

## Food Habits and Cancer Prevention

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To use the language of this digital era, I'll expect the members of today's audience to copy and paste in their brain all that are going to be discussed and subsequently download and communicate these to their near and dear ones. I'm sure this will take us one step ahead in our mission of ushering in a cancer-free world. We want our planet Earth to be cancer-free.

It might seem impossible to eradicate cancer. Let us take the example of small pox. There was a time when small pox used to be considered highly dangerous; many people across the world lost their lives to this disease. Now, small pox has completely been eradicated and this has been possible by the process of prevention alone.

The common concept that cancer is an incurable disease is not wholly correct. With the help of modern gadgets in medical science, we can cure various types of cancer. All cancers are not curable. There are 200 different types of cancer. If these be divided into three categories, each will have nearly 70 types. In the first part of 70 types of cancer, the patients might stay well with the treatment available for a maximum period of 17-18 months. This class has limited treatment.

As for the second category of 70 types of cancer, if treated properly, the patients can be kept well for a decade or even for two decades. These are known as arrestable or controllable cancer. One patient had come to us with the right side

of the face swollen and a drooping right eye. The left side was all normal. He had to be diagnosed from outside as the affected area was located in the upper jaw. This is the cancer of the Maxillary Antrum. If treated properly, the patient can be kept well up to 15-20 years.

In the third category are 70 types of cancer that are totally curable if treated properly. A person with a small ulcer just below the right eye, which turned out to be a cancer, was completely cured on proper treatment. Skin cancer on the face as a result of excessive exposure to UV rays is curable. The person will never have this particular type of cancer again in his lifetime.

So, 70 types of cancer out of 200 are curable. But there is one condition. The diagnosis must be early, followed by immediate start of treatment.

What are carcinogens? These are very dangerous substances which, on entering our body, may cause cancer. The carcinogens may enter through various orifices we have in our body and may even enter through blood. If you are careful enough not to allow these substances to enter your body, you can reduce the chance of cancer to a great extent.

Any type of disease can be fought in two ways. One is the treatment of the disease and another, the prevention of the disease. In the second case, an environment is created in the society that

will not allow the existence of the particular type of disease. You can even create that environment within your body to prevent any attack by a disease. It is well known that prevention is better than cure.

Not all cancers are preventable; 60-65% cancer can be prevented. I'll cite seven points about cancer. These are a) Occupational cancer, b) Radiation-induced cancer, c) Infection and cancer, d) Hormone and cancer, e) Tobacco and cancer, f) Exercise and cancer prevention and g) Diet and cancer. Out of these, only the last point can be discussed in detail; the rest will just be touched upon.

*Occupational cancer:* Sometimes your profession helps you to create cancer. For example, workers in a factory producing aniline dye are susceptible to cancer of urinary bladder. The carcinogen here is aniline. So, you must stay away from aniline.

*Radiation-induced cancer:* There are 5-6 rays in nature which may enter the earth, eventually hit our body and cause cancer. These are UV radiation, X-ray, Gamma ray, cathode rays; in fact, all nuclear rays are carcinogens.

*Infection and cancer:* There are some infections that might cause cancer in the body. For example, a bacterium, *Helicobacter pylori* enters the body through our mouth along with food. These then multiply inside the stomach causing ulcer and the result is stomach cancer.

*Hormone and cancer:* There are a number of hormones in our body. Some hormones are common to both males and females but the sex hormones are different. Males have the sex hormone testosterone which has a normal level in blood. If this level goes above normal and continues to remain in blood for a long period, there is a possibility of prostate cancer. Females have

the sex hormone estrogen which, if accumulated in blood in high level, may lead to breast cancer.

*Tobacco and cancer:* It is a well-established fact that tobacco causes cancer.

*Exercise and cancer:* The more you exercise, the less is the risk of at least 14-15 types of cancer. Proper exercise alone reduces the risk of colon cancer, prostate cancer, breast cancer, rectum cancer, uterus cancer, pancreas cancer and many more. Due to modern lifestyle, the present generation goes without any exercise; there is no movement of hands or feet. This may cause knee problem or heart problem in future. So, go on exercising according to your age. It may be jogging, walking, swimming, cycling, skipping, dancing, etc.

*Diet and cancer:* This is today's topic and will be discussed in detail. This point can be divided into two parts—diet causing cancer and diet preventing cancer.

### **Diet causing cancer**

One culprit in our food is fat. Excess consumption of fatty foods increases the risk of colon, rectum, breast, uterus and prostate cancer. But fat is an essential component of our balanced diet and all fats are not harmful; accordingly, we are to select items. Consumption of any red meat like mutton, beef, pork, ham, etc., may cause cancer; chicken meat is white meat. Scientists are of the opinion that red meat can be taken once in a month and consumption of chicken is allowed 4 times in a month.

