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WOMENS HEALTH, BREAST CANCER, PREVENTIVE MEASURES, AND TREATMENT

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ABSTRACT

INTRODUCTION

Breast cancer is a kind of invasive tumour that begins in the breast gland. Mammograms, breast self-examination (BSE), biopsy, and specialist tests on breast cancer tissue are used to identify breast cancer. Breast cancer treatment options include surgery, radiation, hormone therapy, chemotherapy, and targeted therapy. Controllable risk factors for breast cancer can be reduced. Breast cancer is now the most commonly diagnosed life-threatening cancer in women, as well as the leading cause of cancer mortality in women. Breast cancer is impacted by inheritance, but it can develop even if you don't have a family history or possess the disease's genes. However, smoking, hormone therapy, having thick breasts, and being overweight can also cause breast cancer,Changes in the nipple and some discharge, lumps or swelling in the arms, changes in the feel or size are also observed in breast cancer patients. It also has types such as Invasive Ductal Carcinoma (IDC), which has some subtypes but is characterized by a soft, fleshy mass that resembles the medulla of the brain, abnormal cells invade the stroma of the breast in clusters between the ducts and lobes, there is also imaging and biopsy, which prove to be more successful, then biopsy method a tiny tissue sample is extracted from an area of concern in the breast, a pathologist then analyses the tissue under a microscope.

CONCLUSIONS

Some molecular characteristics are also tested, for prevention physical exercise has proven to control weight because those who are overweight are more at risk of developing breast cancer, knowing your family history will help in reducing the risk, for mothers engaging in breast feeding and conceiving early will help in prevention of breast cancer in the early stage and promote women's health Raising public awareness and improving screening would result in earlier diagnosis at phases amenable to surgical resection and curative

therapy. As a result, breast cancer survival rates will improve dramatically, finally teaching patients, family, and community members about cancer risk factors and the need of adopting preventative actions to avoid acquiring cancer.

Key words: Cancer, treatment, Radiation, chemotherapy, Breast cancer, cancer prevention, Breast Diagnosis, Breast feeding.

INTRODUCTION

Breast cancer occurs when a malignant (cancerous) tumor originates in the breast, As breast cancer tumors mature, they may metastasize (spread) to other parts of the body, the primary route of metastasis is the lymphatic system which, ironically enough, is also the body's primary system for producing and transporting white blood cells and other cancer-fighting immune system cells throughout the body. Metastasized cancer cells that aren't destroyed by the lymphatic system's white blood cells move through the lymphatic vessels and settle in remote body locations, forming new tumors and perpetuating the disease process.

Breast cancer is fairly common. Because of its well-publicized nature, and potential for lethality, breast cancer is arguably the most frightening type of cancer diagnosis someone can receive. However, it is important to keep in mind that, if identified and properly treated while still in its early stages, breast cancer can be cured.

Breast cancer is not just a woman's disease; it is quite possible for men to get breast cancer, although it occurs less frequently in men than in women. Our discussion will focus primarily on breast cancer as it relates to women but it should be noted that much of the information is also applicable for men.

Breast cancer is an invasive tumor that develops in the mammary gland. Breast cancer is detected via mammograms, breast self-examination (BSE), biopsy, and specialized testing on breast cancer tissue. Treatment of breast cancer may involve surgery, radiation, hormone therapy, chemotherapy, and targeted therapy. Breast cancer risk may be lowered by managing controllable risk factors.

ABOUT THE BREAST

The breast is made up of different tissue, ranging from very fatty tissue to very dense tissue. Within this tissue is a network of lobes. Each lobe is made up of tiny, tube-like structures called lobules that contain milk glands. Tiny ducts connect the glands, lobules, and lobes, carrying milk from the lobes to the nipple. The nipple is located in the middle of the areola, which is the darker area that surrounds the nipple. Blood and lymph vessels also run throughout the breast. Blood nourishes the cells. The lymph system drains bodily waste products. The lymph vessels connect to lymph nodes, the tiny, bean-shaped organs that help fight infection.

