

Proceedings of the Webinar
on

CANCER:

Prevention, Management,
and Control



**Bureau of Police Research
and Development**
Ministry of Home Affairs, New Delhi

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Ministry of Home Affairs, Govt. of India
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MESSAGE



The rising incidence of a life threatening disease, such as cancer, in the country is a matter of grave concern. It is important to know and understand various causative factors of cancer so that appropriate measures may be adopted for preventing cancer from developing in our bodies. Unhealthy diet, physical inactivity, exposure to harmful radiation and environmental hazards, use of tobacco and smoking, consumption of alcohol and processed meat products could be among the factors causing cancer.

Police Forces in the country are exposed to a highly stressful work environment, which might further worsen their health conditions. Lifestyle factors, such as the sedentary nature of the job, long hours at work, inability to fulfil social commitments, and inadequate hours of sleep could be among the additional risk factors affecting their overall health.

With a view to improving awareness about Prevention, Management, and Control of Cancer in Police Forces of the country the Modernization Division of the BPR&D conducted a webinar on '**Cancer: Prevention, Management, and Control**' at the BPR&D Headquarters, New Delhi, on June 25, 2021. Two eminent experts of the country, viz., Prof. S K Gopinath, Padma Shri, HCG Hospital, Bengaluru, and Prof. Lalit Kumar, Padma Shri, AIIMS, New Delhi, delivered talks on important aspects of cancer and shared their experiences. They also clarified many of the issues raised by the participants.

I congratulate Dr. Karuna Sagar, IPS, IG/Director, Modernization Division, and his team of dedicated officials, comprising Shri B. Shanker Jaiswal, IPS, DIG/Deputy Director, and Dr. Ajit Mukherjee, PSO (LS), on successful conduct of this important webinar!

The proceedings of the webinar will be very useful for our Police Forces and will go a long way in preventing the occurrence and cancer and ensure overall health and well-being of police personnel.

(V.S.K. Kaumudi)

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MESSAGE



The title of the Pulitzer prize winning book: ‘**Emperor of all Maladies**’, by Oncologist Dr. Siddhartha Mukherjee, says it all. Despite several decades of research and treatment, in the minds of the citizens at large, Cancer continues to defy easy treatments.

Experts around the world have maintained that a healthy lifestyle, coupled with avoidance of exposure to carcinogenic substances, can lower the risk of contracting the disease. Given the highly stressful and challenging environment in which they operate makes the police personnel easily vulnerable to health disorders.

With a view to promoting awareness about the techniques for preventing and managing cancer in police forces in the country, the Modernization Division of the BPR&D, conducted a Webinar on June 25, 2021, where eminent domain experts interacted with the participants.

It is heartening to note that the proceedings of the webinar are being compiled for dissemination. I compliment the Modernization Division led by Dr. Karuna Sagar, IPS, and his team, including Shri B. Shanker Jaiswal, IPS, DIG/Deputy Director (Modernisation) and Dr. Ajit Mukherjee, PSO (LS), for the webinar and the proceedings.

(Neeraj Sinha)

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EXECUTIVE SUMMARY



Rising incidence of a life threatening disease, such as cancer in our country is a matter of serious concern. It is important to be aware of various causes of cancer in order to adopt appropriate preventive measures. To increase awareness about cancer among Police Forces of the country, the Modernization Division of BPR&D organized a Webinar on “**Cancer: Prevention, Management, and Control**” on June 25, 2021 from 11 AM-1.30 PM at the BPR&D Headquarters, New Delhi.

Two eminent speakers of the country namely, Prof. K S Gopinath, Padma Shri, a well-known Surgical Oncologist, HCG Hospital Bangalore and Prof. Lalit Kumar, Padma Shri, Head, Medical Oncology, Dr. B R A Institute of Rotary Cancer Hospital, AIIMS, New Delhi delivered talks on various important aspects of cancer and clarified many issues raised by the participants. One hundred and thirty seven Police officials from CAPFs, States/UTs, CPOs and outlying units of BPR&D participated in the webinar from all over the country.

Following initial welcome of the expert speakers and participants, Shri Neeraj Sinha, ADG, BPR&D in his inaugural address, emphasized the importance of the subject of cancer and expressed his happiness that the Modernization Division of BPR&D is conducting a webinar on a topic of great importance. He also expressed his concern on the rising incidence of cancer in the country.

Speaking first, Prof. K S Gopinath felt that people aged 40-65 years are mostly affected by cancer. He classified the cancer-causing factors into two categories, namely Internal and External factors. He discussed some common cancers affecting males and females and said that the treatment of cancer requires a multidisciplinary team involving experts from other domains also. He showed harmful effects of consumption of tobacco and its products. He mentioned that plant based diets are cancer protective whereas animal based diets are cancer enhancing agents Dr. Gopinath concluded his talk by saying “**Cancer is preventable and can be cured if detected early**”.

“Promoting Good Practices and Standards”

Prof. Lalit Kumar, the second and last speaker of the webinar presented a global as well as national scenario of cancer and also focussed on its prevention and control strategies. He showed a rising trend of cancer in the country over the years. He also explained the role of diet in various forms of cancer and said that people should be educated and made aware of the harmful effects of the consumption of tobacco and its products through community participation. He put a lot of emphasis on reducing obesity, doing regular exercise, walking, and other physical activities for reducing the risk of cancer. He proposed a three-pronged approach involving Medicine (Science), Harmony, and Humanism for combating cancer.

Overall, it was an excellent webinar covering all the important aspects on prevention, management, and control of cancer. Hope, the proceedings of the webinar will help create awareness about cancer among police forces of the country and will serve the purpose of preventing cancer and ensure their good health and well-being.



(Dr. Karuna Sagar, IPS)
IG/Director, (Modernization)

WEBINAR

Cancer: Prevention, Management and Control Modernization Division, BPR&D Hqrs., NH-8, Mahipalpur, New Delhi

Date: June 25, 2021

Venue: BPR&D Hqrs., New Delhi

Time: 11 am – 12.30 pm

Minute to minute programme:

Time	Topic	Speaker/Moderator
11 am	Inaugural address	Shri Neeraj Sinha, ADG, BPR&D
11.10 am	Management of Cancer – currently available options and latest developments	Dr. K S Gopinath Padma Shri Surgical Oncologist, HCG Kalinga Rao P Kalinga Rao Road, Sampangi, Ram Nagar Bangalore
11.40 am	Q/A Session	Moderated by Dr. Karuna Sagar, IG/Dir (Mod), BPR&D
11.50 am	Current status, Prevention and Control strategies for Cancer with particular reference to role of Diet, Lifestyle and Environmental Factors	Dr. Lalit Kumar, Padma Shri Prof & Head, Medical Oncology, Dr. B R A Institute of Rotary Cancer Hospital, AIIMS, New Delhi
12.20 pm	Q/A Session	Moderated by Dr. Karuna Sagar, IG/Dir (Mod), BPR&D
12.30 pm	Vote of Thanks	Shri B Shanker Jaiswal DIG (Mod)/Deputy Director, BPR&D

Proceedings of the Webinar on Cancer: Prevention, Management, and Control

BPR&D Headquarters, NH-8, Mahipalpur, New Delhi | June 25, 2021

To increase awareness about Cancer among the Police Forces of the country, the Modernization Division of the Bureau of Police Research and Development (BPR&D) organized a webinar on “Cancer: Prevention, Management, and Control” on June 25, 2021, at BPR&D Headquarters, New Delhi from 11 am – 1.30 pm. One hundred and thirty-seven Police Officials from CAPFs, States/UTs, CPOs, and outlying units of BPR&D participated in the webinar.

Shri Neeraj Sinha, ADG, Dr. Karuna Sagar, IG/Director, Modernization, Shri B Shanker Jaiswal, DIG/Deputy Director, Modernization were among the distinguished participants from BPR&D. Prof. K S Gopinath, Padma Shri, HCG Hospital, Bangalore and Prof. Lalit Kumar, Padma Shri, AIIMS, New Delhi were the two eminent speakers who talked on various important aspects of Cancer Prevention and Control.

After the initial welcome of the expert speakers and participants, Shri Neeraj Sinha in his inaugural address emphasized the importance of cancer prevention and control in the country. He felt that the topics of the webinar were thoughtfully curated. He quoted the works of the famous Rishikesh Mukherjee, the Film Producer & Director of the Movie “Anand” and Dr. Siddharth Mukherjee, the Pulitzer Award-winning author of the book “The Emperor of All Maladies” for bringing the issue of Cancer in limelight. He hoped that the deliberations held in the webinar will be useful for the Police Forces.

CURRENT STATUS OF MANAGEMENT OF CANCER IN MIDDLE AGE

The first speaker of the Webinar Prof. K S Gopinath talked about “**Management of Cancer in the Middle Age**” as he felt that majority of Police Officials fall in the category of middle age between 40-65 years. He noted that the stress inherent in policing jobs negatively impacts the health of police officials with increased risk of obesity, suicide, sleeplessness, and cancer. He said that the Metabolic Syndrome (MS) which is a cluster of symptoms believed to increase the risk of Heart Disease, Stroke, and Diabetes, was more prevalent in Police Forces compared to the general population. Those, who work the night shift are more prone to MS. Officers who are constantly exposed to high-stress levels might develop Brain Cancer after 30 years of service.

Of all the cancers detected, 45 % are in the age group 40-65 years. Women have seen a bigger rise in cancer rate than men from 363 per 100,000 in 1979 to 459 per 100,000 in 2008. Further, a higher rate of detection of cancer in middle age could be due to more rigorous screening. Dr. Gopinath explained with the help of a hypothesis, how to de-stress and positive thoughts mediate our immune



system leading to respectively progression and regression of cancer in our body.

