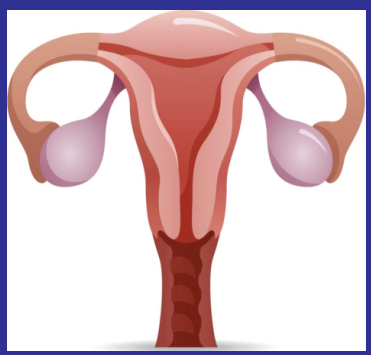
Tata Memorial Hospital
Department of Preventive Oncology

A Training Module on
Canncer Awareness for Prevention and Early Detection of Breast and Uterine Cervix Cancer



Prepared by
Dr. Gauravi Mishra, MD
Dr. Sharmila Pimple, MD

Publication No.2/2019

A Training Module on

Cancer Awareness for Prevention and Early Detection of Breast and Uterine Cervix Cancer

DEPARTMENT OF PREVENTIVE ONCOLOGY

It is estimated that there were 11,57,294 new cancer cases, 7,84,821 deaths and 22,58,208 people living with cancer, in India, in 2018, according to GLOBOCAN 2018 data. The five most common cancers affecting the Indian population are breast, lip, oral cavity, uterine cervix, lung and stomach. Cancers of major public health relevance such as breast, lip, oral cavity and uterine cervix contribute to 32.8% of all cancers among Indian population. These cancers can be prevented, screened for and/or detected early and treated at an early stage. This could significantly reduce the death rate from these cancers.

The cancer toll in developing countries, especially India, is due to the fact that over 70% of cases are detected late and report for treatment in very advanced stages. Apart from the pain and misery that cancer inflicts on the patient and his family, the economic impact of this disease is catastrophic. Simple preventive measures and regular screening can bring down these deaths drastically and even have other health benefits. With the principal objective of prevention and early detection of common cancers, the Tata Memorial Hospital set up the Department of Preventive Oncology in March 1993. Ever since, the Department of Preventive Oncology has been raising awareness and concern about cancer and affirming the prevention and curability of cancers, if detected early. As the level of cancer awareness rises, the health seeking behaviour towards early detection will increase and consequently the cancer load in the country will begin to decline.

The Department of Preventive Oncology, Tata Memorial Hospital, Mumbai, is a designated WHO Collaborating Centre for Cancer Prevention, Screening and Early Detection (IND 59), Region SEARO, since 2002. The five main thrust areas of the department are:

- Information, Education and Communication (IEC)
- Clinic and Community-based, Opportunistic-Screening
- Health Manpower Development
- Advocacy, NGO-Training and Networking
- Research

The department is housed on the third floor of the 'Service Block', Tata Memorial Hospital, Parel, Mumbai: 400012.

Ph: +91-22-24154379
Email: preventive@tmc.gov.in

A Training Module on

Cancer Awareness for Prevention and Early Detection of Breast and Uterine Cervix Cancer

Dr. Gauravi Mishra, M.D.
Professor & Physician, Department of Preventive Oncology

Dr. Sharmila Pimple, M.D.
Professor & Physician, Department of Preventive Oncology

Publication No. 2
2019

Tata Memorial Centre
Department of Preventive Oncology
Mumbai-400012, India.

Published by the Department of Preventive Oncology,
Tata Memorial Hospital

Distributed by the Department of Preventive Oncology
(preventive@tmc.gov.in)

Index

Preface

India is in the roll out mode of the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular diseases and Stroke (NPCDCS). Health being a State subject, different States are at various stages of implementation. There are directives to the State Government to roll out the Cancer Control Programme. However, the State Health Services manpower is not trained to implement either cancer awareness or common cancer screening. The Department of Preventive Oncology at the Tata Memorial Hospital is actively engaged in training the health services staff. This booklet will guide the paramedical staff Accredited Social Health Activist (ASHAs), Auxiliary Nurse Midwifery (ANMs), Anganwadi Workers (AWWs), Primary Health Workers (PHWs), Community Health Volunteers (CHVs) and other staff] from the government and private sectors about conducting cancer awareness sessions for the prevention and control of Breast Cancers and Cervical Cancers. Our intent is to translate this document into as many Indian languages as possible, so that it could be widely used.

Dr. Gauravi Mishra & **Dr. Sharmila Pimple**

Acknowledgements

The authors gratefully acknowledge the following personnel of Preventive Oncology Department, Tata Memorial Hospital for their valuable and tireless contribution in the preparation of this manual:

Dr. Heena Shaikh, Dr. Pallavi Uplap, Dr. Sheetal Kulkarni and Dr. Dolorosa Fernendes who assisted in editing the various versions of this manual;

Mr. Tushar Jadhav responsible for designing the manual and also the background graphics of the cover page;

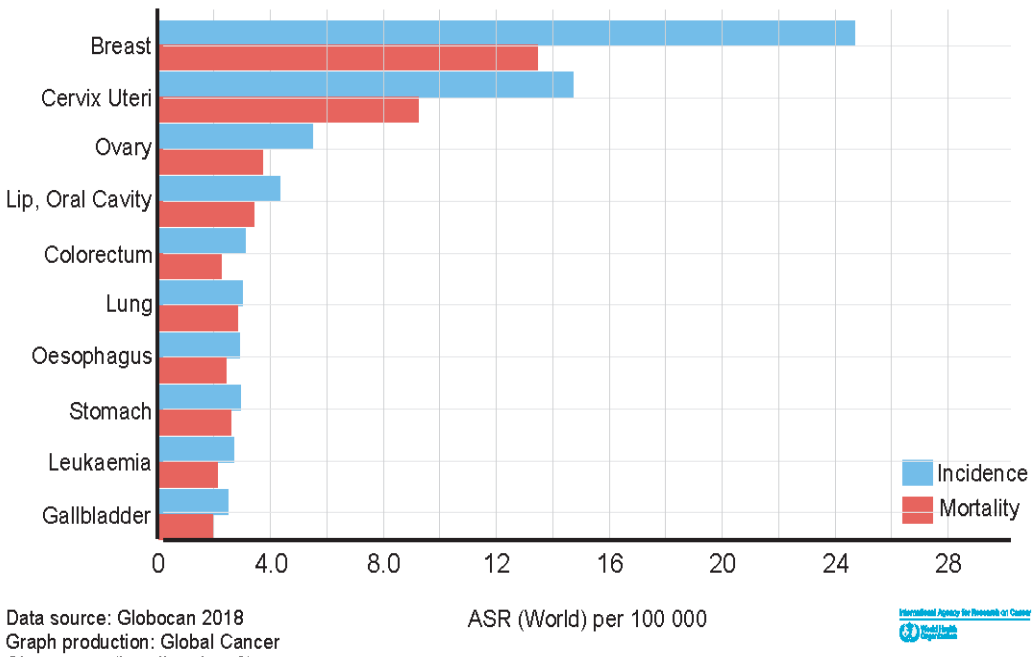
Dr. Kshma Vairagi, Ms. Vaishnavi Bhagat, Ms. Anjali Salvi for assisting in translation of Hindi and Marathi versions of the manual.

We are extremely grateful to Dr. Shripad Banavali, Director Academics, Tata Memorial Centre for his support and encouragement to bring out this manual.

Background

Cancers of cervix and breast account for 44% of cancers and 40% of all deaths from cancers among women in India. Breast Cancer is the most common cancer among Indian women followed by Uterine cervix cancer.(1)

Estimated age-standardized incidence and mortality rates (World) in 2018, India, females, all ages



Data source: Globocan 2018
Graph production: Global Cancer Observatory (http://gco.iarc.fr)

The global burden of breast cancer is expected to cross two million by the year 2030, with growing proportions from the developing countries.(2) With the rising breast cancer incidence in India(3) and disproportionately higher mortality,(4) it is essential to understand the level of cancer literacy, especially since the average age at diagnosis of breast cancer is 10 years younger among Indian women as compared to women in the western countries.(5) India also

accounts for about 20% of cervical cancer cases reported worldwide.[6] It is one the leading causes of mortality among women accounting for 23.3% of all cancer deaths.[7]. Lack of awareness of treatment of cervical and breast cancer may lead to low compliance to follow up diagnostic investigations and further treatment. This is a major hurdle for the success of any screening program.[8] Various studies from the developing countries report lack of awareness to be a major predictor for lack of willingness for cancer screening.[9,10] Poor awareness about symptoms and it's sequelae may lead to delayed health seeking and higher mortality in the absence of proactive interventions to improve early detection.[11,12,13,14]

Cancer screening programs in developing countries identified various challenges such as low participation and poor follow-up among the participants.[15,16,17] The common reasons for denial of screening is the subjective feeling of wellness and hence no perceived need to undergo screening, preference to undertake other personal work, fear of the screening procedure, etc. The awareness programs need to be specifically designed to enhance the understanding regarding risk factors, benefits of early detection and the available treatment options.[18] There is an urgent call for more effective nation and state wide cancer literacy programs as well as engagement with community level organizations and the health system.[19] The Health Education Program (HEP) needs to be specifically designed to enhance the understanding regarding risk factors, benefits of early detection and the available treatment options. Considering these, we have prepared Health Education Module to enable the paramedical staff to deliver cancer awareness regarding Breast and Cervical Cancer.

