Frequently Asked Questions

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Cancer *– the word cancer itself causes fear and anxiety in many people.*

What we must realize that many cancers can be diagnosed earlier by simple techniques.

The factors that cause these cancers, many of them can be easily prevented.

In this booklet, you will find a few common queries with respect to cancer - followed by we have explained the common cancers - along with its causes, symptoms, early detection & treatment.

Do feel free to call us in the numbers provided, if you need to know more.

Remember ***"Prevention is always better than Cure"***

Common Questions on cancer

1. What is cancer?

Cancer is a disease caused by an uncontrolled division of abnormal cells in any part of the body.

Cancer can start in any place in the body. It starts when cells grow out of control and crowd out normal cells. This makes it hard for the body to work the way it should. There are many types of cancer. Cancer can start in the lungs, the breast, the colon, or even in the blood.

The cells in our bodies all have certain jobs to do. Normal cells divide in an orderly way. They die when they are worn out or damaged, and new cells take their place.

Now when the same cells grow out of control they crowd out normal cells. This causes problems in the part of the body where the cancer started.

2. What are the types of cancer?

Cancers are often described by the body part that they originated in. However, some body parts contain multiple types of tissue, so for greater precision, cancers are additionally classified by the type of cell that the tumor cells originated from. These types include:

- Carcinoma: Cancers derived from epithelial cells. This group includes many of the most common cancers and include nearly all those in the breast, prostate, lung, pancreas and colon.
- Sarcoma: Cancers arising from connective tissue (i.e. bone, cartilage, fat, nerve).
- Lymphoma and leukemia: These two classes arise from hematopoietic (blood-forming) cells that leave the marrow and tend to mature in the lymph nodes and blood, respectively.

Let us look at a few examples:

I. Cancers are named using *-carcinoma*, *-sarcoma* or *-blastoma* as a suffix, with the Latin or Greek word for the organ or tissue of origin as the root.
   - cancers of the liver parenchyma arising from malignant epithelial cells is called hepato cellular carcinoma,

- while a malignancy arising from primitive liver precursor cells is called a hepatoblastoma.

II. For some common cancers, the English organ name is used.
Like for example:
- The most common type of breast cancer is called ductal carcinoma of the breast. Here, the term *ductal* refers to the milk ducts of the breast.

III. Benign tumors (which are not cancers) are named using *-oma* as a suffix with the organ name as the root.
For example:
- a benign tumor of smooth muscle cells is called a leiomyoma.
(The commonly known as fibroid).

IV. Some types of cancer are named for the size and shape of the cells under a microscope.
For example:
- Giant cell carcinoma, spindle cell carcinoma and small-cell carcinoma.

3. Can any person including children get cancer?

Yes anyone can get cancer as some cancers are genetic while others are related to some other causes.

4. What are the Common cancers (In India)?

Cancer of lip and oral cavity has emerged as the deadliest among **Indian** men while for **Indian** women, it is breast cancer.

The most common **cancers** in men are:

1. lip/oral cavity,
2. lung,
3. colorectum,
4. prostate &
5. pharynx.

While among women most common **cancers** are:

1. breast,
2. cervix,
3. colorectum,
4. ovary &
5. lip/oral cavity.

5. What are the causes of cancer?

Cancer is a generic term for a large group of diseases with many possible causes that can affect any part of the body. Other terms used are malignant tumours and neoplasms. One defining feature of cancer is the rapid creation of abnormal cells that grow beyond their usual boundaries, and which can then invade adjoining parts of the body and spread to other organs, the latter process is referred to as metastasizing. Metastases are the major cause of death from cancer.

Cancer can be caused by variety of physical, chemical and biological carcinogens

Common risk factors that contribute to cancer include:

- Tobacco /Alcohol use
- Unhealthy Diet and obesity
- Certain types of infections
- Environmental pollutants
- Excessive Radiation exposure
- Lack of physical activity.

6. What is the treatment of cancer?

There are many types of cancer treatment. The types of treatment that you receive will depend on the type of cancer you have and how advanced it is.

The main types of cancer treatment include:

1. **Surgery:**

   Usually the "cancer affected "part is removed/ excised along with the neighboring structures- if invaded.

2. **Radiation Therapy:**

   This type of treatment uses high energy particles or waves to destroy or damage cancer cells. Radiation can be given alone or along with other treatments such as surgery / chemotherapy.

3. **Chemotherapy:**

   Chemotherapy is the usage of chemicals (medicines) to treat (by destroying or damaging) cancer cells.

4. **Immunotherapy:**

   Immunotherapy is a form of treatment that uses the body's immune system to fight the cancer which can be done in a few ways depending on the choice of your physician such as : stimulating your own immune cells to attack the cancer cells or giving you immune system components (man-made proteins).

5. **Hormone Therapy:**

   Hormone therapy is using systemic (whole body) treatment for hormone receptive cancers such as breast cancer.

6. **Stem Cell Transplant:**

   Stem cell transplant is a type of treatment used for certain kinds of cancer such as leukemia and multiple myeloma. Bone marrow contains the haematopoitic stem cells which are used in the treatment.

   Some people with cancer will have only one treatment. But most people have a combination of treatments, such as surgery with chemotherapy and/or radiation therapy. When you need treatment for cancer, you have a lot to learn and think about. It is normal to feel overwhelmed and confused. But, talking with your doctor and learning about the types of treatment you may have can help you feel more in control.

7. **What are the common symptoms of cancer?**

   The signs and symptoms of cancer will depend on where the cancer is, how big it is, and how much it affects the organs or tissues. If a cancer has spread (*metastasized*), signs or symptoms may appear in different parts of the body.

   In some cases as the cancer grows, it may push the nearby blood vessels or organs thereby causing pressure symptoms. Where as in other cancers, it may not cause any symptoms till it increases significantly in size.

Treatment works best when cancer is found early – while it's still small and is less likely to have spread to other parts of the body.

Some general signs any symptoms of cancer are:

- Unexplained weight loss
- Lumps in the body
- Irregular bleeding
- White patches in the mouth
- Ulcers that do not heal
- Persistent irregular bowel habits
- A nagging cough or hoarseness that won't go
- Warts / moles that grow

8. Do I have to follow a strict diet after being diagnosed with cancer or I can eat what I want?

While many dietary recommendations have been proposed to reduce cancer risks, the evidence to support them is not definitive.

The primary dietary factors that increase the risk of cancers are high fat diet & alcohol consumption. Diets low in fruits and vegetables and high in red meat have been implicated. Studies have linked excess consumption of red or processed meat to an increased risk of breast cancer, colon cancer and pancreatic cancer, a phenomenon that could be due to the presence of carcinogens in meats cooked at high temperatures.

Dietary recommendations for cancer prevention typically include an emphasis on vegetables, fruit, whole grains and fish and an avoidance of processed and red meat (beef, pork, lamb) animal fats and refined carbohydrates

9. Can stress cause cancer?

Although stress can cause a number of physical health problems, the evidence that it can cause cancer is weak. Some studies have indicated a link between various psychological factors and an increased risk of developing cancer, but others have not.

Apparent links between psychological stress and cancer could arise in several ways. For example, people under stress may develop certain behaviors, such as smoking, overeating, or drinking alcohol, which increase a person's risk for cancer. Or

someone who has a relative with cancer may have a higher risk for cancer because of a shared inherited risk factor, not because of the stress induced by the family member's diagnosis.

10. Is cancer contagious?

NO, cancer is NOT contagious.

A healthy person cannot "catch" cancer from someone who has it. There is no evidence that close contact or touching, sharing meals, or breathing the same air can spread cancer from one person to another.

11. Are cancers hereditary? What do you mean by genetically link cancers?

Yes, some cancers are genetically linked and may run in families but not all the cancers are hereditary.

Cancer is such a common disease that it is no surprise that many families have at least a few members who have had cancer. This is because family members have certain risk factors in common, such as smoking, which can cause many types of cancer. It can also be due to other factors, like obesity, that tend to run in families and influence cancer risk. But most cancers are not clearly linked to the genes we inherit from our parents.

Some features of genetically linked cancers are:

1. Cancers occurring at younger ages than usual (like colon cancer in a 20 year old).

2. More than one type of cancer in a single person (like a woman with both breast and ovarian cancer).

3. Cancers occurring in both of a pair of organs (both eyes, both kidneys, both breasts).

4. More than one childhood cancer in a set of siblings (like sarcoma in both a brother and a sister).

12. Genetic Testing: What You Need to Know.

Genetic testing can be useful for people with certain types of cancer that seem to run in their families, but these tests aren't recommended for everyone.

13. What is genetic testing?

Genetic testing is the process of using medical tests to look for changes (mutations) in a person's genes or chromosomes.

Hundreds of different genetic tests are used today, and more are being developed. The type of testing most often used to check for cancer risk is called **predictive gene testing**. It is used to look for gene mutations that might put a person at risk of getting a disease.

It's usually done in families with a history that suggests there's a disease that may be inherited.

- An example is testing for changes in the BRCA1 and BRCA2 genes (known breast cancer genes) in a woman whose mother and sister had breast cancer.

14. How is cancer diagnosed?

Most cancers are initially recognized either because of the appearance of signs or symptoms or through screening. But neither of these lead to a definitive diagnosis, which requires the examination of a tissue sample by a pathologist. People with suspected cancer are investigated with medical tests.

These commonly include blood tests, X-rays, Ultra sonography, Mammography, CT scans, Endoscopy / Colonoscopy etc.

15. Which cancers can be detected early?

Some cancers can be found early, before they have had a chance to grow and spread

- Breast Cancer
- Cervical Cancer
- Oral / Lung Cancer
- Colorectal Cancer
- Prostate Cancer

16. What is screening?

Cancer screening involves efforts to detect pre-malignant conditions in the body (i.e. conditions which may proceed to cancer if not treated). It also involves detecting cancers after it has formed, but before any noticeable symptoms appear (Unlike diagnostic efforts prompted by symptoms and medical signs). This may involve physical examination, blood or urine tests or medical imaging.

Cancer screening is not available for all types of cancers. Several factors are considered to determine whether the benefits of screening outweigh the risks and the costs of screening.

The recommendations for various cancers screening are:

- Breast Cancer screening for all women above the age of 30 years with (Clinical Breast Examination, self Breast Examination and Mammography for women above 50 years of age.
- Cervical cancer screening in women who are sexually active .
- Oral cancer screening in tobacco users.
- Screening for colorectal cancer via fecal occult blood testing, sigmoidoscopy, or colonoscopy with indicative symptoms of colon cancer or in a family history of cancer.

17. What are pre-cancers?

Having a pre-cancerous/ pre-malignant conditions doesn't mean that you have *cancer*, or that you will definitely develop *cancer*. But *pre*-cancerous conditions are diseases or symptoms that might develop into a *cancer*, so it's important to monitor your health.

18. Can cancers be cured? Can pre cancer be cured?

The cure rates for the cancers depend upon the type of cancer and the stage at which it is detected. With the advancement of medical technology the cure rates for cancer has increased significantly. Pre cancers usually can be cured completely.

19. Can cancer recur?

Yes, there's always a chance that can recur. But with proper medical attention and a good lifestyle the progression of the disease can be controlled.

20. How is cancer treated?

Many treatment options for cancer exist.

The primary ones include:

- Surgery
- Chemotherapy
- Radiation therapy

- Hormonal therapy
- Palliative care.

Which treatments are used depends on the type, location and grade of the cancer as well as the patient's health and preferences.

21. What are the side effects of cancer treatment?

Cancer treatments can cause side effects—problems that occur when treatment affects healthy tissues or organs. Side effects vary from person to person, even among those receiving the same treatment. Some people have very few side effects while others have many.

The type of treatment(s) you receive, as well as the amount or frequency of the treatment will depend on your age, and other health conditions.

Before you start treatment, ask your health care team what side effects you are likely to have. Learn about steps you can take, as well as supportive care that you will receive, to lessen side effects during and after treatment. Do talk about any side effects you have and changes you notice, so your health care team can treat or help you manage them.