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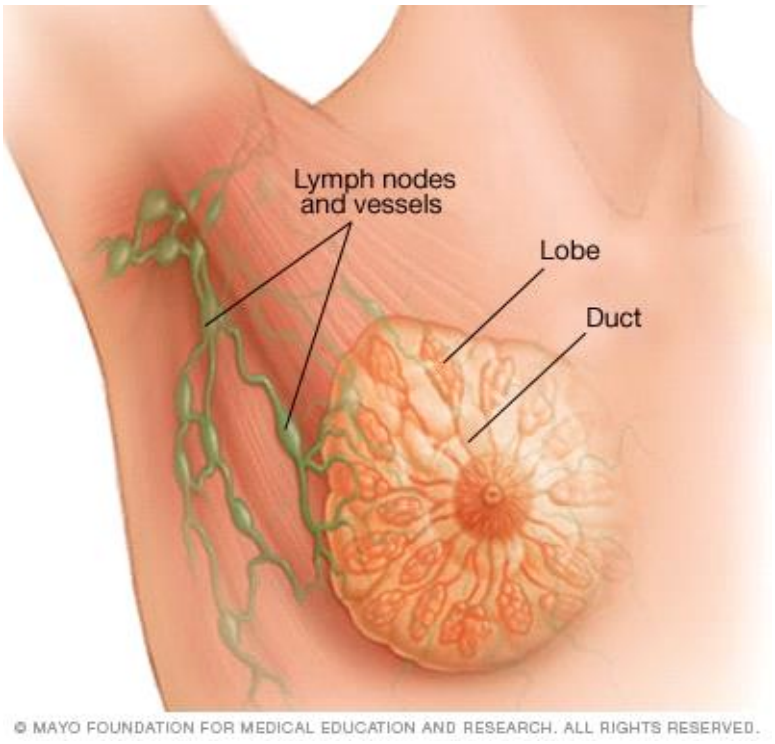
CAUSES AND RISK FACTORS OF BREAS CANCER



Breast cancer is influenced by heredity, but it can develop even if you don't have a family history or carry genes for the disease. There are a number of conditions and environmental exposures associated with alterations in the breast tissue that lead to breast cancer, including smoking, hormone therapy, having dense breasts, and being overweight.

Breast cancer affects one in every eight women throughout their lifetimes. While it is rare, men can develop breast cancer as well, whether you have a family history of breast cancer or not, attention to the causative factors may help prevent you from developing the disease.

Common Risk Factors

Breast cancer occurs when there are slight changes in the cells and tissues of the breast. These altered cells cause the formation of a tumor (or more than one tumor). These tumors can be aggressive, invading normal breast tissue, and potentially even spreading to other parts of the body (including the bones, lungs, and brain) through the lymph nodes and bloodstream.

While the cause or causes of these cellular changes has only been hypothesized thus far, there are a number of factors associated with breast cancer. These risk factors increase the chance of developing the disease, and they may do so by causing the condition or by reducing the body's protection against it.

- **AGE**

It is estimated that 80 percent of women diagnosed with breast cancer are 50 or older. Most types of cancer, including breast cancer, occur more frequently with advancing age. This is due to the build-up of risk factors, age-related changes in the cells of the body and declining immune system protection from cancer.[4]

Age of First Menses and Menopause

Having your first menstrual period at an earlier age and experiencing menopause at a later age meaning more years of having your period is associated with a higher chance of developing breast cancer. This is believed to be due to the hormonal changes that occur each month with a woman's menstrual cycle.

- **DENSE BREASTS**

You can't control whether you have dense breast or not, and this characteristic is linked with an increased chance of developing breast cancer, some efforts are underway to standardize mammogram reports of dense breasts and their associated breast cancer risks.

A SCREENING STRATEGY FOR WOMEN WITH DENSE BREAST

Hormone Therapy

Oral contraceptives and hormone replacement therapy contain estrogen and progesterone. These hormones have been linked with breast cancer, but they do not necessarily pose this risk for all women.

Your medical history and family history play a role in whether any type of hormone could increase your risk of developing breast cancer.

Previous Cancer

Women (and men) who have previously been diagnosed and treated for any type of cancer, especially breast or ovarian cancer, are at a greater risk of developing breast cancer.

Will breast cancer return?

- **Pregnancy and Breastfeeding**

Women who never become pregnant or who have children at a later age are more likely to develop breast cancer. Breast feeding is also associated with a lower risk of the disease. These factors are believed to be related to the protective effects of hormonal changes that occur during pregnancy and lactation.

- **Heredity and Genetics**

Having a mother, sister, or daughter with breast cancer doubles your chances of getting the disease yourself. About 5 percent to 10 percent of women with breast cancer have a family history of the condition.

