself not only free of diseases but also fit and fine is very essential for every individual. As health is a fundamental human right, every human being has to take individual initiatives to keep oneself free of disease and be healthy.

Human Physiology – An Over view

Having a basic knowledge about our body, our internal organ systems, their functions and their role in maintaining health is the first step in helping ourselves to be healthy and free of disease.

Human body is the entire physical structure of a human organism. The human body consists of major organ systems namely integumentary system composed of skin and associated structures; musculoskeletal system composed of skeletal muscles and bones; respiratory system composed of lungs, trachea, and other breathing passages; circulatory system composed of the heart, blood, blood vessels; digestive system composed of mouth esophagus, stomach, intestines (includes small intestine and large intestine), pancreas, liver; excretory system composed of kidneys, ureters, urinary bladder and urethra; nervous system composed of brain, sensory organs, spinal cord, and nerves; endocrine system composed of hormone secreting glands; and reproductive system composed of male/female reproductive organs depending on the gender of the human being. Each of these systems with their respective organs and tissues work together as a single functional unit. Efficiency and health of these organ systems would be at optimum level, if the internal environment is maintained at a steady level.

Human body in order to allow proper functioning of its component cells, tissues, organs, and organ systems maintains a steady internal environment known as homeostasis. For example a stable body temperature of 98.6 degrees Fahrenheit, for enzymes to function at their optimum efficiency. Maintaining a steady acid-base balance in the cells and tissues which is essential for various organs to function properly. The acidic/basic nature of chemical compounds is measured in terms of pH value. pH value ranges from 1 – 14. pH value 7 indicates the neutral nature, values from 1 – 7 indicate the acidic nature of chemical compounds and values ranging from 7 – 14 indicate the basic nature. Ideal acid/base balance for some of body parts in terms of their pH values are as follows:

Stomach juice (hydrochloric acid)	1.5 pH.
Skin	4.7 pH.
Saliva	7.1 pH.
The cell	7.1 pH.
Blood	7.35 to 7.45 pH.
Pancreatic juice	8.8 pH.

Imbalance in this level will lead to subnormal or deficient performance of body organs. Similarly maintenance of water or fluid balance is very important. A significant fraction of the human body is made up of water. For example lean muscle tissue contains

about 75% water. Blood contains 83% water, body fat contains 25% water and bone has 22% water. Body water is broken down into the following compartments -

- Intracellular fluid (2/3 of Body Water)
- Extracellular fluid (1/3 of Body Water)
- Plasma (1/4 of Extracellular fluid)
- Interstitial fluid (3/4 of Extracellular fluid)
- Transcellular fluid

In order to maintain a steady internal balance of these parameters the human body thus constantly takes in various biochemical products such as salts, electrolytes, proteins, gases and energy from the immediate environment and performs thousands and millions of bio-chemical actions and releases a number of biochemical compounds. Some of these by-products are once again retained by the body as they are required for various metabolic activities, and rest of the by-products are released into the immediate environment as they are not useful for the body, in fact retaining them is harmful for the body. Metabolic wastes thus released into the immediate environment are collected by specialized organs and organ systems and ultimately expelled out of the human body.

Body systems responsible for maintaining the internal balance

Almost every body part, be it skin, digestive system, liver, kidneys, pancreas, central nervous system has a definite and specific role in maintaining the internal environment at a steady state, however some systems play a major role in balancing the internal environment.

Circulatory System

The circulatory system consists of heart and blood vessels. Blood vessels are of two types – arterial and venular. Arterial blood vessels take blood containing nutrients and oxygen from the heart to all the body cells and tissues. Nutrients and oxygen are transferred to the cells and tissues at the junction of blood capillaries and cells. Similarly cells transfer metabolic compounds, wastes, hormones and some nutrients etc, to blood capillaries of venular type which take blood from body parts to the heart. Blood is pumped by the heart simultaneously into two circuits: the pulmonary and systemic circuits. The pulmonary system takes blood through the lungs where gas exchange occurs and the systemic system transports blood to all parts of the body where exchange with tissue fluid takes place.