Common side effects caused by cancer treatment include:

- Anemia
- Appetite Loss
- Bleeding and Bruising (Thrombocytopenia)
- Constipation
- Delirium
- Diarrhea
- Edema
- Fatigue
- Hair Loss (Alopecia)
- Infection and Neutropenia
- Lymphedema
- Memory or Concentration Problems
- Mouth and Throat Problems
- Nausea and Vomiting
- Nerve Problems (Peripheral Neuropathy)

- Pain
- Sexual and Fertility Problems (Men)
- Sexual and Fertility Problems (Women)
- Skin and Nail Changes
- Sleep Problems
- Urinary and Bladder Problems

21. Is taking the treatment (chemotherapy / radiation) worse than the disease itself?

It's often only after the treatment begins that people start to feel sick. It's also true that chemo, radiation, and surgery can cause side effects. But these fade after the treatment is over, and the treatment can be life-saving for many people.

A person who is thinking of refusing cancer treatment should talk with the doctor to clearly understand the likely outcomes of both treatment and non-treatment before making a decision.

If cancer is allowed to progress without treatment, the existing symptoms get worse and new symptoms build up over time. Symptoms differ based on the type of cancer and the locations to which it spreads. Later in the course of cancer, when more serious symptoms start, curative treatment may not be an option. Cancer kills by invading key organs (like the intestines, lungs, brain, liver, and kidneys) and interfering with body functions that are necessary to live. If left untreated, cancer commonly causes death.

In contrast, cancer treatment often saves lives – especially when cancer is found and treated early. Even when it can't cure the cancer, treatment can often prolong life. And medical care can always be used to help make a person more comfortable by reducing pain and other symptoms. It's important that a person knows the goal of each course of treatment, and makes informed decisions throughout the cancer experience.

22. Can cancer be prevented?

Cancer prevention is defined as active measures to decrease cancer risk. The vast majority of cancer cases are due to environmental risk factors. Many of these environmental factors are controllable lifestyle choices. Greater than 30% of cancer deaths could be prevented by avoiding risk factors including: tobacco, excess

weight/obesity, insufficient diet, physical inactivity, alcohol, sexually transmitted infections and air pollution. Not all environmental causes are controllable, such as naturally occurring background radiation and cancers caused through hereditary genetic disorders and thus are not preventable via personal behavior. Screening of the common cancers can also reduce the risk of those cancers.

23. Are there any vaccination for cancer?

There is no single vaccine that can protect against all types of cancers.

Most of the cervical cancers are associated with chronic genital infection with Human Papilloma Virus. There are many genotypes of HPV viruses with varying grades of oncogenic potential (i.e. potential to cause cancers). HPV- types 16 and 18 are the most common oncogenic viruses responsible for cervical cancers. 2 vaccines, namely the Cervarix and Gardasil, have been developed that prevent the genital infection with HPV and hence appear to reduce the incidence of cervical cancers. The American College of Obstetricians and Gynaecologists recommends that HPV vaccination be offered to all female patients aged between 9 and 26 years who have not been previously vaccinated.

The vaccine dose is 0.5 mL given intramuscularly, either in the deltoid muscle or in the antero-lateral thigh. A total of three doses at 0, 2 and 6 months are recommended with Gardasil™ or 0, 1 and 6 months with Cervarix™ (minimum interval of 4 weeks between the first and the second dose, 12 weeks between the second and third dose and 24 weeks between the first and third dose). At present, there is no data to support the use of boosters.

Both vaccines available are equally efficacious and safe for protection against cervical cancer and precancerous lesions as of currently available data. The Gardasil vaccine has, in addition, demonstrable efficacy against vaginal and vulvar cancers and protects against anogenital warts.

It must be kept in mind that Vaccines are NOT 100% protective against cervical cancer and so NOT a replacement for periodic screening. Hence, women should continue her regular screening inspite of the vaccination status.

The hepatitis B vaccine prevents infection with hepatitis B virus and thus decreases the risk of liver cancer.

Common Questions on Breast Cancer

1. **What is breast cancer?**

   Breast cancer is a disease in which malignant (cancer) cells form in the tissues of the breast. The damaged cells can invade surrounding tissue, but with early detection and treatment, most people continue to lead a normal life.

2. **What are the symptoms of breast cancer?**

   It is important to know how the normal breast feels for you to understand the abnormal findings, so it is important to talk to your doctor/ health care professional about it.

   However following are the signs/ symptoms of breast cancer:

   - The most common signs of breast cancer is a lump (swelling).

     A painless, immovable, hard lump is more likely to be a cancerous lump. But cancer lumps can be soft, tender with restricted mobility. It is important for every woman with a lump to be examined by doctors.
   - Other possible signs of breast cancer are :

     a) Swelling in the axilla (arm pit)

     b) Swelling above the collar bone

     c) Thickening in the breast

     d) Recent inversion of the nipple

     e) Recent retraction of the nipple

     f) Dimpling of the skin of the breast.

     g) Nipple discharge (other than milk)

3. **What are the risk factors for breast cancer?**

   - **Gender:** Breast cancer occurs nearly more often in women than in men.
   - **Age (NCR):** in the age group following are the percentages of diagnosed cancers

     a) 20-30

     b) 30-40 :16 %

     c)40-50 : 28%
   - **Family History and Genetic Factors:** If your mother, sister or child has been diagnosed with breast or ovarian cancer, you have a higher risk of being

diagnosed with breast cancer in the future. Your risk increases if your relative was diagnosed before the age of 50.

Certain inherited genes: About 5% to 10% of breast cancer cases are thought to be hereditary, meaning that they result directly from gene defects (called *mutations*) passed on from a parent.

BRCA1 and BRCA2: these are genes, the most common cause of hereditary breast cancer is an inherited mutation in the *BRCA1* and *BRCA2* genes.

In normal cells, these genes help prevent cancer by making proteins that help keep the cells from growing abnormally. Mutated versions of these genes cannot stop abnormal growth, and that can lead to cancer.

- If you have inherited a mutated copy of either gene from a parent, you have a higher risk of breast cancer and ovarian cancer.
- In some families with *BRCA1* mutations the lifetime risk of breast cancer is as high as 80%, but on average this risk seems to be in the range of 55% to 65%. For *BRCA2* mutations the risk is lower, around 45%.
- Breast cancers linked to these mutations are more often found in younger women and more often in both the breasts than cancers not linked to these mutations. Women with these inherited mutations also have a higher risk of developing other cancers, mainly ovarian cancer.

- **Personal Health History:** If you have been diagnosed with breast cancer in one breast, you have an increased risk of being diagnosed with breast cancer in the other breast in the future. Also, your risk increases if abnormal breast cells have been detected before (such as atypical hyperplasia, lobular carcinoma in situ (LCIS) or ductal carcinoma in situ (DCIS)).
- **Menstrual and Reproductive History:** Early menstruation (before age 12), late menopause (after 55), having your first child at an older age, or never having given birth can also increase your risk for breast cancer.
- **Dense Breast Tissue:** Having dense breast tissue can increase your risk for breast cancer and make lumps harder to detect.

- **Environmental and Lifestyle Risk Factors** :
    - **Lack of Physical Activity:** A sedentary lifestyle with little physical activity can increase your risk for breast cancer.

- **Poor Diet:** A diet high in saturated fat and lacking fruits and vegetables can increase your risk for breast cancer.
- **Being Overweight or Obese:** Being overweight or obese can increase your risk for breast cancer. Your risk is increased if you have already gone through menopause.
- **Drinking Alcohol:** Frequent consumption of alcohol can increase your risk for breast cancer. The more alcohol you consume, the greater the risk.
- **Radiation to the Chest:** Having radiation therapy to the chest before the age of 30 can increase your risk for breast cancer.
- **Combined Hormone Replacement Therapy (HRT):** Taking combined hormone replacement therapy, as prescribed for menopause, can increase your risk for breast cancer and increases the risk that the cancer will be detected at a more advanced stage.

4. Can breast cancer spread?

Yes, it can spread in three important ways:

- Damaged cells replicate, creating more damaged cells and tumor growth.
- Our body's hormones and chemicals can accelerate the growth of some tumors.
- Lymph and blood vessels can carry the cancer to others areas of the body and lymph node examination can help pinpoint the progression of the disease.

5. Can breast cancers be detected earlier? If so how?

There is no sure way to prevent breast cancer. But there are things all women can do to help reduce their risk and help increase the odds that if cancer does occur, it will be found at an early, more treatable stage.

- Self breast examination.
- Clinical Breast Examination by doctors.
- Screening Mammography
- Lowering your risk :
    - You can lower your risk of breast cancer by changing those risk factors that can be changed.
    - Body weight, physical activity, and diet have all been linked to breast cancer, so these might be areas where you can take action.

- Alcohol also increases risk of breast cancer. Even low levels of alcohol intake have been linked with an increase in the risk.
- Many studies have shown that moderate to vigorous physical activity is linked with lower breast cancer risk.
- A diet that's rich in vegetables, fruit, poultry, fish, and low-fat dairy products has also been linked with a lower risk of breast cancer in some studies. But it's not clear if specific vegetables, fruits, or other foods can lower risk. Most studies have not found that lowering fat intake has much of an effect on breast cancer risk.

- <u>For women who are or may be at increased risk</u>

  If you are a woman at increased risk for breast cancer (for instance, because you have a strong family history of breast cancer, a known genetic mutation of a *BRCA* gene (*BRCA1* or *BRCA2*), or you have had DCIS (Ductal Carcinoma In Situ), LCIS (Lobular Carcinoma In Situ), or biopsies that have shown pre-cancerous changes, there may be some things you can do to help reduce your chances of developing breast cancer. Before deciding which, if any, of these may be right for you, talk with your health care provider/ doctor to understand your risk and how much any of these approaches might lower this risk.
- <u>Genetic testing for BRCA gene mutations</u>

  Having an inherited mutation in one of the *BRCA* genes greatly increases a woman's risk of getting breast cancer (and some other cancers). Many women may have relatives with breast cancer, but in most cases this is not the result of *BRCA* gene mutations. Genetic testing for these mutations can be expensive, and the results are often not clear cut. Testing can have a wide range of consequences that need to be considered. It should only be done when there's a reasonable suspicion that a mutation may be present.
- For the few women who have a very high risk for breast cancer, surgery to remove the breasts or ovaries may be an option.
- Preventive (prophylactic) mastectomies: Removing both breasts before cancer is diagnosed can greatly reduce the risk of breast cancer. Some women diagnosed with cancer in one breast choose to have the other, healthy breast removed as it can help prevent a second breast cancer. Breast removal does not completely prevent breast cancer because even a very careful surgeon

can leave behind at least some breast cancer cells, which might go on to become cancer.

Some of the reasons for considering this type of surgery may include:

- Mutated *BRCA* genes found by genetic testing
- Strong family history (such as breast cancer in several close relatives)
- Lobular carcinoma in situ (LCIS) seen on biopsy
- Previous cancer in one breast (especially in someone with a strong family history)

  This type of surgery has been shown to be helpful in studies of large groups of women with certain conditions, but there's no way to know ahead of time if this surgery will benefit any women. Some women with *BRCA* mutations will develop breast cancer early in life, and have a very high risk of getting a second breast cancer. A prophylactic mastectomy before the cancer occurs might add many years to their lives. But while most women with *BRCA* mutations develop breast cancer, some don't. These women would not benefit from the surgery, but they would still have to deal with its aftereffects. ***Second opinions are strongly recommended before any woman decides to have this surgery.***

6. What is Clinical breast examination?

A clinical breast examination (CBE) is a thorough examination of the breast and the underarm area by trained healthcare professional to check for abnormalities.

7. When is a CBE recommended?

A CBE may be done if a woman finds a lump or change in her breasts. It may also be done as part of a woman's regular physical examination.

Men who find a lump or a change in their breasts should also have a CBE.

8. How is a CBE is done?

There is usually no special preparation for a CBE. The procedure is painless. The woman removes her clothing from the waist up. A sheet or gown covers her while she is on the examination table.