Introduction to Health Education

What is Health Education?

Health education is any combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes. [20]

Where Health Education should be given? [21]

Health Education locations are not limited to just health centers, existing clinics, outpatient departments or hospitals but every encounter between the Health personnel and community is an opportunity for delivering Health Education and educating the people. Opportunities for Health education may be provided in those places where people come together like, community centers, religious places, shops, clubs, youth groups, ladies club etc.

Whom should we consider to deliver Health Education? [21]

Even though doctors and medical assistants have large burden of clinical work, they should consider health education as an essential role. They should take lead in Health Education and train paramedical staff to deliver organized health education. Every paramedical staff should be trained in delivering health awareness on different aspects and thus educate the community e.g. ANMs, ASHA, youth workers, and teachers etc. Elders in the village, religious leaders, family physicians and political leaders have influence in the community. The trained Health workers should ensure their support in the HEP.

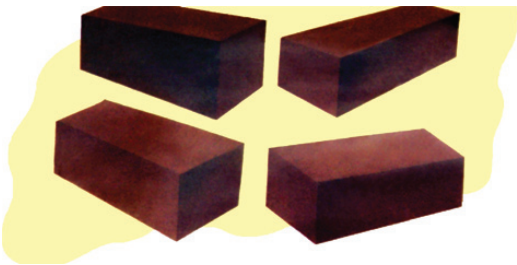
Principles of effective health education: [21]

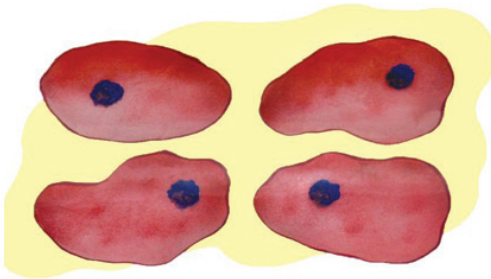
1. Aimed at people who have influence in the community.
2. Repetitive and reinforced by using effective methods depending upon the population or community
3. Adaptable and by different channels of communication like songs, drama, and storytelling.
4. The effective Health education should be engaging to attract the community's attention.
5. By using easy, understandable and local language of community.
6. HEP should be interactive. Sufficient time should be given for discussion and feedback on understanding.
7. Advisable to give in small groups so that people will not hesitate to ask queries.

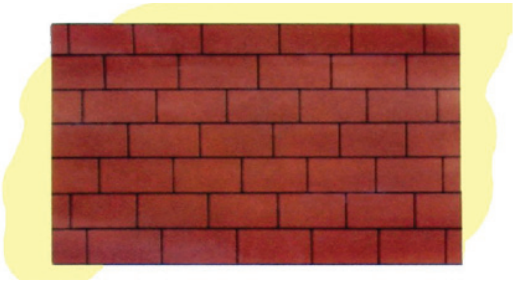
What Is Cancer?

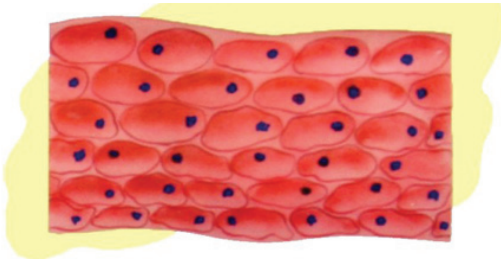
Let us first understand what CANCER is.

Just as a wall of a building is made of several bricks, our body is made up of cells. Even if one brick of the wall develops a crack through it, eventually the building is damaged. Similarly, even if one cell of the body grows out of control it may cause cancer. If the repairs of the wall are not done on time, entire building collapses. Similarly, if cancer is not detected and treated at an early stage, it advances and thereby causes death of the person.



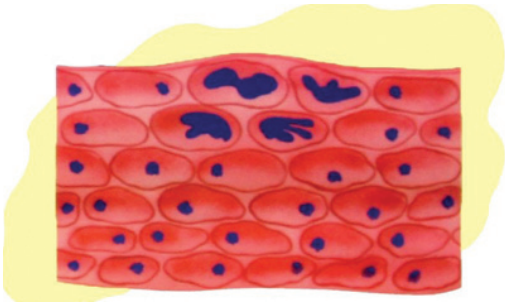




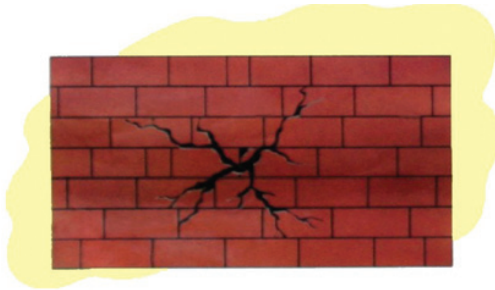


WALLS ARE MADE OF BRICKS

ORGANS ARE MADE OF CELLS

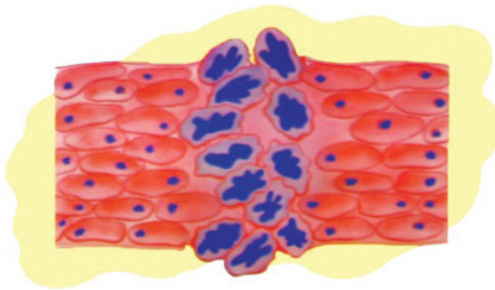


ONE CELL GROWS ABNORMALLY
WHOLE HUMAN BODY IS DAMAGED



CRACK THROUGH ONE BRICK,
THE WALL IS DAMAGED

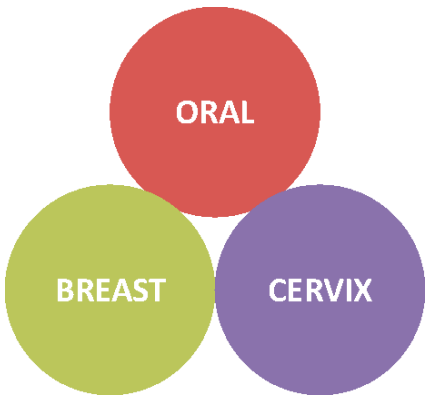
BUILDING COLAPESES EVEN WHEN ONE WALL GETS DAMAGED



PERSON MAY DIE EVEN IF ONE CELL OF ANY ORGAN IS DAMAGED

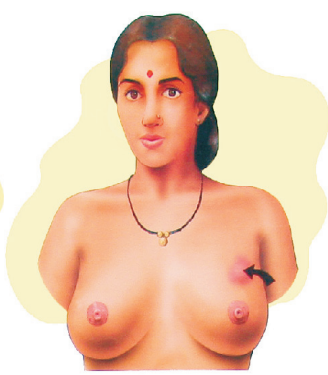
Can Cancer Be Treated?

Most of us may think that cancer cannot be treated. But the fact is that cancer can be treated. But **WHICH?** And **WHEN?**

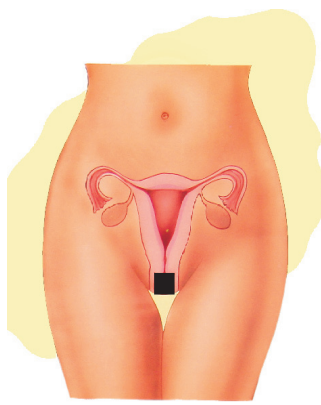


Yes, cancers of the Oral cavity, breast and uterine cervix are very common among the Indian population and can be treated if detected at early stages.