Next is storage and preservation of food. Nowadays eating freshly cooked food every day is quite rare; food is stored in refrigerator. Food stored in fridge does not cause cancer but the palatability reduces to a great extent with time. Hence, preservatives

are used to keep the food items fresh for a longer period. One commonly used preservative is sodium nitrate. Packaged food sold in the market contains this preservative. Prolonged consumption of sodium nitrate-added food may lead to cancer of stomach.

Dry fruit or food kept in a container for some time may develop fungal growth. For example, dry maize or dry peas, if stored for long, may develop a greyish or brownish coloration due to a fungus, *Aspergillus flavus*, which contains a carcinogen named aflatoxin. So, one must not consume such food with fungal growth as these may cause liver cancer.

As far as mushroom is considered, most of them reduce the risk of cancer. Scientists, while carrying out research on mushroom, found a mushroom in 2007 that contains carcinogenic substance. This mushroom named *Gyromitra esculenta*, if consumed for a long period, may cause cancer anywhere in the digestive track.

Additives are often used in foods and other substances. These can be colours used to give an attractive look. Some common examples are metanil yellow, malachite green, iron oxide, lead bromate, etc., all of which are carcinogens. Metanil yellow is added to biriyani and also in some snacks and sweets. It is also mixed with turmeric powder.

Another commonly used food additive is monosodium glutamate (*ajinomoto*). W.H.O. has already warned people to minimize its use since it exhibits the carcinogenic nature on occasions and may prove to be a carcinogen in a few years.

Sodium chloride (common salt), if consumed in large excess, may become carcinogen, increasing the risk of esophageal cancer and stomach cancer.

Food items, whether these are vegetarian or non-vegetarian, must be

cooked properly. Care is to be taken to see that no charring occurs on the surface as this char may contain 5-7 carcinogens.

Betel quid (paan), dried tobacco leaf (*dokta*), chewing tobacco (*zarda* and *khaini*), paan masala, tobacco paste (*gudakhu*), etc., are all carcinogenic but betel leaf has medicinal value. Betel leaf alone is helpful but the ingredients used to make paan are carcinogens. Regular consumption of the carcinogen causes oral cancer like tongue cancer, cancer in the inner lining of the mouth cavity, etc.

### **Diet preventing cancer**

Now, I'll discuss about the diet preventing cancer. The first in this list is vitamin C which is found in plenty in various fruits and vegetables. In addition to commonly known sources like lime, green chilli, tomato, mango, jackfruit, pineapple, etc., cucumber is also a good source containing 25% vitamin C in it. Apart from vitamin C, the other anticancer vitamins are vitamin A and E. Vegetables like pumpkin, carrot, etc., contain the pigment carotene that provides large amount of vitamin A, thus reducing the risk of lung cancer. Like carrot, most of the vitamin-rich fruits and vegetables can be eaten raw. Egg, milk and leafy vegetables are good sources of vitamin E.

Next are the minerals. Strong anticancer minerals are selenium, calcium, magnesium, iron, copper and zinc, the strongest being selenium. We get selenium from our daily diet like cooked rice and whole wheat bread. Liver (mutton or chicken) and sea fish are good sources of selenium. Calcium is obtained from milk, sesame, banana and several other sources but the richest source is fish bone. Small fishes have very soft and tender bones which are not separated from the flesh while eating. By eating small fishes twice or thrice a week, we can get huge amount of calcium.

I'll specifically mention three vegetables: onion, garlic and tomato. The red colour of tomato is due to lycopene which is an anti-cancer agent. Regular consumption of red tomato lowers the risk of prostate cancer in males and ovary cancer in females. People with uric acid problem may eat tomatoes after removing the seeds. Both onion and garlic contain the same anti-cancer agent which is allicin. This allicin reduces the chance of cancer anywhere in the gastrointestinal tract.

If an onion be halved, at the end near the root, there is a small compact portion of light cream colour. We usually discard this part which contains 60% of the anti-cancer agent and the remaining 40% is distributed in the rest of the onion. But in case of garlic, allicin is uniformly distributed throughout the entire body.

Omega-3 fatty acid reduces the risk of breast cancer. Walnut and fish oil contain omega-3 fatty acid. It is also found just below the skin of the fish; so it is desirable to eat fish along with the skin.

Next is sterol which reduces the risk of both breast and colon cancer. A good source of sterol is the skin of cucumber which is normally peeled off. So, it is advisable to eat cucumber along with its skin.