First, the healthcare professional inspects the breasts. This is done with the person sitting, and then when she or he is lying down. The healthcare professional looks for:

- changes or differences in the shape of the breasts

- areas of fullness or thickness in only one breast
- differences in skin color, temperature and texture in the breasts, such as redness, increased warmth or dimpling of the skin
- rashes
- visible lumps or swelling
- nipple discharge (fluid leaking from the nipple)
- nipple changes, such as pointing inward (inverted) or retracted – especially if these are new
- changes in the color of the nipple

Then, the healthcare professional feels (palpates) the breast and the nipple. This is done with the woman lying down, which flattens the breast tissue over the chest wall. The entire breast area is carefully examined using the fingers. The breast extends from the middle of the chest, into the armpit and up towards the collarbone. The entire area should be examined.

The healthcare professional feels for:

- lumps, including their size, shape and whether or not they move within the tissue
- hardening or thickening in the breast tissue
- tenderness or pain

The lymph nodes are also examined. This may be done while the woman or man is sitting or lying down. The healthcare professional feels the lymph nodes in the:

- underarm area or armpit (axilla)
- area above and below the collarbone

9. What happens if a change or abnormality is found OR what are the investigations needed to diagnose breast cancer?

The healthcare professional will discuss the findings of the CBE with you and suggest if further tests are needed or not. Some tests that might be advised for further diagnosis include:

- diagnostic mammography
- ultrasound
- biopsy
    - fine needle aspiration if the lump is fluid-filled
    - core needle or stereotactic core needle biopsy if the lump is solid
- Magnetic Resonance Imaging (MRI)

- may be done if the other tests do not help with the diagnosis

10. What is mammography?

It is an investigation that helps in locating &diagnosing tumors and diseases of the breast. It is a X-Ray picture of breast.

11. How is it done?

The machine uses low dose X-rays to detect cancer. Since these low dose X-rays are used, to get a good quality image your breast must be flattened out. So a qualified technologist will position your breast on the machine between the plates. The upper plate will firmly press your breast from above. You must hold very still while the X-ray picture is taken to reduce the possibility of burred image.

The entire procedure may take you about 20 minutes. You are advised to leave jewelry at home and avoid deodorant, talcum powder or lotion under your arms or on your breast.

12. Do I have to come empty stomach for a mammogram?

No it is not required to come on an empty stomach for your mammogram.

13. How often do I have to get a mammography done?

Based on your clinical breast examination findings your doctor will decide the frequency of the mammogram to be done.

- Usually: above 50 years- if all findings are normal, a screening mammography is done every two years.

14. What is Self breast examination – how often should it be done?

Breast Self-Examination:

Adult women of all ages are encouraged to perform a breast self-exam once a month.

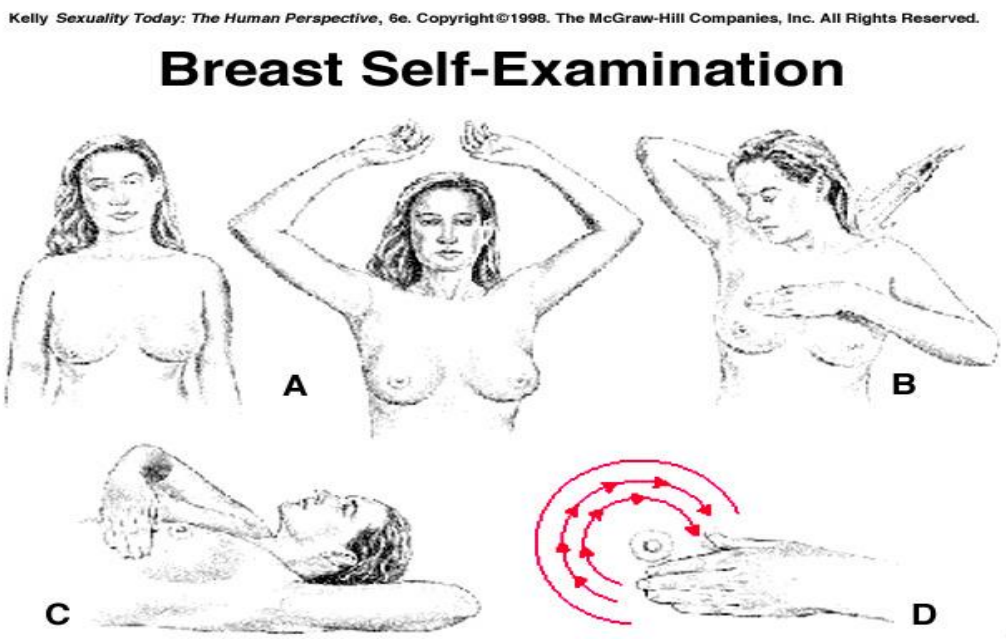
Some guidelines:

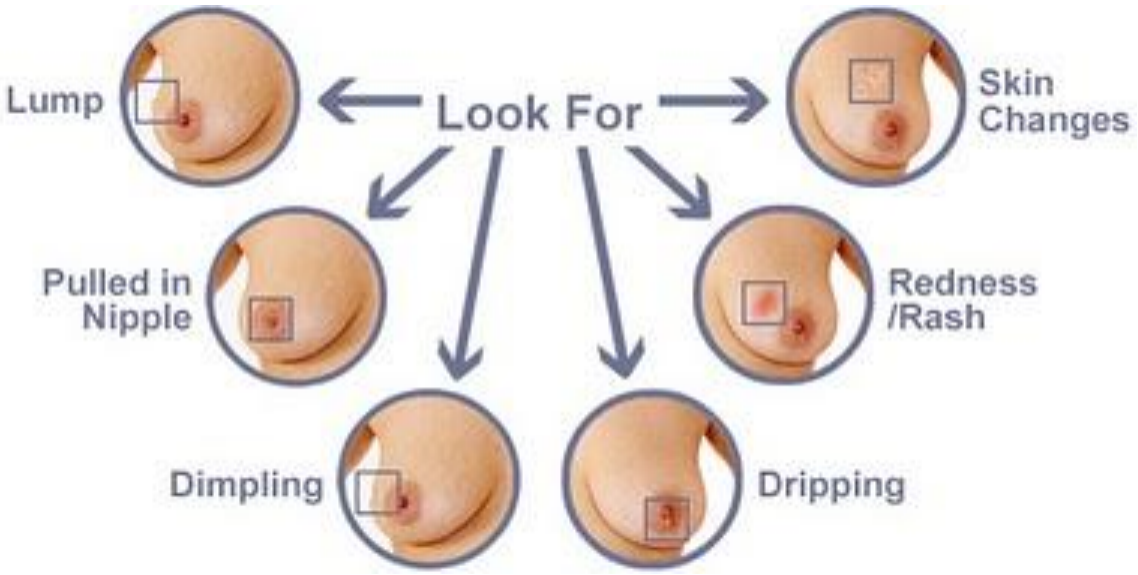
- Pick the same time of the month – Because of the normal hormonal fluctuations in a woman's body that affect breast tissue, it is important to select the same

- time every month so you will be able to distinguish between a normal change and something that feels different.

Premenopausal women*:* Do your exam toward the end of your menstrual period, preferably on the 10th day. The end of the menstrual cycle is the time when hormonal changes have the least influence on breast tissue, and the breasts are the least tender. Usually 10th day of menstrual cycle is ideal.

Postmenopausal women*:* Choose a day of the month (e.g., the 1st or 15th of the month) and consistently perform your breast self-exam on that same day every month.

- Examine your breasts – Use circular motions to identify the geography of your breasts. The first few times you do this may feel strange. But you will get to know the feeling of each breast so well, that if a change does occur you'll notice it immediately.
- Perform the exam again but lying down – This way you will develop a feeling for your breasts in a different position, allowing for greater knowledge of the way your breasts feel. Forty percent of diagnosed breast cancers are detected by women who feel a lump, so establishing a regular breast self-exam is very important.
- 



15. What are the other investigations for breast cancer?

Ultra sonogram of the breast is the next common examination, followed by CT – Scan & MRI

16. What is the treatment of breast cancer?

There are several ways to treat breast cancer, depending on its type and stage.

Local treatments: Some treatments are called *local therapies*, meaning they treat the tumor without affecting the rest of the body. Types of local therapy used for breast cancer include:

- Surgery – mastectomy – modified / partial / total –depending on the case
- Radiation therapy

These treatments are more likely to be useful for earlier stage (less advanced) cancers, although they might also be used in some other situations.

Systemic treatments: Breast cancer can also be treated using drugs, which can be given by mouth or directly into the bloodstream. These are called *systemic therapies* because they can reach cancer cells anywhere in the body. Depending on the type of breast cancer, several different types of drugs might be used, including:

- Chemotherapy
- Hormone therapy
- Targeted therapy

Many women will get more than one type of treatment for their cancer.

17. Why is that the arm corresponding to the collateral side of the breast that is removed swells up?

This is called lymphedema.

When, due to cancer you have a part / the entire breast removed, the surrounding lymph nodes (tissues that drain the infection) are also removed- to eliminate all possible sites where the cancer cells have spread to. Hence post the surgery, since these lymph nodes are not present, the lymph (fluid) collects in the arm.

You will be counseled on this, how to cope with it and also taught how to combat it. Generally tight stockings are given to wear to prevent the collection from increasing. Your health care professional will be able to give you more information on this.

Exercise & Physiotherapy: regular, *supervised* exercise & physiotherapy will strengthen the muscles & increase flexibility. Not to mention it will also give a sense of well being to the patient.

18. What happens to me after treatment?

For many people with breast cancer, treatment may remove or destroy the cancer totally – depending the stage of the cancer. The end of treatment can be both stressful and exciting. You'll be relieved to finish treatment, yet it's hard not to worry about cancer coming back. This is very common if you've had cancer.

For other people, breast cancer may never go away completely. Some people may get regular treatment with chemotherapy, radiation therapy, or other treatments to try to help keep the cancer in check. Learning to live with cancer that does not go away can be difficult and very stressful – but there is a way to cope up with the difficulties, to make to more comfortable

Life after breast cancer means returning to some familiar things and also making some new choices.

- Ask your doctor for post treatment plan

This plan might include:

- A suggested schedule for follow-up exams and tests, and instructions on Self Breast Examinations
- A schedule for other tests you might need in the future, such as early detection (screening) tests for other types of cancer, or tests to look for long-term health effects from your cancer or its treatment

- A list of possible late- or long-term side effects from your treatment, including what to watch for and when you should contact your doctor
- Diet and physical activity suggestions

Common Questions on Cervical Cancer

1. What is cervical (cervix) cancer?

Cervix (mouth of the uterus) cancer is a disease in which malignant (cancer) cells form in the tissues of the cervix. The damaged cells can invade surrounding tissue, but with early detection and treatment, most people continue a normal life.

2. What are the signs / symptoms of cervical cancer?

- The most common symptom of cancer is abnormal vaginal bleeding (bleeding other than your regular period)
- Abnormal vaginal discharge : excessive, foul smelling white /yellow/ green discharge
- Bleeding after menopause
- Pain during intercourse
- Pelvic (lower abdominal) pain
- Bleeding or spotting after intercourse

3. What is cervical pre cancer?

Precancerous conditions of the cervix are changes to cervical cells that make them more likely to develop into cancer. Precancerous conditions are not yet cancer, but there is a higher chance these abnormal changes will become cervical cancer if they aren't treated in time. If left untreated, it may take 10 years or more for precancerous conditions of the cervix to turn into cervical cancer, but sometimes this happens in less time.

Precancerous changes in the cervix are quite common. They can develop at any age, but they occur most often in women in their 30s.

Infection with the human papilloma virus (HPV) is the main risk factor for precancerous changes in the cervix and cervical cancer.

4. What are the types of cervical pre cancer?

Precancerous conditions in the cervix are described based on how abnormal the cells look under the microscope and how severe the cell changes are. They are also referred as cervical intraepithelial neoplasm: i.e. CIN. Precancerous conditions are divided into category depending on the thickness of cervical epithelium involved by abnormal cells.

