

AWARENESS CAN REDUCE RISKS

Breast cancer is the malignant tumour that starts in the cells of the breast. It occurs both in men and women

In 2018, 1,62,468 new cases and 87,090 deaths were reported in India

For every 2 women newly diagnosed in the country, one dies from it

Breast cancer survival rates vary greatly worldwide, ranging

from 80% or over in North America, Sweden and Japan, to around 60% in middle-income countries and below 40% in low-income countries (Coleman et al, 2008)



The low survival rates in less developed countries can be explained mainly by the lack of early detection programmes as well as lack of adequate diagnosis and treatment facilities.

Source: World Health Organisation and Indian Council of Medical Research

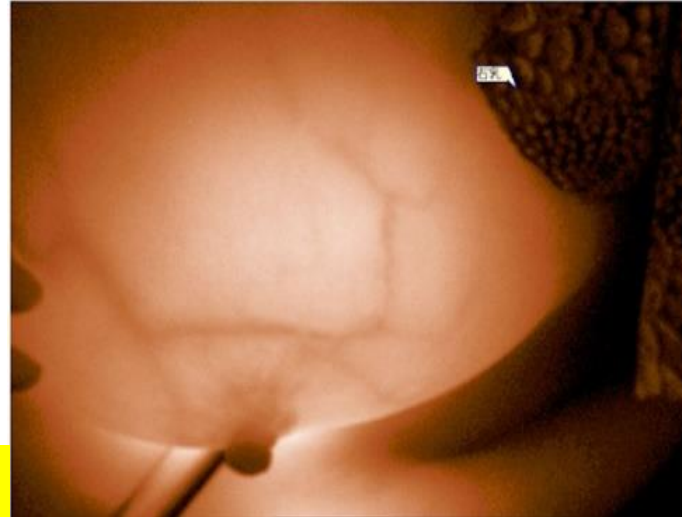


FDA Approved Concept

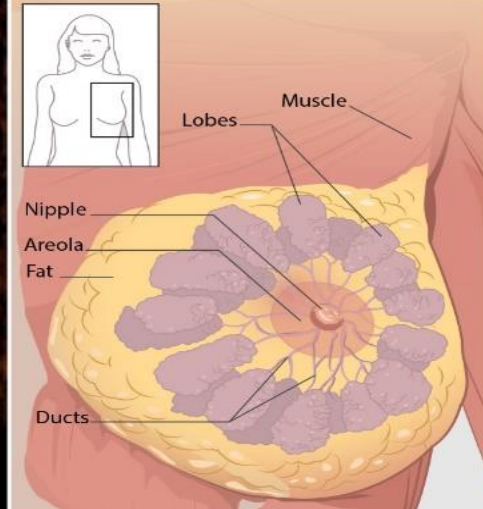
Safe Alternate to Mammography

Newest Generation Diagnostic Device

Revolutionizing Breast Cancer Detection by Disruptive Technique



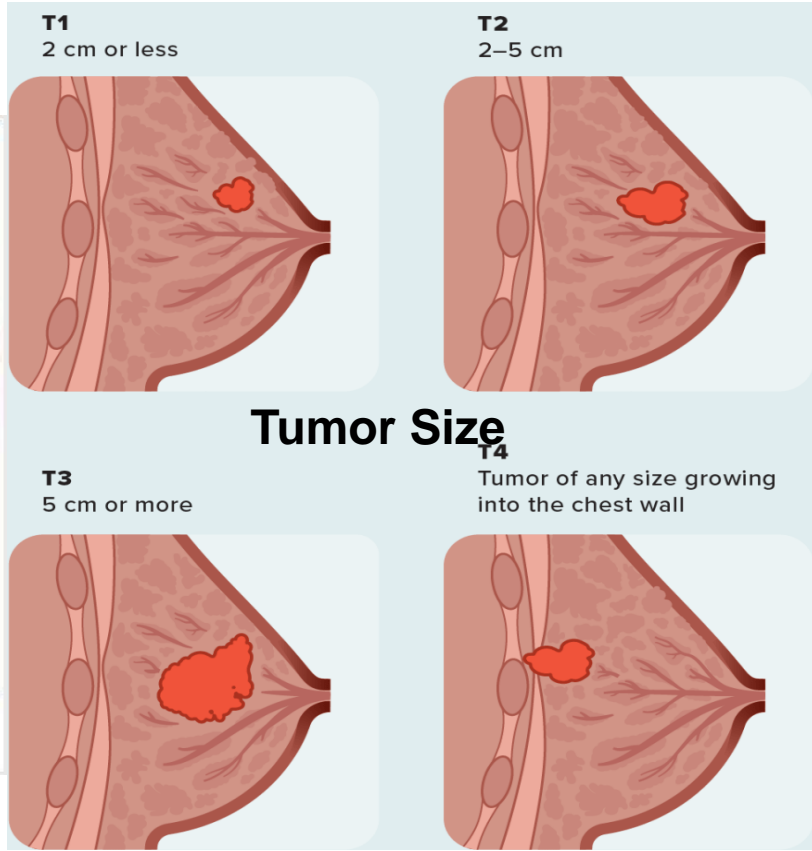
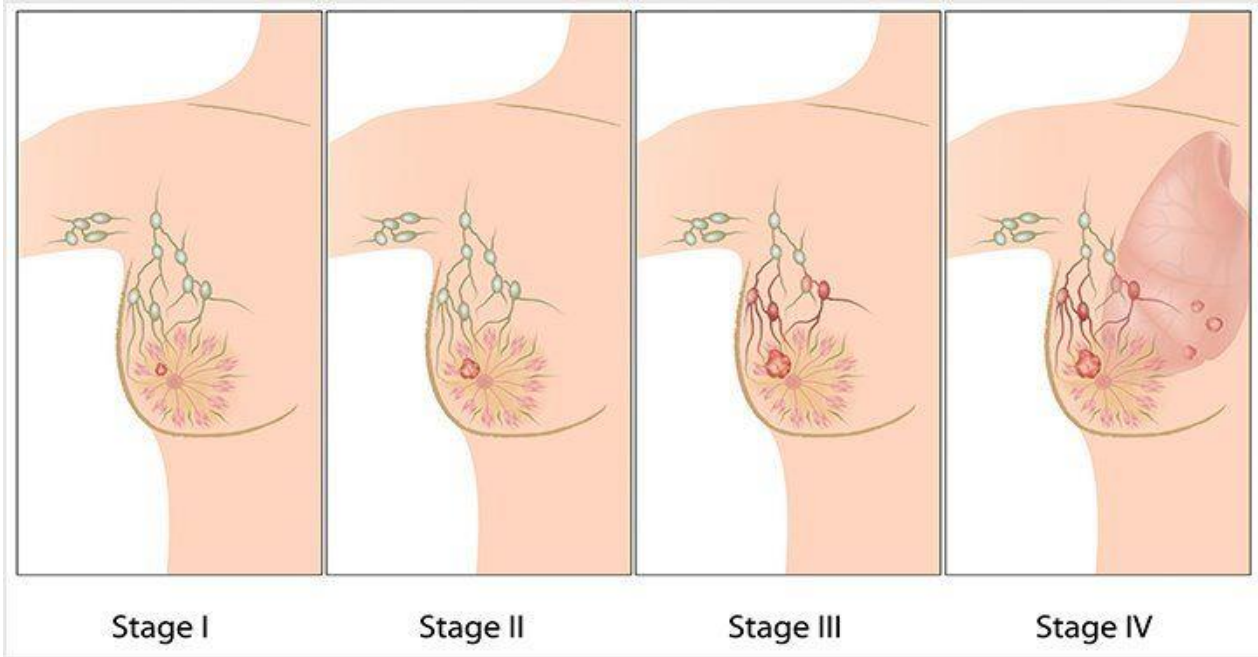
Normal Breast