Blood is composed of two parts: formed elements and plasma. Formed elements in turn are composed of red blood cells, white blood cells, and platelets. All these formed elements have a role in maintaining the internal balance. Red blood cells are responsible in carrying oxygen from lungs to all body parts and cells, which in turn is responsible in releasing energy required for various metabolic activities. White blood cells are the defence mechanism of the body in its fight against bacteria and viruses that are harmful to the body. Platelets help in clotting of the blood during injury thereby prevent excessive loss of blood and thus help in fluid balance.

Plasma – the other component of the blood contributes to the internal balance by maintaining the volume of the blood through water and osmotic pressure necessary for exchange of nutrients, metabolic wastes at capillary and cellular interface. It also carries hormones and electrolytes required for the maintenance of internal environment.

Lymphatic System

Lymphatic capillaries collect excess tissue fluid, and return it via lymphatic vessels to the systemic veins. Lymph nodes present along the length of lymphatic vessels filter and purify lymph. Lymph nodes are rich in lymphocytes, the type of white blood cell that responds to antigens allowing immunity to develop.

Special lymph capillaries, called lacteals, are found within the villi of the small intestine. They absorb the products of fat digestion.

Nervous system

The nervous system maintains homeostasis by controlling and regulating the other parts of the body. Any deviation from a normal condition acts as a stimulus to a receptor, which sends nerve impulses to a regulating center in the brain. The brain directs an effector to act in such a way that an adaptive response takes place. For example, if there is a drop in body temperature, the effector acts to increase body temperature. Hypothalamus - a portion of the brain particularly concerned with homeostasis; influences the action of the medulla oblongata, a lower part of the brain, the autonomic nervous system, and the pituitary gland.

Endocrine System

Endocrine glands help in maintaining the balance of blood sugar, and body temperature, some of the important factors in maintaining a steady internal environment. The hormones produced by endocrine glands are chemical messengers that are transported throughout the body by the blood. For example, if there is too much glucose in the blood, then receptors in the pancreas detect this. They send a message to the brain, inducing feelings of satiety (so that intake of food is decreased). They also send messages to the Islets of Langerhans (the B-cells) to produce insulin. The insulin thus released into the bloodstream via capillaries, and controls the blood sugar in various ways. It increases the intake of glucose by all cells, and stimulates the conversion of glucose into glycogen. This reduces the amount of glucose in the blood, so that they return to equilibrium.

If there is too little glucose in the blood, then the same receptors in the pancreas detect this. They send a message to the cerebrum, inducing feelings of hunger (so that intake of food is increased). They also send a message to the A-cells in the pancreas to produce glucagon. Glucagon is released into the bloodstream via capillaries and stimulates the conversion of glycogen into glucose in liver. The liver is also stimulated to convert amino acids into glucose. Thus, the levels of glucose in the blood increase and equilibrium is attained. The endocrine system and the nervous system both coordinate the activities of body parts. The nervous system reacts quickly to external and internal stimuli, whereas the endocrine system is slower to act but its effects are longer lasting.

Respiratory System

Lungs maintain the internal balance of oxygen and carbon dioxide. Oxygen-laden air is inhaled into the alveoli of the lungs. Blood within the pulmonary artery is oxygen-poor and contains a large concentration of carbon dioxide. As blood passes through the capillaries surrounding the alveoli, oxygen diffuses into blood and carbon dioxide diffuses out of blood into the alveoli. Thereafter, carbon dioxide is exhaled by moving from the alveoli to the nose.

Excretory System

Kidneys, one of the primary organs of the excretory system play a very important role in maintaining the internal environment by eliminating unwanted salts, metabolic wastes and toxins of the body. As blood passes through the kidneys, kidneys by absorbing unwanted salts, metabolic wastes and toxins from the blood make urine and excrete it out. Urine is composed of substances not needed by cells like end-products of metabolism (e.g., urea), and excess salts and water. In the process of making urine, blood is first filtered and all small molecules, including both nutrients and wastes, enter a nephron. Then the nutrient molecules and much of the salts and water are reabsorbed back into the blood, while unwanted substances remain within the nephron to become a part of urine. Thereafter urine leaves the body.