Quoting from the Population-Based Cancer Registry in India, Dr. Gopinath mentioned that Bangalore, the IT hub of the country has become the cancer capital of India with 126 cases of cancer per 100,000 population ahead of New Delhi (123) and Mumbai (105). Talking about age and Cancer he observed that maximum patients with Cancer are seen in the age group of 50-55 years and that age of onset of cancer in India is 10 years younger to other countries.

Dr. Gopinath defined Cancer as the division of abnormal cells without control that invades other body tissues through the blood and lymph systems. It is a complex heterogeneous disease from the tissue of origin to cancer cells. He classified the Cancer causing factors into two categories, namely Internal and External factors. Hormones, immune conditions, and inherited conditions are among the internal factors. Among the external factors, he included lifestyle habits (smoking, diet, and alcohol), viruses, chemicals, and radiations. He listed out many Environmental Factors such as Diet, Tobacco, Infection, Alcohol, Reproductive and Sexual Behavior, Occupation, Pollution, Geophysical Factors, Medicines and Medical Procedures, and Industrial Products which could be associated with deaths due to Cancer.

While talking about when to approach the doctor, Dr. Gopinath laid down warning signs involving various body organs and also mentioned what all to observe in the functioning of those organs before approaching a doctor. Some of the warning signs mentioned by him were (i) Change in bowel and bladder habits, (ii) Thickening of the lump in the breast or elsewhere, (iii) Unusual bleeding or discharge, (iv) A sore throat that does not heal, (v) Indigestion or difficulty in swallowing, (vi) Obvious change in warts or mole, and (vii) Nagging cough or hoarseness.

The treatment of cancer requires a multidisciplinary team comprising a **Surgical Oncologist, a Microvascular surgeon, Oral and Maxillofacial Surgeon, Radiation Expert, Medical Pathologist, and Psychooncologist**. The role of the Rehabilitation Team comprising **Speech Therapist, Prosthodontist, Nutritionist, and Critical Caregivers** is equally important. To avoid unnecessary treatment and improve outcomes, Dr. Gopinath talked about Precision Medicine, which involves Precise Diagnostics, Precision Surgery and Radiotherapy, and Targeted Chemotherapy.

Describing Middle Age Cancer in men and women, Dr. Gopinath mentioned head and neck, lung, prostate, and stomach cancers as common cancers in men. Whereas, uterine cervix, breast, oral, endometrial, ovarian, and colon cancers are the common cancers, seen in women.

Explaining the sign and symptoms of cervical cancer in women he mentioned white discharge, abnormal bleeding between periods, bleeding after intercourse, and prolonged heavy bleeding during menstruation as some of the major symptoms. Frequent sexual intercourse at an early age, multiple sex partners, and having many children were the risk factors mentioned by him. Breast cancer is the most common cancer seen in Indian women with about 1,10,000 new cases being detected every year. Firm lump, small changes in the nipple, and discharge from the nipple are some of the symptoms of breast cancer. Early menstruation, late menopause, first child after 35 years of age, childlessness, family history of breast cancer, and high fat and low fiber diet were mentioned by him as some of the major risk factors for breast cancer. Dr. Gopinath also showed how females themselves can examine breasts by understanding the signs and symptoms in a five-step procedure. Diagnostic tools for cancer such as mammogram, ultrasound, MRI (useful in young women aged 35-40 years), and surgical interventions



such as mastectomy, breast conservation surgeries, and **LABC (Locally Advanced Breast Cancer)** were also mentioned by him.

Discussing cancer in men, Dr. Gopinath showed the effects of the consumption of tobacco and oral cancer. He said a combination of Chemotherapy and Radiotherapy could be used to treat oral cancers. He talked about various treatment modalities for Laryngeal cancer and said regular follow-up is very important and mandatory. Discussing signs and symptoms of Prostate Cancer, he said it is hormone-dependent cancer and to detect it all men aged 45-65 years should undertake PSA testing and rectal examination at least once.

Dr. Gopinath said that cancer is preventable. Smoking increases the risk of not only cancer but also increases the risk of many other diseases. Tobacco chewing is strongly linked to oral cancer. So, the use of tobacco in any form should be avoided to prevent cancer. He further said cancer is curable if detected early.

Talking about “Cancer & Diet” he said, the diet has a powerful effect on health and the risk of cancer. Plant-based foods are cancer-protective agents and animal-based foods and the method of cooking, are cancer enhancing agents.

He noted that Yoga & Pranayama can relieve cancer patients of a lot of stress and can also improve their quality of life. Dr. Gopinath concluded his talk by saying “Cancer is preventable and can be cured if detected early”.

Responding to a question raised by Shri B Shanker Jaiswal on the treatment of cancer being costly, Dr. Gopinath mentioned “Economy Based Treatment”. In this context, he mentioned Ayushman and BPL schemes of the government. There are policies followed by every institution to provide the best treatment of cancer at a reduced cost for the common men and poor.



CURRENT STATUS OF MANAGEMENT OF CANCER IN MIDDLE AGE

DR. K. S. GOPINATH
MS, FRCS, FAMS, FICS, MAMS, FAIS
CHAIRMAN/ EDITOR IJSO

PROF. OF SURGERY & ONCOLOGY
SRI DEVARAJ URS MEDICAL UNIV.
TAMAKA, KOLAR , KARNATAKA.



DEFINITION OF MIDDLE AGE



HEALTH IN POLICE OFFICERS:

- On-the-Job Stress Negatively Impacts Police Officer Health, Study Suggests
- The stress inherent in police work with an increased risk of obesity, suicide, sleeplessness and cancer.

Laura Walter, EHS Today,
Jul 13, 2012





HEALTH HAZARDS & POLICE PROFESSIONALS

- ④ 40 percent of the officers were obese, compared with 32 percent of the general population.
- ④ More than 25 percent of the officers had metabolic syndrome, a cluster of symptoms believed to increase the risk of heart disease, stroke and diabetes, versus 18.7 percent of the general population.
- ④ Officers who worked night shifts had a higher risk of metabolic syndrome than those who work day shifts. Nearly half (46.9 percent) of officers in the study worked a non-day shift compared to just 9 percent of U.S. workers.



- Female and male officers experiencing the highest level of self-reported stress were four and six times more likely to have poor sleep quality, respectively.
- Officers were at increased risk of developing Hodgkin's lymphoma and brain cancer after 30 years of service.
- Suicide rates were more than eight times higher in working officers than they were in officers who had retired or left the police force.



- **Cancer diagnoses in 40-65 age group 45%**
- Women have experienced a bigger rise in cancer rates than men 363 per 100,000 in 1979 rising to 459 per 100,000 in 2008.
- The two major reasons for the rise are screening and lifestyle.
- More cancers that would not have been spotted in middle age in the past are now being detected and treated.



CHANGING PEOPLE'S PERCEPTIONS OF CANCER

Stress is a response pattern whose function is to prepare the body to cope with a demanding situation.

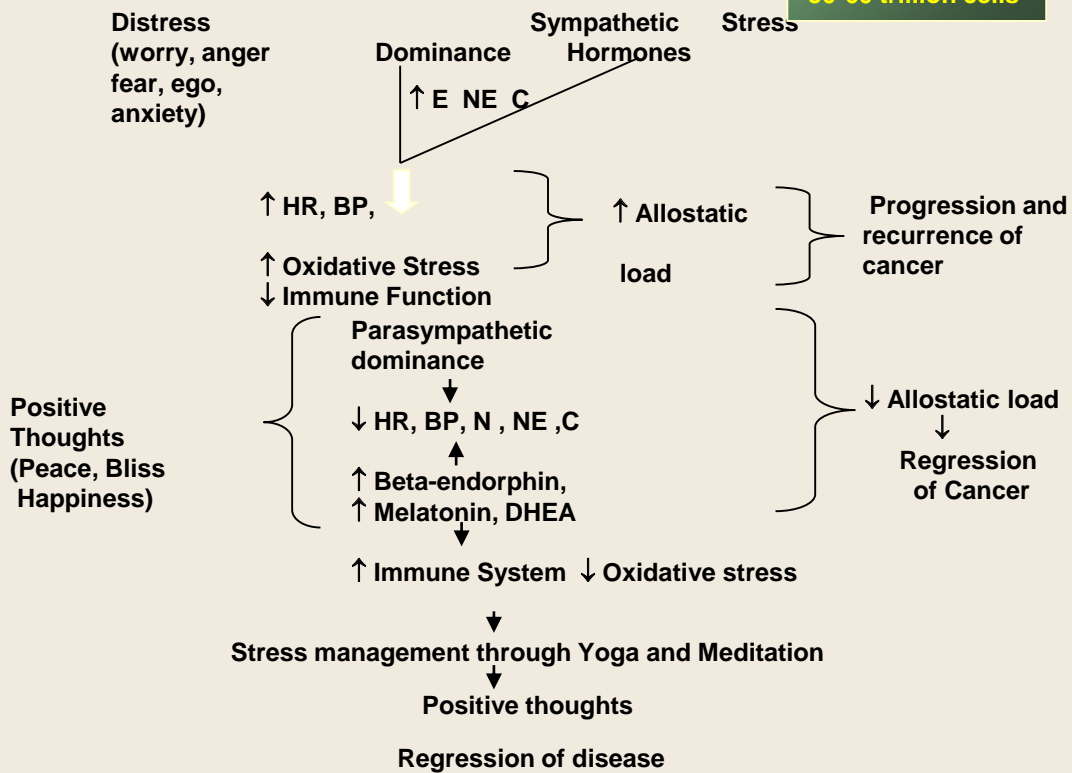
Link between stress and disease is mediated by the immune system.