Breast Cancer Diagnostic Device

Revolutionizing Indian Healthcare Space by Disruptive Techniques

- No. 1 cause of death in the World / India.
- Most common in women: 1 : 8. Delhi Women: 1:6. Men : 1:7
- 85% diagnosed early
- Stage 1 & 2: Cure Rate: 93~98%, if diagnosed early. Stage 3: 72% and Stage 4: 22%.
- Screening to start from 40+ years.
- 45~54 years: One Mammogram/year. 5/1000 diagnosed.
- Increases by 16% annually. Double by 2040.
- India will be the Breast Cancer World Capital by 2040.



Breast cancer happens when cells in the breast **grow and divide in an uncontrolled way**, creating a mass of tissue called a **tumor**. Breast cancer increases with age and weight gain. The kind of breast cancer depends on which cells in the breast turn into cancer. Breast cancer can begin in different parts of the breast. **Most breast cancers begin in the ducts or lobules.**

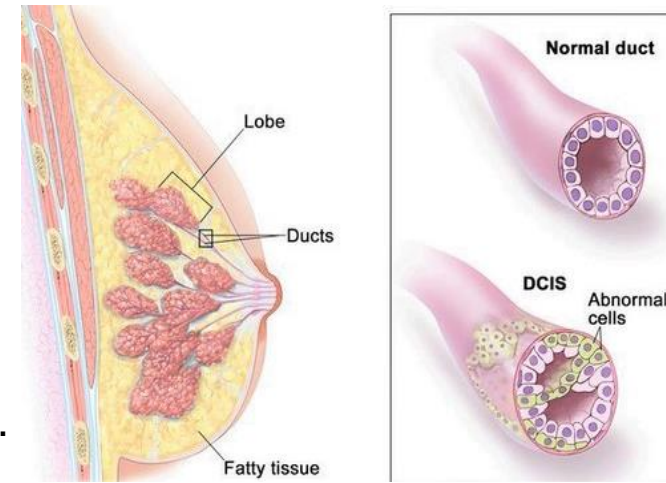
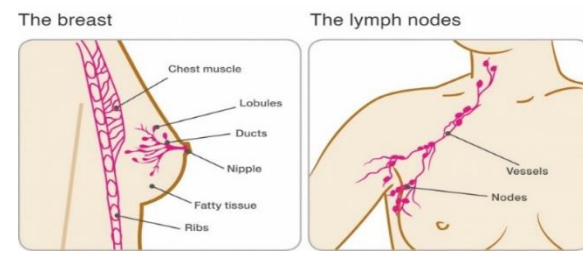
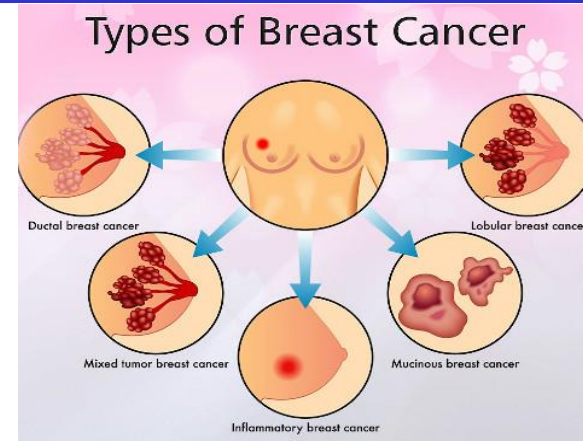
Breast has three main parts:

1. **Lobules:** glands that produce milk,
2. **Ducts tubes** that carry milk to the nipple, and
3. **Connective tissue** (which consists of fibrous and fatty tissue) surrounds and holds everything together.