Besides kidneys digestive system also helps in maintaining the internal environment by removing solid wastes generated during the process of digestion. Skin the outermost and largest organ of the body helps in dissipating the excess heat generated in the body through the microscopic pores present on the surface of the skin.

Life Styles in Today's Society – Far from Ideal

Under ideal conditions, human body is well equipped to withstand the vagaries of the external environment and quite successful in maintaining the internal environment steadily and is capable of remaining in a steady state of health. But unfortunately the living conditions and lifestyles are far from ideal. Industrialisation, urbanization, which are the realities of modern society have tremendously changed the life styles and living conditions of every individual and are the major causes for environmental degradation, pollution of air, water, and soil. As a result many toxic and hazardous industrial wastes and chemicals are entering into the human body and disturbing the internal environment of human body.

Impact of Environment on Internal Balance

Studies on environmental impacts on health conducted by international organizations like UNEP (United Nations Environmental Program), WHO (World Health Organisation) reveal that an estimated 25% of all preventable illness is caused by environmental factors. Worldwide, 500 million children are debilitated by environmental diseases. Many, if not most, environmental threats to health are aggravated by persistent poverty, political conflicts, natural and man-made disasters, and social inequity. Every hour, 15,000 people worldwide die of an infectious disease, and more than half of those are children under 5 years of age; 2 million children under 5 years of age die every year from acute respiratory infections, for which indoor air pollution is a major causative factor. Another serious environmental and public health problem is caused by water pollution from animal waste runoff, as well as the widespread use of antibiotics and hormones to speed up growth of animals.

It is very difficult to assess how many and how much of these toxins are consumed by individuals either directly or indirectly. Though not systematic studies, but still some studies have been done to measure and assess the type and quantity of toxins entering into the human body. One such study conducted to measure the average exposure to toxins through measuring the levels of toxins in breast milk found that toxins such as PVC and PCBs (polychlorinated biphenyls) have been found in breastmilk which are potentially capable of affecting the nervous, endocrine (hormone) and reproductive systems of animals, and may be carcinogenic. Fortunately breastmilk can counteract any possible effects caused in the womb by exposure to toxins, because it contains antioxidants, which helps to compensate for the toxic effects of the environment. Breastmilk also helps babies develop stronger immune systems.

Another interesting study carried out by the Federal Investigation Bureau (FBI) of America with the support of the Environmental Protection Agency (EPA) of America focused on the extent to which lead is being absorbed by humans due to: a) water treatment procedures; b) industrial releases of lead and other toxins; c) plumbing systems, leaded paint, and other sources of lead associated with old housing; d) other sources, such as lead residues in soil, that are particularly common in American cities; and e) dietary habits (such as shortages of calcium and iron) and demographic factors (such as poverty,

stress, and minority ethnicity) which are known to be associated with increased risk of lead uptake. The reasons for this focus was firstly to study the correlations between the use of these chemicals and crime, disease, and behavioral dysfunction, and establish clearly whether or not these compounds are poisoning the public. Secondly to study the silicofluorides which apparently function to increase the cellular uptake of lead and other toxic metals, such as manganese. Confirming correlations between silicofluorides and lead uptake should thus clarify the extent to which these compounds are risk co-factors for toxicity and other hazardous effects.

Some of the findings of this study point that

1. Communities with a higher percentage of children having blood lead over 10 mg/dL are significantly more likely to have higher rates of violent crime and higher rates of educational failure.

2. Communities using either fluorosilicic acid (H_2SiF_6) or sodium silicofluoride ($NaSiF_6$) have significantly higher rates of crime than those using sodium fluoride or delivering unfluoridated water (with the exception of towns with naturally fluoridated water).

3. The use of fluosilicic acid (H_2SiF_6) to fluoridate public water supplies significantly increases the amounts of lead in the water (whereas the use of sodium silicofluoride ($NaSiF_6$) or sodium fluoride (NaF) does not.