- Seyle, 1950

Hypothesis:



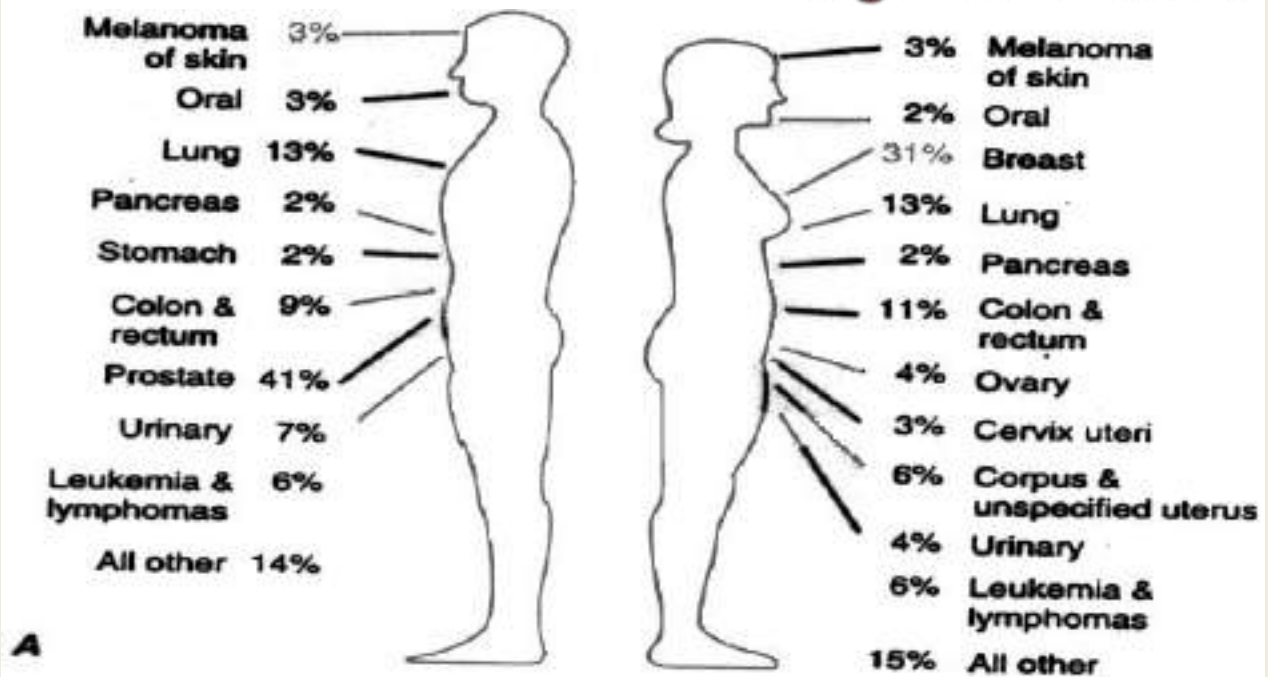
**Thoughts
Matter
Neuropeptides
50-60 trillion cells**



BANGALORE IS CANCER CAPITAL OF INDIA

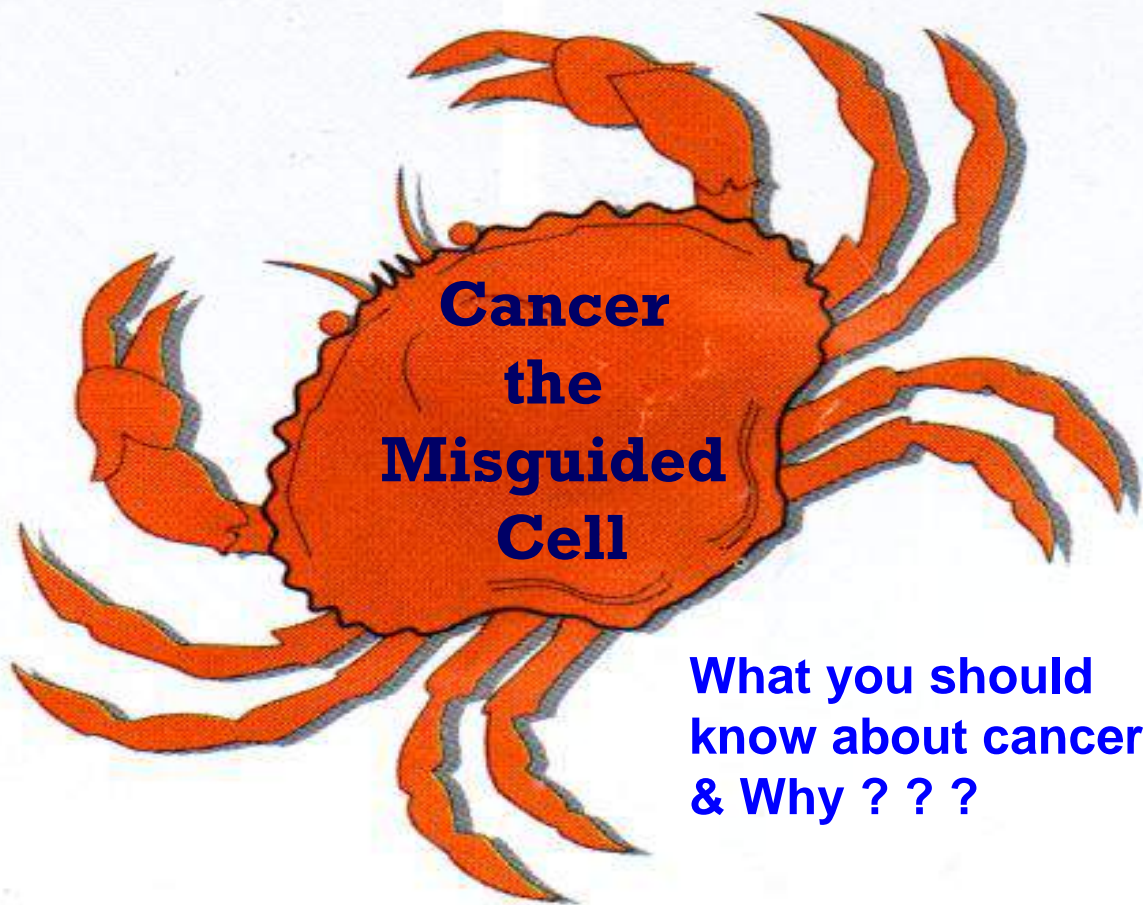
- TNN Feb 23, 2013, 03.14AM IST
- Tags: Prahlad Ram |
- **BANGALORE:** Here are warning bells for Bangaloreans. The fast-paced IT city has the highest incidence of cancer among Indian cities, roughly 126 cases for every lakh people.
- Latest figures released by the Population Based Cancer Registry put Bangalore at No.1 with 113.4 cases of cancer for every one lakh males and 139.1 cases for a lakh females every year. The average is 126.25, ahead of New Delhi (122.75) and Mumbai (104.75).

Age & Cancer



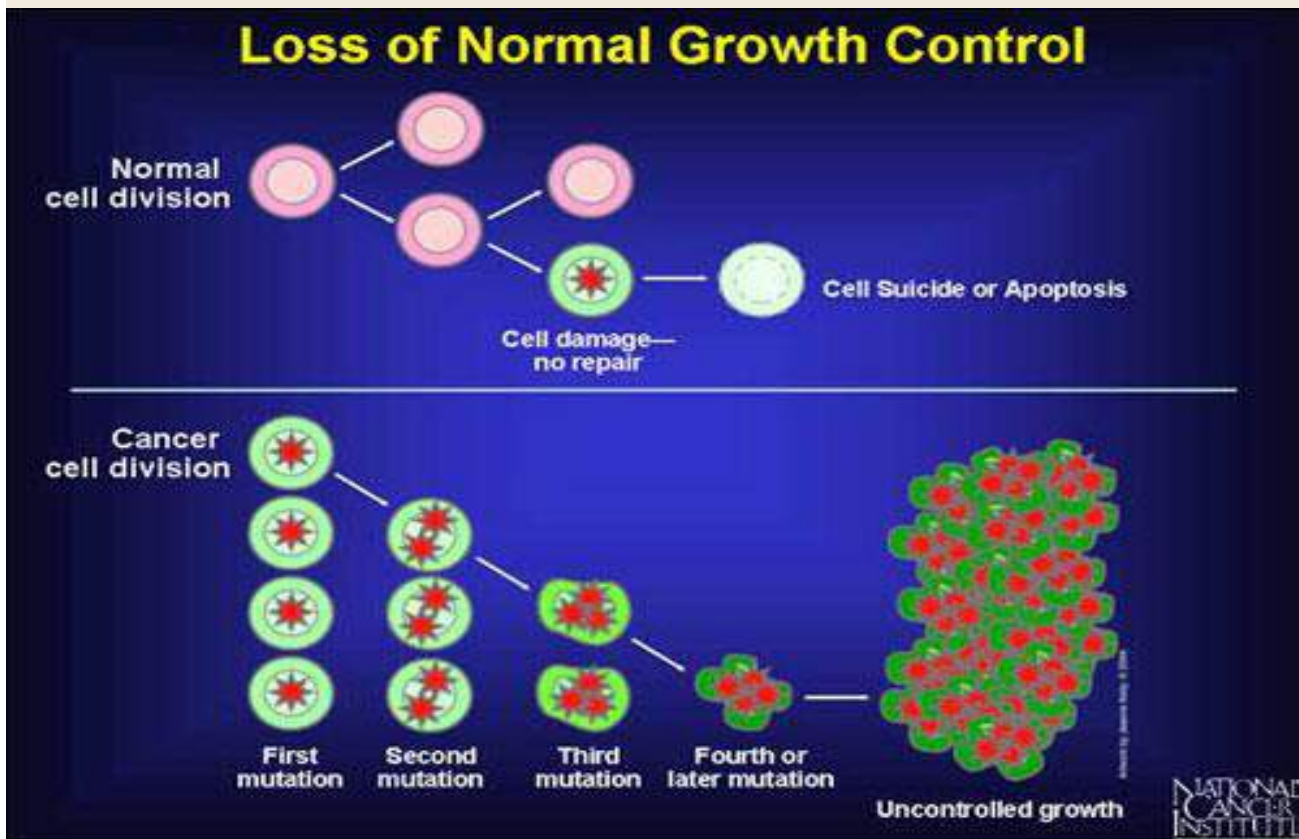
In India cancer develops 10 years younger than other

50 – 55 Years maximum number of cancer patients are seen.