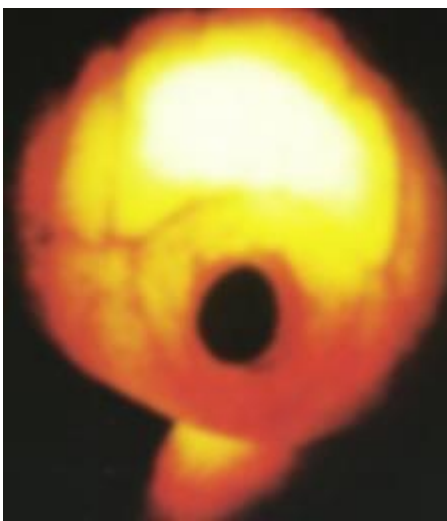
Breast cancer can spread outside the breast through blood vessels and lymph vessels. When breast cancer spreads to other parts of the body, it is said to have metastasized.

Most common kinds of breast cancer:

- 1) **Invasive ductal carcinoma.** Cancer cells begin in the ducts, then grow into other parts of the breast tissue.
- 2) **Invasive lobular carcinoma.** Cancer cells begin in the lobules, then spread to the breast tissues close by.
- 3) **Ductal carcinoma *in situ* (DCIS)** may lead to invasive breast cancer. Cancer cells are only in the lining of the ducts.



Ductal carcinoma *in situ* (DCIS)



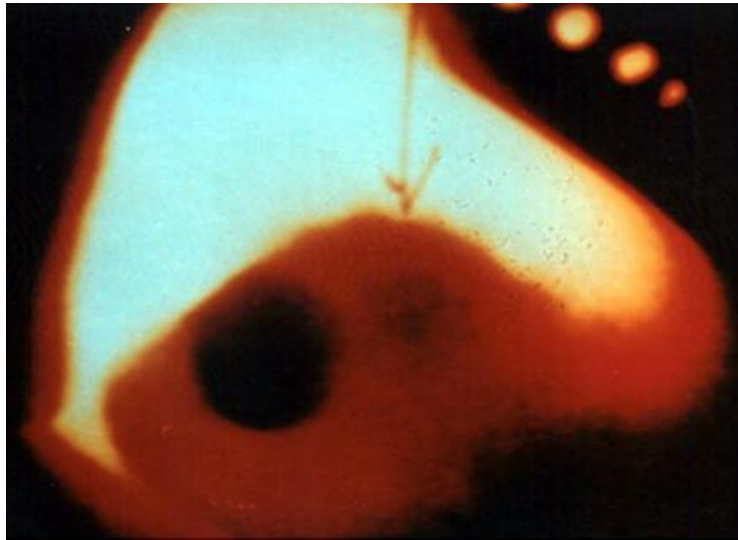
Normal Breast in Menstrual Period



Normal Breast with clear Blood Vessels



Clear boundary. No veins change around the middle grey shadow. Result: benign breast tumour (Fibroadenoma)



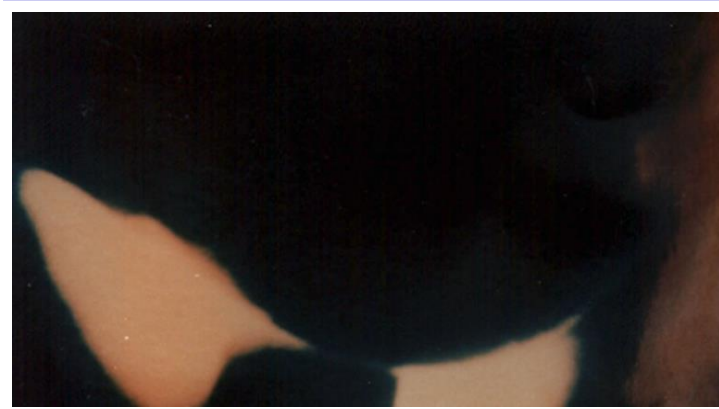
Clear boundary. No veins change around the middle grey shadow. Result: Fibroadenoma of breast



Arrow points to the light grey shadow in flakes Result:Hyperplasia of mammary glands