5. What are the risk factors for cervix cancer?

HPV (Human Papilloma Virus) is the most important risk factor for developing a precancerous condition of the cervix. Having more than one sex partner increases your risk of getting HPV infection and subsequent the risk of cervical cancer.

Mostly 80% of women acquire this infection once in lifetime. But majority of women clear this infection spontaneously by 18 months, which is referred to as transient infections. Only few women with persistent infection with high risk HPV are at risk of getting precancerous or cancerous lesion of cervix.

The following risk factors increase the chance that an HPV infection will not go away on its own and can develop into a precancerous condition of the cervix:

1. smoking
2. having a weakened immune system
3. multiple pregnancies (called multiparity)
4. using oral contraceptives for a long time

Screening helps to detect early precancerous changes following persistent and prolonged HPV infection well in advance before symptoms appear so it is important that every women gets herself screened.

6. Can cervical cancer spread?

Yes, it can spread in three important ways:

- Damaged cells replicate, creating more damaged cells and tumor growth.
- Our body's hormones and chemicals can accelerate the growth of some tumors.
- Lymph and blood vessels can carry the cancer to others areas of the body and lymph node examination can help pinpoint the progression of the disease.

7. Can cervical cancers be detected earlier? If so how?

Precancerous changes in the cervix often do not cause any signs or symptoms. Few procedures that will help us enable detect pre cancers earlier are:

- VIA / VILI
- PAP smear
- HPV DNA

8. What is a VIA / VILI test?

Visual inspection of the cervix, using acetic acid (white vinegar 5%; VIA) & or Lugol's iodine (VILI) to highlight precancerous lesions so they can be viewed with the "naked eye", shifts the identification of pre cancer from the laboratory to the clinic.

It is a simple test and can be done at a primary health care center too, where the lady is positioned in lithotomy and a speculum is gently inserted into the vagina. The vagina is cleaned with a solution (normal saline) & using a swab stick the acetic acid is applied on the cervix. After a minute- any pre cancerous lesions –if present- will turn "dense white" (Aceto White Area) which on application of the lugols iodine – will turn canary yellow.

9. What is a PAP Smear?

A PAP test, or papnicolaou test, is a procedure that removes a small sample of cells from the cervix. Cells are looked at under a microscope to see if they are normal or abnormal.

10. Why is a PAP test done?

A PAP test is mainly used to:

- screen for and help diagnose precancerous conditions of the cervix and cervical cancer
- help diagnose precancerous conditions of the vagina and vaginal cancer
- diagnose infection and inflammation of the lower female reproductive tract

PAP tests are also done to follow up after an abnormal PAP test or to monitor precancerous conditions. They are used to check for abnormal cell changes or to see if cancer comes back (recurs) after treatment.

11. How to prepare for a PAP test?

Try to avoid having a PAP test during menstruation, or when you have your period. For best results, the test should be done in the middle of your cycle, 10–20 days after the first day of your menstrual period.

Avoid having sexual intercourse for 24 hours before the test. Do not use a vaginal douche, vaginal medicines, tampons or contraceptive (spermicidal) creams, foams or gels (except as directed by your doctor) for 48 hours before the test. These products can wash away or hide abnormal cells.

Avoid having the test during treatment for any cervical or vaginal infection. Wait 2 weeks after treatment has ended.

Try to empty your bladder right before the PAP test. A full bladder may make having the test uncomfortable.

12. How is a PAP test is done?

A PAP test may be done as part of a checkup or during a pelvic, or gynecological, exam. A pelvic examination is done to make sure the pelvic organs are normal and to check for infections. A PAP test is usually done in a doctor's or nurse's office or in a clinic. It only takes a few minutes to do a PAP test. There may be some discomfort during the procedure, but it is not usually painful.

To do a PAP test, the doctor or nurse gently places a speculum into the vagina. A speculum is a clear plastic or metal device. It separates the walls of the vagina so the doctor can see the upper part of the vagina and cervix.

The doctor or nurse uses a small stick, or spatula, to gently scrape the surface of the cervix to pick up cells. Samples of tissues from the vagina can also be taken during a PAP test.

After collecting the cells, the doctor or nurse smears them onto a glass slide or places them in a container filled with a special liquid (called a liquid-based PAP test). The liquid containing the sample of cells may also be used to test for HPV. The sample is sent to a lab to be processed so it can then be examined under a microscope. It may take a week for your PAP test result to come back from the lab.

13. How is a HPV –DNA testing done?

A HPV DNA test is usually done in a doctor's or nurse's office or in a clinic. It only takes a few minutes to do the test. There may be some discomfort during the procedure, but it is not usually painful.

To do the HPV DNA test, the doctor or nurse gently places a speculum into the vagina. A speculum is a clear plastic or metal device. It separates the walls of the vagina so the doctor can see the upper part of the vagina and cervix.

A special brush (called a cytobrush or cytobroom) is used to collect cells from the inner part of the cervix, which leads into the uterus. The brush is dipped in the transport media so that it preserves the appearance of the cells. The sample is then sent to a lab to be processed.

14. What happens if the result is abnormal?

If the result of a PAP test is abnormal, your doctor will decide if you need to have follow-up tests, treatment or both. Some changes or abnormalities may need to be treated, depending on how severe they are.

Follow-up options include another PAP test or a colposcopy (a procedure that uses a lighted magnifying instrument, called a colposcope, to examine the cervix).

15. Are there any risks with a PAP test?

Screening tests, including the PAP test, have a risk of giving misleading results.

A **false-negative result** means that the test doesn't find cancer or abnormal cells even though they are present. This may occur if the sample doesn't have enough tissue or cells. It can also happen when abnormal cells in the sample are missed.

A **false-positive result** means that the test shows abnormal cells even though they are not present. This means that something looked like a precancerous condition, but it actually isn't. A false-positive result may lead to unnecessary follow-up tests, procedures and anxiety.

16. What is colposcopy?

Colposcopy is usually done in a doctor's office, and the procedure typically takes 10 to 20 minutes. You'll lie on your back on a table with your feet in supports, just as during a pelvic examination.

The doctor inserts a speculum in your vagina. The speculum holds open the walls of your vagina so that your doctor can see your cervix.

Your doctor positions the special magnifying instrument, called a colposcope, a few inches away from your vulva. A bright light is shown into your vagina, and your doctor looks through the lens, as if using binoculars.

Your cervix and vagina are swabbed with cotton to clear away any mucus. Your doctor may apply a solution of vinegar or another type of solution to the area. The solution helps highlight any areas of suspicious cells on cervix.

If your doctor finds a suspicious area, a small sample of tissue may be collected for laboratory testing. To collect the tissue, your doctor uses a instrument to remove a small piece of tissue. If there are multiple suspicious areas, your doctor may take multiple biopsy samples.

What you feel during a biopsy depends on what type of tissue is being removed:

- **Cervical biopsy:** A cervical biopsy will cause mild discomfort but is usually not painful; you may feel some mild discomfort.
- **Vaginal biopsy:** Most of the vagina has little sensation and you won't feel pain during the biopsy. But a biopsy of the lower portion of the vagina or the vulva can cause pain, so your doctor may administer a local anesthetic to numb the area.

Your doctor may apply a chemical solution to the biopsy area to limit bleeding.

After the colposcopy

If your doctor didn't take a biopsy sample during your colposcopy, you won't have any restrictions on your activity once your exam is complete.

If you had a biopsy sample taken during your colposcopy, you may experience:

- Vaginal or vulva pain that lasts one or two days
- Light bleeding from your vagina that lasts a few days
- A dark discharge from your vagina

Use a pad to catch any blood or discharge. Avoid tampons, douching and vaginal intercourse for a week after your biopsy.

17. What are the different treatments, if I am diagnosed with a cervical pre-cancer?

- Cryotherapy
- LEEP
- Cone Biopsy / Conization

18. What is cryotherapy?

Cryotherapy destroys abnormal tissue on the cervix by freezing it with CO2 or liquid Nitrogen Gas under pressure. Freezing of tissue at minus degree centigrade kills the abnormal cells replacing them by new and healthy cells. Before a cryotherapy treatment a histopathology report is necessary to confirm the precancerous lesion.

The procedure usually takes around 10 minutes and can be done as outpatient procedure. No anaesthesia is needed.

19. How it is done?

Cryotherapy is usually done at your doctor's office, a clinic, or a hospital as an outpatient procedure. You do not have to spend a night in the hospital.

You will need to undress below the waist and you will be given the hospital gown. You will then lie on your back on an examination table with your feet raised and supported by stirrups. Your doctor will insert a speculum into your vagina. The speculum gently spreads apart the vaginal walls, allowing the inside of the vagina and the cervix to be examined.

A colposcopy will be done to identify all abnormal areas on the cervix. The doctor then inserts an instrument called as cryoprobe and holds it firmly against cervix.

The cervix is then freezed with a cryoprobe using CO2 and Liquid Nitrogen Gas which forms “ice ball” on the cervix.

The cervix is freeze for 3 minutes and then allow to thaw and then again refreeze for 3 minutes. This procedure kills the abnormal cells on the cervix. The women may experience some discomfort in the lower abdomen and sense of warmth during the procedure. These symptoms settles down in few minutes.

20. What To Expect After the procedure?

Most women are able to return to their normal activity level the day after the cryotherapy procedure.

After cryotherapy

- A watery vaginal discharge will occur for about 2 to 3 weeks.
- Pads should be used instead of tampons for 2 to 3 weeks.
- Sexual intercourse should be avoided for 2 to 3 weeks.
- Douching should not be done for 2 to 3 weeks.

21. When to call your doctor?

Call your doctor if you have any of the following symptoms:

- Fever
- Moderate to heavy bleeding (more than you would usually have during a menstrual period)
- Increasing pelvic pain
- Bad-smelling or yellowish vaginal discharge, which may point to an infection

22. How well does cryotherapy work?

Cryotherapy is an effective method for destroying abnormal cervical tissue, depending on the size, depth, and type of abnormal tissue. Studies have had differing results. They show that cryotherapy destroys all of the abnormal tissue in 77 to 96 out of 100 cases.

23. What are the side effects of cryotherapy?

Cryotherapy is absolutely safe procedure with some minor side effects.

Immediate (upto 7 days):

- Cramping pain
- Profuse watery vaginal discharge
- Light bleeding or spotting in first week
- Infection of sloughing area

The above side effects can be taken care by medicines and mostly do not need hospitalization.

Long term sequale:

- Cervical stenosis

- Chronic pelvic inflammatory disease

Both the above complications are very rare.

24. What is LEEP?

Loop Electrosurgical Excision Procedure (LEEP) is treatment for precancerous lesion of cervix confirmed on histopathology report.

The loop electrosurgical excision procedure (LEEP) uses a thin, low-voltage electrified wire loop to cut out abnormal tissue of cervix.

25. How is LEEP done?

LEEP is usually done at your doctor's office, a clinic, or a hospital as an outpatient procedure. You do not have to spend a night in the hospital.

You need to undress and you shall be given a hospital gown. You will then lie on your back on an examination table with your feet raised and supported by stirrups. Your doctor will insert a speculum into your vagina. The speculum gently spreads apart the vaginal walls, allowing the inside of the vagina and the cervix to be examined.

A local anaesthesia is injected into the cervix or you may be given a short sedation which will be decided by your treating doctor. Using a thin low voltage electrified wire loop, the doctor will cut out the abnormal tissue of the cervix.

26. What To Expect After LEEP?

Most women are able to return to normal activities within 1 to 3 days after LEEP is performed. Recovery time depends on how much was done during the procedure.

After LEEP

- Mild cramping may occur for several hours after the procedure.
- A dark brown vaginal discharge during the first week is normal.
- Vaginal discharge or spotting may occur for about 3 weeks.

You are advise

- Pads should be used instead of tampons for about 3 weeks.
- Sexual intercourse should be avoided for about 3 weeks.