That said. Hereditary breast cancer is complicated. Many breast cancer genes have been identified, but not all women with breast cancer have these genes, even when breast cancer runs in the family.

And many women who have the genes do not have a family history of breast cancer.

HOW FAMILY HISTORY AFFECT BREAST CANCER RISK

Breast Cancer Genes

The most common genetic mutation is that of the BRCA gene pair, referred to as **BRCA1 and BRCA2** but there are a number of breast cancer genes, which are often referred to as Non BRCA breast cancer genes, there are also probably additional breast cancer genes that have not yet been identified.

Because there are so many breast cancer genes, they are unlikely to cause breast cancer in the same way.

Having a breast cancer gene could predispose you to the condition. When a genetic predisposition is combined with other risk factors, it becomes even more likely that you will develop the disease.

If you have breast cancer in your family, your doctor might recommend that you have genetic testing.

LIFESTYLE RISK FACTORS

There are a few activities and exposures that are linked with breast cancer. While they are often described as lifestyle choices, some of these behaviors are in fact addictive, making them difficult to stop. If you drink, smoke, or consume an unhealthy diet, consider getting professional help if you want to change your habits.

Lifestyle risk factors associated with breast cancer include:

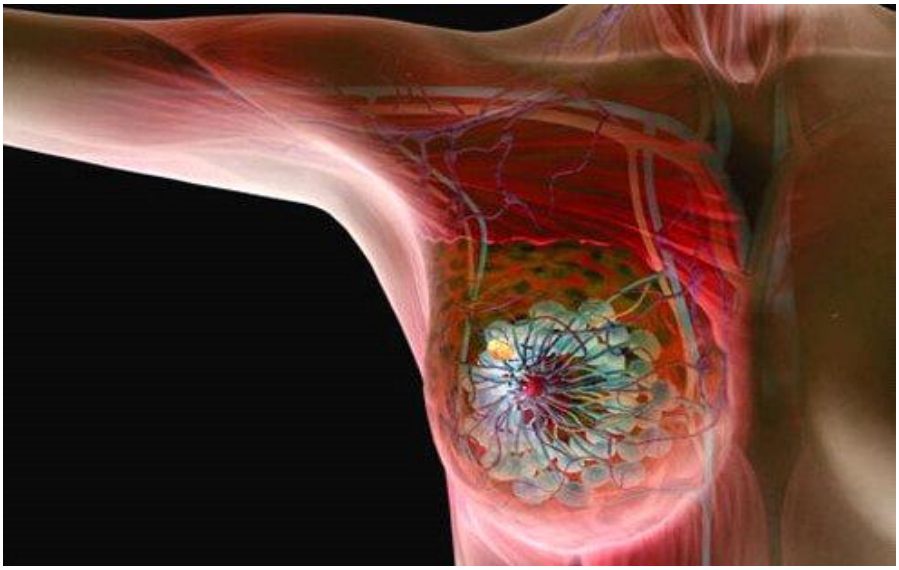
. **Smoking:** Cigarettes contain a number of chemicals, many of which are known carcinogens. Smoking is associated with breast cancer, as well as a number of other types of cancer.

. **Alcohol consumption:** Women who drink two to five drinks a day have 1.5 times the risk of getting breast cancer compared to women who do not drink alcohol.

. **Weight:** Obesity may increase the risk of breast cancer. This is largely due to altered estrogen hormone levels that are associated with weight gain in women.

. **Diet:** There have been a number of theories about food and breast cancer Experts suggest that some food preservatives and dyes may be carcinogenic and can increase the risk of all cancers, including breast cancer.

BREAST CANCER SYMPTOMS



Breast cancer may or may not cause symptoms. Some women may discover the problem themselves, while others may have the abnormality first detected on a screening exam. Common breast cancer symptoms include the following:

- Non-painful lumps or masses
- Lumps or swelling under the arms
- Nipple skin changes or discharge
- Noticeable flattening or indentation of the breast
- Change in the nipple

- Unusual discharge from the nipple
- Changes in the feel, size, or shape of the breast tissue

TYPES OF BREAST CANCER

There are many different types of breast cancer, and each case is usually classified according to its type during the diagnostic process, this is because the type of breast cancer will affect the appropriate treatment for each patient, the most common types of breast cancer are covered in more detail below.