Breast Cancer



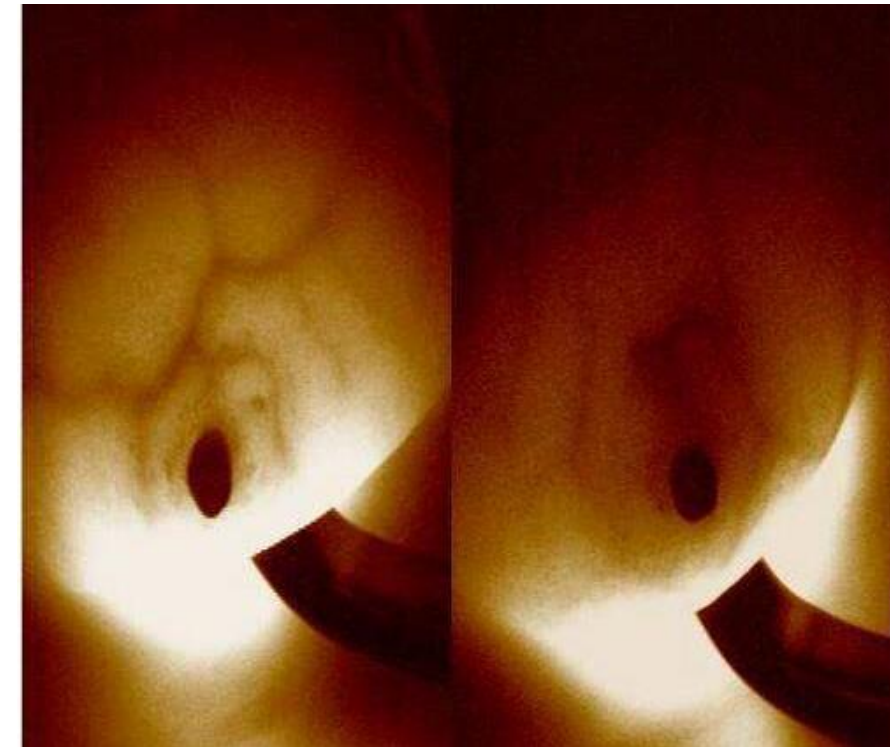
Acute Mastitis



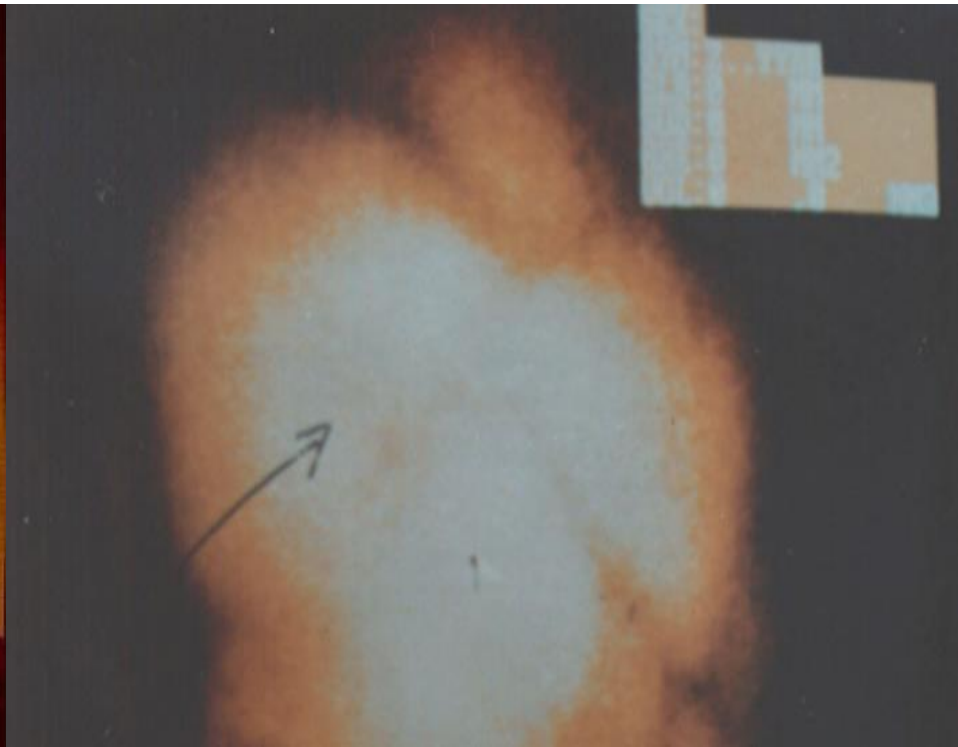
Mastitis



Breast Galactocele



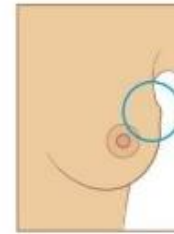
Breast Hyperplasia



Different people have different symptoms of breast cancer. Some people do not have any signs or symptoms at all.

Some warning signs of breast cancer are:

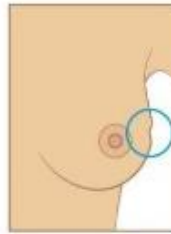
- New lump in the breast or underarm (armpit).
- Thickening or swelling of part of the breast.
- Irritation or dimpling of breast skin.
- Redness or flaky skin in the nipple area or the breast.
- Pulling in of the nipple or pain in the nipple area.
- Nipple discharge other than breast milk, including blood.
- Any change in the size, shape or contour of the breast/nipple.
- Pain in any area of the breast.
- A marble-like hardened area under the skin.



Lumps



Nipple discharge



Dimpling



Breast or nipple pain



Nipple retraction or inversion



Redness



Changes to the skin's texture



Lymph node changes



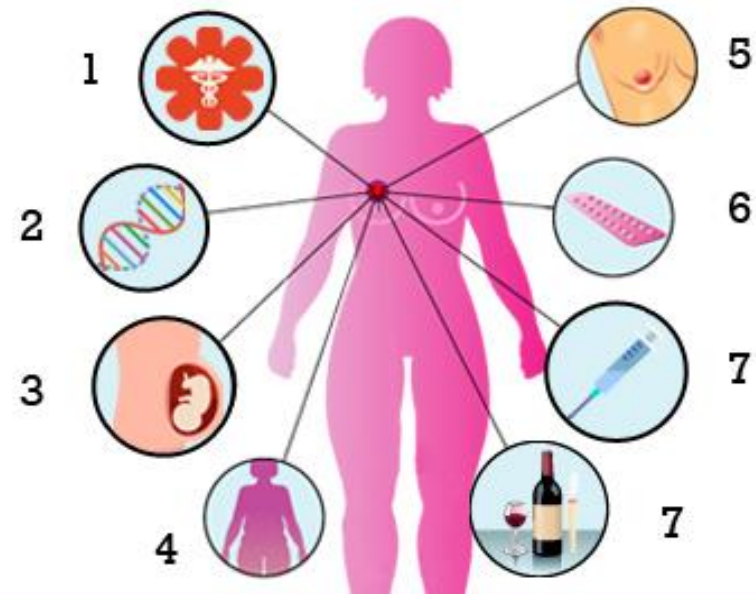
Swelling

These symptoms can happen with other conditions that are not cancer.

