

# HealthCare

## Cancer- One of the leading causes of death

**C**ancer is one of the leading causes of death worldwide. A few years back, there were 14.1 million new cases and 8.2 million cancer-related deaths worldwide. The number of new cancer cases per year is expected to rise to 23.6 million by 2030. Cancer is not a single disease but a group of more than 100 different but related diseases. It can develop anywhere in the body. Types of cancer are usually named for the organs or tissues where the cancers form.

### What Is Cancer

Cells are the basic units of the human body. They grow and divide to make new cells and to replace old or damaged cells. Sometimes genetic changes in a cell interfere with this orderly process and abnormal cells are created. Cancer starts when these abnormal cells grow out of control and crowd out normal cells, often forming a mass called a tumour.

As a cancerous tumor grows, the cancer cells may be carried by the bloodstream or lymphatic system to other parts of the body (metastasis), where they grow and may develop into new tumors.

Nowadays, cancer can be treated very well for many people. More and more people than ever before are leading full lives after cancer treatment.

Yet, far too many cancer patients do not get cured and die early. So, it is critical to know how to prevent cancers in the first place.

### Causes and Risk Factors of Cancer

Genetic changes that cause cancer can be inherited from our parents. They can also arise due to damage to DNA caused by certain environmental exposures. Such environmental exposures include substances, such as the chemicals in tobacco smoke, and radiation, such as ultraviolet rays from the sun. Most often, cancer-causing genetic changes accumulate slowly as a person ages, leading to a higher risk of cancer later in life.

Factors that increase the risk of cancer are (1) Cigarette smoking and tobacco use, (2) Infections by certain viruses and bacteria, (3) Radiation – in the form of UV rays from the sun or from diagnostic tests like X-rays and CT scans, or due to radon gas at home, and (4) Medicines that decrease body's immune response (immunosuppressive medicines), usually given after an organ transplant, (5) Diet – diet high in fat, proteins, calories, and red meat, (6) Alcohol, (7) Lack of physical activity, (8) Obesity, (9) Diabetes, (10) Environmental cancer-causing substances (carcinogens) like asbestos, benzene, coal tar, arsenic, etc., (11) Advancing age, (12) Chronic inflammation, (13) Family history of cancer.

### Prevention of Cancer

Here are some ways you can prevent cancer to a large extent:

**Be lean** without becoming underweight. Check your waist measurement as a crude measure of your abdominal fat in men < 37 inches, in women < 31.5 inches. People who are obese may have an increased risk of several types of cancer, including cancers of the breast (in women who have been through menopause), colon, rectum, endometrium (lining of the uterus), esophagus, kidney, pancreas, and gallbladder.

**Be physically active** for at least 30 minutes every day. Break it into 10 to 15 minute slots, if need be.

**Eat a healthy diet**, Avoid sugary drinks, and limit consumption of high calorie foods, especially those low in fiber and rich in fat or added sugar. Eat more of a variety of vegetables, fruits, whole grains, and legumes (such as beans). Limit consumption of red meats (beef, pork, and lamb) to 18 ounces per week and substitute with chicken, seafood, or legumes; avoid processed meats.

These first three healthy behaviours of a healthy diet, being physically active and keeping a healthy weight also lessen the risk of other illnesses, such as heart disease, diabetes, and high blood pressure.

**Avoid or moderate alcohol**

**consumption** – If you drink alcohol, limit your daily intake to two drinks for men and one drink for women. There is no scientific evidence that red wine reduces cancer risk. Alcohol is a known cause of cancer. Regular or heavy consumption of alcohol increases the risk of developing cancers of the oral cavity, throat, voice box, esophagus, liver, breast, colon, and rectum. The risk of developing cancer increases with the amount of alcohol a person drinks.

**Limit consumption of salty foods** and food processed with salt (sodium) to 2.4 g/day.

**Consumption of certain items like tea** (which contains polyphenol compounds like catechins), **antioxidants** (which block free radicals that may damage cells), **calcium**, **vitamin D** may help but have not been conclusively shown to reduce the risk of cancer.

**Lower your risk of infection** with certain viruses and bacteria – by getting vaccinated, not sharing needles, and



not having unprotected sex.

**Treat chronic inflammation** – chronic inflammation can damage DNA and lead to cancer. Take proper anti-inflammatory medication in the form of aspirin or non-steroidal anti-inflammatory drugs for illnesses like chronic inflammatory bowel diseases (Crohn's disease and ulcerative colitis) which carry an increased risk of colon cancer.