- **Ductal Carcinoma in Situ (DCIS)**

DCIS is an early form of breast cancer with the presence of cancerous cells inside the milk ducts of the spread that has not yet spread to other areas. It is also sometimes referred to as Intraductal, non-invasive, or pre-invasive cancer. Without treatment, DCIS can spread to other areas and become an invasive breast cancer.

- **Invasive Ductal Carcinoma (IDC)**

IDC is the most common type of breast cancer to be diagnosed. This type of breast cancer is also sometimes referred to as no special type (NST) or not otherwise specified (NOS).

There are various subtypes of invasive ductal carcinoma, which include:

Tubular carcinoma of the breast: usually small growths (less than 1 cm) and composed of tube-shaped; hence the name “tubules.”

Medullary carcinoma of the breast: a soft, fleshy mass that resembles the medulla of the brain.

Mucinous (or colloid) carcinoma of the breast: a tumor composed of abnormal cells that sit in pools of mucin.

Papillary carcinoma of the breast: a tumor with small projection and a clear border.

Cribriform carcinoma of the breast: abnormal cells invade the stroma of the breast in clusters between the ducts and lobules.

- **Lobular Carcinoma in Situ (LCIS)**

LCIS involves the abnormal growth of cells that begin in the lobules of the breasts, which are the glands at the end of the ducts that are responsible for the production of milk, In situ means that the abnormal cell growth is confined to the lobule and has not spread to surrounding tissues, although this could occur in the future

- **PAGET'S DISEASE OF THE NIPPLE**
- Paget’s disease of the nipple is an uncommon type of breast cancer that presents with a red and scaly rash on the skin of the breast and nipple. This type of cancer accounts for less than 5% of cases of breast cancer in the United States.
- **MOLECULAR SUBTYPES OF BREAST CANCER**

There are several molecular subtypes of breast cancer according to the type of genes that the cancer cells express. These include:

Luminal A: hormone receptor positive, HER2 negative and low levels of Ki-67 protein. This subtype tends to grow slowly and is associated with a good prognosis.

Luminal B: hormone receptor positive and high levels of Ki-67 protein. This subtype tends to grow more quickly than luminal B and is associated with a poorer prognosis.

Triple-negative: hormone receptor negative and HER2 negative: This subtype is common in women with a mutation in the BRCA1 gene.

HER2: hormone receptor negative and HER2 positive: This subtype tends to grow more quickly than luminal subtypes and has a poor prognosis without treatment, but targeted therapies are improving treatment outcomes for affected individuals.

Normal-like: hormone receptor positive, HER2 negative and low levels of Ki-67 protein. This subtype is similar to luminal A but has a slightly worse prognosis.

- **PHYLLODES TUMORS OF THE BREAST**

Phyllodes tumors, also known as cystosarcoma phyllodes, are a rare type of breast cancer that involves tumor cells that grow in a leaf-like pattern. This type tends to grow quickly, but is usually localized to the area of the breast and does not spread around the body.

HOW IS BREAST CANCER DIAGNOSED

Self-Checks

Breast cancer can produce changes in the appearance or texture of your breast. Women (and men) need to pay attention to any variations, which can include:

-Discoloration

-A visible or palpable lump

-Nipple discharge

-Bleeding

-Breast pain (rare)

You may be able to feel lumps and growths with your fingers even if they don't produce visible changes in your breasts. Although self-checks are not recommended as a screen for breast cancer, regular breast exam by a health care provider may be important for women at higher risk for breast cancer.

- **PHYSICAL EXAMINATION**

During your annual physical, your physician will typically conduct a clinical breast exam to identify lumps or variations in your breasts. They will also perform this test if you come in with symptoms that could indicate breast cancer.

Your doctor will ask you about any changes you may have noticed, such as marks on your skin or an inverted nipple. If these are congenital (meaning you've had them since birth), then they aren't necessarily concerning, even if they're unusual. Your doctor may note congenital breast abnormalities in your chart so that your medical team will be aware of them and follow up on any changes.

If you have dense or large breasts, it may be difficult for your doctor to feel small lumps during an examination.

- **LABS AND TESTS**

If you have one or more lumps, your doctor will recommend further testing. In some cases, your doctor may order blood work, but this is more common with other types of cancer. When breast cancer is suspected, diagnosis is typically done via imaging and biopsy.