4. There is no linear relationship between the amount of lead in a community's public water supply (as measured by current methods of determining "90th percentile first draw water lead") and the rates of violent or property crime.

However indicative these studies may be, still are sufficient to warn us the the havoc caused by these toxins in the internal environment of the body and thus to the health of the individual as well as the society at large.

Disturbance in the internal environment due to deprivation of essential nutrients

Advances in food production and food processing technologies has enabled to mass produce processed foods because they last longer in the kitchen, look nicer, slice better, sell faster, and are easier to mass-produce than "whole" foods. Moreover with growing urbanisation, increased cost of living, increased literacy and education levels both men and women in the nuclear family are taking on full time employment. As a result women are finding it difficult to manage their time to cook foods in traditional and conventional ways using 'whole' food materials and are preferring to have fully processed or semi processed food items over conventional and traditional foods as they save time, easy and faster to cook and tastier to eat. But in the long run these processed foods are depriving the body of essential and valuable nutrients which are available through the whole foods.

For example grains when processed or refined they are stripped of their outer bran, which has all the nutrients, and they are stripped of their inner germ, which has all the fiber. All that's left is the starchy endosperm, which is rich in only carbohydrate. The vitamin enrichment meant to counter such tampering scarcely even begins to reverse the damage, largely because it cannot replace lost phytonutrients, which exist only in whole plant foods and are believed to promote health in many unknown ways. There's a growing amount of evidence to suggest that it's not so much any one nutrient, but the particular balance of many nutrients in whole foods that makes them good for us. That's not something we can re-create in the laboratory.

Similarly, processed oils are also widely used and are even more harmful. Processing of oils removes important nutrients and damage a small fraction of the oil's molecules, making them potentially toxic. Oils used in many packaged baked goods and snack foods and in restaurant frying are put through another process, called hydrogenation. This turns healthy, unsaturated fats into saturated and trans fats. Trans fats have been linked to heart attack, diabetes, stroke, aneurysm, weakened immune system, liver dysfunction, reproductive problems, lower IQ, prostate cancer and breast cancer.

Other potentially dangerous compounds of the processed foods are additives and preservatives, which are added to lengthen the life of the processed foods. Many of these, such as the sodium-based preservatives used in a wide variety of products, also have known health consequences (such as hypertension). Others may or may not be harmful—they just haven't been studied. But it's safe to assume that any ingredient we eat which doesn't exist in nature will cause at the least some minor negative effects. Colorings, flavorings, preservatives and additives can interfere with the delicate workings of our biological systems, because they do not fit the highly specific structural or functional requirements of these systems and hence disturb the internal balance of the human body.

Unhygienic living

All over the world it has become a norm to put the entire blame on environmental degradation and other external factors like industrial farming, use of artificial manures and pesticides etc, for the fall in health and rise in incidence and intensity of diseases in human beings. But individuals themselves are equally if not more responsible for their poor health and suffering. Irrespective of the economic, social class they belong to, modern man in this civilised society has adapted a life style which is far from hygienic. Modern life style with

- reduced physical activity,
- sedentary jobs,
- working for long at a stretch in closed, illventilated work places under artificial lighting and recirculated air,
- irregular eating habits like eating without hunger, eating for the pleasure of taste only, eating in a hurry, eating stale food, eating highly processed, highly refined and overcooked foods deprived of dietary fibre, essential nutrients,
- irregular sleeping patterns,
- wearing tight cloths which obstruct the free escape of body heat and other metabolic wastes through sweat etc, is highly responsible for disturbing the internal environment.