If you have any signs or symptoms that worry you, see your doctor right away.

- **Getting older.** most breast cancers are diagnosed after age 50.
- **Reproductive history.** not breastfeeding, never having a full-term pregnancy. menopause after age 55 expose women to hormones longer, raising their risk of getting breast cancer.
- **Personal history of breast cancer or certain non-cancerous breast diseases.**
- **Family history of breast or ovarian cancer.**
- **Exposure to Radiation/Chemicals.**
- **Drugs diethylstilbestrol (DES),** Mother took DES while pregnant.
- **Physically Inactive.**
- Hormonal changes due to night shift working.
- **Breast implants.**

Causes and Risk Factors of Breast Cancer



- 1- Family history
- 2- Gene mutation
- 3- Late childbearing
- 4- Early Menstruation & Late Menopause/ Obesity
- 5- Increased breast density
- 6- Prolonged use of oral contraceptives
- 7- Hormone replacement therapy after menopause
- 8- Alcohol intake/ tobacco

1. **Breast Examination:** Self or by Doctor
2. **Digital Mammography,**
3. **Ultrasonography,**
4. **Scintimammography:** Radioactive contrast agents are injected into a vein in the arm.
5. **PET scanning,**
6. **MRI**
7. **Thermography:** Harmless, Inexpensive. Can even detect small sized cancer cells.

If Positive then biopsy.

Breast cancer diagnosis and treatment are best accomplished by a team of experts working together with the patient.

Each patient needs to evaluate the advantages and limitations of each type of treatment and work with her team of physicians to develop the best approach.

Risks of Screening

False positive test results, expensive, invasive, time-consuming, and may cause anxiety.

Overdiagnosis, surgery or radiation therapy.

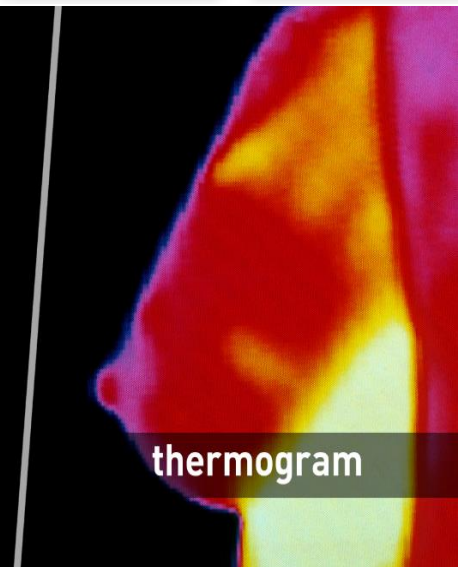
False negative test results, which may delay finding a cancer and getting treatment.



Breast self-exam:
Manual inspection
(reclining)

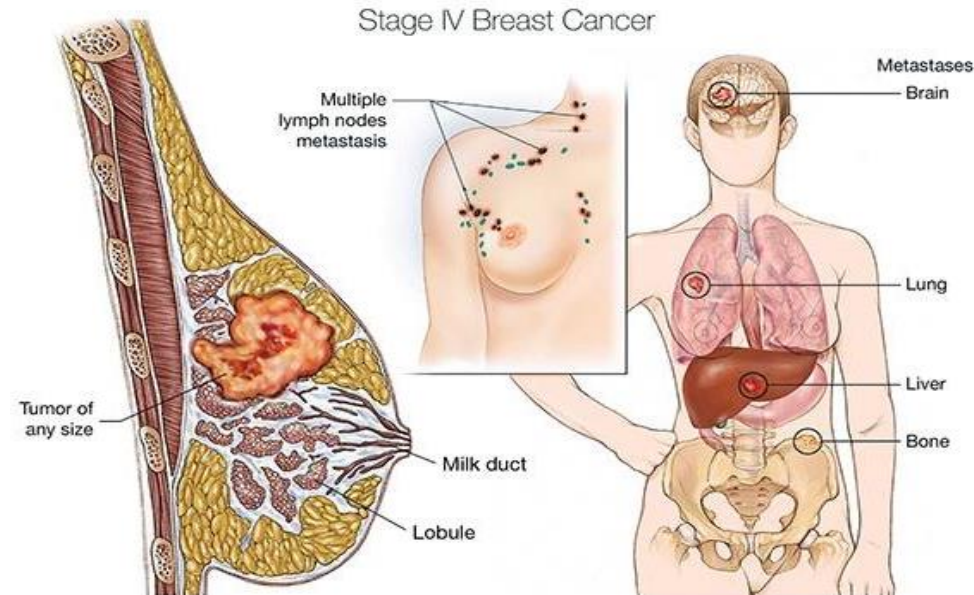


With fingertips close together, gently probe each breast in one of these three patterns



Remove, destroy, or control the cancer cells in a specific area, such as the breast. Depends on the kind of breast cancer and how far it has spread.