- **IMAGING**

A mammogram is an X-ray image of the breast. It's a key screening tool that can detect breast cancer up to two years before it can be felt by physical examination. Screening mammograms are recommended yearly for women over the age of 45, and sometimes for younger women or men who have a high risk of breast cancer.

Mammograms can visualize benign (non-cancerous) breast conditions and breast cancer, but they can't always verify the difference.

A few other imaging tests are also used in breast cancer diagnosis. While these techniques can helpwith diagnosing breast cancer, a biopsy is the only test that can confirm the disease.

- **DIAGNOSTIC MAMMOGRAM**

While a screening mammogram looks at the whole breast, a diagnostic mammogram generally examines one section in greater detail, usually by getting more images of a small area to visualize it better. You might have a diagnostic mammogram if your doctor is concerned about something on your screening mammogram.

- **ULTRASOUND**

Breast Ultrasound creates images of the breast using sound waves. Sometimes used as a follow-up test after a mammogram with an abnormal finding, a breast ultrasound can help differentiate between a liquid-filled cyst and a solid mass, such as a tumor.

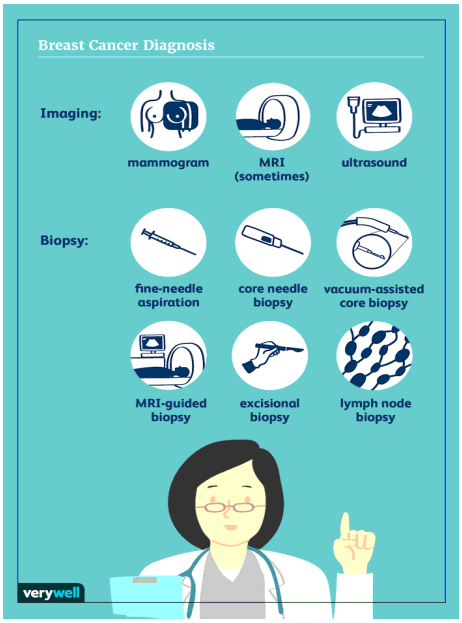
BREAST MAGNETIC RESONANCE IMAGING (MRI)

Breast MRI uses magnetic fields to create an image of the breast. It may be recommended to aid diagnosis in some instances, but it is not used in all situations. In addition, it's not as effective as a mammogram for many breast conditions.

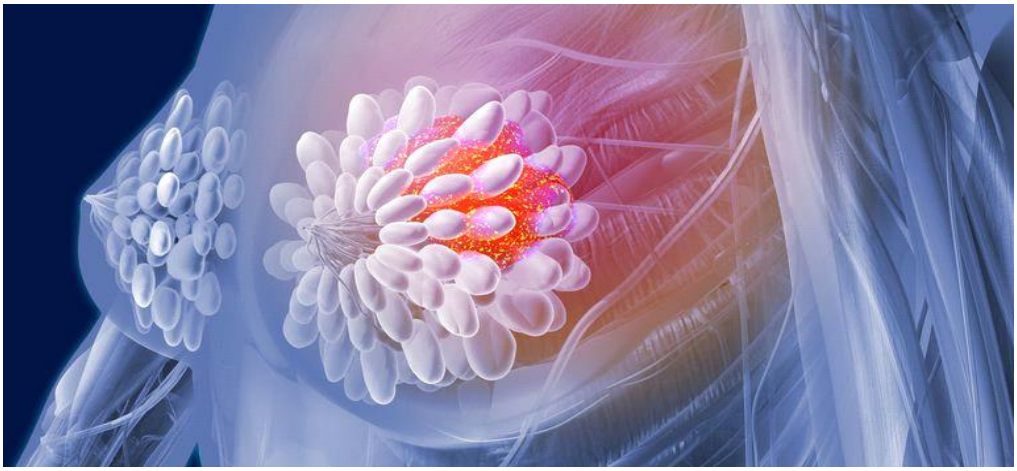
BIOPSY PROCEDURES

During a Breast biopsy,a small tissue sample is removed from an area of concern in the breast. A pathologist then examines the tissue under a microscope. Some molecular characteristics are tested as well.

Several biopsy types and methods are used to diagnose breast cancer. These procedures generally involve numbing the skin around the area, and you may need a few stitches after your procedure. You might experience mild pain for a few days after a breast biopsy, but most women do not experience any pain or adverse effects after that.