- Douching should not be done.

27. When to call your doctor?

Call your doctor now or seek immediate medical care if:

- You have severe vaginal bleeding. You are passing clots of blood and soaking through your usual pads each hour for 2 or more hours.
- You have pain that does not get better after you take pain medicine.
- You have signs of infection, such as:
- Increased pain.
- Vaginal discharge that smells bad.
- fever

28. What are the risks of LEEP?

- Infection of the cervix or uterus may develop (rare).
- Narrowing of the cervix (cervical stenosis) that can cause infertility may occur (rare).
- After a woman has had LEEP, she has a higher risk of delivering a baby early.

Loop electrosurgical excision procedure (LEEP) is less expensive and easier to perform than cone biopsy or carbon dioxide laser treatment. Before a LEEP procedure is done, a biopsy is done to confirm the abnormal cervical cell changes.

29. What is cone biopsy /conization?

A cone biopsy is an extensive form of a cervical biopsy. It is called a cone biopsy because a cone-shaped wedge of tissue is removed from the cervix and examined under a microscope. A cone biopsy removes abnormal tissue that is high up in the cervical canal. A small amount of normal tissue around the cone-shaped wedge of abnormal tissue is also removed so that a margin free of abnormal cells is left in the cervix.

A cone biopsy can:

- Remove a thin or a thick cone of tissue from the cervix, depending on how much tissue needs to be examined.
- Be used to diagnose and sometimes to treat abnormal cervical tissue. The abnormal tissue is removed and sent to a lab to be examined.

30. What is the treatment of cervical cancer?

There are several ways to treat cervical cancer, depending on its type and stage.

a) Local treatments: Some treatments are called *local therapies*, meaning they treat the tumor without affecting the rest of the body. Types of local therapy used for cervical cancer include:

- Surgery
- Radiation

These treatments are more likely to be useful for earlier stage (less advanced) cancers, although they might also be used in some other situations.

b) Systemic treatments: Cervical cancer can also be treated using drugs, which can be given by mouth or directly into the bloodstream. These are called *systemic therapies* because they can reach cancer cells anywhere in the body. The different types of drugs that may be used are:

- Chemotherapy
- Hormone therapy

Usually women will get more than one type of treatment for their cancer.

31. What happens to me after treatment?

For many people with cervical cancer, treatment may remove or destroy the cancer totally – depending the stage of the cancer. The end of treatment can be both stressful and exciting. You'll be relieved to finish treatment, yet it's hard not to worry about cancer coming back. This is very common if you've had cancer.

For other people, cervical cancer may never go away completely. Some people may get regular treatment with chemotherapy, radiation therapy, or other treatments to try to help keep the cancer in check. Learning to live with cancer that does not go away can be difficult and very stressful – but there is a way to cope up with the difficulties, to make you more comfortable

Life after cervical cancer means returning to some familiar things and also making some new choices.

- Ask your doctor for post treatment plan

This plan might include:

- A suggested schedule for follow-up exams and tests-including blood investigations, sonograms ,Bone scans / PET scans or MRI scans

- A schedule for other tests you might need in the future, such as early detection (screening) tests for other types of cancer, or tests to look for long-term health effects from your cancer or its treatment
- A list of possible late- or long-term side effects from your treatment, including what to watch for and when you should contact your doctor
- Diet and physical activity suggestions

Common Questions on Oral Cancer

1. What is oral cancer?

Oral cancer appears as a growth or sore in the mouth that does not go away. Oral cancer, which includes cancers of the lips, tongue, cheeks, floor of the mouth, hard and soft palate, sinuses, and pharynx (throat), can be life threatening if not diagnosed and treated early.

2. What are the symptoms of oral cancer?

The most common symptoms of oral cancer include:

- Swellings/thickenings, lumps or bumps, rough spots/crusts/or eroded areas on the lips, gums, or other areas inside the mouth.
- The development of velvety white, red, or speckled patches in the mouth.
- Unexplained bleeding in the mouth.
- Unexplained numbness, loss of feeling, or pain/tenderness in any area of the face, mouth, or neck.
- Persistent sores on the face, neck, or mouth that bleed easily and do not heal within 2 weeks.
- A soreness or feeling that something is caught in the back of the throat.
- Difficulty chewing or swallowing, speaking, or moving the jaw or tongue.
- Hoarseness, chronic sore throat, or change in voice.
- Ear pain.
- Change in the way your teeth or dentures fit together because there may be a growth.
- Dramatic weight loss.

If you notice any of these changes, contact your dentist or health care professional immediately.

3. What are the causes or the risk factors of oral cancer?

Risk factors for the development of oral cancer include:

- Smoking cigarette, beedi, cigar or pipe smokers are six times more likely than nonsmokers to develop oral cancers.
- Smokeless tobacco users. Users of dip, snuff, or chewing tobacco products are 50 times more likely to develop cancers of the cheek, gums, and lining of the lips.
- Excessive consumption of alcohol. Oral cancers are about six times more common in drinkers than in nondrinkers.
- Human Papilloma Virus (HPV). Certain HPV strains are etiologic risk factors for Oropharyngeal Squamous Cell Carcinoma (OSCC).

4. Can all age groups be affected with oral cancer?

Anyone can get oral cancer, however some factors may increase your likelihood of developing the disease. As with many cancers, the risk of developing oral cancer increases with age.

5. After how many years of eating tobacco, can cause oral cancer?

People, who stop using tobacco, even after many years of use, can greatly reduce their risk of all smoking related illnesses, including mouth cancer. The best way to avoid these cancers is to never start smoking or chewing tobacco in any form. There is no evidence to show the time correlation of the cause of cancer and the tobacco use.

6. How can oral cancer be diagnosed / detected?

As part of your routine dental exam / oral exam, your dentist / your doctor will conduct an oral cancer screening exam. More specifically, your dentist/ doctor will feel for any lumps or irregular tissue changes in your neck, head, face, and oral cavity. When examining your mouth/ doctor, your dentist will look for any sores or discolored tissue as well as check for any signs and symptoms mentioned above.

Your dentist/ doctor may perform an oral brush biopsy if he / she sees tissue in your mouth that looks suspicious. This test is painless and involves taking a small sample

of the tissue and analyzing it for abnormal cells. Alternatively, if the tissue looks more suspicious, your dentist/ doctor may recommend a biopsy. This procedure usually requires local anesthesia and may be performed by your dentist or a specialist. These tests are necessary to detect oral cancer early, before it has had a chance to progress and spread.

7. Can oral cancer be treated?

Oral cancer is treated the same way many other cancers are treated -- with surgery to remove the cancerous growth, followed by radiation therapy and/or chemotherapy (drug treatments) to destroy any remaining cancer cells.

8. Are there any warning signs for oral cancer / oral pre cancer?

Lesions that might signal oral cancer:

Two lesions that could be precursors to cancer are leukoplakia (white lesions) and erythroplakia (red lesions). Although less common than leukoplakia, erythroplakia and lesions with erythroplakic components have a much greater potential for becoming cancerous. Any white or red lesion that does not resolve itself in 2 weeks should be reevaluated and considered for biopsy to obtain a definitive diagnosis.

Other Possible Signs and Symptoms:

Possible signs and symptoms of oral cancer that your patients may report include: a lump or thickening in the oral soft tissues, soreness or a feeling that something is caught in the throat, difficulty chewing or swallowing, ear pain, difficulty moving the jaw or tongue, hoarseness, numbness of the tongue or other areas of the mouth, or swelling of the jaw that causes dentures to fit poorly or become uncomfortable.

If these problems persist for more than 2 weeks, a thorough clinical examination and laboratory tests, as necessary, should be performed to obtain a definitive diagnosis. If a diagnosis cannot be obtained, referral to the appropriate specialist is indicated.

9. What are the investigations for oral cancer?

Only a biopsy can give a definitive oral cancer diagnosis. A sample of tissue or cells is required for a biopsy, which must be conducted before treatment can begin. The types of biopsies typically used for diagnosing oral cancers are:

- **Incisional biopsy**: A small piece of tissue is cut from an abnormal-looking area. If the abnormal region is easily accessed, the sample may be taken at your doctor's office. If the tumor is deeper inside the mouth or throat, the biopsy may need to be done in an operating room, with general anesthesia administered to subside any pain.
- **Fine needle aspiration (FNA)**: Here, a very thin needle attached to a syringe is used to extract (aspirate) cells from a tumor or lump. This approach can be particularly useful for several situations that can occur with oral cancer.
- **Other investigations** : USG, CT-Scan, MRI, PET Scan

10. How to perform an oral examination on your own?

The examination should be performed in a well lit room

Examine the following for any change in colours, non healing ulcers or growths

- Floor of the oral cavity
- Roof of the oral cavity
- Inner side of both cheeks(right and left)
- Tongue
- Lips
- Back of the throat

11. Which is more dangerous chewing tobacco or smoking?

Tobacco in any form is dangerous & can cause harmful effects hence should be avoided.

12. Is nicotine replacement harmful?

Nicotine replacement therapy (NRT) is a medically-approved way to take nicotine by means other than tobacco. It is used to help with quitting smoking or stopping chewing tobacco. It increases the chance of quitting smoking by about 50% to 70%. Often it is used along with other behavioral techniques. NRT has also been used to treat ulcerative colitis. Types of NRT include the adhesive patch, chewing gum, lozenges, nose spray, and inhaler. The use of more than one type of NRT at a time may increase effectiveness

13. What are side effects of Nicotine Replacement Therapy?

Common side effects depend on the formulation of nicotine. Common side effects with the gum include nausea, hiccups, and irritation of the mouth. Common side effects with the patch include skin irritation and a dry mouth while the inhaler commonly results in a cough, runny nose, or headaches. Serious risks include nicotine poisoning and continued addiction.

14. What are E- Cigarettes?

An electronic cigarette or e-cigarette is a handheld electronic device that vaporizes a flavored liquid. The user inhales the vapor which is called vaping. The fluid in the e-cigarette, called e-liquid, is usually made of nicotine, propylene glycol, glycerine, and flavorings.

15. Are E Cigarettes safe?

E-cigarettes contain nicotine, which is addictive. Nicotine is addictive in any form. When you stop using it, you may experience withdrawal symptoms including feeling depressed irritable, restless or anxious.

So far, evidence suggests that e-cigarettes may be safer than regular cigarettes, since the bigger danger from using tobacco is the smoke, and e-cigarettes don't burn. The long-term risks or the effects of secondhand exposure are still not known. Hence it is BETTER NOT TO USE THEM.

16. Is using the hookah harmful?

Hookahs are water pipes that are used to smoke specially made tobacco that comes in different flavors, such as apple, mint, cherry, chocolate, coconut, licorice, cappuccino, and watermelon. Although many users think it is less harmful, hookah smoking has many of the same health risks as cigarette smoking.

Using a hookah to smoke tobacco poses serious health risks to smokers and others exposed to the smoke from the hookah

<u>Hookah Smoke and Cancer</u>

- The charcoal used to heat the tobacco can raise health risks by producing high levels of carbon monoxide, metals, and cancer-causing chemicals. Even after it has passed through water, the smoke from a hookah has high levels of these toxic agents.

- Hookah tobacco and smoke contain several toxic agents known to cause lung, bladder, and oral cancers.
- Tobacco juices from hookahs irritate the mouth and increase the risk of developing oral cancers.

Other Health Effects of Hookah Smoke

- Hookah tobacco and smoke contain many toxic agents that can cause clogged arteries and heart disease.
- Infections may be passed to other smokers by sharing a hookah.
- Babies born to hookah smokers are also at increased risk for respiratory diseases.

17. What can I do to prevent oral cancer?

Not all cases of oral cavity and oropharyngeal cancer can be prevented, but the risk of developing these cancers can be greatly reduced by avoiding certain risk factors.