**Stop smoking and using tobacco** – not smoking or quitting smoking and tobacco usage lowers the risk of getting cancer of various types like cancer of the blood (leukemia), bladder, food pipe, kidney, lungs, oral cavity, pancreas, and stomach.

**Chemoprevention** – taking one of the following agents may lower the risk of cancer: (a) Selective estrogen receptor modulators (SERMs) like tamoxifen and raloxifene reduce the risk of breast cancer, (b) Finasteride lowers the risk

of prostate cancer, (c) COX-2 inhibitors may prevent breast and colon cancer, (d) Aspirin may prevent colorectal cancer.

It's best for mothers to **exclusively breastfeed their babies for up to six months** and then add other liquids and foods.

**Regular Screening** – regular screening can detect cancer in its early stages when it is curable. For instance, yearly mammography (for breast cancer), colonoscopy, sigmoidoscopy and fecal occult blood tests (for colorectal cancer), Pap smear (for cervical cancer), CA-125 test (for ovarian cancer), PSA test (for prostate cancer), etc.

**Risk-reducing surgery** – for instance, polypectomy, mastectomy, removal of ovaries and fallopian tubes, etc.

**Prevention and adequate control of diabetes** – diabetes slightly increases the risk of having many cancers like that of bladder, breast, liver, lung, pancreas, oral cavity, etc. Hence its prevention and control can ward off cancer.

## PREGNANCY LOSS: WHY AND WHAT NEXT??

ADVERTORIAL

The spontaneous loss of a woman's pregnancy before the 20th week (also known as abortion or miscarriage) can be both physically and emotionally painful. Approximately 12-15% of all clinically recognized pregnancies end in miscarriage; out of which 30-60 % will end within the first 12 weeks of gestation. After a miscarriage, it's understandable that the couple would want to know why it happened and what might be done to stop it from happening again.



### Causes:

- Most pregnancy losses result from chromosomal or genetic abnormalities, and are random events. The abnormality may come from the egg, the sperm, or the early embryo.
- Advancing maternal age is associated with an increased risk of miscarriage, which is thought to be due to poor egg quality leading to chromosomal (genetic) abnormalities. Sometimes, couple themselves may have a slight abnormality in their genes, but the offspring could be more severely affected resulting in miscarriage.
- Abnormalities of the womb (uterus) like septate uterus, double uterus, multiple fibroids, endometrial scarring, incompetent cervix could lead to miscarriage.
- Immunological problems like SLE, APLA syndrome, Autoimmune disorders.
- Endocrine abnormalities like PCOS, thyroid disorders, diabetes, elevated prolactin level.
- Blood clotting disorders.

### Risk factors:

Certain factors increase the chances of having a miscarriage in pregnancy.

### They are :-

- History of having two or more previous miscarriages
- 35 years or older.
- Extremes in weight, such as obesity or being too thin
- Smoking, excessive caffeine consumption or alcohol drug abuse.
- Being exposed to harmful chemicals/solvents/environmental toxins

### Testing after miscarriage:

If a woman has two miscarriages in a row, the couple need to be evaluated. This should happen whether or not the couple already have one or more children.

First the fertility specialist will take a detailed medical, surgical, family, and genetic history and perform a physical examination. Investigations are advised for evaluation.

### Example:-

- To check parental genetics.
- To check uterine factors by scan / MRI / X-ray.
- To check ovarian factors by scan / hormonal test.
- To check for any endocrine abnormalities by blood tests.
- To check for immunological disorders by screening tests.

### Treatment:

- IVF with PGS (Pre-Genetic screening): Biopsy from embryos formed after IVF is sent for genetic testing to identify a genetically normal embryo that can be transferred to have a successful pregnancy outcome.
- Correction of hormonal problems. Example : PCOS / thyroid disorders / diabetes.
- Surgical intervention (Laparoscopy/operative Hysteroscopy) for uterine abnormalities- Example:- Myomectomy / septal resection / Polypectomy
- Immunological problems-blood thinning medications like Ecosprin & Heparin are given during pregnancy.

No matter what the results of the work-up are, the chances of having a successful next pregnancy is high with right diagnosis and right management.



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## CANCER CAN EVEN AFFECT EYES AND HEART

There are hundreds of types in Cancer. It affects many organs in the body and it is not a surprise that Cancer can also affect eyes and heart. Cancer first begins in cells. Our body is made of many cell lumps that together form tissues. Usually, old cells die and new cells are born in our body but if there is imbalance in this natural process, it leads to lumps which are designated as Malignant tumours or cancer. These spread into blood circulation and then through lymph nodes they affect all parts of the body. This phenomenon of proliferation is also termed Metastasis.

