



**World Cancer Day is the one singular initiative under which the entire world can unite together in the fight against the global cancer epidemic. It takes place every year on 4 February.**

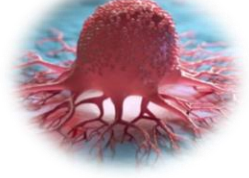
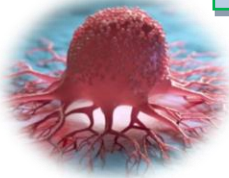
World Cancer Day aims to prevent millions of deaths each year by raising awareness and education about cancer, and pressing governments and individuals across the world to take action against the disease.

**World Cancer Day 2022** is observed on **February 4** which is on Friday, the main goal of World Cancer Day 2022 is to educate and encourage people about cancer disease prevention, early detection, and treatment.

Our Students of Department of Zoology, aimed to boost up the level of knowledge and of awareness about cancer by submitting short articles to know more about Cancer and awareness on **February 4, 2022.**

# AWARENESS OF CANCER

Presented by- Sahin Ali-PG[SEMESTER-I ]



Cancer is dangerous and refers to the diseases that happen as a result of abnormal growth and division of cells. There are several types of cancers, the most common types affecting men are lung, stomach, liver, colon, rectum, oesophagus and prostate cancer, while those commonly affecting women include breast, lung, stomach, colon, rectum and cervical cancer (WHO, 2009).

Knowledge and awareness of cancer is extremely important to effectively detect and treat the disease. Thus, the respondents in the selected locations have awareness and knowledge of cancer. This also examines respondents' knowledge of cancer and cancer screening. Findings reveal that 96% (322 respondents) have heard of cancer and have some knowledge about it. Respondents know that cancer is dangerous and can be fatal, and its cure and treatment are difficult. Only 4% (22) of the respondents have never heard of cancer. More respondents from the urban areas were found to have knowledge of cancer compared to those from other areas.

Cancer awareness is the key to early detection and better health-seeking behaviour. Cancer is quite common in both developing as well as developed countries, but awareness is yet poor among the general population. Poor awareness may lead to poor uptake of screening modalities and delay in diagnosis.

- ❖ The awareness about risk factors of cancer was limited to only tobacco and alcohol. Tobacco was identified as the most common risk factor in most of the studies. Smoking was the most mentioned risk factor followed by tobacco chewing.
- ❖ Common cancers such as oral, cervical, breast and lung cancers are preventable to some extent with appropriate preventive measures. Awareness about the preventability of cancer will affect their practice of preventive measures.
- ❖ For better survival rates of cancer patients, the knowledge and awareness of cancer and its screening are important. Screening leads to early detection and a better chance of survival.
- ❖ Awareness generation campaigns can be a better way to impart information to the communities. Community health education on cancer needs to be emphasised. Proper utilisation of mass media and the internet can be useful in creating awareness.
- ❖ General awareness of cancer was poor among the Indian population; similarly, it was also poor for curability, preventability and screening methods. Education and place of residence (rural or urban) plays a vital role in cancer awareness.

WORLD  
CANCER  
DAY

# AWARENESS OF CANCER IN ACCORDANCE WITH WORLD CANCER DAY

Cancer is a disease in which body's cells grow uncontrollably and spread to the other parts of the body. **4th february** is known as world cancer day. So, let's know some do's and don'ts about cancer.



## Do's of cancer :

- **Exercise often:** Exercise habit is directly related to cancer. Several researcher claimed that exercise can reduce the chance of having cancer by lowering calories and stress which are the main reason to cancer. So, do 30 minutes exercise for at least 3 times a week .
- **Clear your mind:** clearing mind will lower your stress level and will also improve the body's immune system. A healthy mind can lower the chance of having cancer. Practice regular meditation to clear your mind.
- **Eat fruits and vegetables:** vegetables are not only high in antioxidant and fiber ,but also contains dietary cancer chemo preventive such as carotene, lycopene etc. so, eat about 500grams fruits and vegetables per day.