### **Drinks**

From diet, I'll move on to drinks. Alcohol may cause cancer anywhere in the digestive tract; tongue cancer due to alcohol consumption is quite common. Cut down on alcohol consumption and stay totally away from country liquor. There is no restriction on tea which is a strong anti-cancer agent, but not coffee. Tea reduces the risk of breast cancer, colon cancer, ovary cancer and lung cancer. But the anti-cancer property of tea is

hampered if tea is mixed with milk. So drink raw tea; green tea is even better.

Bantu is a tribe in Africa. The incidence of cancer is nil or very rare among them. Dr George Oettle, an oncologist, carried out research work on Bantu people in the '60s to know why they are not prone to cancer. Most interestingly, he observed that they normally defecate about 5 hours after their dinner. Normally when we eat, some amount of carcinogen is always produced in our stomach. The more the detention of carcinogens in the body, the more is the risk of cancer. The possible reason of not having cancer among the Bantu tribe is not allowing formation and/or detention of carcinogens like lithocholic acid and deoxy lithocholic acid in the stomach.

Dr Oettle died leaving his research paper incomplete. After his death, his research work was taken up by a famous cancer specialist, Dr Denis Burkitt. For his research, Dr Burkitt went to Uganda where the incidence of cancer was very rare. He started his work with the data provided by Dr Oettle. Dr Burkitt took about four years and a half before declaring that these tribal people do not suffer or very rarely suffer from colon cancer, breast cancer, prostate cancer, uterus cancer and rectum cancer. This is because they include lots of fibre in their food.

We normally throw off the fibres. The fruits and vegetables contain fibres in their skin, whole wheat flour has fibre in the husk; we discard all these. Nowadays use of pesticides for growing crops is very common. So, the pesticide residues are to be removed if we are to consume the skin of fruits and vegetables. For this, the fruits and vegetables are first cleaned in ordinary tap water. These are then dipped in water where a measured quantity of salt

or colourless vinegar has been added. The fruits and vegetables are again washed in tap water. Almost the entire adhered pesticide residue can be removed this way.

At the end, I'll mention that the strongest anti-cancer agent in the world is vitamin C. Depending on the availability, we must include fruits and vegetables containing vitamin C like lemon, jackfruit, *amlaki* (Indian gooseberry), guava, mango, green chilli, etc., in our daily diet.

The three factors which can destroy vitamin C are strong light, heat and oxygen. Ordinary light causes no damage

to vitamin C but direct exposure to sunlight must be avoided. Similarly fruit juices are to be consumed with cold or normal water because heat destroys vitamin C. The third vitamin C killer is oxygen. The more the exposure time to oxygen in air, the more is the loss of vitamin C due to oxidation. Cucumber contains about 25% vitamin C. As we cut it into thin slices, more surface gets exposed to air. Hence the slices must be kept covered and eaten within 10-15 minutes after slicing. By following some such simple precautions, we can prevent loss of vitamin C. ■

\* This article is based on the text of a lecture delivered originally in Bengali by Dr Sankar Kumar Nath, Consultant and Clinical Oncologist, at the Institute's Vivekananda Science Circle on 24 February 2025.

(Continued from page 12)

One is *Shubhāgama pancaka* which was introduced by Vashishtha, Shuka, Sanak, Sanandan and Sanat Kumara. This *Shubhāgama pancaka* is also called *samayamata*. Although generally it is said in the *Tantra shāstra* that you should pierce the six *chakras* and come to the *sahasradala kamala* (the thousand-petalled lotus), it is not all. You must move through *mulādhāra*, *svādhishthāna*, *manipura* and so on.

### Conclusion

Whenever there is trouble in the machine, a mechanic is called because he knows what to do and how to do. But he does not know *why* and if there is any abnormal irregularity in the machine, he is at a loss. Then the service of an expert engineer is needed. He comes, examines the machine and knows all

the exigencies—what has happened and why it has happened. He instructs the mechanic accordingly and then the machine starts functioning again. There lies the difference between a mechanic and an engineer.

By practising '*ajapā Gāyatri*' we can go beyond being a mechanic and become engineers, for then it is in our hands to attain the supreme Brahman. On this sacred day, the *punaryātrā* or the return journey of Lord Jagannatha, crores of people are watching the '*vāmana*' on the *ratha*. We must also have a return journey. Sri Krishna has declared in the *Gītā* (18.61): '*Ishvarah sarva-bhutānām hriddeshe' rjuna tishthati*', 'God resides in the heart of all beings'. Let all of us be conscious of the Supreme Self and not forget that all treasure is within us. Let us be aware of this indestructible truth. ■

\* Late Sitanath Goswami delivered this lecture at the Institute on 11 July 2000. Dr Goswami was former Professor of Sanskrit, Jadavpur University.