CANCER OF THE MOUTH



CANCER OF THE BREAST



CANCER OF THE CERVIX

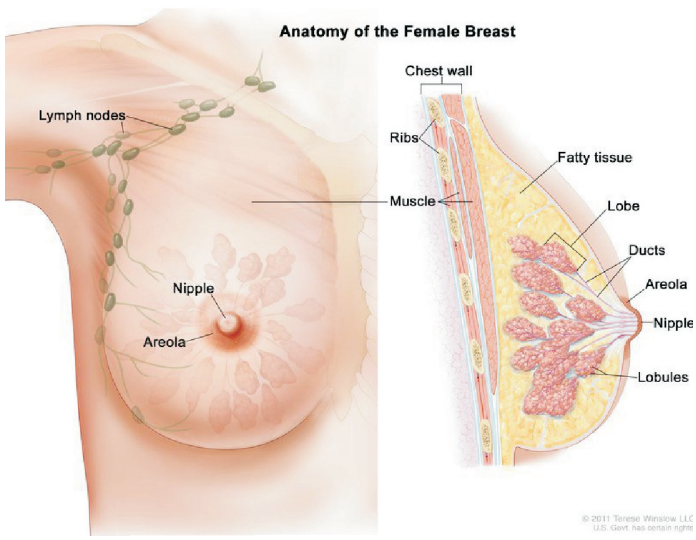
Introduction to Breast Cancer

Breast cancer is a malignant tumor (a tumor with the potential to invade other tissues or spread to other parts of the body) that starts in the cells of the breast. It occurs both in men and women. However male breast cancer is not common.

Anatomy of Breast: The breast tissue is very complex. It goes through more changes than any other part of the human body – from birth, puberty, pregnancy and breastfeeding, right through to menopause.

Breast tissue extends from the collarbone, to lower ribs, sternum (breastbone) and armpit. The breast structure consists of 15-20 lobes. Each lobe is made up of many smaller lobules which have groups of tiny glands that can produce milk. The milk travels through a network of tiny tubes (ducts) to a reservoir that lies just below the nipple. The dark round area of skin surrounding the nipple is called the areola. The breast also contains blood, lymph vessels and lymph nodes.

The breast and armpit contain lymph nodes and vessels carrying lymph fluid and white blood cells. Much of the rest of the breast is fatty tissue. One of the main ways breast cancer spreads is through the lymphatic system.[22]



Risk factors for Breast Cancer

What is risk factor?

A risk factor is any attribute, characteristic or exposure of an individual that increases the likelihood of developing a disease or injury.

Risk factors for breast cancer [23]

1. Hormonal and reproductive factors:

a. **Age at menarche**: An early menarche is a risk factor for breast cancer.

b. **Parity:** In general, nulliparous women have a higher risk of breast cancer (up to 2-fold increase) compared with parous women.

c. **Age at first full-term pregnancy**: Women aged 30 years or older at their first full-term pregnancy have a short-term increased risk of breast cancer

d. **Breast feeding**: Women who have not breast fed their child are at higher risk of developing breast cancer.

e. **Age at menopause**: Later age of menopause (more than 55) is associated with increased risk of breast cancer.

f. **Endogenous hormones:** Among postmenopausal women, women having high blood levels of both estrogens and andro-gens have almost double the risk of breast cancer compared with those with low blood levels.

g. **Use of oral contraceptives:** The combine use of estrogen progesterone oral contraceptive pill increases the risk factor for breast cancer. Risk decreases after its stoppage.

h. **Use of hormonal menopausal therapy:** The use of estrogen progesterone therapy increases the risk of breast cancer.

2. Lifestyle factors and environmental exposures

a. **Alcohol consumption**: Alcohol consumption increases the risk of breast cancer.

b. **Overweight, obesity, and change in body weight:** Obesity increases the risk of breast cancer.

c. **Physical activity:** Increased physical activity has a protective effect over pre and post menopausal breast cancer.

3. Non-modifiable risk factors

a. Height: A greater adult attained height is an increased risk of breast cancer.

b. Age: Breast cancer incidence increases after menopause but aggressive breast cancer declines after menopause.

c. Benign breast disease: all the benign diseases are not associated with breast cancer however epithelial hyperplasia and atypical hyperplasia are associated with breast cancer.

4. Ionizing radiation: Exposure to ionizing radiation increases the risk of breast cancer. Like;

a. Atomic bomb survivors

b. Women exposed for medical monitoring

c. Women irradiated for benign disease

d. Survivors of childhood cancer

e. Women undergoing frequent mammography

5. Women at high genetic risk of breast cancer

a. Hereditary breast cancer

b. Penetrance of breast cancer susceptibility genes

EARLY ONSET OF MENSES

LATE MENOPAUSE

ELDERLY AGE AT FIRST CHILD BIRTH

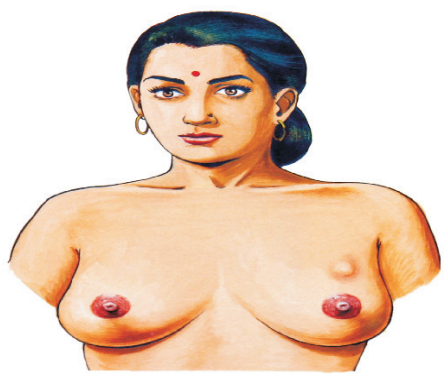
OBESITY

HEREDITARY

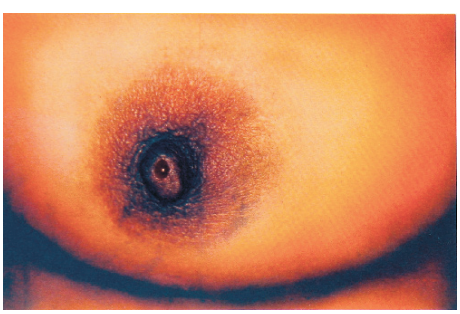
Sign & Symptoms of Breast Cancer

1. Change in the shape/ size of breast
2. Retraction of nipple (inwards drawing)
3. Immobile, painless lump in the breast
4. Swelling in the armpit or neck
5. Depression / Pitting over the skin of breast
6. Blood stained/ watery/greenish discharge from nipple
7. Orange peel appearance of Breast
8. Skin Redness
9. Sore on breast that does not heal

RETRACTION OF NIPPLE



LUMP IN BREAST



NIPPLE DISCHARGE

ORANGE PEEL APPEARANCE OF THE BREAST SKIN

Early Detection and Diagnosis of Breast Cancer

1. **Breast Self Examination:** This must be done every month.

Premenopausal women: 5th to 10th day of her menstrual cycle

Post menopausal women: One fixed day, every month

Pre -requisites for self examination: Mirror, good source of light, privacy.

There are 5 steps to perform Breast Self Examination. It entails two important components:

1. Looking
2. Feeling

5 STEPS OF SELF EXAMINATION

- Step 1 and step 2 consist of inspection

  Inspect for: - Skin changes, Redness, Visible bumps,

  Nipple crusting, Symmetry

Step 1:-

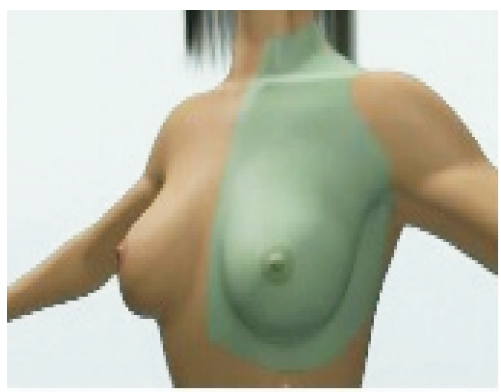
Both arms placed over your waist: Place your hands on your waist and press inward, and turn side to side to note any changes.

Step 2:-

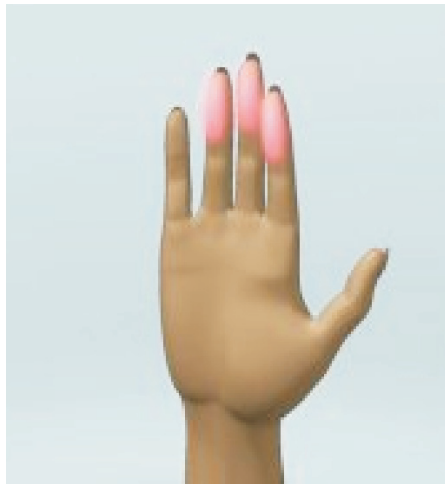
Both arms raised above head: Place your hands behind your head and press forward. Again, turn side to side and look for changes.