WHAT IS CANCER ?

- Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other tissues.
- Cancer cells can spread to other parts of the body through the blood and **lymph** systems.



WHAT YOU SHOULD KNOW ABOUT CANCER & WHY ? ? ?



Today cancer is complex heterogeneous disease from tissue of origin to cancer cell – cancer stem cell and Circulating tumor cells and a Geno type centric which changes cancer genome to select patients for treatment.



WHAT CAUSES CANCER?

- **Internal factors**
 - hormones
 - immune conditions
 - inherited conditions
- **External factors**
 - lifestyle habits (smoking, diet, alcohol)**
 - viruses, chemicals, radiation**

ENVIRONMENTAL FACTORS AND CANCER DEATHS

Diet	35% (10-70%)
Tobacco	30% (25-40%)
Infection	10% (?)
Alcohol	3% (2-4%)
Reproductive and sexual behavior	7% (1-13%)
Occupation	4% (2-8%)
Pollution	2% (<1-5%)
Geophysical factors	3% (2-4%)
Medicines and medical procedures	1% (0.5-3%)
Industrial Products	1% (<1-2%)

Adapted from Doll and Peto, 1981; Casarett and Doull's Toxicology, 5th Ed.



WHEN TO APPROACH THE DOCTOR

Warning Sign	What to look for
Change in bowel or bladder habits	<ul style="list-style-type: none"> • Changes in frequency of bowel or bladder habits? • Changes in the color, consistency (diarrhea, constipated...), size, or shape of stools. • Blood in urine or stool
Thickening or lump in breast or elsewhere	<ul style="list-style-type: none"> • Any lump in the breast when doing a self exam • Any lump in the scrotum when doing a self exam • Any lumps in any part of the body needs evaluation
Unusual bleeding or discharge	<ul style="list-style-type: none"> • Blood in urine or stool • Discharge from any parts of your body, eg. Vagina, Rectum, nipples, penises, Nose Etc ...
A sore that does not heal	<ul style="list-style-type: none"> ○ don't seem to be getting better ○ are getting bigger ○ getting more painful ○ are starting to bleed



Indigestion or difficulty in swallowing	<ul style="list-style-type: none">• Feeling of pressure in throat or chest which make swallowing uncomfortable• Pressure or feeling full without food or with a small amount of food
Obvious change in warts or mole	Use the ABCD RULE <ul style="list-style-type: none">• Asymmetry: Does the mole look the same in all parts or are there differences?• Border: Are the borders sharp or ragged?• Color: What are the colors seen in the mole?• Diameter: Is the mole bigger than a pencil eraser (6 mm)?
Nagging cough or hoarsness	<ul style="list-style-type: none">• Change in voice• Cough that does not go away• Sputum with blood



IMPACT OF DIAGNOSIS

- **COPING CONCERNS**
- **Hopelessness/helplessness**
- **Guilt, Anger, Grief**
- **Social withdrawal**
- **Low self esteem**
- **Fear of death**
- **Image problems**
- **Natural defenses**
- **DENIAL**
- **ANGER**
- **BARGAINING**
- **DEPRESSION**
- **ANXIETY.**
- *.....Kubler Ross*

MULTIDISCIPLINARY TEAM

The team has made the change

Surgical Oncologist
Microvascular Surgeon
Oral & Maxillofacial surgeon



Rehabilitation team
Speech therapist
Prosthodontist
Nutritionist
Critical care

Translational
Research

**RADIATION
MEDICAL
PATHOLOGIST
PSYCHOONCOLOGIST**

Cancer Cell
Belongs to
everybody

PRECISION MEDICINE



Precise Diagnostics-GENOMICS

GOAL:

- **AVOID UNNECESSARY TREATMENT**
- **IMPROVE OUTCOMES**



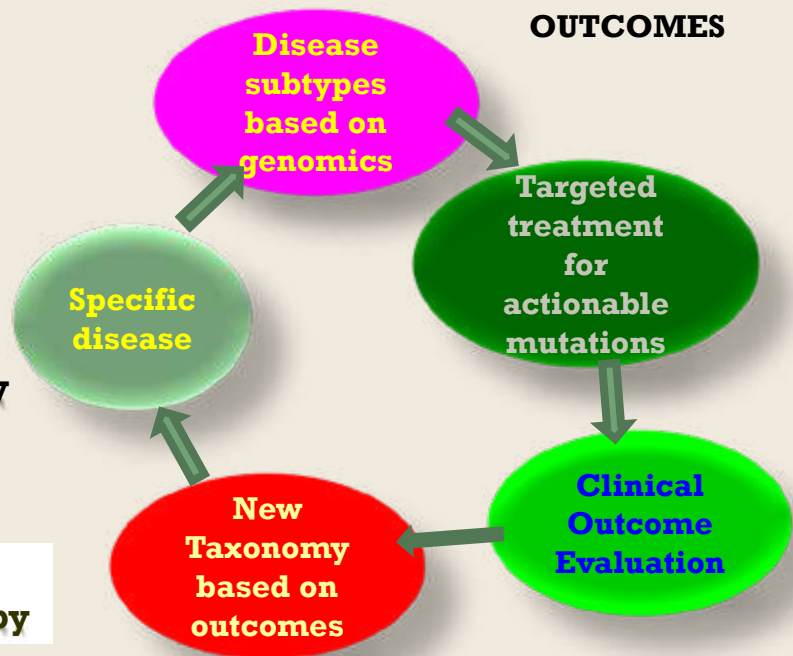
Precision Surgery



Precision Radiotherapy



Targeted Chemotherapy





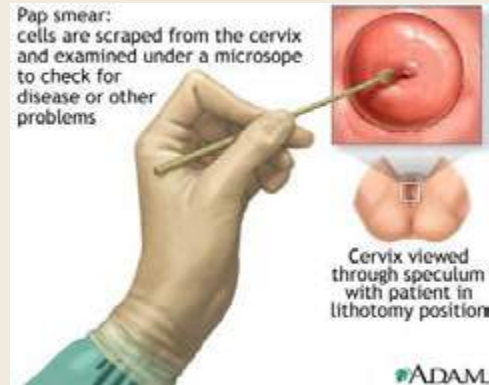
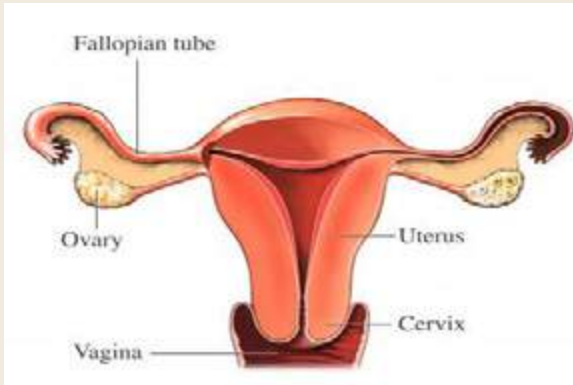
MIDDLE AGE CANCER

MEN

- Head & Neck cancer
- Lung cancer
- Stomach cancer
- Prostate cancer
- Etc

WOMEN

- Cancer of Uterine cervix
- Cancer of the Breast
- Oral cancer
- Endometrial cancer
- Ovarian cancer
- Colon cancer
- Etc.....



- ◉ **WHITE DISCHARGE**
- ◉ **ABNORMAL BLEEDING BETWEEN PERIODS**
- ◉ **BLEEDING AFTER INTERCOURSE**
- ◉ **PROLONGED HEAVY BLEEDING DURING MENSTRUATION**

RISK FACTORS - FREQUENT SEXUAL INTERCOURSE AT AN EARLY AGE, MULTIPLE SEX PARTNERS, MANY CHILDREN

Clinical examination

PAP – Examination

Colposcopy

CIN – **Carcinoma IN SITU**

Treatment

Surgery - Radical surgery

Radiation

CERVICAL CANCER





BREAST CANCER IN INDIA

1 – 22 women will develop breast cancer during their life times

1,10,000 new cases every year

17 – 40 per 1,00,000 population

40 to 60% of Breast Cancer diagnose constitutes LABC

5 – year survival 42.3% - 46.8%

BREAST CANCER – WARNING SIGNS

- **FIRM LUMP**
- **SMALL CHANGES IN THE NIPPLE**
- **DISCHARGE FROM THE NIPPLE**

**RISK FACTORS – EARLY MENSTRUATION
LATE MENOPAUSE FIRST
CHILD AFTER 35 YRS OF AGE
CHILDLESSNESS
FAMILY HISTORY
- BREAST CANCER
HIGH FAT &
LOW FIBRE DIET**



Evaluation of breast lump



How To Do It ?