- ❖ **Surgery, lumpectomy (Partial Mastectomy).**
- ❖ **Chemotherapy.**
- ❖ **Hormonal therapy.**
- ❖ **Biological therapy.**
- ❖ **Radiation therapy.**
- ❖ **Mastectomy (removal of the entire breast)**



A Mammary gland

Adipose tissue

Lactiferous duct

Alveoli

B Histological classification

Normal duct Ductal carcinoma in situ Invasive ductal carcinoma

C Molecular classification

Luminal-A	Luminal-B	HER2+	TN
40%	20%-30%	10-15%	10-20%
ER+/PR+/HER2-	ER+/PR+/-HER2+/-	ER-/PR-/HER2+	ER-/PR-/HER2-

D Healthy breast microenvironment

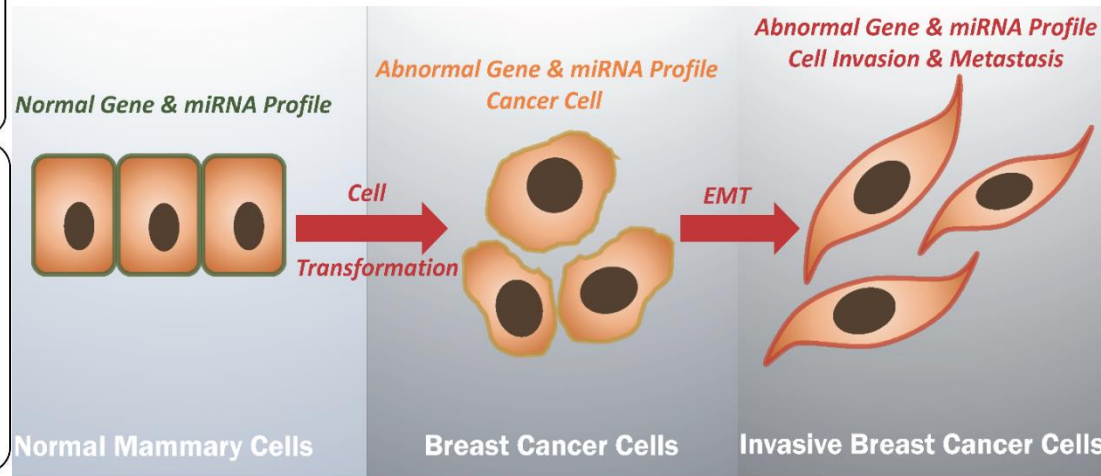
Fibroblasts Extracellular matrix (ECM)

Vasculature Adipocytes Myoepithelial cells

E Breast tumor microenvironment

Cancer ECM CAFs T-Cells Dendritic cells M1 M2 Natural killer

CAAs Myoepithelial cancer cells



- Be healthy.
- Exercise Regularly: 30 mins daily. Post menopausal : 60 minutes. Burn Fat. Improve heart and lung function. Aerobic exercise is a great way. Walking, Swimming, Running, Biking, Dancing, Hiking.
- Don't drink alcohol, or in limits.
- Hormone Replacement Therapy or Oral Contraceptives,
- Breast feed your children, if possible.
- Consult doctor, in case of family history or inherited changes in your BRCA1 and BRCA2 genes,



Some benefits of aerobic exercise can include:

- Lower cholesterol and blood pressure.
- Increased endurance.
- A lower resting heart rate.
- Weight loss or maintenance of your current weight.
- Stress relief. Improved sleep.



Is Your Mammogram Killing You?

Excerpts of an Interview With Dr. Len Saputo MD. Internal Medicine Specialist, US Physician and Author of Return To Healing,

1,900 mammograms saves one life. But, they will cause two cancers from the mammogram's radiation in the process.

Misdiagnose: 30% women will receive unnecessary and costly surgeries, radiation and chemotherapy. So, even more will die from those.

For women under age 50, mammograms aren't necessary. A shocking study that shows **some breast cancers go away on their own - without any treatment at all** - and what tests doctors can use to determine which cancers fall into that category.

Thermography measures the metabolic activity of cells and cancer cells are highly metabolically active even when they are of such a small number to be undetectable by mammograms.

Thermography can pick up signs of breast cancer cells earlier than a mammogram. Thus, **it is an excellent tool for early breast cancer detection.** "No more than any other test, and far less," Saputo said. He believes **thermography is more accurate than mammograms.**

Saputo said that FDA is influenced by advocates of the Mammogram Industry.

Saputo said they perform about a dozen thermography a week and have offered thermography for the past decade. Despite the existence of thermography since the 1960s. Dr. Saputo believes **thermography should be approved as a standalone test for breast cancer.**

Source: Google

Thermography: An Excellent Tool for early Breast Cancer Detection.

Thermography or Digital Infrared Imaging: Tumors require their own blood supply and thus make a lot of blood vessels. They will look different than regular tissue during Thermography.

Thermography has 99% accuracy in identifying breast cancer in women in the 30 to 55 age group. **Detects abnormalities 8-10 years before mammography can** detect a mass. Early detection of breast cancer saves lives. Some proponents of breast thermography claim what this imaging technique can actually do when it comes to finding cancer.

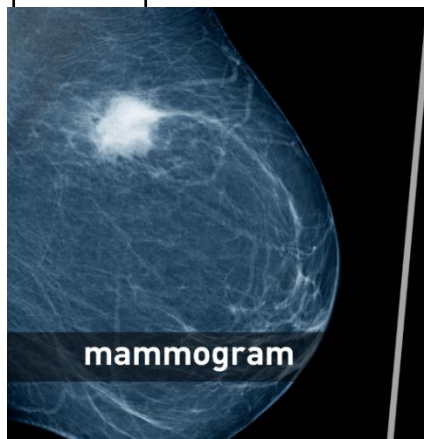
Thermogram looks impressive. It's a rainbow picture of your body where each color represents a different temperature zone. Thermography is a test that can detect changes that could possibly progress into a late-stage disease, such as breast cancer. Thermography is offered at clinics in US. Thermography Experts say it is "**more accurate**" than mammograms and advertised as a test that **can find cancer years before a mammogram can.**

Thermography is "Very Accurate. Detect changes many years before than detected on a mammogram."