- Stop smoking
- Stop drinking alcoholic beverages
- Avoid HPV infections – by maintaining good oral hygiene
- Eat a healthy diet
- Conduct an oral exam every month
- Treat precancerous growths like white patches, ulcers

18. I don't smoke or use tobacco in any form, will I get oral cancer?

Yes, apart from tobacco use there are other factors that are responsible for oral cancer

- There is evidence that a poor diet may increase your risk of some types of mouth cancer. A healthy, balanced diet with plenty of fruit and vegetables is thought to reduce your risk of developing mouth cancer.
- The human papilloma virus (HPV) is a family of viruses that affect the skin and moist membranes that line your body, such as those in your cervix, anus, mouth and throat. There is evidence that in rare cases, certain types of HPV can cause abnormal tissue growth inside the mouth, triggering mouth cancer.
- There is evidence that poor oral hygiene, such as having tooth decay, gum disease, not brushing your teeth regularly and having ill-fitted dentures (false teeth) can increase your risk of mouth cancer.

19. What happens to me after treatment?

For many people with oral cancer, treatment may remove or destroy the cancer totally – depending the stage of the cancer.

There might be the ordeal of dealing with post surgical scars or excisions especially cosmetic related. But you will be given various options how to deal with it, including the physical limitations. You'll be relieved to finish treatment, yet it's hard not to worry about cancer coming back. This is very common if you've had cancer.

Learning to live with cancer that does not go away can be difficult and very stressful – but there is a way to cope up with the difficulties, to make one more comfortable

Life after oral cancer means returning to some familiar things and also making some new choices.

- Ask your doctor for post treatment plan
- Plan to deal with the cosmetic scarring (if any)

This plan might include:

- A suggested schedule for follow-up exams and tests.
- A schedule for other tests you might need in the future, such as early detection (screening) tests for other types of cancer, or tests to look for long-term health effects from your cancer or its treatment
- A list of possible late- or long-term side effects from your treatment, including what to watch for and when you should contact your doctor
- Diet and physical activity suggestions

FREQUENTLY ASKED QUESTIONS REGARDING TOBACCO CESSATION CLINIC

A) Quitting tobacco:

1. Will you give me some medicine to quit tobacco habit?

Medicines may help you deal with withdrawals. There is no such medicine available, which can prevent the urge or temptation for tobacco use.

2. How can counseling help me to quit tobacco use?

You can be helped to help yourself, through counseling, for quitting tobacco use. The counselor needs to talk in detail with the tobacco user, after which counseling help can be provided.

3. **Within how many days can you make me quit tobacco habit?**

   There is no hard and fast rule about it. In fact, it mainly depends upon how sincerely you work on quitting tobacco.

4. **How often do I have to come and see you?**

   It would be preferable if you can come for weekly counseling for the first month and then monthly or quarterly. It would be ideal if counseling follow up is maintained for a period of one year.

5. **My father chews tobacco. How do I make him quit?**

   There is no fixed formula by following which you can make him quit. Do not pester him too much to quit. Instead encourage him to quit initially for two or three days and then keep extending it. Have a small celebration if he has managed to remain abstained from tobacco use for a week.

   If possible you can bring him to Department of Preventive Oncology, Tata Memorial Hospital for check up as he is at a risk for cancer due to tobacco use. He will also be provided counseling services.

6. **When can I bring him for check up?**

   Oral cancer screening is provided to tobacco users at the following address and time:

   Department of Preventive Oncology
   Service Block, 3rd Floor
   Tata Memorial Hospital
   Parel, Mumbai 400012
   Phone: 24177000 ext. 4632
   Timing:

   - Monday to Friday: 09.30 am to 05:00 pm
   - Saturday : 09:30 am to 00.01 pm

   It is advised to come before 1 pm so that you can be examined and if any investigations needed to be done, it can be done as early as possible.

B) Withdrawals:

1. How do I cope with withdrawals?

People can have different withdrawals or some people may not experience any withdrawal at all.

The following are some of the withdrawals faced by people and what you can do to handle them.

1. Headache, irritation, lack of concentration, uneasiness – You need to take it easy. Try to relax yourself. Go to sleep, listen to music, do some reading, go for jogging or cycling, walking. Do yoga or meditation. You can also do simple deep Breathing.
2. The urge for tobacco use: Drink water, fruit juice, have fruits, have 'Saunf', 'Dhana Dal', Elaichi, Peanuts, etc. Divert your attention into something else. Remind yourself that you can handle this. Every time you manage to avoid tobacco use, congratulate yourself. Tell yourself, I have managed to abstain from tobacco use so far, I can do it further.
3. Constipation: Have more of green leafy vegetables, drink more water, do exercises, sleep well. You can also consult your doctor.
4. Inability to sleep: Lack of sleep could be due to anxieties, worries, depression etc. Tobacco is no remedy for any problem. Poison can never be a remedy. You need to consult a counselor for anxieties or depression.
5. Toothache, gastric trouble: Again tobacco is no remedy for any problem. For toothache, you need to consult a dentist. Consult your doctor for gastric trouble.

2. How can you say tobacco causes cancer? People who do not use tobacco also get cancer. Children also get cancer.

Tobacco is a risk factor for cancer, not the only cause. Normally all of us are already taking in a lot of chemicals through different means. We do not take care of our health, we may have unhealthy lifestyles. Sometimes there are hereditary reasons for cancer, as in the case of children. Each individual's diseases resistance capacity is also different. Several factors already increase the risk for cancer. Tobacco use increases the risk even further.

3. **I have seen so many old people who have been chewing tobacco throughout their life. Why nothing has happened to them?**

   Such people are very few compared to lakhs of people who die every year to tobacco habit. It is better not to increase our own risk for illness due to tobacco use.

4. **I do not smoke. I only chew tobacco. Will I get cancer?**

   Any form of tobacco, whether it is smoked or smokeless form, can be harmful.

C) Tobacco control:

Q. Why don't you ask the government to stop sale of tobacco? If it is not available, then no one will use.

There is a law for control of tobacco use. The following aspects are covered under the 'Cigarettes and Other Tobacco Products Act' of 2003.

1. Tobacco products cannot be sold to children below 18 years of age; similarly minors cannot sell tobacco products.
2. Prohibition of sale of tobacco products around 100 meters of educational institutes.
3. Prohibition of smoking in public places.
4. Prohibition on direct and indirect advertisements of tobacco products.
5. Pictorial warnings to be depicted on tobacco products.

Common Questions on Lung cancer

1. **What is lung cancer?**

   Lung cancer is the uncontrolled growth of abnormal cells that start off in one or both the lungs. It is usually in the cells that line the air passages. The abnormal cells do not develop into healthy lung tissue, they divide rapidly and form tumors.

   As tumors become larger and more numerous, they decrease the lung's ability to provide the bloodstream with oxygen. Tumors that remain in one place and do not appear to spread are known as "benign tumors".

   Malignant tumors, the more dangerous ones, spread to other parts of the body either through the bloodstream or the lymphatic system. Metastasis refers to cancer spreading beyond its site of origin to other parts of the body. When cancer spreads it is much harder to treat successfully.

Primary lung cancer originates in the lungs, while secondary lung cancer starts somewhere else in the body, metastasizes, and reaches the lungs.

2. What causes Lung cancer?

Following are the reason that causes Lung cancer:

- Carcinogens : cancer causing agents, such as :
    - Smoke / car fumes
    - Tobacco / tobacco smoke
    - Asbestos
    - Arsenic
    - Radiation

When our bodies are exposed to carcinogens, free radicals are formed that try to steal electrons from other molecules in the body. These free radicals damage cells and affect their ability to function and divide normally.

About 87% of lung cancers are related to smoking and inhaling the carcinogens in tobacco smoke. Even exposure to second-hand smoke can damage cells so that cancer forms.

- Genes

  Inherited gene changes that might put person at higher risk of lung cancer.

3. What are the symptoms of lung cancer?

In most of the cases who get lung cancer there are no unusual apparent symptoms when it is diagnosed.

Some of the common symptoms include:

- Cough
- Shortness of breath
- Difficulty in breathing
- Wheezing
- Chest pain
- Coughing up blood

Other symptoms include

- Hoarseness of voice
- Shoulder pain

- Difficulty in swallowing

4. What investigations do I have to undergo to know if I have lung cancer?

The investigations that you will need to undergo, if your physician suspects lung cancer are:

- Blood investigations
- Sputum examination
- Chest x-ray
- Pleural tapping – draining fluid that collects from within the covering (called pleura) of the lungs.
- Sonogram of the swelling in the neck (with USG guided FNAC)
- CT-Scan / Low dose CT Scan for screening.
- MRI
- Bone scan

4. What are the types of Lung cancer? How can lung cancer be classified?

Lung cancer can be broadly classified into two main types based on the cancer's appearance under a microscope: non-small cell lung cancer and small cell lung cancer. Non-small cell lung cancer (NSCLC) accounts for 80% of lung cancers, while small cell lung cancer (SCLC) accounts for the remaining 20%.

5. What is the treatment of Lung cancer?

There are several ways to treat Lung cancer, depending on its type and stage.

Local treatments: Some treatments are called *local therapies*, meaning they treat the tumor without affecting the rest of the body. Types of local therapy used for lung cancer include:

- Surgery – includes removing a part / a lobe / the entire affected lung
- Radiation therapy

These treatments are more likely to be useful for earlier stage (less advanced) cancers, although they might also be used in some other situations.

Systemic treatments: Lung cancer can also be treated using drugs, which can be given by mouth or directly into the bloodstream. These are called *systemic therapies* because they can reach cancer cells anywhere in the body. Depending on the type of

lung cancer, several different types of drugs might be used, commonly known as Chemotherapy

Usually individuals will get more than one type of treatment for their cancer.

Physiotherapy: physiotherapy / breathing exercises are also given / taught during / post the treatment.

6. What happens to me after my treatment?

For many people with lung cancer, treatment may remove or destroy the cancer totally –depending the stage of the cancer. The end of treatment can be both stressful and exciting.

There might be the ordeal of dealing with post surgical scars or excisions especially cosmetic related. But you will be given various options how to deal with it, including the physical limitations. You'll be relieved to finish treatment, yet it's hard not to worry about cancer coming back. This is very common if you've had cancer.

Learning to live with cancer that does not go away can be difficult and very stressful – but there is a way to cope up with the difficulties, to make one more comfortable

Life after lung cancer means returning to some familiar things and also making some new choices.

- Ask your doctor for post treatment plan

This plan might include:

- A suggested schedule for follow-up exams and tests.
- Physiotherapy.
- A schedule for other tests you might need in the future, such as early detection (screening) tests for other types of cancer, or tests to look for long-term health effects from your cancer or its treatment
- A list of possible late- or long-term side effects from your treatment, including what to watch for and when you should contact your doctor
- Diet and physical activity suggestions

Common Questions on Colo-rectal cancers

1. What is colorectal cancer?

Colorectal cancer is a cancer that starts in the colon or the rectum. These cancers can also be named colon cancer or rectal cancer, depending on where they start. Colon

cancer and rectal cancer are often grouped together because they have many features in common.

2. The normal colon & rectum.

The colon and rectum are parts of the digestive system, which is also called the *gastrointestinal (GI) system* (see illustration). The colon and rectum make up the large intestine (or large bowel). Most of the large intestine is made up of the colon, a muscular tube about 5 feet long. The colon absorbs water and salt from the remaining food matter after it goes through the small intestine (small bowel).

The waste matter that is left after going through the colon goes into the *rectum*, the final 6 inches of the digestive system, where it is stored until it passes out of the body through the *anus*.

3. How does colo- rectal cancer start?

Most of the colorectal cancer begins on the inner lining of the colon or rectum- commonly called a polyp.

Some polyps change into cancer over a period of time, but not all polyps change into cancer.

The chances of the polyp changing in to cancer depends on the type of the polyp

Following are the types of polyps:

- Adenomatous Polyps (adenomas) : these type of polyps can turn into cancer, hence adenomas are pre cancerous lesions
- Hyperplastic polyps & inflammatory polyps : these are more common, however they are not pre- cancerous
- Dysplasia : is a pre cancerous area of cells within the polyp / the lining of the colon / rectum which look like cancer but are not like true cancer cells

The wall of the colon and rectum is made up of several layers. Colorectal cancer starts in the innermost layer (the mucosa) and can grow through some or all of the other layers. When cancer cells are in the wall, they can then grow into blood vessels or lymph vessels (tiny channels that carry away waste and fluid). From there, they can travel to nearby lymph nodes or to distant parts of the body.