Clinical Examination
Clinical Diagnosis
Imaging
Tissue Diagnosis
Treatment

Minimal stage workup
Clinical Breast Examination
Breast Imaging
X – Ray Chest
Ultra Sound Abdomen & Pelvis
Bone Scan Options

Breast Imaging

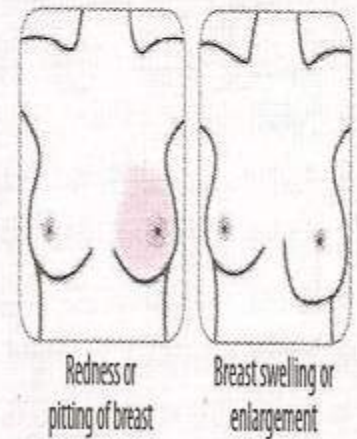
Mammography
Sono-Mammography
Digital Mammography
Mammo Scintigraphy
MR Mammogram
PET
PEM

BE BREAST AWARE

Periodic consistent Breast Self Examination may facilitate breast self awareness. Breast Self Awareness is encouraged as a supplemental screening modality for early detection of breast cancers.¹

Understand the signs and symptoms of breast cancer^{2,3}

- A breast lump or thickening of breast
- Dimpling of the breast skin
- Change in the colour or texture of breast skin
- Change in the appearance of nipple (inverted nipple)
- Fluid or bloody discharge from the nipple
- Redness or pitting of breast
- Change in the size or shape of a breast

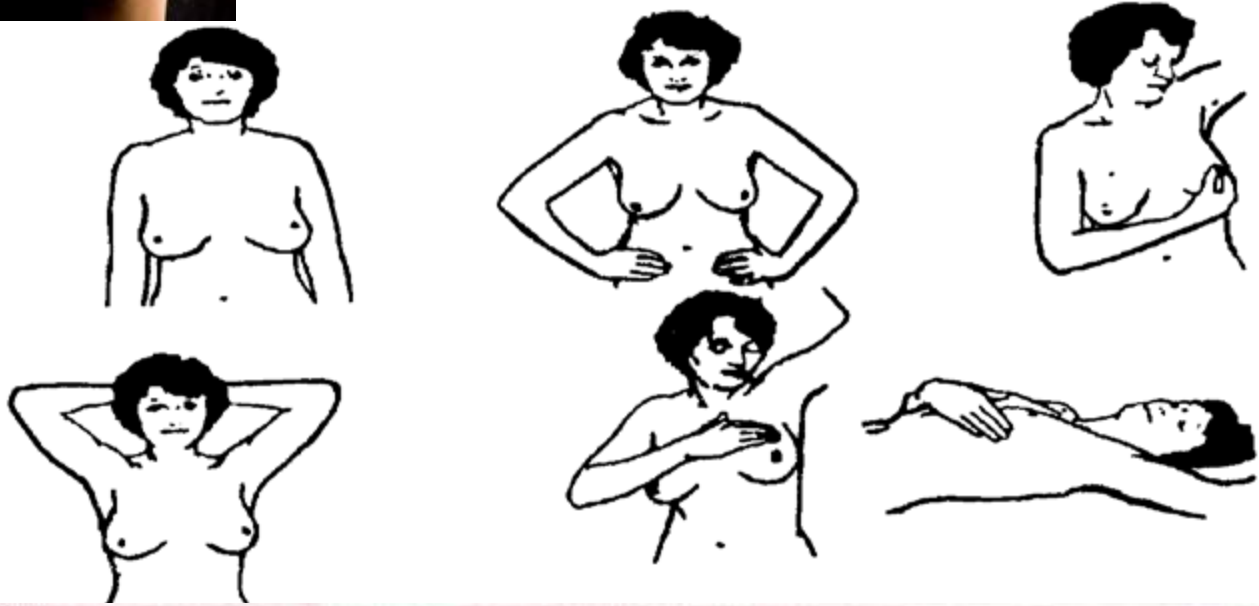






Breast self Examination

ಜಿ-ಜಿ ಪರೀಕ್ಷೆ



Women should be familiar with their breasts and promptly report changes to their doctor.

HOW TO PERFORM BREAST SELF EXAMINATION¹

STEP 1

Stand in front of the mirror with your shoulders straight and your arms on your hips.

- Observe your breast for their usual size, shape and colour.
- Check for any visible distortion or swelling.

STEP 2

Look for the same changes after raising your arms.

STEP 3

Observe both the nipples carefully for any signs of fluid or blood discharge.

STEP 4

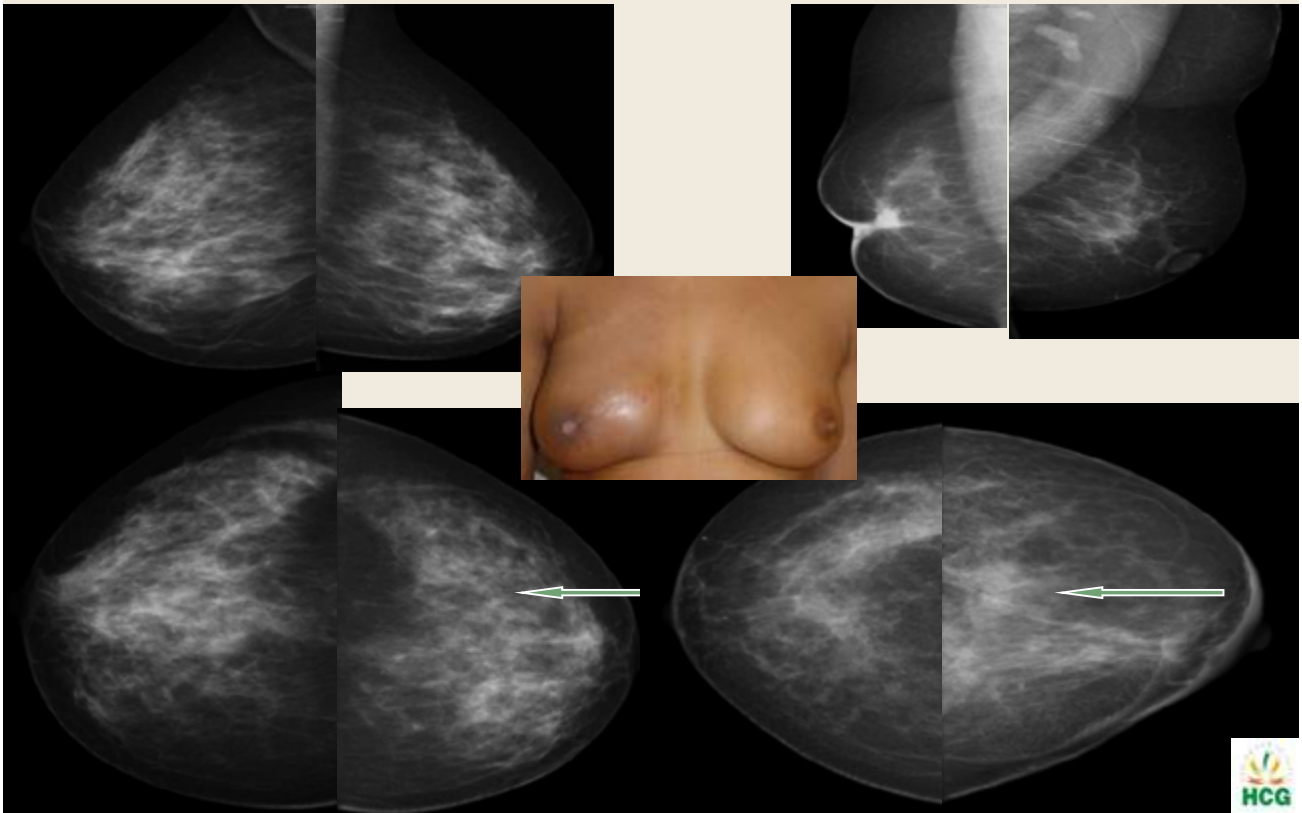
Lie down flat and feel your left breast with right hand and right breast with left hand with a firm and smooth touch of fingers. Follow a circular motion to cover the whole breast.