- **Step 3 and step 4 consist of palpation i.e. feeling;**

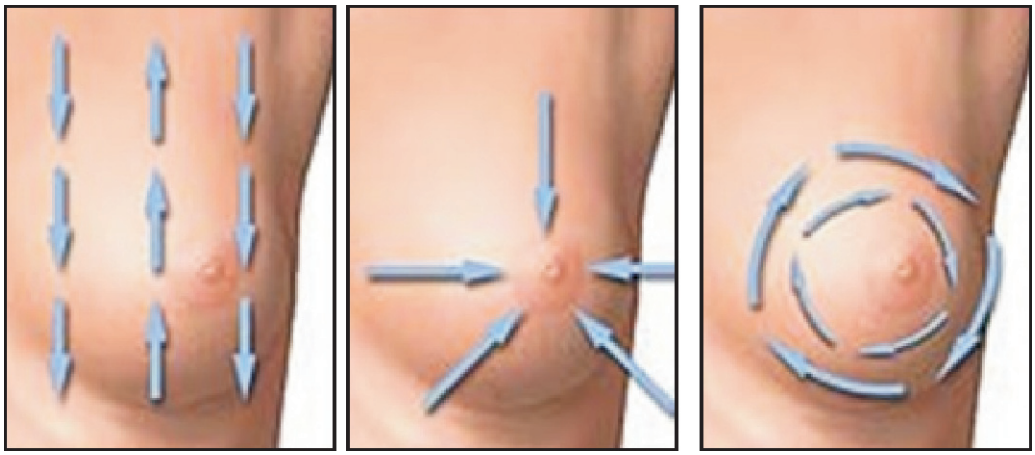
The examination area is shaded area as shown in picture. Most breast cancers occur in the upper outer area of the breast.



- Use the pads of three middle fingers (pink areas) to examine every inch of your breast tissue.



There are different methods of palpation.



- **Step 3:-**

  Put one hand behind the head. Examine the breast of that side of body with other hand

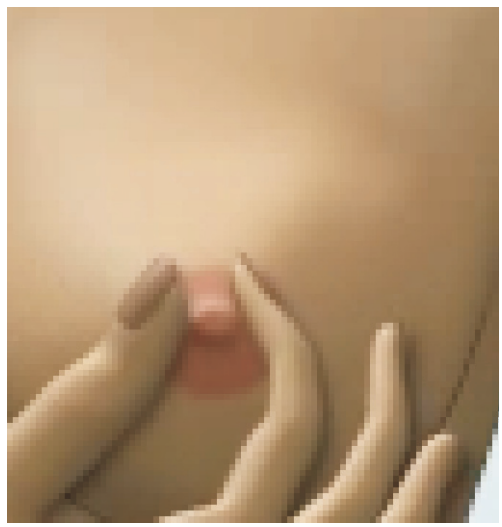
- **Step 4:**

  Perform the same examination as step 3 but do at lying down position.

- **Step 5:**

  Put fingers around areola press outwards around nipple.

  Look for any discharge.

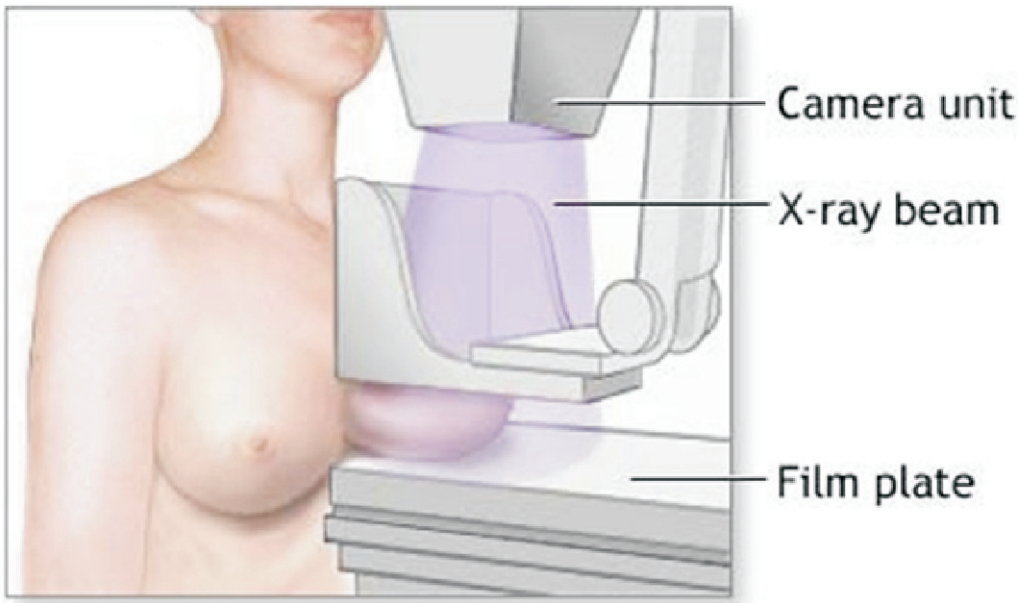


2. Clinical Breast Examination:-

After age of 30, one should go for clinical breast examination screening by going to health care centre once every year

Doctor will do all the steps described in self examination plus feeling under arm area and above collar bone.

3. Mammography x-ray of breast

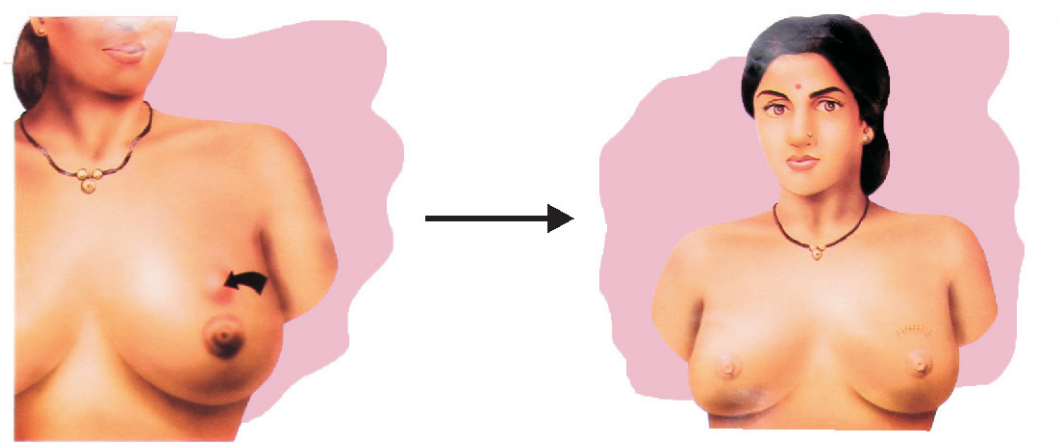


Mammography should be done every two yearly after the age of 50. [24]

If found positive in screening test then biopsy is done for further confirmation

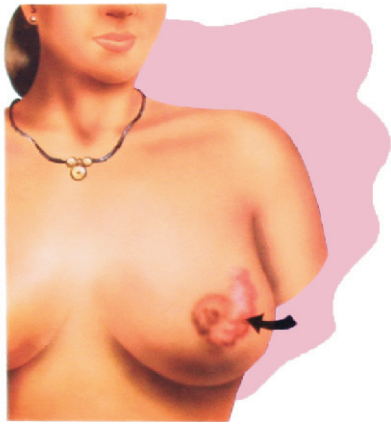
Treatment of Breast Cancer

1. If diagnosed early, breast cancer is treated by surgically excising the affected area. The unaffected part of the breast can thus be conserved. The chances of survival are more.
2. If neglected in early stages the breast cancer advances and may have to be treated by excising the entire breast. This causes disfigurement and may cause mental depression.
3. If neglected in above two stages, the breast cancer spreads in the whole body. This stage can be treated by Chemotherapy and Radiation. The chances of survival are less.