The stage (extent of spread) of a colorectal cancer depends on how deeply it grows into the wall and if it has spread outside the colon or rectum.

4. What are the types of colo- rectal cancers?

- Adenocarcinomas make up more than 95% of colorectal cancers. These cancers start in cells that form glands that make mucus to lubricate the inside of the colon and rectum. When doctors talk about colorectal cancer, they are almost always talking about this type.

Other, less common types of tumors can also start in the colon and rectum. These include:

- Carcinoid tumors start from specialized hormone-making cells in the intestine.
- Gastrointestinal stromal tumors (GISTs) start from specialized cells in the wall of the colon called the *interstitial cells of Cajal*. Some are non-cancerous (benign). These tumors can be found anywhere in the digestive tract, but it is unusual to find them in the colon.
- Lymphomas are cancers of immune system cells that typically start in lymph nodes, but they can also start in the colon, rectum, or other organs.
- Sarcomas can start in blood vessels, muscle layers, or other connective tissues in the wall of the colon and rectum. Sarcomas of the colon or rectum are rare.

5. What are the causes / risk factors of colo rectal cancers?

Several lifestyle-related factors have been linked to colorectal cancer. In fact, the links between diet, weight, and exercise and colorectal cancer risk are some of the strongest for any type of cancer.

- Being overweight or obese

If you are overweight or obese (very overweight), your risk of developing and dying from colorectal cancer is higher. Being overweight raises the risk of colon cancer in both men and women, but the link seems to be stronger in men.

Physical inactivity

If you are not physically active, you have a greater chance of developing colorectal cancer. Being more active might help lower your risk.

- Certain types of diets

A diet that is high in red meats (such as beef, pork, lamb, or liver) and processed meats (such as hot dogs and some luncheon meats) can raise your colorectal cancer risk.

Cooking meats at very high temperatures (frying, broiling, or grilling) creates chemicals that might raise your cancer risk, but it's not clear how much this might increase your colorectal cancer risk.

Diets high in vegetables, fruits, and whole grains have been linked with a lower risk of colorectal cancer, but fiber supplements have not been shown to help.

It's not clear if other dietary components (for example, certain types of fats) affect colorectal cancer risk.

- Smoking

People who have smoked for a long time are more likely than non-smokers to develop and die from colorectal cancer. Smoking is a well-known cause of lung cancer, but it is also linked to other cancers, like colorectal cancer.

- Heavy alcohol use

Colorectal cancer has been linked to heavy alcohol use. Limiting alcohol use to no more than 2 drinks a day for men and 1 drink a day for women could have many health benefits, including a lower risk of colorectal cancer.

There are some factors that you cannot change for example:

- Being older

Younger adults can develop colorectal cancer, but your chances increase markedly after you turn 50.

- A personal history of colorectal polyps or colorectal cancer

If you have a history of adenomatous polyps (adenomas), you are at increased risk of developing colorectal cancer. This is especially true if the polyps are large or if there are many of them.

If you have had colorectal cancer, even though it has been completely removed, you are more likely to develop new cancers in other areas of the colon and rectum. The chances of this happening are greater if you had your first colorectal cancer when you were younger.

- A personal history of inflammatory bowel disease

If you have inflammatory bowel disease (IBD), including either ulcerative colitis or Crohn's disease, your risk of colorectal cancer is increased.

IBD is a condition in which the colon is inflamed over a long period of time. People who have had IBD for many years often develop *dysplasia*. Dysplasia is a term used to describe cells in the lining of the colon or rectum that look abnormal (but not like

true cancer cells) when seen with a microscope. These cells can change into cancer over time.

If you have IBD, you may need to start being screened for colorectal cancer when you are younger and be screened more frequently.

Inflammatory bowel disease is different from *irritable bowel syndrome (IBS),* which does not increase your risk for colorectal cancer.

- A family history of colorectal cancer or adenomatous polyps

People with a history of colorectal cancer in a first-degree relative (parent, sibling, or child) are at increased risk. The risk is even higher if that relative was diagnosed with cancer when they were younger than 45, or if more than one first-degree relative is affected.

The reasons for the increased risk are not clear in all cases. Cancers can "run in the family" because of inherited genes, shared environmental factors, or some combination of these.

Most people with colorectal cancer have no family history of colorectal cancer. Still, as many as 1 in 5 people who develop colorectal cancer have other family members who have been affected by this disease.

Having family members who have had adenomatous polyps is also linked to a higher risk of colon cancer. (Adenomatous polyps are the kind of polyps that can become cancerous.)

If you have a family history of adenomatous polyps or colorectal cancer, talk with your doctor about the possible need to begin screening before age 50. If you have had adenomatous polyps or colorectal cancer, it's important to tell your close relatives so that they can pass along that information to their doctors and start screening at the right age.

6. What are the symptoms of colo- rectal cancer?

Colorectal cancer might not cause symptoms right away, but if it does, it may cause one or more of these symptoms:

- A change in bowel habits, such as diarrhea, constipation, or narrowing of the stool, that lasts for more than a few days
- A feeling that you need to have a bowel movement that is not relieved by doing so
- Rectal bleeding

- Blood in the stool, which may make it look dark
- Cramping or abdominal (belly) pain
- Weakness and fatigue
- Unintended & unexplained weight loss

Colorectal cancers can often bleed into the digestive tract. While sometimes the blood can be seen in the stool or make it look darker, often the stool looks normal. But over time, the blood loss can build up and can lead to low red blood cell counts (anemia). Sometimes the first sign of colorectal cancer is a blood test showing a low red blood cell count.

Most of these problems are more often caused by conditions other than colorectal cancer, such as infection, hemorrhoids, or irritable bowel syndrome. Still, if you have any of these problems, it's important to see your doctor right away so the cause can be found and treated, if needed.

7. What are the investigations to diagnose colo- rectal cancers?

Your doctor will ask about your medical history to learn about possible risk factors, including your family history. You will also be asked if you're having any symptoms and, if so, when they started and how long you've had them.

As part of a physical exam, your doctor will feel your abdomen for masses or enlarged organs, and also examine the rest of your body. You may also have a digital rectal exam (DRE). During this test, the doctor inserts a lubricated, gloved finger into your rectum to feel for any abnormal areas. He or she may also test your stool to see if it contains blood that isn't visible to the naked eye (occult blood).

Blood tests

Your doctor might also order certain blood tests to help determine if you have colorectal cancer. (These tests also can be used to help monitor your disease if you've been diagnosed with cancer.)

Complete blood count (CBC): This test measures the different types of cells in your blood. It can show if you have anemia .Some people with colorectal cancer become anemic because the tumor has been bleeding for a long time.

Liver enzymes: You may also have a blood test to check your liver function, because colorectal cancer can spread to the liver.

Tumor markers: Colorectal cancer cells sometimes make substances called *tumor markers* that can be found in the blood. The most common tumor markers for colorectal cancer are carcinoembryonic antigen (CEA) and CA 19-9.

Blood tests for these tumor markers can sometimes suggest someone might have colorectal cancer, but they can't be used alone to diagnose cancer. This is because tumor marker levels can sometimes be normal in someone who has cancer and can be abnormal for reasons other than cancer.

Tumor markers are used most often along with other tests to monitor patients who already have been diagnosed with colorectal cancer. They may help show how well treatment is working or provide an early warning of a cancer that has returned.

If symptoms or the results of the physical exam or blood tests suggest that you might have colorectal cancer, your doctor could recommend more tests, more often COLONOSCOPY

8. What is Colonoscopy?

For this test, the doctor looks at the entire length of the colon and rectum with a colonoscope, a thin, flexible, lighted tube with a small video camera on the end. It is inserted through the anus and into the rectum and the colon. Special instruments can be passed through the colonoscope to biopsy or remove any suspicious-looking areas such as polyps, if needed.

Colonoscopy may be done in a hospital outpatient department, in a clinic, or in a doctor's office.

- Biopsy

Usually if a suspected colorectal cancer is found by any screening or diagnostic test, it is biopsied during a colonoscopy. In a biopsy, the doctor removes a small piece of tissue with a special instrument passed through the scope. Less often, part of the colon may need to be surgically removed to make the diagnosis.

- Lab tests of biopsy samples

Biopsy samples (from colonoscopy or surgery) are sent to the lab where they are looked at under a microscope. Other tests may suggest that colorectal cancer is present, but the only way to be sure is to look at the biopsy samples under a microscope.

If cancer is found, other lab tests may also be done on the biopsy specimens to help better classify the cancer.

9. What are Gene tests?

Doctors may look for specific gene changes in the cancer cells that might affect how the cancer is best treated. For example, doctors now typically test the cells for changes in the *KRAS* and *NRAS* genes. Some doctors may also test for changes in the *BRAF* gene. Patients whose cancers have mutations in these genes do not benefit from treatment with certain targeted anti-cancer drugs.

- MSI testing:

Sometimes the cancer cells will be tested to see if they show gene changes called *microsatellite instability* (MSI). Most colorectal cancers do not have high levels of MSI. But most colorectal cancers that are linked to a syndrome (collection of symptoms) -Lynch syndrome.

There are 2 possible reasons to test colorectal cancers for MSI:

- To identify patients who should be tested for Lynch syndrome. A diagnosis of Lynch syndrome can help plan other cancer screenings for the patient (for example, women with Lynch syndrome may need to be screened for uterine cancer). Also, if a patient has Lynch syndrome, their relatives could also have it, and may want to be tested for it.
- Knowing an early-stage colorectal cancer has MSI may change the way it is treated.

Some doctors suggest MSI testing only if a patient meets certain criteria. Others test all colorectal cancers for MSI, and still others decide based on the age of the patient or the stage of the cancer.

10. What are the various Imaging tests to look for colorectal cancer?

Imaging tests use sound waves, x-rays, magnetic fields, or radioactive substances to create pictures of the inside of your body. Imaging tests may be done for a number of reasons, such as:

- To look at suspicious areas that might have cancer,
- To learn how far cancer has spread
- To help determine if treatment is working
- **Computed tomography (CT or CAT) scan**

A CT scan uses x-rays to make detailed cross-sectional images of your body. This test can help tell if colon cancer has spread into your liver or other organs.

Ultrasound: Ultrasound uses sound waves and their echoes to create images of the inside of the body. A small microphone-like instrument called a *transducer* gives off sound waves and picks up the echoes as they bounce off organs. The echoes are converted by a computer into an image on a screen.

Abdominal ultrasound: For this exam, a technician moves the transducer along the skin over your abdomen. This test can be used to look for tumors in your liver, gallbladder, pancreas, or elsewhere in your abdomen, but it can't look for tumors of the colon.

Endorectal ultrasound: This test uses a special transducer that is inserted into the rectum. It is used to see how far through the rectal wall a cancer has penetrated and whether it has spread to nearby organs or tissues such as lymph nodes.

Magnetic resonance imaging (MRI) scan

Like CT scans, MRI scans show detailed images of soft tissues in the body. But MRI scans use radio waves and strong magnets instead of x-rays. A contrast material called *gadolinium* may be injected into a vein before the scan to better see details.

MRI can be used to look at abnormal areas in the liver that might be due to cancer spread, or to look at the brain and spinal cord.

- **Endorectal MRI:** MRI scans can be used in patients with rectal cancers to see if the tumor has spread into nearby structures. This can help plan surgery and other treatments. To improve the accuracy of the test, some doctors use endorectal MRI. For this test the doctor places a probe, called an *endorectal coil*, inside the rectum. This stays in place for 30 to 45 minutes during the test and can be uncomfortable.

Chest x-ray

An x-ray may be done after colorectal cancer has been diagnosed to see if cancer has spread to the lungs.

