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## LIFESTYLE INTERVENTIONS IN THE PREVENTION AND TREATMENT OF CANCER—A NON PHARMACOLOGICAL APPROACH

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**Abstract:** People are predisposed to various diseases based on their way of living and occupational habits. They are preventable, and can be lowered with changes in diet, lifestyle, and environment. Lifestyle diseases characterize those diseases whose occurrence is primarily based on daily habits of people and are a result of an inappropriate relationship of people with their environment. The onset of these lifestyle diseases is insidious, they take years to develop, and once encountered do not lend themselves easily to cure. The main factors contributing to the lifestyle diseases include bad food habits, physical inactivity, wrong body posture, and disturbed biological clock. The diet [or lifestyle] of different populations might partly determine their rates of cancer, and the basis for this hypothesis was strengthened by results of studies showing that people who migrate from one country to another generally acquire the cancer rates of the new host country, suggesting that environmental [or lifestyle factors] rather than genetic factors are the key determinants of the international variation in cancer rates.

A growing body of scientific evidence has demonstrated that lifestyle intervention is an essential component in the treatment of chronic disease that can be as effective as medication, but without the risks and unwanted side-effects. Lifestyle Medicine (LM) is the use of lifestyle interventions in the treatment and management of disease. Such interventions include: Diet (nutrition), Exercise, Stress Management, Smoking Cessation, A variety of other non-drug modalities. Ayurveda can contribute a major role in prevention and Treatment of cancer Disease in both pharmacological and non pharmacological way of Treatment. As in non pharmacological measures like Yoga, Pranayama, Asana, Aachar-Rasayana, Aahar, Nidra etc a lot of Life Style intervention in the Prevention and Treatment of Cancer.

**Keywords:** Life style medicine, Yoga, Aachar-Rasayana, food habits, physical inactivity, wrong body posture, and disturbed biological clock

**Introduction:** A report, jointly prepared by the World Health Organization and the World Economic Forum,<sup>[1]</sup> says India will incur an accumulated loss of \$236.6 billion by 2015 on account of unhealthy lifestyles and faulty diet. The resultant chronic diseases-heart disease, stroke, cancer, diabetes and respiratory infections - which are ailments of long duration and slow progression, will severely affect people's earnings. The income loss to Indians because of these diseases, which was \$8.7 billion in 2005, is projected to rise to \$54 billion in 2015.

Among various diseases, cancer has become a big threat to human beings globally. As per Indian population census data, the rate of mortality due to cancer in India was high and alarming with about 806000 existing cases by the

end of the last century. Cancer is the second most common disease in India responsible for maximum mortality with about 0.3 million deaths per year. This is owing to the poor availability of prevention, diagnosis and treatment of the disease. All types of cancers have been reported in Indian population including the cancers of skin, lungs, breast, rectum, stomach, prostate, liver, cervix, esophagus, bladder, blood, mouth etc. The causes of such high incidence rates of these cancers may be both internal (genetic, mutations, hormonal, poor immune conditions) and external or environmental factors (food habits, industrialization, over growth of population, social etc.). In view of these facts, the present article describes the status of various types of

cancers in India and its comparison at global level. Besides, attempts have been made to describe the main causes of cancer along with their preventive measures. In addition to this, efforts have also been made to predict the effect of increasing number of cancer patients on the Indian economy

**Life Style Medicine:** The field of lifestyle medicine has been growing by leaps and bounds over the last two decades. In the 1999 landmark textbook entitled "Lifestyle Medicine," editor James Rippe, MD, expressed the hope it would "open an entire new branch of medicine..."<sup>[2]</sup>

LM is becoming the preferred modality for not only the prevention but the treatment of most chronic diseases, including:

- Type-2 Diabetes
- Coronary Heart Disease
- Hypertension
- Obesity
- Insulin Resistance Syndrome
- Osteoporosis
- Many types of cancer

**Prevalence of Cancer:** Cancer is the uncontrolled growth of cells, which can invade and spread to distant sites of the body.<sup>[3]</sup> Cancer can have severe health consequences, and is a leading cause of death. Lung, prostate, colorectal, stomach, and liver cancer are the most common types of cancer in men, while breast, colorectal, lung, uterine cervix, and stomach cancer are the most common among women. More than 30% of cancer deaths could be prevented by modifying or avoiding key risk factors, especially tobacco use. Early detection, accurate diagnosis, and effective treatment, including pain relief and palliative care, help increase cancer survival rates and reduce suffering. Treatment options include surgery, chemotherapy and radiotherapy, tailored to tumor stage, type and available resources. Comprehensive cancer control plans are needed to improve cancer prevention and care, especially in low-income and middle-income countries.

**Life Style Intervention in Management of Cancer:** A person cannot control certain risk factors such as age, family history or race, but can limit other factors viz body weight, PA, diet, alcohol consumption, smoking or chewing tobacco, that affect the overall risk factor or recurrence of cancer.