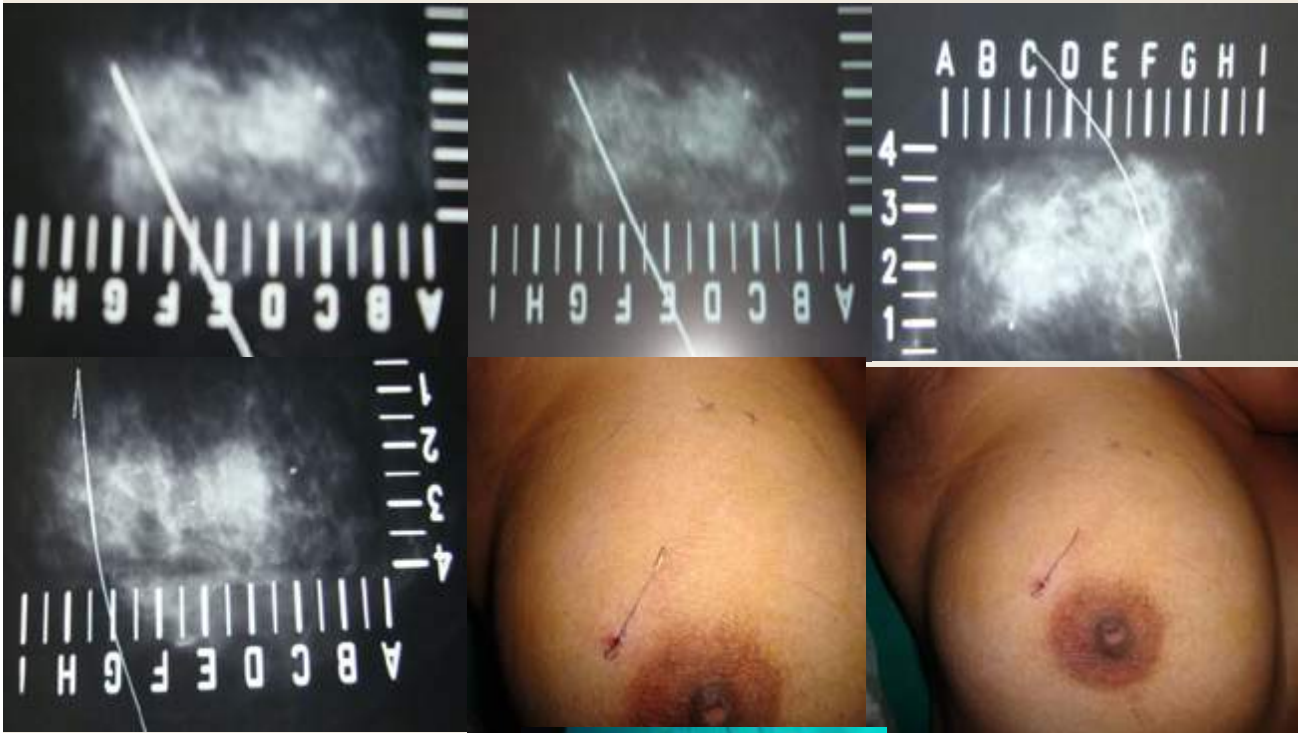
STEP 5

Feel your breasts while you are standing or sitting. It is easier to feel the breast while the skin is wet and slippery and so you can do this test while in shower. Follow the circular motion to feel your entire breast.

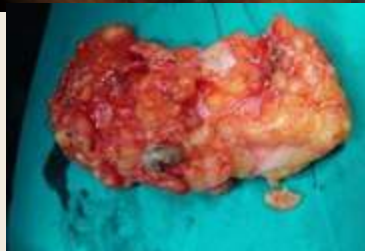


DIGITAL MAMMOGRAM





Mammo Needle Localization



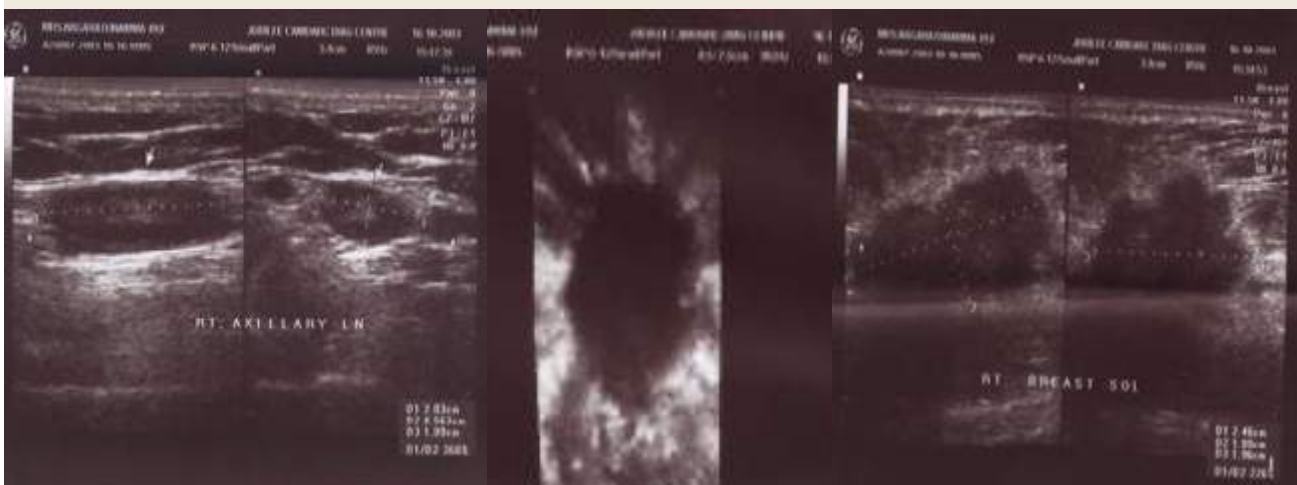
ULTRASOUND

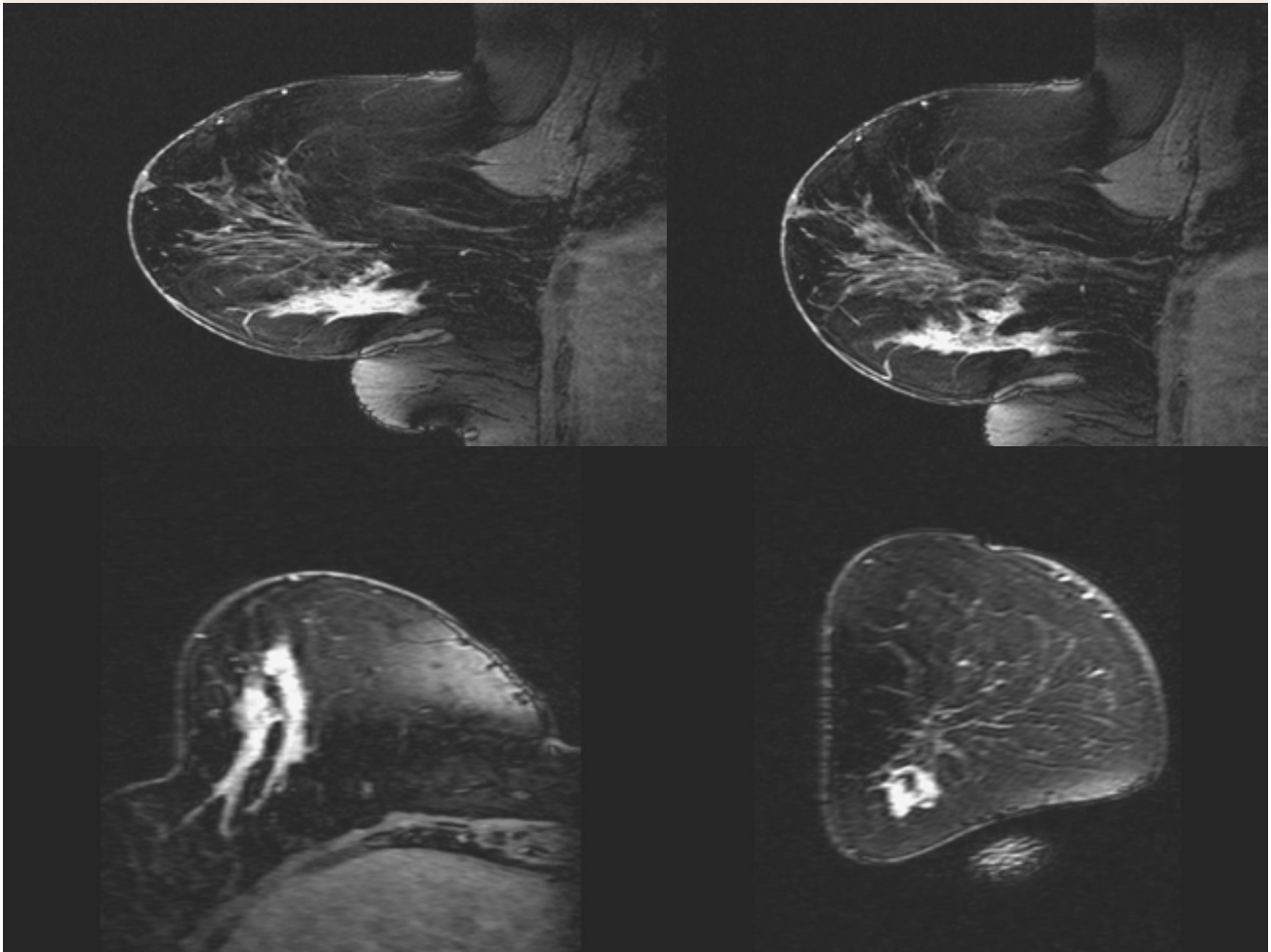
High frequency transducers of 5 to 7.5 MHz is used.