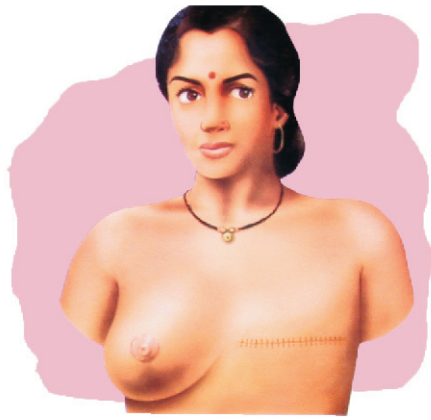


DIAGNOSED EARLY

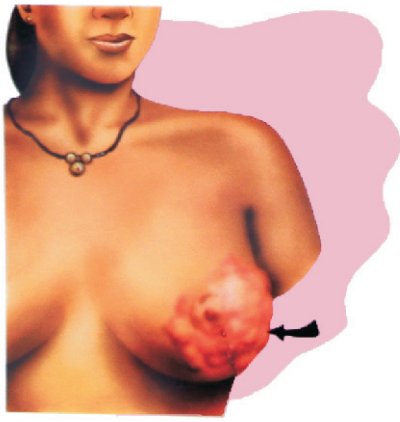
SURGICALLY EXCISING THE AFFECTED AREA



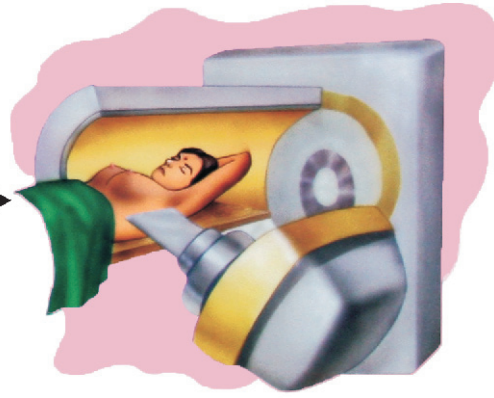
BREAST CANCER ADVANCES



EXCISION OF THE ENTIRE BREAST



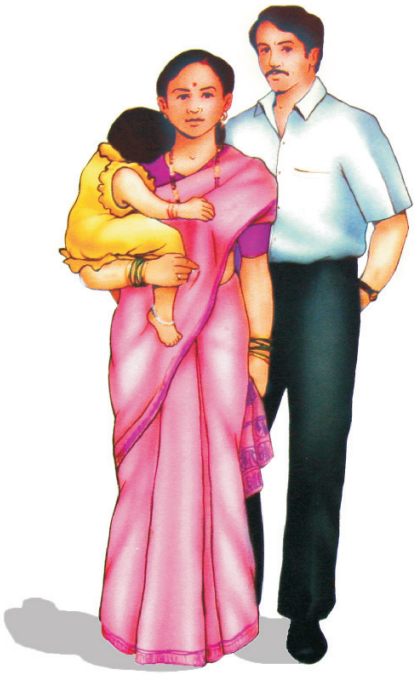
BREAST CANCER SPREADS
IN THE WHOLE BODY



TREATED BY CHEMOTHERAPY
AND RADIATION

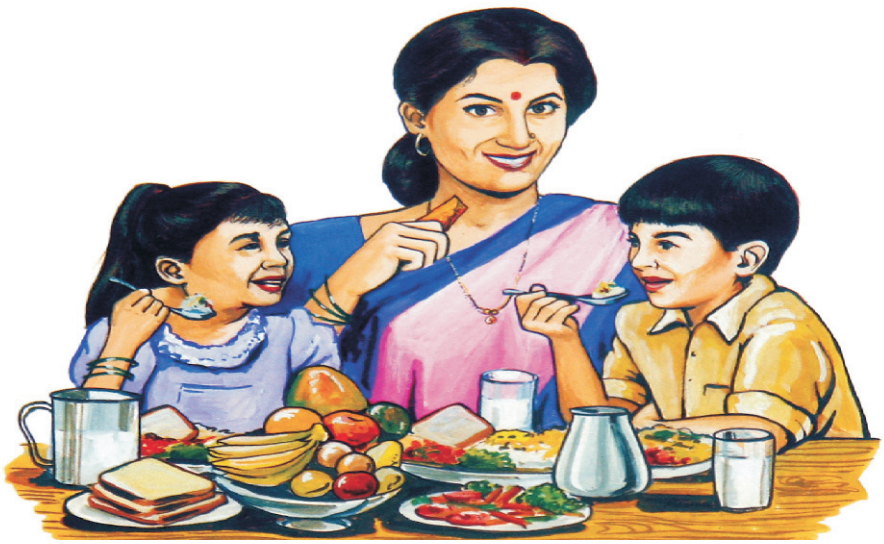
Prevention of Breast Cancer

1. Reduce excessive fat intake in diet. Healthy diet should be maintained. Vegetables, fruits, lentils, beans, chapati, rice should be more in diet. Fish, eggs, milk, curd should be moderate in diet. Oil, butter, ghee, sugar, packed food, fried snacks, sweets, carbonated drinks should be kept away from diet.
2. First child after the age of 20yrs. and 2nd child before the age of 30yrs with appropriate spacing between the two.
3. Breast feeding each child for at least one year.
4. Genetic: Regular examination for breast cancer from Doctors, If there is a history of breast cancer in first degree relatives.
5. Breast self examination should be done every month.
6. If symptoms suspicious of cancer are noted, then consult your doctor immediately and get treated.
7. Annually one should go for clinical examination
8. Don't ignore a symptom- if you discover lump, dimpling, nipple discharge or any other symptoms of breast cancer speak to your doctor immediately.



FIRST CHILD AFTER THE AGE OF 20 YEARS AND SECOND CHILD BEFORE THE AGE OF 30 YEARS

ADEQUATE BREAST FEEDING



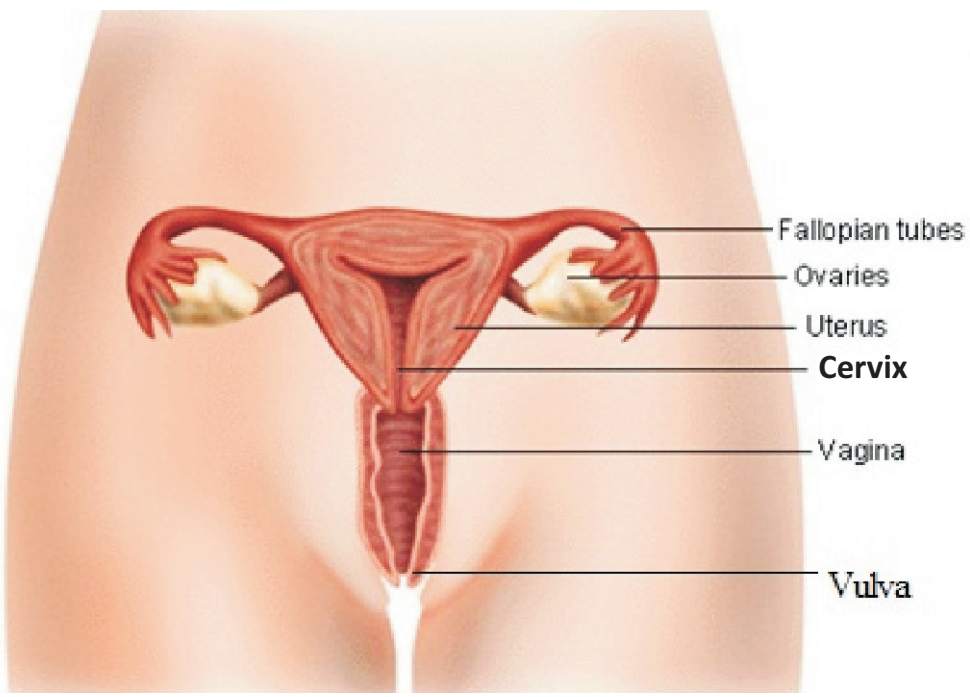
HEALTHY DIET WITH LESS FAT AND SUGAR INTAKE

Cervix Cancer

Cervical Cancer:-

There are six main parts of a woman's reproductive system viz. ovaries, fallopian tubes, uterus, cervix, vagina and vulva.