**Have adequate and appropriate nutrition:** consume appropriate proportion of each 5 food group per meal. Avoid grilled, deep fried or pan fried food that are brunt .Avoid red meat and fermented foods also.

## Don'ts of cancer:

- **Don't smoke:** smoking is one of the main causes of lung cancer, larynx cancer ,liver cancer even ovaries cancer .smoke from cigarette contains over 4,000 types of chemicals,60 of which are carcinogenic. So, avoid smoking.
- **Do not drink often:** Drinkers are prone to liver cancer, breast cancer, esophageal cancer. It is recommended not to drink.
- **Don't expose to intense sunlight:** sunlight contains uv rays , which is the main cause for skin cancer. uvB is believed to be the main cancer developing agent. Stay clear from intense sunlight, use long sleeves, eye glasses and a hat to cover sunlight.
- **Do not engage illicit sex:** women who have many sexual partners are more prone to ovarian cancer. So, do not change sexual partner often. Wear appropriate protection while having sex.

# **A BACTERIUM TOXIN BOTULINUM AND ITS THERAPEUTIC EFFECT AS PAIN RELIEFER IN CANCER PATIENTS**

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We recently familiar to a term Botox Therapy, which is very much famous in film industries. It has not only a cosmetical site but also a therapeutic site. There are so many injections under Botox i.e. botulinum toxin, botulinum neurotoxin, abobotulinumtoxin A, rimabotulinumtoxin B, incobotulinumtoxin A etc.

Botox is botulinum toxin, derived from a bacterium named *Clostridium botulinum*, which is a nonsurgical injection, used in cosmetic treatment but in therapeutic focuses Botox can be used in relieving pain. This type of injections are basically sub cutaneous or intramuscular type. In case of cancer patients, mainly patients with breast cancer (20-60%) and patient with neck and brain cancer (30%) experience chronic pain at the particular site of radiation or surgery. Normally this type of post-radiational or post-surgical pains are treated with many topical medicines containing hyaluronic acid, calendula officinalis, trolamine etc. but all these remedies give them a temporary relief.

Botulinum toxin or Botox can be used as pain relief treatment in cancer patients, who complete their chemotherapy. Botox can blocks signals in neuromuscular junction by preventing muscles from contraction and also introduction of BoNT-A can open a tumor vascular bed by inhibiting neurogenic tone in tumor cell line. BoNT can inhibit the release of acetylcholine at neuromuscular junction, which is the main hero behind the pain relief strategy due to muscle spasms. In case of neuropathic pain, the usage of botulinum neurotoxin inhibits the release of neurotransmitter both at sensory and peripheral level. Peripheral injection like botulinum toxinA is used close to peripheral nerve endings, which has an effect in reduction of calcitonin protein release from trigeminal ganglion. It has been also found in an experiment that BoNT can slow the growth and mitotic activity of cancer cell line and induces apoptosis.

There are 2 prominent advantages of using botulinum toxin are:

1. Side effects of usage of this toxin (BoNT-A & BoNT-B) is very lower and safer in comparison to side effects of other potent analgesic agents (opoids).
2. The duration of action of Botox injection at the site of radiation or surgery, lasts for almost 3-6months

Many works about the methodology of BoNT functions are going on but from so many experiments it is clear that there is a neurological effect in reducing pain. So this botulinum toxin can use to get relief from pain after taking radiation in cancer patients.

# The metastatic threat-Cancer

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PG/ZOOL/20/0020  
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The word 'cancer' was coined by the "Father of Medicine", Greek physician Hippocrates (460-370 BC). He used the terms '*carcinos*' and '*carcinoma*' to explain non-ulcer forming and ulcer-forming tumours. In Greek, these words refer to a crab, most likely applied to the disease because the finger-like spreading projections from a cancer called to mind the shape of a crab. Celsus later translated the Greek term into *cancer*. Cancer is nothing but uncontrolled population increment of oncogene activated cells. We all have the cancerous gene but in hibernating inactive form which is called protooncogene. By the altered mutagenic action of some carcinogenic elements such as asbestos, UV rays etc. After activation to oncogene, it results to hike in cell number in a galloping rate. But these carcinogens are not always successful to do its work because our body have many cancers suppressive apoptotic elements like p53. There are mainly three stages of cancer Benign (if tumours don't have any adverse effect in its surrounding tissues), Malignant (if tumours have adverse effect in its surrounding tissues) and Metastatic (migration of malignant cell to other unaffected tissues).