Although there may be no conclusive reason, certain viruses, weakened immune system, genetic reasons, one's habits, lifestyle, surrounding environment as well as age are some of the factors that causes cancer. It may be due to changes in chromosome, DNA, Proteins or enzymes but the exact cure for such cancers is still not established.

Termed as Angiogenesis, it affects blood circulation, reduces oxygen supply for blood and results in uncontrolled blood vessels. The best way to address cancer is prevention rather than cure. If it is identified in the initial stages, it becomes easier to address cancer. However, rapid advances in diagnosis, treatment and cure offers a lot of hope. There is a vaccine now to prevent cervical cancer along with advanced screening tests.

Although there may be no visible symptoms in healthy individuals or those with risk factors, cancer may arise due to genes, smoking, alcohol, and the profession of individuals. Screening tests are those that helps in early identification of the condition. Mammogram for Breast Cancer, Pap Smear test for Cervical cancer and tests for Colon Cancer and Prostate cancer are some of the examples.

There are many among us who are usually apprehensive of hospitals and health checkups. Some feel it involves unnecessary costs and unnecessary tests. Cancer cells are highly sensitive, minute and they manifest differently in each individual. Hence, customized treatments for cancer is common these days. It is also called targeted or personalized treatments. The size of cancer, its proliferating capacity, stage, the exact lymph nodes it has affected, the parts of body affected, age of the patient and other health

ailments of patients are the factors considered during the process of diagnosis and treatment. The diagnosis and treatment depend on the organ affected. Usually X-ray, biopsy, Ultrasound are the tests done followed by CT scan, PET scan, MRI tests etc., that helps in identifying the stage and size of cancer.

AFP (Alfa Feto Protein)  
This protein concentration is high in those suffering from Liver cancer.  
CA 15.3  
This blood marker level is high in blood cancer  
CA 19.9  
The level is high in gastric and pancreatic cancers.  
CA 125  
Indicates the presence of reproductive cancers in women  
CEA (Carcinocimbronic Antigen)  
Used in identifying digestive, colon and rectal cancers  
DR-70  
Useful in identifying 13 forms of cancers  
PET (Positron Emission Tomography)  
Indicates the metabolic rate of cancer cells and which organ the cancer has spread to. Cancer cells consume more glucose than normal cells  
Endoscopy  
By inserting a small tube, it helps in analysis of organs internally especially during Colonoscopy, Nasal endoscopy etc.  
PSA  
Indicates Prostate Cancer in Men  
Cancer cannot be diagnosed by one method alone. Hence, it is important to be aware of the symptoms involved right from beginning. Changes in urination and defecation pattern, loss of appetite and weight, wounds that don't heal, lump formation, regular fever, severe tiredness, and menstruation changes in women are all advanced hints of cancer.

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**BREAST CANCER AWARENESS MONTH**

## TOGETHER, LET'S FIGHT THIS MENACE

On the occasion of World Breast Cancer Awareness Month, I would like to take this opportunity to shed some light and impart awareness on the severity of Breast Cancer. Breast cancer is by far the most common cancer in women worldwide, both in the developed and developing countries. There are about 1.38 million new cases and 4,58,000 deaths from Breast Cancer each year (as per World Health Organization). The risk of breast cancer increases with age. Women who carry certain mutations have a higher chance of developing breast cancer. Due to the lack of awareness, majority of the cases are being diagnosed in advanced stages. It is the need of the hour to spread awareness.

The last two decades have seen tremendous advancement in cancer care, and the mortality rates due to breast cancer have significantly reduced. With the new and advanced techniques of Breast reconstruction, women cannot only be disease-free but also live a socially active and fulfilling life. The new age Cancer Management involves a holistic approach to cancer care, not just increasing the longevity but also the quality of life of Women.



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**BE AWARE & CREATE AWARENESS**  
**WORLD BREAST CANCER MONTH - 2020**

Our choices and actions have the power to protect the most valuable among us in a big way. With your support, we can show every woman that her life is important. By working together, we can inspire hope and become a force for good "to get her" access to the care she needs.

**TECHNOLOGY & INFRASTRUCTURE**

<b>Radiation Oncology</b>	<b>Nuclear Medicine</b>	<b>Medical Oncology</b>	<b>Surgical Oncology</b>
• IGRT	• Whole Body	• Chemotherapy for Adults & Paediatrics	• Minimally Invasive Surgery
• IMRT	• FDG PET-CT	• Targeted Immuno Therapy	
• VMAT	• 18F Bone Scan	• Hormone Therapy	
• SRS/SRT/SBRT	• Neuro PET		
• 3DCRT			
• Brachytherapy			
• Electron Therapy			

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