Women, who are worried about the radiation from mammograms, turned to thermography. Thermograms images are Colorful. Mammogram images are in black-and-white. In 1982, FDA approved Thermography as a test women can use in addition to getting a mammogram.

Source: Google

S No.	Particulars	Mammography	Thermo mamography
1	Diagnostic Method	Radiation	Infrared
2	Equipment	Very Expensive (Rs. 15 ~20Lakhs)	Economical upto Rs. 8 Lakhs
3	Result Based on	X-Rays	Infrared and Analytical Software
4	Additional Equipment	Laser X-Ray Films Printer	Any Normal Colour Printer
5	Consumable	Specialized X-Ray Film	Normal A4 size white paper
6	Output	Black & White in X-Ray Film. No Video Recording possible.	Coloured Prints on Plain paper. Video : Recording, Editing and Replay
7	Effect on Patient	Harmful. Exposure to Radiation can cause cancer	Harmless. No Radiation. Number of Exposures do not create Cancer
8	Test Cost	Rs. 8000~10000	upto Rs. 2000~ 4000
9	Regulation	AERB	None
10	Accuracy	Not 100% Accurate	99% accurate
11	Detection	Cannot detect small number of Cancer Cells	Detects small number of Cancer Cells as they are highly metabolic.
12	Remarks	Expensive. Harmful due to Radiations. Data cannot be stored	Inexpensive. Harmless. Excellent Tool for early Breast Cancer detection. Detects abnormalities 8-10 years before mammography can. Patients Data can be stored in the System