Ovaries are where eggs are produced every month fallopian tubes carry eggs from ovary to uterus, uterus is where baby (lies) during pregnancy, cervix is the part from where menstrual blood flows out and sperms enter in, vagina is where sexual intercourse happens, vulva is the part which can be seen outside.

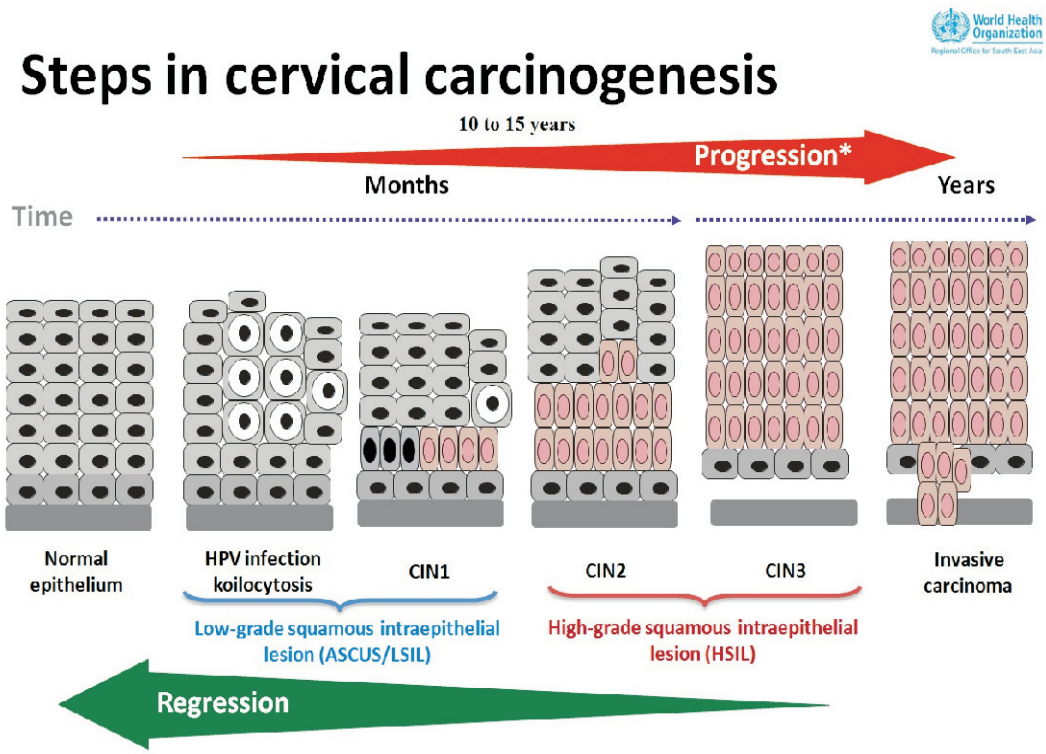


Risk factors of Cervix Cancer

1. Infection with high risk Human Papilloma Virus.
2. Early age of marriage or early age of initiating intercourse.
3. First child before the age of 20 yrs thereafter frequent births with less spacing between them.
4. Poor genital hygiene.
5. Multiple sexual partners unsafe sex.
6. Tobacco use. Eg. - zarda, paan, gutkha, khaini, cigarette smoking, beedi, hukkah, application of masheri to teeth etc.

What is HPV

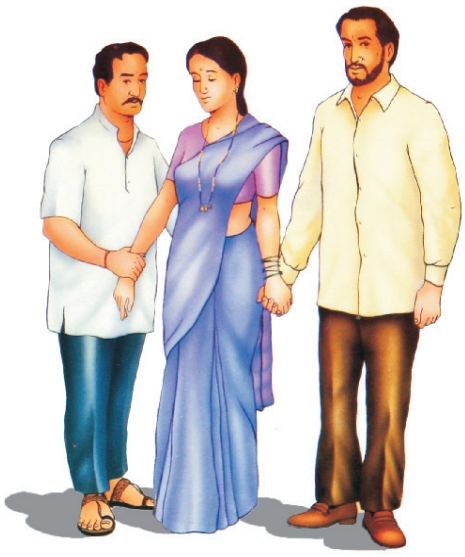
It is a common virus occurring in both men and women and spreads through sexual intercourse. It usually clears up on its own but sometimes infection persists and can turn pre-cancerous in few years. If left untreated, it can turn cancerous. Regular screening detects such lesions. Women must undergo screening once in every two years.



EARLY AGE OF MARRIAGE

FREQUENT CHILD BIRTHS WITH LESS SPACING BETWEEN THEM

PHYSICAL AND GENITAL UNHYGIENE



MULTIPLE SEX PARTNERS

TOBACCO USE

Symptoms of Cervix Cancer

1. Persistent foul smelling discharge.
2. Intermenstrual bleeding, passage of blood clots in the menstrual flow or heavy menstrual flow for more than three consecutive months.
3. Post coital bleeding i.e. bleeding after sexual intercourse
4. Post menopausal bleeding.

➢ Cervical Pre-Cancer is asymptomatic hence regular screening is required to detect cervical Pre-cancer

INTERMENSTRUAL BLEEDING

POST COITAL BLEEDING

POST MENOPAUSAL BLEEDING

Early Diagnosis of Cervix Cancer

Every woman between age of 30 to 65 years who is sexually active must get the cervical cancer screening done by a trained nurse or a doctor, every two years. If woman notices any of the above symptoms, she must consult a Doctor and get the necessary investigations done.

What is screening?

Screening is defined by WHO as the presumptive identification of unrecognized disease in an apparently healthy, asymptomatic population by means of tests, examinations or other procedures that can be applied rapidly and easily to the target population.

It is identifying illness before it spreads. Regular screenings can identify precancerous cells. Treatment is easy and the chance of a full recovery is very high.

Tests for screening:

Some of the investigations/tests to detect Cervical pre-cancers are as follows:

1. **Visual Inspection by Acetic Acid, Visual Inspection by Lugols Iodine:**

   This test requires short time, is conducted in privacy and is a painless procedure. For conducting this test, you need to lie down on the examination table, after removing your under garments. The examining health personnel after wearing gloves will insert a speculum inside your vagina and locate your cervix. She will then apply 5% acetic acid solution on your cervix using cotton swab. After 2-3 mins, Lugol's Iodine solution will be applied to your cervix. The doctor shall observe changes and remove the speculum. The VIA VILI test is done.

2. Colposcopy:

In this test, the cervix of the woman will be seen through a Colposcope, to visualize a magnified image of the cervix.

3. Pap Test:

In this test, the cervix is lightly scraped with a cotton tipped stick or brush to collect cells. These cells are then spread on the glass slide and examined under microscope.

4. HPV test:

In this test after insertion of speculum, HPV brush is partially inserted into external os for sample collection. The collected sample is inserted into the transport media bottle put in alcohol solution & stained and then send to the laboratory for report.

If the result is positive for any Screening test it does not mean you have cancer. It means you may need to undergo further tests which are describe below.

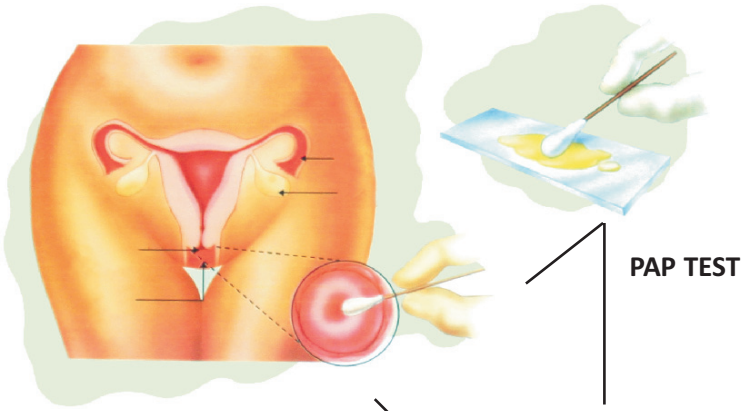
I. Biopsy:

If findings suspicious of cervical pre-cancer are detected, then a small portion of the suspicious part of the cervix is taken and sent for examination.

II. Endo cervical curettage:

If findings suspicious of cervical precancer are detected then a small portion of the suspicious part of the endo-cervix is scrapped and sent for examination.