Chronic constipation is one of the most common health problems caused by the modern lifestyle. People generally think that constipation is not being able to eliminate the undigested or under digested foods through regular bowel movements of the large intestine. But constipation is much more than difficulty in releasing the stools. Retaining the waste products in the large intestine for longer periods which is unhygienic for health. Chronic constipation caused due to faulty food habits over a long period is a major contributor to many health problems of the modern society. Uneliminated faecal matter tends to stick to the walls of the large intestine. Slowly over a period of time the muscular walls of the large intestine lose their elasticity and lose their rhythmic

contraction and expansions which are essential for the elimination of wastes through rectum. Retained waste products over a long time will slowly start thickening the walls of other parts of the intestine like small intestine, and even stomach thus slowing or weakening the functioning of the the entire digestive system. Uneliminated wastes start putrifying inside the intestine and produce more toxins and disturb the acid-base balance, which in turn activates the harmful bacteria and viruses, resulting in other diseases. Surveys done among North American populations indicate that around 17 percent of the American population have problems related to constipation.

Psycho-emotional factors

In today's society individuals are constantly experience threats and competition to their physical survival as well as economic and emotional well being. All these aspects are interdependent and cause a lot of psycho emotional stress in individuals. This psycho emotional stress in turn disturbs the internal balance by disturbing the production of digestive enzymes, hormones, constricts blood vessels and there by upsets the blood supply to vital organs like brain and kidneys thus causing many nervous disorders and kidney diseases.

Acute disease – Natural way of maintaining the internal balance

As discussed in the previous sections, the human body is continuously and constantly taking large amounts of toxins from the external environment namely pollutants of water and air through the water we drink and the air we breathe in. Similarly a number of unwanted chemicals in the form of additives, preservatives, colouring agents and synthetic vitamins and minerals which fortify the processed foods are making in to the human body through the food we take in. Added to this are the toxins produced within the body due to our unhygienic living are continuously posing threat to the internal balance.

Human body with its life power has amazing capacity to tolerate the harmful effects of toxins and yet carry out the regular functions of the body for a long time. We human beings are generally not aware of this capacity of our body, tend to think that the vital organs inside our body are happy and healthy, so we keep on stressing our vital organs and continue to damage them by our unhygienic living habits. Whenever the amount of toxins accumulated due to faulty and subnormal elimination through body's natural mechanisms cross the limits the life power within human body attempts to forcefully eliminate the toxic materials.

Most common, yet highly annoying disease conditions such as common cold, sinusitis, bronchitis, asthma, chronic cough, rashes, acne, eczema, psoriasis, headache, flu, are some of the routes chosen by the body to eliminate the toxins through skin, mucous membranes, sinuses, lungs etc. Unfortunately people tend to suppress the acute diseases as quickly and as effectively as possible through medication. In reality acute diseases are the processes adopted by nature to restore the internal balance and keep the body clear of toxins.

Suppressing Acute Diseases – Closing the outlets for Toxins

Repeated attempts of body to eliminate toxins through acute diseases are forcefully stopped by human beings through continuous and repeated medication. At the same time due to the ignorance about our unhygienic food and living habits, we keep increasing the toxic levels in our body. When failed to eliminate the toxins from within, the human body resorts to store them in places like fat, muscle tissues, cavities of the bone joints, thus initiating the formations of cysts, tumors, inflamed joints, fibroids, blocked arteries, gall bladder and kidney stones, so on and so forth.

These stored toxins disrupt and disturb the functioning of the vital organs causing sub-normal functioning or put a halt to the function altogether. Accumulated toxins disturb the internal balance in one of the following ways -

By interfering in various biochemical and metabolic reactions and processes of the body. For example organophosphate pesticides inhibit the nerve enzyme that helps in transmitting a message across a neural synapse (specialised junction through which cells of nervous system signal to other cells of the nervous system or cells of the muscles or glands etc).

By replacing or blocking an essential chemical, for example carbon monoxide replaces the oxygen molecule on the haemoglobin molecule thus effecting the supply of oxygen to cells and tissues of the body.

By damaging the cell structure. Toxic damage to cells results in either complete loss or partial loss of cell functions by altering its cell structure. For example many toxins attach themselves to the cell walls where receptors sites for hormones are located and thus blocking hormones from transmitting the necessary messages and stimulating the feedback processes required in restoring the internal balance.