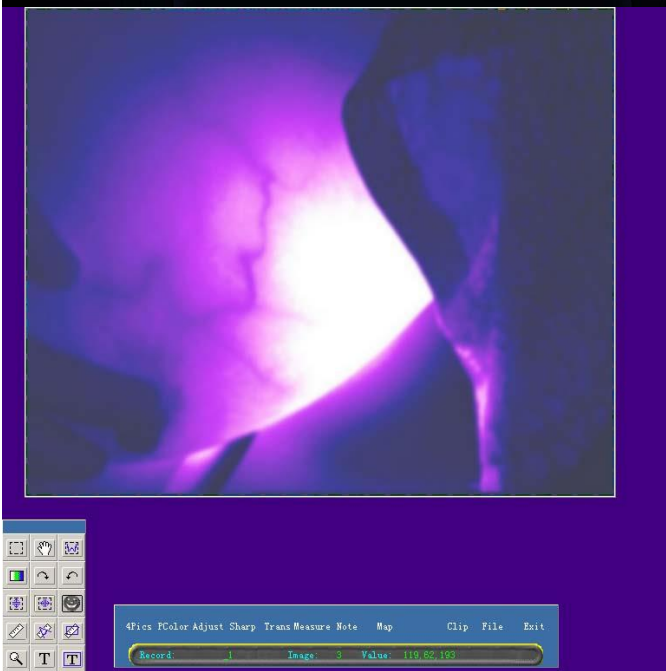
mammogram



thermogram

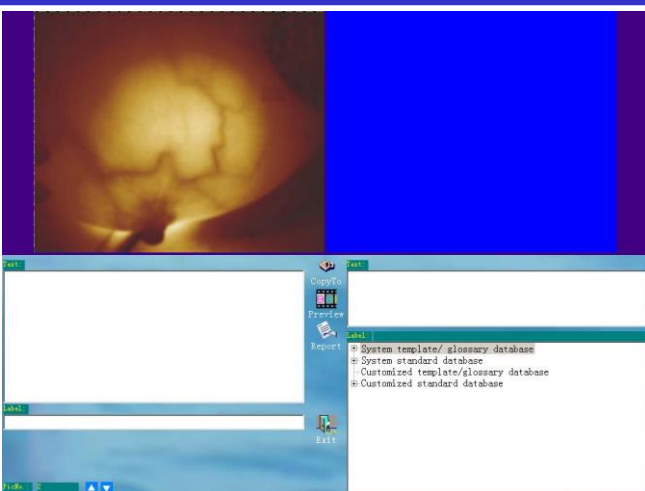


1. System Startup

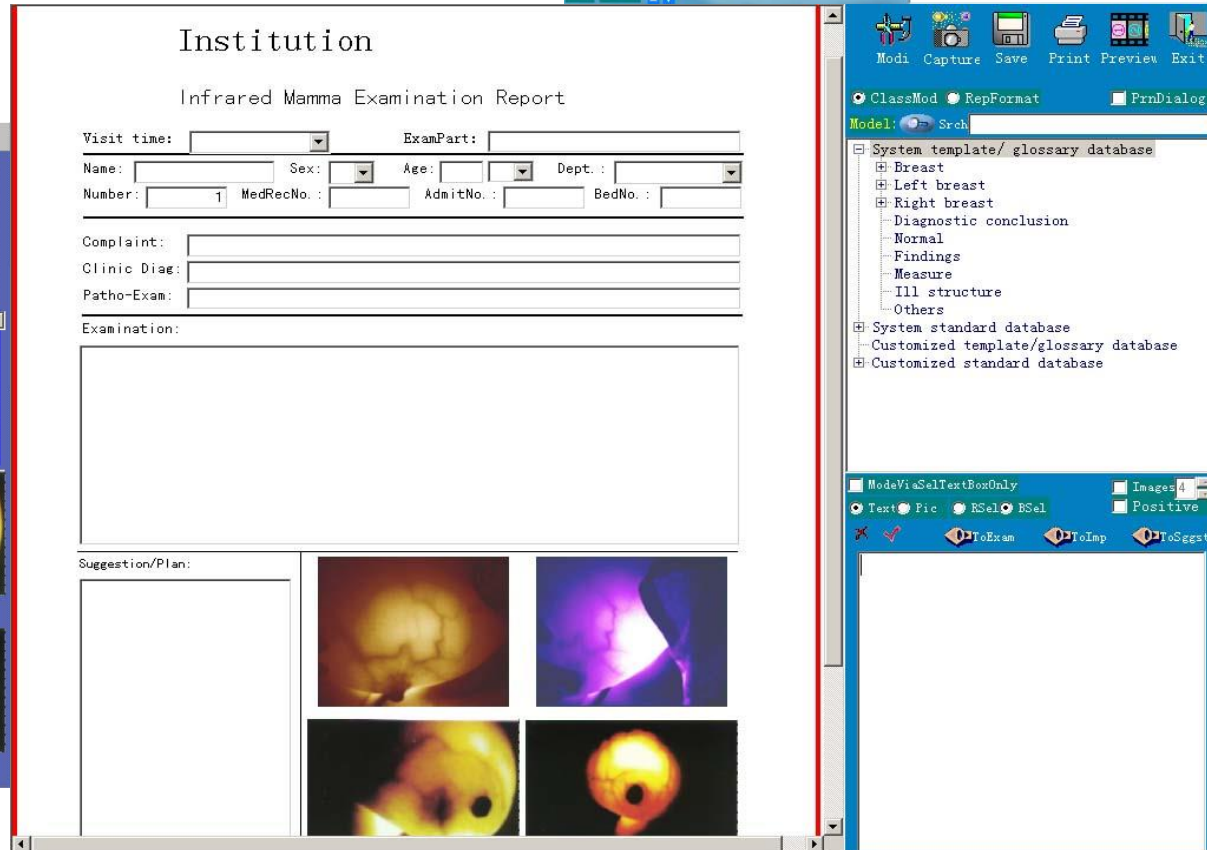


2. Image Collection and Processing

3. Image Comparison

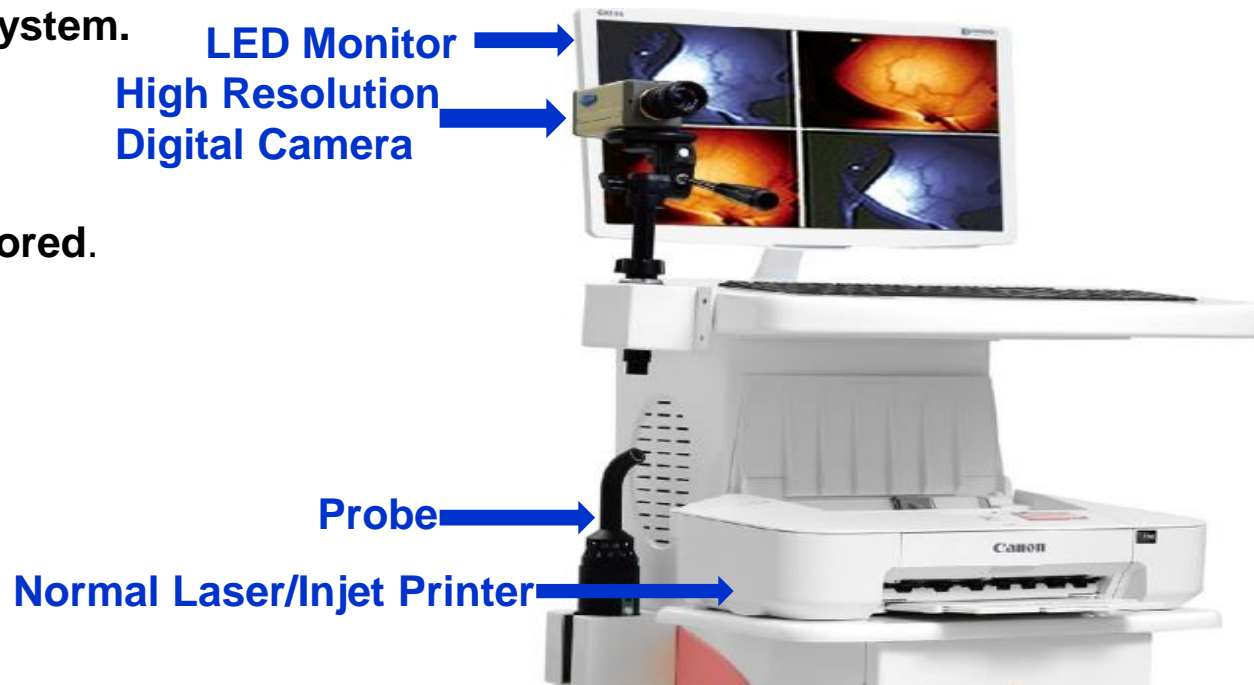


4. Finalize Report



- Excellent Tool for early Breast Cancer Detection.
- Detects abnormalities 8-10 years before mammography can.
- Harmless. No Radiation. 99% Accurate.
- Detects small number of Cancer Cells as they are highly metabolic.
- Economical. Analytical Software based.
- Infrared Imaging System.
- High Resolution and Low Intensity Digital Camera. **Clear Image.**
- Professional Infrared Probe,
- **Image Managing Functions** : Dynamic Video, Image Capture, Image Freeze, Dispose and Save.
- Professional Case **History Managing System.**
- Multi working interface software.
- Multi Reports formats.
- **Patients Data can be amended and stored.**

Breast Cancer Diagnostic Device Configuration:
Camera, Probe, Laptop with Windows, Key board, Mouse, Printer and 19" LED Display.



***Thanks a lot....
Look Forward to Serve you....***

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