GYNECOLOGICAL EXAMINATION DONE BY A TRAINED NURSE OR A DOCTOR



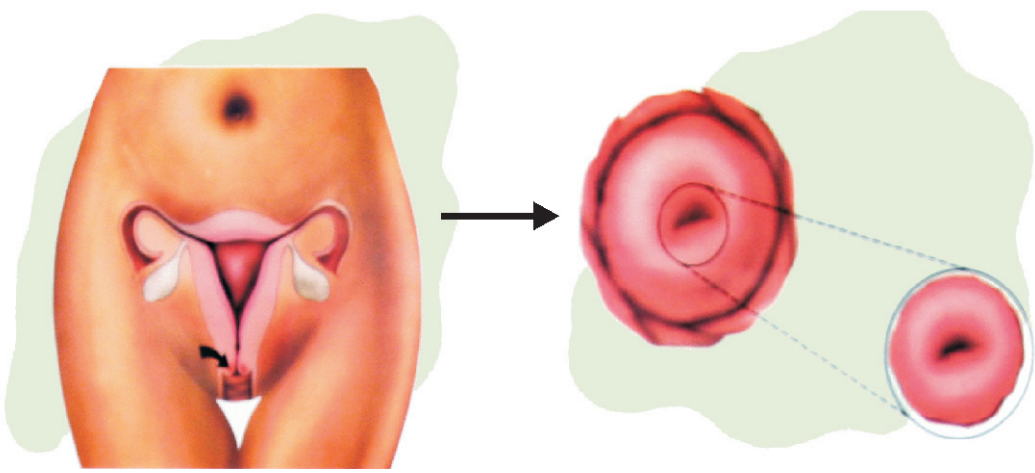
PAP TEST

COLPOSCOPY

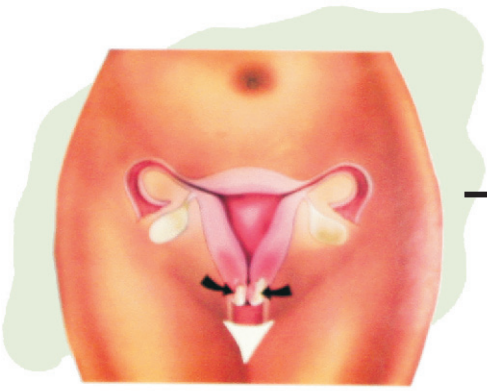
Treatment of Cervix Cancer

If you go for regular screening and identify pre-cancerous cells, the treatment is easy and cheap. Chances of recovery are high. However, if not detected during pre-cancerous stage, surgery and chemo will be needed to achieve recovery. If detected late when the cancer has spread, the doctor will try to reduce your suffering using different treatment modalities/ methods

1. If not detected in early stage (stage of pre-cancer) then cancer advances. In the early stage of cancer, it can be treated by surgery.
2. If not detected in early stage the cancer spreads in the neighboring parts. This stage can be treated by surgery along with radiation. The patient's survival rates are 40-55%.
3. If neglected in the above stages, the cervical cancer advances further & spreads in the whole body. This may not even be cured by Surgery, Chemotherapy or Radiation.

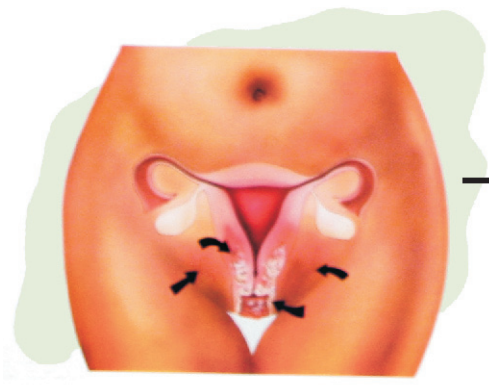


CERVIX PRECANCER **CRYOTHERAPY / LEEP / CONISATION**

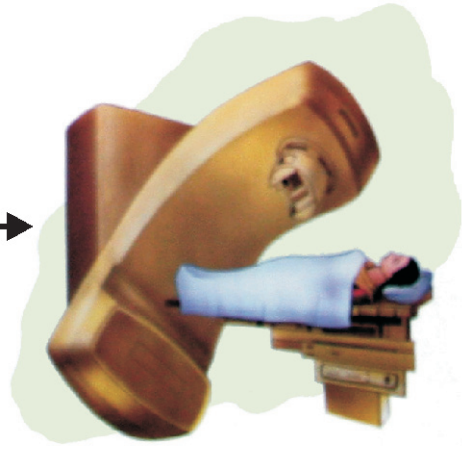


CANCER ADVANCES

SURGICAL EXCISION OF UTERUS WITH CERVIX



CANCER SPREADS IN THE NEIGHBORING PARTS



RADIATION

Prevention of Cervix Cancer

Cervical cancer can also be prevented if following care is taken:

1. Regular screening; atleast once in every 2 years
2. Avoid sexual relations before age 18, which is the legal age to marry for women. Avoid conceiving before age 20, as doing so can hurt women's health permanently and also make her and her family susceptible to other infection and diseases
3. Age at first delivery should be minimum 20yrs.
4. Good family planning and at least a gap of three years between two children
5. Good genital hygiene
6. Avoid use of any form of Tobacco.
7. Avoid sexual relations with multiple partners
8. Use barrier methods (condoms)
9. Healthy diet – Reduce excessive fat and sugar intake in diet. Healthy diet should be maintained. Vegetables, fruits, lentils, beans, chapati, rice should be more in diet. Fish, eggs, milk; curd should be moderate in diet. Oil, butter, ghee, fried snacks, sweets; carbonated drinks should be kept away from diet.
10. If you find any of the symptoms suspicious of cervical cancer then consult a Doctor.
11. HPV Vaccine

HPV Vaccine

In India, over 98% of cervical cancer cases are due to HPV infection and HPV 16 is the type exclusively (80–90%) prevalent.[25] Infection with HPV is a necessary though not sufficient cause of cervical cancer. Though nearly all cervical cancers are associated with HPV infection, the majority of women with HPV do not develop cervical cancer. Persistent infection with high-risk human papilloma virus (especially with HPV 16 and 18) is the most important risk factor for cervical cancer precursors and also invasive cervical cancer. Vaccines are now available to prevent cervical cancers. HPV vaccination is a primary prevention tool and does not eliminate the need for screening later in life. HPV vaccines have good immunogenicity - antibodies persist for more than 10 years.[26] Vaccines do not cure the infection. They protect against cervical precancers & cancers as well as many cancers of the vulva, vagina, anus and throat .There is no risk of getting an HPV infection from the vaccine as the vaccine does not contain live virus. HPV vaccination and regular cervical screening is the most effective way to prevent cervical cancer.[27] HPV vaccine must be given before HPV infection is acquired. As HPV transmits through sexual activity, the vaccine should be given before the initiation of sexual activity. [28]

Two vaccines are available for prevention of HPV infection in India, a quadrivalent HPV vaccine (qHPV) and the bivalent vaccine (bHPV). Both vaccines include HPV types 16 and 18, which represent the most common cause of cervical cancer. In addition, qHPV includes HPV types 6 and 11, which are responsible for the majority of genital warts. Both HPV vaccines were licensed by Drug Controller General of India (DCGI) to be marketed in India in 2008/09.Both vaccines are safe and are licensed for use in women above 9 years . They are to be given in three doses (0.5ml, IM, deltoid region)for girls above 15 years and in two doses for girls upto 15 years.

Globally 83 countries have introduced HPV vaccine in their National Immunization Program till 2018. In India states of Delhi, Punjab & Sikkim commenced HPV vaccination in November 2016. Uttar Pradesh in India commenced HPV vaccination in February 2017.