Positron Emission Tomography (PET) scan

For a PET scan, you are injected with a slightly radioactive form of sugar, which collects mainly in cancer cells. A special camera is then used to create a picture of areas of radioactivity in the body.

The picture from a PET scan is not as detailed as a CT or MRI scan, but it provides helpful information about whether abnormal areas seen on these other tests are likely to be cancerous or not.

If you have already been diagnosed with cancer, your doctor may use this test to see if the cancer has spread to lymph nodes or other parts of the body. A PET scan can also be useful if your doctor thinks the cancer may have spread but doesn't know where.

PET/CT scan: Some machines can do both a PET and CT scan at the same time. This lets the doctor compare areas of higher radioactivity on the PET scan with the more detailed picture of that area on the CT scan.

Angiography

Angiography is an x-ray test for looking at blood vessels. A contrast dye is injected into an artery, and then x-rays are taken. The dye outlines the blood vessels on x-rays.

If your cancer has spread to the liver, this test can show the arteries that supply blood to those tumors. This can help surgeons decide if the liver tumors can be removed and if so, it can help plan the operation. Angiography can also help in planning other treatments for cancer spread to the liver, like embolization.

11. Can colo rectal cancers be detected early?

Tests used to screen for colorectal cancer include:

- **Guaiac-based fecal occult blood test (gFOBT)** and **fecal immunochemical test (FIT):** Samples of stool (feces) are checked for blood, which might be a sign of a polyp or cancer.
- **Stool DNA test:** A sample of stool is checked for certain abnormal sections of DNA (genetic material) from cancer or polyp cells.
- **Sigmoidoscopy:** A flexible, lighted tube is put into the rectum and lower colon to check for polyps and cancer.
- **Colonoscopy:** A longer, flexible tube is used to look at the entire colon and rectum.
- **Double-contrast barium enema:** This is an x-ray test of the colon and rectum.
- **CT colonography (virtual colonoscopy):** This is a type of CT scan of the colon and rectum.

gFOBT, FIT, and stool DNA testing mainly find cancer, but can find some polyps.

Sigmoidoscopy, colonoscopy, double contrast barium enema, and CT colonography are good at finding both cancer and polyps. These tests are preferred if they are available and you are willing to have them.

For most adults, it is recommended to starting screening with one of these tests at age 50. Some people at higher risk for colorectal cancer might need to start screening earlier.

12. What is the treatment for colo rectal cancers?

If you've been diagnosed with colorectal cancer, your cancer care team will discuss your treatment options with you. It's important that you think carefully about each of your choices. You will want to weigh the benefits of each treatment option against the possible risks and side effects.

There are several ways to treat colorectal cancer, depending on its type and stage.

- Surgery (the type of surgery will depend on whether it is for colon or rectal cancer)
- Radiation therapy
- Chemotherapy

For advanced colon and rectal cancer, ablation (treatments that destroy tumors without removing them like using radiofrequency, alcohol, cryotherapy) or embolization (substances are injected to try to block or reduce the blood flow to cancer cells) may also be used.

Depending on the stage of the cancer and other factors, different types of treatment may be combined at the same time or used after one another.

Generally a patient may have to undergo a combination of the ways to treat the cancer.

13. What happens after the treatment?

For many people with colorectal cancer, treatment may remove or destroy the cancer. The end of treatment can be both stressful and exciting. You'll be relieved to finish treatment, yet it's hard not to worry about cancer coming back. This is very common if you've had cancer.

For other people, colorectal cancer may never go away completely. Some people may get regular treatment with chemotherapy, radiation therapy, or other treatments to try to help keep the cancer in check. Learning to live with cancer that does not go away can be difficult and very stressful.

Life after colorectal cancer means returning to some familiar things and also making some new choices.

- Ask your doctor for post treatment plan

This plan might include:

- A suggested schedule for follow-up exams and tests
- A schedule for other tests you might need in the future, such as early detection (screening) tests for other types of cancer, or tests to look for long-term health effects from your cancer or its treatment
- A list of possible late- or long-term side effects from your treatment, including what to watch for and when you should contact your doctor
- Diet and physical activity suggestions

Common Questions on Prostate cancer

1. What is the prostate gland?

The prostate gland makes fluid that forms part of semen. The prostate lies just below the bladder in front of the rectum. It surrounds the urethra (the tube that carries urine and semen through the penis and out of the body).

Almost all prostate cancers are adenocarcinomas (cancers that begin in cells that make and release mucus and other fluids).

2. What are the symptoms of prostate cancer?

Prostate cancer often has no early symptoms. Advanced prostate cancer can cause men to urinate more often or have a weaker flow of urine, but these symptoms can also be caused by benign prostate conditions (BPH).

A few of the symptoms are:

- Weak or interrupted ("stop-and-go") flow of urine.
- Sudden urge to urinate.
- Frequent urination (especially at night).
- Trouble starting the flow of urine.
- Trouble emptying the bladder completely.
- Pain or burning while urinating.
- Blood in the urine or semen.
- Pain in the back, hips, or pelvis that doesn't go away.

Prostate cancer usually grows very slowly. Most men with prostate cancer are older than 65 years and do not die from the disease. Finding and treating prostate cancer before symptoms occur may not improve health or help you live longer.

3. How is prostate cancer diagnosed?

A definitive diagnosis of prostate cancer is only made on a biopsy.

Other test that may aid to help diagnose prostate cancer are:

- Digital Rectal Exam – the physician will examine the prostrate by inserting a finger through the anus.
- PSA levels
- Trans rectal ultrasound
- Trans rectal MRI / MRI of pelvis

4. What is the treatment of prostate cancer?

- Surgery
- Chemotherapy
- Hormone therapy
- Radiation

Usually the prognosis of prostate cancer is good and the patient usually doesn't die due to it

5. What are the tests that can screen / help detect prostate cancer earlier?

1. Blood PSA levels
2. Digital Rectal Examination

FREQUENTLY ASKED QUESTIONS BY PATIENTS

1. Will cancer lead to death?

Survival rates vary by cancer type and by the stage at which it is diagnosed, ranging from majority survival to complete mortality five years after diagnosis. Once a cancer has metastasized, prognosis normally becomes much worse. Predicting short- or long-term survival depends on many factors. The most important are the cancer type and the patient's age and overall mental and physical health and the other factors are type of cancer, type of treatment, spread of cancer.

2. **Should I come empty stomach for screening?**

   Usually it is not needed to come empty stomach for screening of common cancers like breast, cervix, and oral cancers. However to screen colorectal or lung cancers it is advisable to ask your physician as the tests are usually scheduled.

3. **Can I resume work after screening?**

   Yes, after most screening tests you can resume work. However you may need to rest for a while after screening for colo-rectal cancers.

4. **Can I come alone with screening or with companion?**

   For routine screening for breast, cervical and oral cancers you can come on your own. However for colorectal screening it is advisable to bring a companion.

5. **Can I resume work after I'm detected with cancer?**

   After you are detected with cancer, yes you can do all your routine work. BUT you must on a MANDATORY basis schedule a visit to your physician who will be able to guide you better.

   Always remember the earlier the cancer is detected, the easier and better are the treatment options.

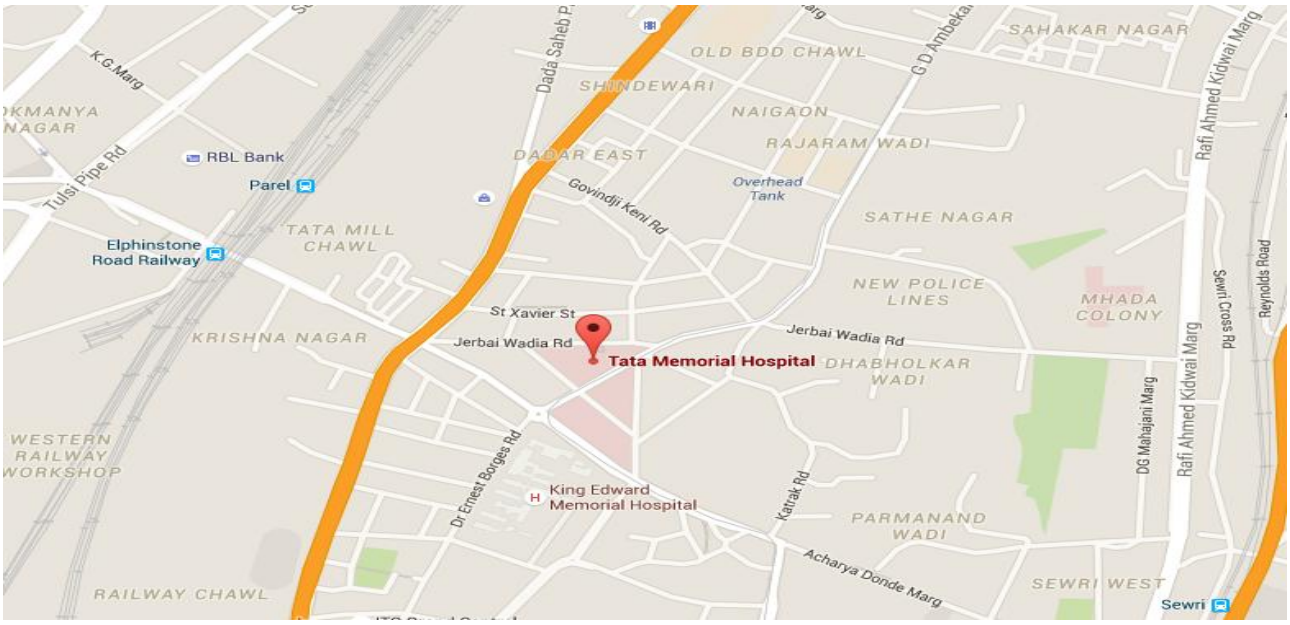
6. **How often should I come for screening?**

   Based on your initial cancer screening findings, your physician will be able to tell you better when you should be coming for the next screening examination.

7. **Is blood group related to cancer?**

   No, your blood group is not directly related in getting cancer. It is the genetic factors (genes) that are responsible for the same.

HOW TO COME TO TATA MEMORIAL HOSPITAL?



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DEPARTMENT OF PREVENTIVE ONCOLOGY

The department of Preventive Oncology was set up in March 1993 with the primary aim of prevention and early detection of common cancers.

1) **Where should I go once I reach Tata Memorial Hospital to screen myself?**

   Once you reach Tata Memorial Hospital, you need to come to the: **Department of Preventive Oncology,** in the Service Block -3RD Floor.

2) **What is the procedure once I reach the department?**

   Once you are in the department of Preventive Oncology,

   - You can go to the counter directly and request to make a file for yourself,
   - You will be asked to fill a form first which will contain a few basic information details about yourself.

- You will be requested to have a photo taken at the counter itself, which is used to make your identity card.

3) What are the services offered in the department of Preventive Oncology?

Department of Preventive Oncology offers the following services: -

- Health education on Cancer prevention and early detection
- Cancer Screening & Follow-up clinics
- Health Manpower Training and Development in Preventive Oncology
- Technical Advice for establishing Preventive Oncology activities
- Scientific research Projects
- Special Focus Programme

4) What are the charges in Preventive Oncology for screening packages?

DESCRIPTION	**GENERAL CATEGORY**	**PRIVATE CATEGORY**	
	C (Rs)	**B (Rs)**	**F (Rs)**
Routine Examination of Female Patients	**600**	**1200**	**1500**
Routine Examination of Male Patients	**500**	**1000**	**1200**

5) What are the investigations that are provided in this package?

Sr. No.	**Investigations**	
1	Consultation	
2	Small biopsies	Breast - small biopsy
		Lymph node – small biopsy
3	Cytology (FNA)	
4	PAP smear cytology	
5	HPV-DNA(Qualitative)	
6	Cytology – Non Gyneac (oral)	
7	Sputum cytology	
8	CBC	
9	Sputum cytology	
10	CBC	
11	X- ray chest	
12	Mammography	
13	USG	Breast
		Pelvis
14	PSA	