## PROPERTIES OF CANCER CELLS:

- It shows uncontrolled mitotic divisions.
- Due to uncontrolled growth – tumour is formed.
- They are less adhesive than normal cells.
- They exhibit number of alterations.
- Lack differentiation.
- They loss ability to communicate with other cells.
- They lose sensitivity.
- They lose adhesion molecules.
- Lack of contact inhibition.
- Loss of limitations on the number of cell division.
- Ability to grow in culture.
- Angiogenesis.

## TYPES OF CANCER THERAPY

- Surgery
- Radiation therapy
- Chemotherapy
- Immunotherapy
- Targeted therapy
- Stem cell transplant
- Nano particle drug delivery system.

## Stages of Cancer

Stage I cancers are localized to one part of the body; usually curable.

Stage II cancers are locally advanced.

Stage III cancers are also locally advanced.

Stage IV cancers have often metastasized, or spread to other organs or throughout the body.

So, it was an overview on cancer. Last but not the least in the world of carcinogens try to be someone's p53.

# AWARENESS OF CANCER

By Anushka Ghosh, UG 3<sup>rd</sup> semester, 2021-2022



Cancer is very familiar term to us. In cell biology It is a type of cell transformation , where abnormal proliferation of cells occur , so a cell loses its ability to control the cell division. Our body is continuously managing the cell division, regulation process. But when the essential genes do not work properly, then the regulation breaks down. The uncontrolled growth of cells forms tumours. Thus the nature of the cell become cancerous, it spreads throughout the tissues via circulatory system ,it is called METASTASIS.

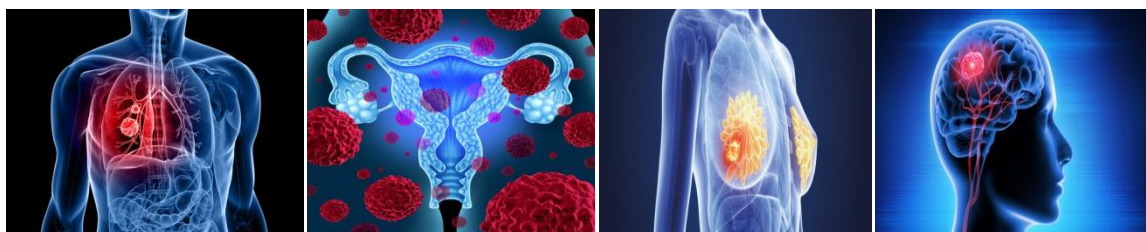
The reason behind cancer is genetic because, In genetic alternation cases , the cancerous , defective gene flows into one generation to another . Thus it arises in the DNA of somatic cells and causes the genetic changes to produce malignant tumours , affecting the good ,healthy tissues of the body.

Depending upon the growth pattern , tumours is of two types: the benign tumour and the malignant tumour. Benign tumours are not very dangerous , it actually indicates the primary symptoms of cancer, like , common skin warts. The malignant tumours are serious one because it is capable to invade or spread within the body , as result , it causes the cancer. The gene related to cancer is called as ONCOGENE.

As it affects all over the body , causes the cancer of breast , ovary , most common in women. Although , there are cancer of lung, brain , colon , kidney, prostate gland, bladder ,blood etc.

Treatments are of various types. Depending upon the stage , the medication and treatment is different. If a patient feels discomfort or any abnormality in their body , they should immediately appoint with doctor . In case of primary stage , it can be curable . But for last stage , it is very difficult to save the life .In most of the cases , the diagnosis shows the last stage , that's why the death rate is very high .

As conclusion , the most important is the treatment, it should be within reach , so all kind of people can do their treatment. Change in lifestyle , food habit can change our health.



Lung cancer

Ovarian cancer

Breast cancer

Brain cancer