BREAST CANCER PREVENTION



- **PHYSICAL EXERCISE**

Physical activity may reduce your risk of breast cancer. Studies published in 2014 by the Women's Health Initiative found that women who walked briskly one to two hours per week reduced breast cancer risk by 18%. Exercise doesn't always mean traditional gym exercises either. You can dance, chase your kids, play a sport whatever gets your heart pumping.

Why it's important: Exercise seems to protect against breast cancer in several ways. First, it helps control weight. An ACS study found that women who'd gained 21 to 30 pounds since age 18 were 40 percent more likely to develop breast cancer than those who hadn't gained more than 5 pounds.

Blame it on estrogen, which can stimulate cell overgrowth, and thus, breast cancer. Before menopause, most of your estrogen is produced by your ovaries. But after menopause, your ovaries stop pumping out the hormone and most of it becomes fat tissue. The more fat in a woman's body the more estrogen,

- **KNOW YOUR FAMILY HISTORY**

Having a family or personal history of breast cancer increases your risk. If an immediate relative, such as your mother or sister, has had breast cancer, it is important to let your doctor know, as breast cancer can be genetic.

Genetic testing for the BRCA1 and BRCA2 genes, as well as counseling, is available for those concerned about their risk. Keep in mind, however, that just because your mother or sister had breast cancer does not mean you will definitelydevelop the disease.

Why it's important: About 5 to 10 percent of all cancers, including breast cancer, are hereditary, passed from one generation to the next via a variety of mutated genes. Your father's family counts as much as your mother's, Look at your family's history of other kinds of cancer, too. Men can carry some of the same abnormal genes, such as BRCA! And 2, that up the risk of not only breast cancer, but also Ovarian cancer in women, pancreatic cancer in men and women, and early prostate and testicular cancers in men. Research shows that roughly 72

percent of women who inherit a BRCA1 mutation and 69 percent who get a BRCA 2 mutation will develop breast cancer by the time they hit 80, the National cancer institution says.

Multiple diagnoses on either side of your family can be a clue to a hereditary link, so be sure to take a look at second- and third-degree relatives, too (aka, your aunts, uncles, cousins, and more).

- **BREASTFEEDING**

Researchers believe that the months without a period during pregnancy and breastfeeding may reduce a woman's risk of breast cancer. This accompanies the data that suggests that late-onset menstruation and early menopause reduce risk as well, due to the smaller window of estrogen exposure over a lifetime.

Why it's important: Women who consistently breastfeed for the first 6 months have a 10 percent reduced risk of death from cancer compared with those who don't, found a recent study in the American Journal of Clinical Nutrition. One reason: Because a woman doesn't menstruate while breast-feeding, it limits the number of cycles she has over a lifetime, which lowers the amount of estrogen her body is exposed to.

- **CONCEIVE EARLY**

It's not always possible to plan when or if you get pregnant, but research has shown that having no biological children, or having your first child in your mid-30s or later, increases the risk for breast cancer.

- **AVOID HORMONE REPLACEMENT THERAPY**

Studies have shown a connection between longtime Hormone replacement therapy (HRT) and breast cancer. This link suggests that HRT with a combination of estrogen and progesterone raises the risk. Five years after discontinuing HRT, the risk drops. If you need to take hormone replacement therapy, talk to your doctor about weighing the risks and benefits.

- **EXAMINE YOUR BREASTS MONTHLY**

Checking your breasts every month may not reduce your risk of developing breast cancer, but it may help detect breast cancer early. The earlier breast cancer is found, the more treatable it is.

CONCLUSION

A plan for the diagnosis and treatment of cancer is a key component of any overall cancer control plan. Its main goal is to cure cancer patients or prolong their life considerably, ensuring a good quality of life. In order for a

diagnosis and treatment programme to be effective, it must never be developed in isolation. It needs to be linked to an early detection programme so that cases are detected at an early stage, when treatment is more effective and there is a greater chance of cure. It also needs to be integrated with a palliative care programme, so that patients with advanced cancers, who can no longer benefit from treatment, will get adequate relief from their physical, psychosocial and spiritual suffering. Furthermore, programmes should include an awareness-raising component, to educate patients, family and community members about the cancer risk factors and the need for taking preventive measures to avoid developing cancer.

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