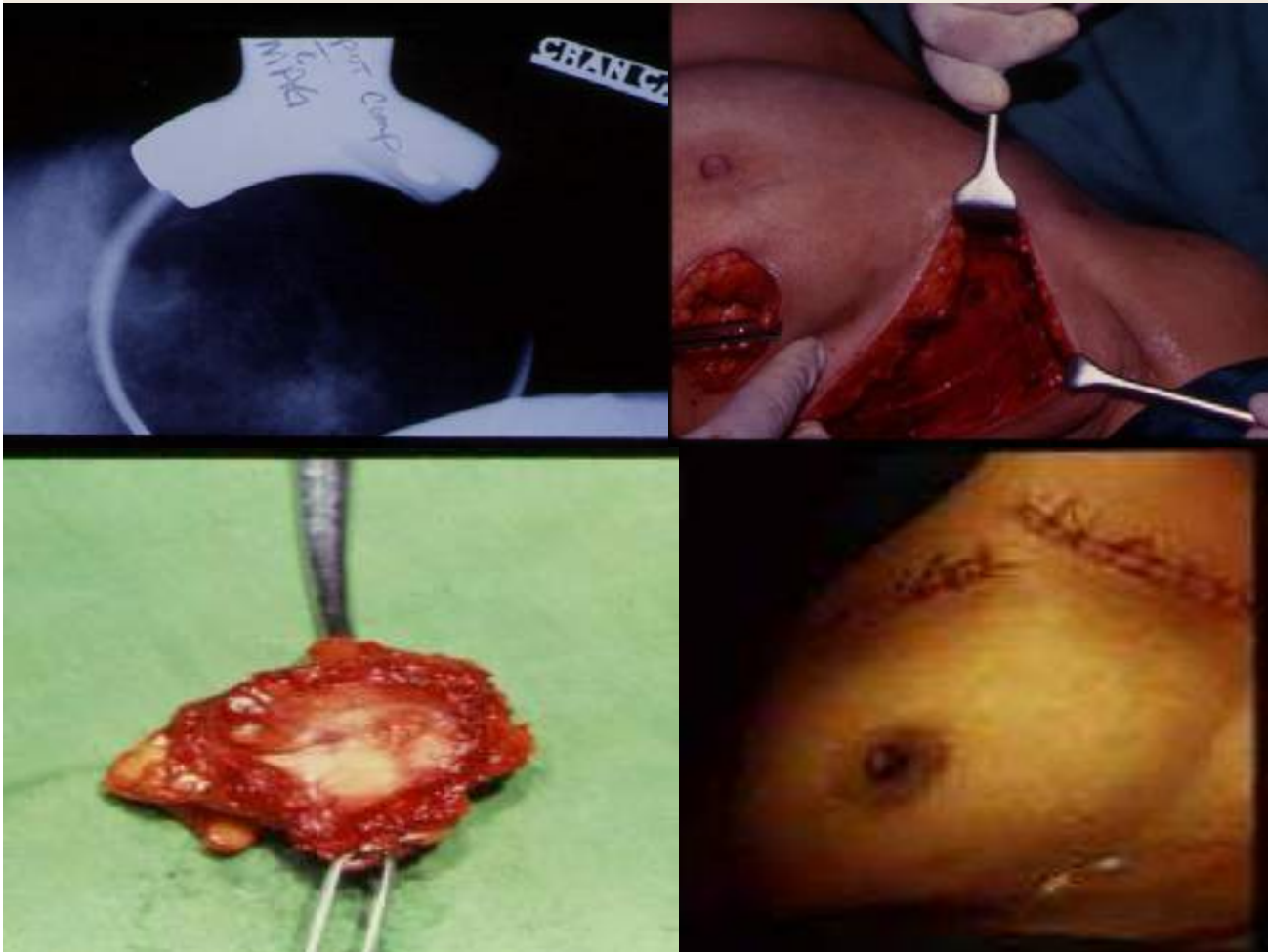
It is useful to differentiate solid from cystic lesion and in guiding aspiration procedures.

Intraductal pathology can be delineated clearly.

Ductal Endoscopy,
Ductal Lavage Laser ablation









**LABC
Clinical
Presentation**



MASTECTOMY TO BCT



BCT with LD Flap



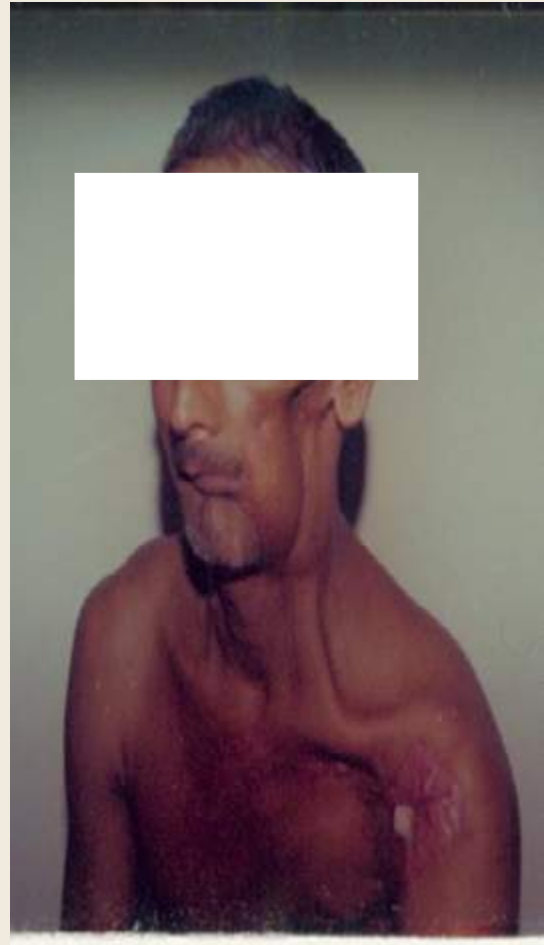
RECONSTRUCTION USING TRAM FLAP

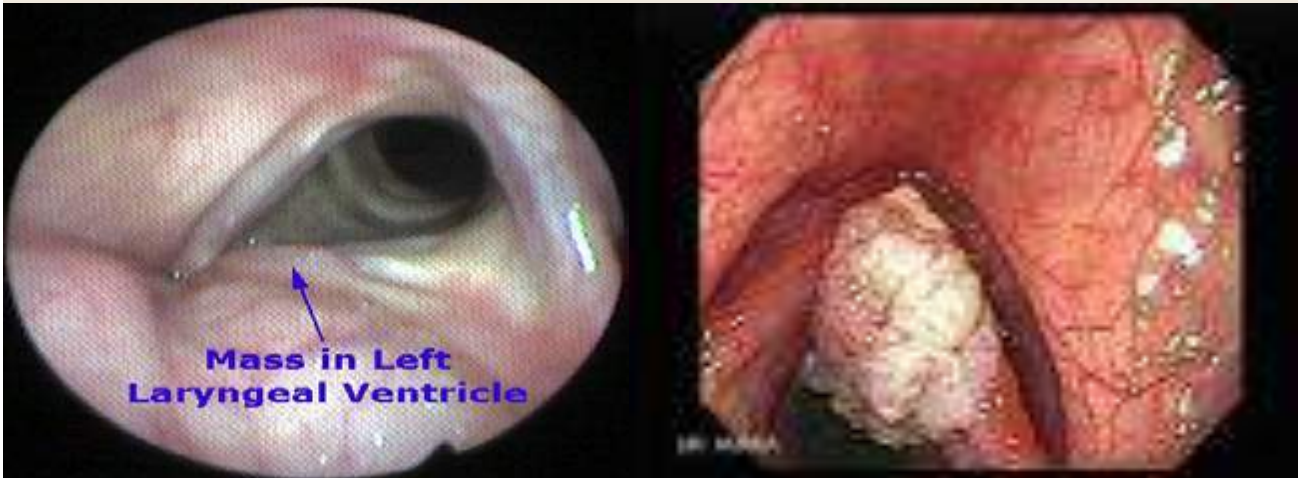


CANCER IN MEN

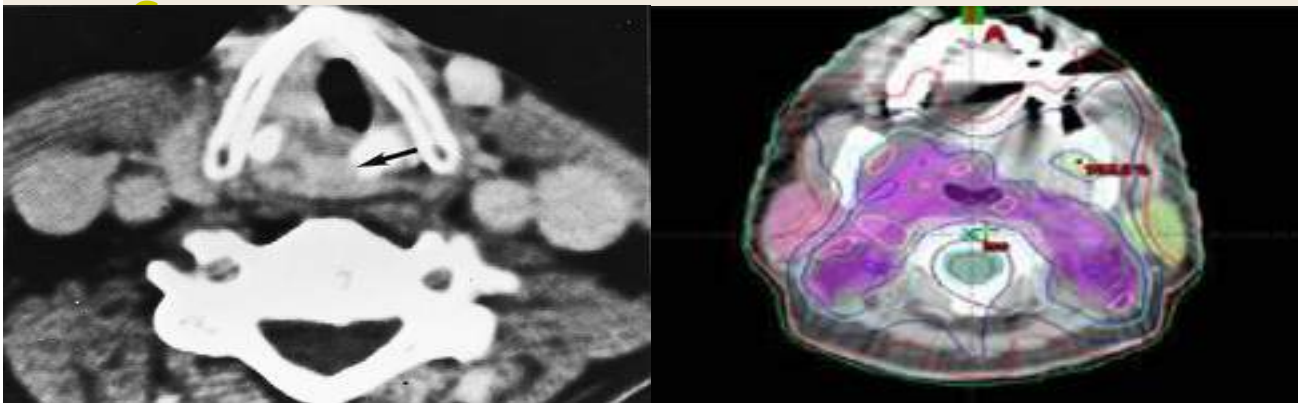


TREATMENT AFTER SURGERY

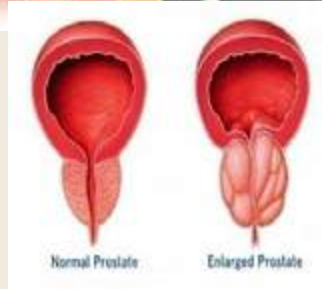
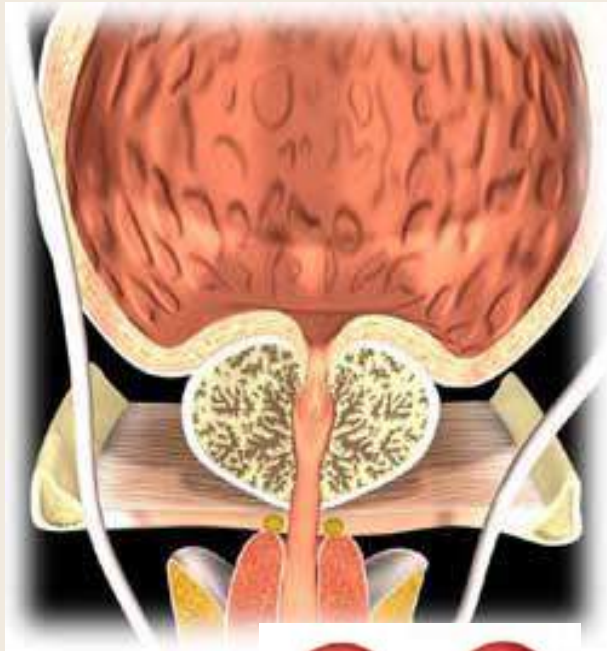




Chemo radiation treatment for Laryngeal



PROSTATE CANCER AWARENESS PROGRAMME - 2012



Symptoms
Slow urinary stream
/Straining

Night frequency

Hesitancy, Urgency / urge
incontinence

Sense of incomplete
voiding

Burning urination /
urinary infection

Blood in the urine,
Retention of Urine

PSA testing
Digital rectal
examination
Trans rectal
ultra sound

Radical
prostatectomy
Radiation
Hormone
therapy

CANCER IS PREVENTABLE ???