Due to such interferences over all efficiency of the body reduces, resulting in the onset of chronic diseases like diabetes due to decreased production and release of insulin by pancreas, hypothyroidism due to decreased productions and release of Thyroid stimulating hormone by pituitary gland, responsible in stimulating thyroid to produce thyroxin, impaired digestion due to impaired production and secretion of various digestive enzymes, so on and so forth.

Due to prolonged storage of toxins, the acid-base balance gets disturbed, and vital internal organs starts decaying and decomposing due to lack of sufficient oxygen, nutrients and essential elements required for repairing and rejuvenating the body cells and tissues. Such situations create congenial environment for bacteria and viruses to feed upon and thrive. These microbes then attack and feed upon the decaying, decomposing and dead cells and tissues of the internal organs resulting in deformation, disfiguration of internal organs, which in turn leads to more severe and life threatening diseases like cancer, kidney failure, liver cirrhosis, HIV/AIDS etc.

In our hurry to get rid of annoying, agonizing and uncomfortable experiences of acute diseases, we weaken our body's natural ability to heal, firstly by suppressing the symptoms through consuming antibiotics and other remedies. Secondly, we continue with our regular daily intake of food, even when there is no hunger. Lack of hunger causes sub-normal, or some time nil production of digestive enzymes and weakens the digestion. So when we take food without feeling hungry, due to the absence of necessary digestive enzymes, the food just stays in the digestive system without being digested. Undigested food would become toxic, is retained in the body for longer periods. Acute diseases are due to the presence of toxins. When we take antibiotics to suppress the acute diseases, we are stopping the elimination of toxins by the body. Retained toxins also hinder the secretion of digestive juices. Digestion is already weak due to improper secretion of digestive juices, even then we keep putting food in our digestive system which never gets a chance to be digested. Undigested food decomposes in the digestive system and generates more toxins. Toxins in turn weaken the body, weakened body is affected by bacteria, Again we take antibiotics to invoke the immunity system to fight against bacteria and the process continues. Such repeated suppression of acute diseases weakens the immunity system, firstly due to the weakening of the entire human body, secondly the antibiotics which are commonly used to kill the bacteria and viruses growing inside the body due to the disturbed acid-base balance, whip the immunity system to over work. It is almost akin to forcing a tired and diseased slave to work more, eventually leading to the death of the slave. Thereafter no amount of whipping can make the slave work. In the case of human immunity system, the collapse of immunity system would eventually lead to the death of the human being through various degenerative and fatal diseases.

Human beings' memory is short, but human body's memory is long

It is a widespread and well established belief that the effects of wrong and unhygienic food and living habits would be felt immediately. It is very hard for us to believe that the impact of our mistakes committed during our childhood days would come to haunt as chronic or fatal diseases once we cross our youthful years of twenties and mid thirties or sometimes even earlier than that age. But that is the reality, because in this age of advanced medical science and technology, since our childhood we take medicines and suppress acute diseases which are body's natural mechanism to eliminate toxins from within. However we forget all about it as we are conditioned to consider each disease state as an independent phase in our life. But for human body all these actions are relevant, interdependent and interconnected. Whenever an acute disease is suppressed, our body stores these toxins in some latent form. As we, are totally unaware of our actions and their consequences, it comes as a shock to us when we learn that we are suffering from a chronic or a fatal disease at a later date. When faced with this painful reality we keep asking ourselves, what did I do to deserve such serious punishment? When or where did I go wrong? But as far as health is concerned we are only to blame ourselves for our poor and deteriorating health.

Hygienic Living – the wise way to health

If we are keen to regain health and be effective and efficient in our day to day activities, the best way is to help the body in its elimination efforts. Given a chance, human body with its amazing capacity of repair and rejuvenation, can restore its internal balance and regain its lost health. Adapting a hygienic living style is the best and surest way to be healthy. Hygienic living involves the following:

Maintaining clean and hygienic sanitation both at home, at work place and also at all public places like schools, hospitals, railway stations, hospitals and even entertainment centres etc. It is very sad but very true even today people have a very poor sense of public hygiene. Due to the strong stigma attached to scavenging, highly educated and high profile people of the society feel it is below their dignity to flush a public toilet after personally using it. They feel that it would hamper their social status and so expect others to clean for themselves. Where as poor people living in many developing countries do not have access to hygienic toilet facilities, they know only open defecation, which does not require flushing. So whenever they happen to access such facilities, due to their ignorance they fail to maintain the facility. Both result in pathetic condition of toilets in almost all public facilities barring few commercially run public places. People fail to realize that unkept public places would affect every individual's health alike irrespective of social, economic status.