**Exercise:** Moderate exercise of 40–60 min 5 days a week can help prevent cancer development by increasing the body's disease fighting response. It has been seen that a 25 min

brisk walk can reduce risk of cancer as much as 18%. Deficiency of vitamin D may lead to early distant metastasis. Hence morning exercise in sun helps in prevention of cancer. Statistically significant higher rate of death has been reported among those who ate large amount of hydrogenated oils than who ate large amount of fruits, leafy vegetables, protein and omega-3 fatty acids. One should choose whole grain breads and cereals, drink 100% fruit or vegetable juices, make sure they are pasteurized. Limit sugary foods but try to eat frequently even if no appetite.

**Diet:** The meal of a cancer patient should be his favorite, appealing may be by adding lemon juice, cherry, tomatoes or other colorful garnishing. Conquer constitution by drinking lot of water and eating high fiber foods like beans, lentils and leafy vegetables, orange juice has been shown to reduce the extent of DNA damage caused by cancer cells.

Protect mouth sores and avoid dry mouth by grinding or pureeing foods. Scrub and rinse the fruit and vegetables thoroughly to avoid diarrhea. Most of the cancer patients quit smoking but they have to remind passive smoking is more injurious to health. Even exposure to chemicals found in some work place, gasoline fumes and vehicle exhaust enhances the risk of cancer, and hence should be avoided. Sour, sugarless hard candy or gum can stimulate saliva flow in patients having xerostomia. Patients should avoid mouth-drying substances such as caffeine, tobacco, and alcohol. Some patients try artificial saliva and mouth-moisturizing products and report relief.

**Stress Management:** Sleep is an important factor in wound healing. Warm almond milk, sleep time snacks may be a better choice than sleeping pills. Supplements of magnesium play a role in regulation of sleep. Always turn off your TV and all bedroom lights. Blue or night light inhibits melatonin secretion which disturbs sleep pattern. Illuminate with red light which is less disturbing. Morning exercise promotes restful sleep, body rhythms and release of growth hormones. Cooler body temperatures are associated with better sleep. Hence avoid late evening working or exercise. Bed room should be clean, no clutter. Put on comfortable loose clothes and extremely comfortable mattress with breathable linen.

Yoga, Pranayam, Meditation, and Manopriya Aahaar Vihaar Nidra (Tri Upstambh of Life) can play better role in Stress management.

**Cession of Bad Hobbies/ Habits:** A patient must stop smoking, Tobacco chewing, pan chewing, alcohol consumption, gul, Tadi Overnight awake etc .and other substance those are injurious to health cancer patient must follow ritucharya to be good health.

**Conclusion:** The main aim of the fight against cancer is to decrease mortality from the disease. This can be achieved by better treatments or by decreasing the incidence of cancer. Treatment of cancer has reached new horizons over the last two decades resulting in cure of several types of cancer, increase in survival of patients living with cancer, and improvement in quality of life. A universal cure for all types of cancer is still not in the foreseeable future.

Decreasing the incidence of cancer can be achieved by modulation of known causes of cancer. In this regard, changes in lifestyle, e.g., adhering to a healthy diet, regular exercise, and avoiding smoking and excessive exposure to UV radiation, can decrease the incidence of cancer.

Yet another way of controlling one's lifestyle that can lead to a decrease in the incidence of cancer is by following medical recommendations related to screening for cancer. That includes screening for breast cancer with mammograms, for cervical cancer with Papanicolaou smears, for prostate cancer with digital rectal examination and serum prostate-specific antigen (PSA). and for colon cancer with colonoscopies.<sup>[4]</sup> Screening can lead to early detection of cancer or precancerous lesions. This is important, because early detection of cancer can lead to early medical intervention and a higher chance of cure. The detection of precancerous lesions can help in preventing the development of cancer by removing these lesions or by starting the affected individual on chemoprevention medications. There is clear evidence that if a breast precancerous lesion is detected, the use of chemoprevention medications may reduce the chance of breast cancer developing in that individual <sup>[5,6]</sup>. Know your genes. Our lifestyle has to accommodate our genes. Over the last decade, many inherited gene mutations that may predispose one to cancer have been discovered. Testing for carrier status of susceptibility genes for breast and colon cancers is commercially available.<sup>[7]</sup>

Those tested and found to be carriers should focus their lifestyle around their susceptibility to that certain cancer and should

seek counseling with regular physician visits and appropriate screening. Additional considerations for such an individual may include chemoprevention and an awareness of the impact of inherited genes on their personal family planning. The U.S. congress recently passed the genetic information nondiscrimination act (GINA law) which protects an individual carrier of an identified genetic mutation from work and insurance discrimination.<sup>[8]</sup> It is hoped that this legislation will result in a wider use of genetic testing for individuals with a strong family history of cancer. While the molecular basis for most cancers is now well known, the inciting process for many has yet to be defined. However, what is clear is that certain controllable human behaviors often may be the trigger mechanism and changes in lifestyle may be one's best protection from becoming another victim of some very preventable diseases.<sup>[9]</sup>

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