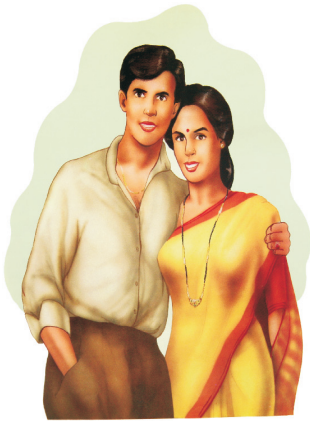
1. Quadrivalent vaccine

- It is a suspension for intra-muscular administration available in 0.5-mL single dose
- It protects against HPV types 6, 11, 16, and 18 in a 0.5-mL dose.
- It should be administered intramuscularly as a 0.5-mL dose at the following schedule: 0, 2 months, 6 months for women more than 15 years and in two doses at 0 and 6 months in girls less than 15 years

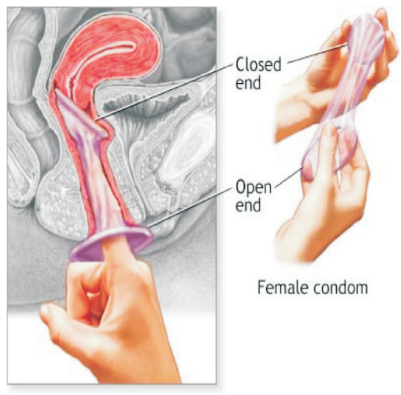
2. Bivalent vaccine

- It consists of 3 doses of 0.5-mL each, to be administered by intramuscular injection according to the following schedule: 0, 1, and 6 monthsin women more than 15 years and in two doses at 0 and 6 months in girls less than 15 years
- It protects against HPV type 16 and 18.

FIRST CHILD AFTER THE AGE OF 20 YEARS



AVOID MULTIPLE SEX PARTNER



FEMALE CONDOMS

MALE CONDOMS

PHYSICAL AND GENITAL HYGIENE

HPV VACCINATION

CONSULT A DOCTOR IF THERE IS ABNORMAL BLEEDING OR WHITE DISCHARGE

AVOID TOBACCO CONSUMPTION

Summary

Breast Cancer is the most common cancer among Indian women followed by Uterine Cervix cancer. Breast cancer incidence is increasing in India. Also mortality due to breast cancer remains high as compared to the western world. India accounts for about 20% of cervical cancer cases reported globally. It is one the leading causes of mortality among women, accounting for 23.3% of all cancer deaths. Breast cancer can be detected in early stages. However, cervix cancer can be detected even in pre- cancer stage and localized stages by regular screening. Lack of awareness regarding treatment of cervical and breast cancer may lead to lower compliance to follow up for diagnostic investigations and further treatment. This is a major hurdle for the success of any screening program. There is an urgent call for more effective nation and state wide cancer literacy programs as well as engagement with community level organizations and the health system.

This module includes the risk factors, signs, symptoms, methods of early detection and prevention of breast and cervical cancers. Appropriate messaging and educating the community by conducting awareness programme in different groups has a far reaching influence. However, care must be taken that messages given are scientifically correct and not conflicting. Educating the community by trained Health personnel is of prime importance. The purpose of this module is to train medical as well as paramedical staff to conduct a well organized cancer awareness programme on Breast Cancer and cervical cancers. This training module is intended to build capacity of paramedical staff in educating community regarding breast and cervical cancers in an organized and standardized way.

References

1. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: a cancer journal for clinicians. 2018;68,6:394-424.
2. Jemal A, Bray F, Melissa MC, Jacques F, Elizabeth W, Forman D. Global cancer statistics. CA Cancer J Clin 2011;61:69-90.
3. National cancer registry programme. National Centre for Disease Informatics and Research. Indian Council for Medical Research. Three year report of population based cancer registries 2009-2011 national cancer registry programme. National Cancer Registry, 2013.
4. Dikshit R, Gupta PC, Ramsundarahettige C, Gajalakshmi V, Aleksandrowicz L, et al. Cancer mortality in India: A nationally representative survey Lancet 2012;379,9828:1807-1868.
5. Leong S, Shen ZZ, Liu TJ, et al. Is breast cancer the same disease in Asian and Western countries? World Journal of Surgery World J Surg 2010;34,10:2308-2324.
6. Guidelines for cervical cancer screening. Government of India and WHO Collaborative Program.[Last accessed on 2012 Jan 23]. Available from: http://www.whoindia.org/LinkFiles/Cancer resource Guidelines for CCSP.pdf
7. World Health Organization. Globocan Fact Sheets. International Cancer Research. Available from: http://www.globocan.iarc.fr/factsheet. asp#WOMEN .
8. Sankarnarayanan R, Matthew B, Jacob BJ et al. Early findings from a community-based, cluster-randomized, controlled oral cancer screening trial in Kerala, India. The Trivandrum Oral Cancer Screening Study Group 2000;88,3:664-673.
9. Basu P, Sarkar S, Mukherjee S, *et al.* Women's perception and social barriers determine compliance to cervical screening: Results from a population based study in India. Cancer Detect Prev 2006;30,4:369-374. http://doi.org/10.1016/j.cdp.2006.07.004
10. Perkings RB, Langrish S, StemLJ, Simon CJ. A community-based educational program about cervical cancer improves knowledge and screening behavior in Honduran woman. Rev PanamSaludPublica 2007;22,3:187-193.
11. Government of India. Report of the Working Group on Disease Burden for 12th Five Year Plan. In: Directorate General of Health Services MOHFW. New Delhi: Government of India, Planning Commission 2011:WG-3.
12. Sim HL, Seah M, Tan SM. Breast cancer knowledge and screening practices: A survey of 1,000 Asian women. Singapore Med J 2009;50,2:132–138.

13. Nene B, Jayant K, Arrossi S, et al. Determinants of women's participation in cervical cancer screening trial, Maharashtra, India. Bull World Health Organ. 2007;85,4:264–272.
14. Choconta-Piraquive LA, Alvis-Guzman N, De la HozRestrepo F. How protective is cervical cancer screening against cervical cancer mortality in developing countries? The Colombian case. BMC Health Serv Res: 2010;10:270. http:// dx.doi.org/10.1186/1472-6963-10-270.
15. Agurto I, Bishop A, Sanchez G, Betancourt Z, Robles S. Perceived barriers and benefits to cervical cancer screening in Latin America. Prev Med:2004;39,1:91–98. http://dx.doi.org/10.1016/j.ypmed.2004.03.040.
16. Arrossi S, Paolino M, Sankaranarayanan R. Challenges faced by cervical cancer prevention programs in developing countries: A situational analysis of program organization in Argentina. Rev PanamSaludPublica 2010;28,4:249–257.
17. Othman NH, Rebolj M. Challenges to cervical screening in a developing country: The case of Malaysia. Asian Pac J Cancer Prev 2009;10,5:747–752.
18. Senthil KM, Shanmugapriya CP, Prabhdeep Kaur.Acceptance of cervical and breast cancer screening and cancer awareness among women in Villupuram, Tamil Nadu, India: A cross sectional survey. Clinical Epidemiology and Global Health 2015;3,1:S63–S68.
19. Krishnan S, Sivaram S, Anderson BO, Basu P, Belinson JL, Bhatla N. Using implementation science to advance cancer prevention in India. Asian Pac J Cancer Prev. 2015;16,9:3639–3644.
20. World Health Organization; https://www.who.int/topics/health_education/en/ Last accessed on 5/03/2019
21. Hubley J. Principles of health education. British medical journal (Clinical research ed.). 1984;289,6451:1054.
22. Available from https://nbcf.org.au/about-national-breast-cancer-foundation/about-breast-cancer/what-you-need-to-know/breast-anatomy-cancer-starts/ (Last accessed on 28.05.2019)
23. Breast cancer screening vol.15. IARC handbook of cancer prevention, Lyon France 2016
24. Available from https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/breast-cancer-screening (Last accessed on 03.06.2019)
25. Das BC, Hussain S, Nasare V, Bharadwaj M. Prospects and prejudices of human papillomavirus vaccines in India. Vaccine. 2008;26,22:2669-79.
26. Schwarz TF, Galaj A, Spaczynski M, Wysocki J, Kaufmann AM, Poncelet S, Suryakiran PV, Folschweiller N, Thomas F, Lin L, Struyf F. Ten year immune persistence and safety of the HPV 16/18 AS 04 adjuvanted vaccine in females vaccinated at 15–55 years of age. Cancer medicine. 2017;6,11:2723-31.
27. Kaarthigeyan K. Cervical cancer in India and HPV vaccination. Indian journal of medical and paediatric oncology: official journal of Indian Society of Medical& Paediatric Oncology. 2012 ;33,1:7.
28. Lo B. HPV vaccine and adolescents' sexual activity.

ISBN 9789382963301