Spending enough time in natural lighting and natural ventilation – Getting natural light and natural ventilation have almost become a luxury due to urbanization and industrialisation. It is very difficult to have residences and workplaces which have provision for such facilities. Various studies show that people spend 65 to 90 percent of their time indoors; 65 percent of that time is spent at home. Field studies of human exposure to air pollutants indicate that indoor air levels of many pollutants may be two to five times, and on occasions more than one hundred times, higher than outdoor levels. One should try to spend some time in the early morning outdoors and expose the body to natural light and fresh air. Bathing in the morning sunlight enables body to absorb vitamin D, essential for calcium absorption and retention by the body. Calcium is important for the maintenance of bone health. Breathing fresh air in the morning improves lung power.

Maintaining right posture – sitting and standing with a slumped and slouched posture puts pressure on the upper torso and presses down on abdomen and depresses liver, pancreas, and stomach which in turn causes problems and pains. With a right upright posture these organs function well and lungs also fill up to their full capacity.

Look after the skin health – Skin is outer most organ of our body and has a major role to play in protecting us from vagaries of the extreme weather conditions, from dust and from various harmful bacteria and viruses. Skin can perform its functions at the optimum level only when the pH level of the skin is maintained at 4.7, and skin pores are kept clean and open. Cloths made out of synthetic fibre generally fail to absorb and dry up the

sweat released by the skin, thereby closing up the skin pores, so one should always try to wear cloths such as cotton, or any other material made out of natural fibre, which absorb the sweat and there by keep the pores clean and dry. Cloths always have to slightly loose so that they allow a thin air column in between the surface of the skin and the cloth, thus allowing the skin to dissipate body heat. Body cleansers like soaps and shampoos used to clean up the skin should help in maintaining the skin pH and retain the natural oils secreted by the skin. Skin oils secreted by the sebaceous glands of the skin help in retaining the moisture and there by keep the skin supple, soft and smooth. Many commercially available body cleansers wash away this natural oil, makes the skin dry and vulnerable to the weather resulting in skin rashes, irritation, itching and viral and bacterial infections.

Avoid consumption of nerve stimulants – Consumption of all food items like coffee, tea, cigarettes, tobacco, aerated beverages like soft drinks, and hard drinks like liquor etc, have to be stopped completely. These foods are very low in their nutritive value but are highly addictive (habit forming and lead to compulsive consumption) in nature. They contain compounds like nicotine, caffeine, and alcohol, which stimulate the nervous system. Consumption of such foods on regular basis for long periods weaken the nervous system, leading to not only many health problems like acidity, loss of appetite, weakened digestion, weakened immunity etc, but also lead to many psychological problems like loss of concentration, irritability, depression etc.

Consuming food conservatively – It is a common belief that human body has to be regularly supplied with proteins, carbohydrates, fats, minerals and vitamins available in the form of cereals, pulses, vegetables, meat, poultry products, fish, milk and milk products etc. Though it is true that body requires these nutrients to derive energy to do various physical activities, to repair and rejuvenate body cells, tissues, solid food is only one of the five sources of energy. Water, air, fire and *Akasatva* are the other important sources of energy. There is a gradual progression from the gross to the subtle form of energy. Subtler the source, greater the energy it provides to the human body hence is required in very small quantities. We assimilate earth in the in the form of carbohydrates, proteins, fats, minerals and vitamins available from various plant sources, water available from various water bodies like rivers, lakes etc. and assimilate through digestive system, air by lungs through breathing and sun light through skin. *Akasatva* is present in all other forms of energy in very minute quantities, but we can avail energy from this most subtle and most powerful source through observing continence, meditation and fasting. By overcoming our desire to indulge, by observing discipline, organization, and sincerity in all our activities and thoughts, we will be able to get energy from *Akasatva*.

Human body has to spend some energy and time to assimilate the energy derived from these five sources in to our body. Our body uses less energy in assimilating the energy given by a subtle source and more energy on a gross source. Digestion and assimilation of solid food items like cooked cereals, pulses and fats take more time and energy, whereas uncooked or moderately cooked fresh vegetables, fresh fruits and raw salads require little energy. That is the reason why, it is always advised to:

- eat minimum or moderately and never to over eat when one is healthy,
- totally abstain from solid food and live only subtler sources of energy like water air, sun light and Akasa when suffering from acute diseases. As acute diseases last only

from few hours to maximum two to three days, during this period one can live without consuming solid food.

- live mainly on liquid foods like fruit and vegetable juices, and fruits and raw salads while suffering from chronic and degenerative disease conditions. Because restoring balance in chronic and degenerative disease conditions takes longer time.

Since gross food in the form of cereals, proteins and fats comprises a major part of our energy source, we have to be careful on the quantity and quality of the food, when to eat what type of food, and also how to eat. Starting the day's routine with tea and coffee early in the morning which is a regular feature of every household in the modern society is very bad for health. Stimulants present in tea and coffee would whip the body in to action but in the long run enervate the body. Breakfast should contain only fruits or fresh fruit juices, Lunch and dinner should contain fresh salads prepared from the seasonal green vegetables followed by meals containing conservatively cooked cereals, pulses and fresh vegetables. Each morsel of the food has to be first thoroughly chewed in the mouth, till food becomes a smooth paste and then to be swallowed. Chewing helps in faster digestion and better assimilation of food. Green and raw vegetables in the form of salads provide many micro and trace nutrients like vitamins and minerals that are vital to good health and also the roughage needed by the body. Snacking on fried foods and packaged foods like wafers and other spicy materials have to be avoided completely.

Disease however severe it may be is not the opposite of health, as the modern medicine and science had made us to believe in. Disease is not the cause for disturbance in internal balance, rather it is the solution for restoring the lost internal balance. It is a natural mechanism adopted by human body to expel and eliminate the toxins – the real culprits in disturbing the internal balance. There is no other way to health except hygienic living. It is never too late to adapt hygienic living. Understanding the reason why a disease occurs in the first place and helping body in its effort to recovery and restoration will prove to be successful in overcoming the discomforts caused by disease and be free from the fear of falling sick. We can be masters of our own health and be liberated in the true sense.

Daily Routine to be observed during Acute disease conditions

- Give rest to your digestive system by cutting down your food intake to as minimum as possible. So that body can divert all its energy to eliminate toxins and rebuild the damaged and weakened body parts in to their full capacity.
- Drink plain water, fresh juices of vegetables or fruits juices, once or twice in a day.
- Consume only fresh fruits, fresh raw vegetables (salads).
- Stop putting obstacles in the elimination process by taking pain killers, sedatives, antibiotics, anti-inflammation drugs, antacids etc.
- Give rest to the body from other physical activities to the extent possible.
- Live under natural lighting conditions and in well ventilated areas.

A Recap of the daily routine to be followed

- Chew the food thoroughly and then swallow.
- Consume fresh fruits available in the season, fresh green and leafy vegetables (salads).

- Consume moderately or conservatively cooked food only when hungry.
- Avoid, cut down the consumption of all processed, semi processed food.
- Include food products prepared using whole grains, whole food materials.
- Avoid, cut down on highly refined food products like white rice, refined wheat flour, white sugar, white salt and refined cooking oils so on and so forth.
- Use as much as possible less refined oils.
- Wear cloths which allow skin to breath and dissipate body heat and sweat in to the environment.
- Live as much as possible under natural lighting and in ventilated areas.
- Exercise regularly but with caution, and moderately.
- Maintain hygiene at home, at work place and at all public places.