- Smoking increases
- Risk of Cancer
- Breast, Lung, Stomach, U Bladder, Endometrium &
- Thromboembolic – Vascular Phenomenon



Cancer is curable if detected early



lung cancer
by 20–30%



asthma by
40–60%

Passive smoking



stroke by 80%



heart disease
by 25–35%



TOBACCO CHEWING & ORAL CANCER



CANCER & DIET



- ⦿ What you eat—and don't eat—has a powerful effect on your health, including your risk of cancer.
- ⦿ Foods as cancer protective agents- plant based foods
- ⦿ Foods as cancer enhancers- animal foods, cooking methods etc



PINK HOPE
BREAST CANCER SUPPORT GROUP

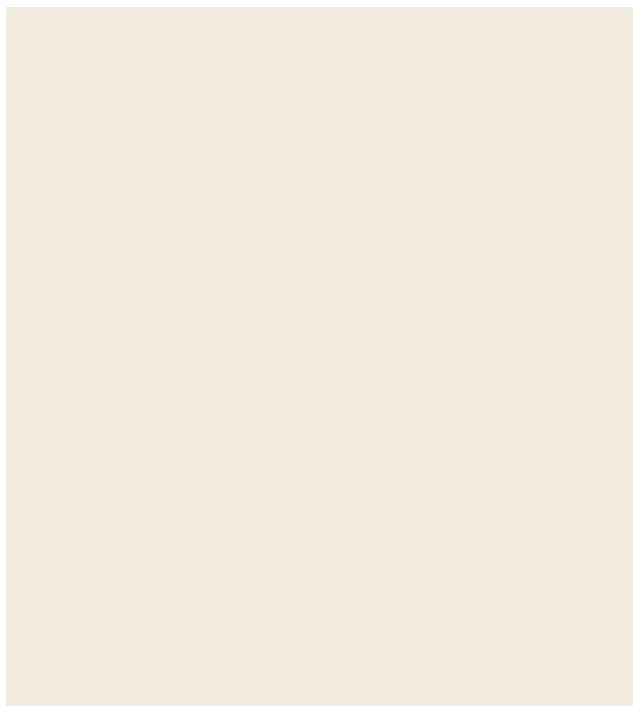
earlier easier
HCG SOUTH ASIA'S LARGEST
CANCER CARE NETWORK

YOGA THERAPY FOR CANCER

Pink Hope Breast Cancer Support Group is a patient-led initiative that shares experiences, provides psychological support and helps new patients prepare for breast cancer treatment.

The Group invites you to a Yoga Therapy Awareness session, guided by Dr. Raghavendra Rao, a yoga therapy specialist.

Date: 27 June '09 | Time: 3 - 5 pm | Venue: HCG Towers



earlier easier
HCG SOUTH ASIA'S LARGEST
CANCER CARE NETWORK

CANCER WELLNESS PROGRAM





Yoga for Health & Disease
Yoga at Home & Yoga with Family
2021 theme

WHO SHOULD ATTEND

The therapeutic Yoga Program is for those who want to reduce stress and manage treatment related symptoms and learn ways to cope effectively with cancer during radiotherapy and chemotherapy.

The stress Management Package is for those who want learn ways to manage day to day stresses in a short period of time.

CANCER SURVIVORS

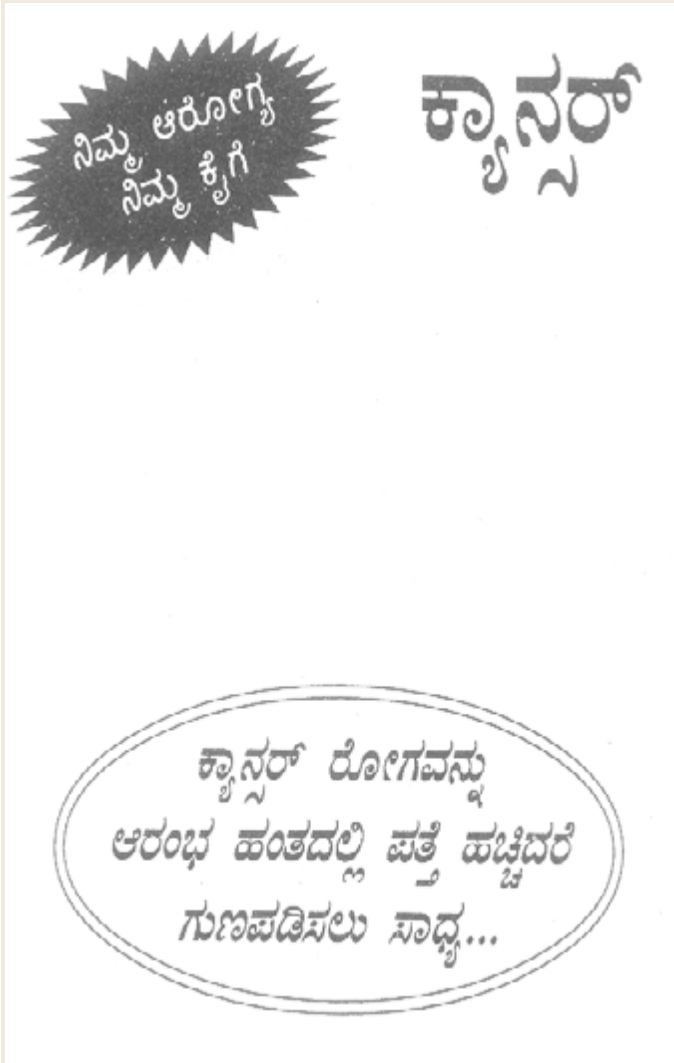


**“ Cure – Conserve – Cosmesis –
Comfort”**



TRIBUTE & THANKS TO ALL CANCER SURVIVOR'S





**Cancer is
Curable if
detected early**

**Cancer is
preventable
disease**

**Your health is in
your hand**

CANCER: A GLOBAL CHALLENGE

Prof Lalit Kumar, the second and last speaker of the webinar talked about “**Cancer: A Global Challenge**”. He also focused on prevention and control strategies of Cancer during his talk.

He started his talk by showing the Burden of Cancer in the top five countries of the world namely, China, the USA, India, Japan, and Germany. Overall, India is placed third but ranks first in the 0-19 years old newly affected population of the children in the year 2018. He mentioned about **National Cancer Registry Program (NCRP)** of ICMR, which is registry-based surveillance of cancer in the country.

Talking about common cancers in males in India, he mentioned that the incidence of oral cancer was maximum followed by cancer of the lung, stomach, large bowel, esophagus, prostate, and larynx. Whereas, in females, the commonest cancer was that of the breast followed by cervix, ovary, oral cavity, esophagus, colon, and lung. In general, the incidence of cancer was higher in urban as compared to rural areas except for cancer of the cervix. Dr. Lalit also showed a relative proportion of various cancers by stages of the disease.

He observed a rising trend of cancer in both males and females concerning cancer of the colon, rectum, lung, breast, corpus uteri, and ovary. On the average, rise in cancer was 2.7 % in males as against 3 % in females. Many factors could be attributed to the rising trend of breast cancer in females such as more awareness, better facilities for diagnosis, no longer a taboo, industrialization/ urbanization, changing lifestyle, late marriage, decreased childbearing and breastfeeding, and diet. Whereas, he showed a declining trend in respect of cancer of the cervix.

Dr. Lalit felt that cancer is the result of the interplay between lifestyle, environment, genetic composition, and immunity. He mentioned tobacco, diet (fried food, red meat & processed food), alcohol, environmental pollutants, infections, obesity and physical inactivity, and stress amongst the lifestyle risk factors. He observed that Tobacco-Related Cancers (TRC) alone constituted 29 % of the total burden of cancer in India. Discussing cancer of the cervix, he mentioned **HPV (Human Papilloma Virus)** vaccines for reducing the risk of cancer of the cervix. He also showed the process of development of colon cancer.

Emphasizing the role of diet, Dr. Lalit noticed that a high-fat diet could be associated with cancers of the breast and prostate. Spicy and fried food could be associated with cancers of the oropharynx and esophagus. Likewise, smoked food, aflatoxins in food, and low fiber diet & high fat intake could be associated with cancers of respectively stomach, liver, and colon. He explained the mechanism of how a high-fat diet could lead to Colon cancer. Overweight and obesity as defined by BMI (Body Mass Index) were also the risk factors for various types of cancer.

Talking about prevention strategies of cancer, Dr. Lalit said that people should be educated and made aware of the harmful effects of the consumption of tobacco and its products through community participation. Tobacco cessation services should be provided for those who want to quit the use of tobacco. Legislation to this effect can also be brought out. People should be advised against the use of alcohol. The diet should be high on vegetables and fruits to increase the intake of fibers and lowering the risk of developing cancer. Avoid consumption of red meat. To minimize consumption of fat, people should be aware of major sources of fat such as Meat, Eggs, Dairy Products, Salad Dressings, and Oils used in cooking.



Continuing with the prevention strategies, Dr. Lalit emphasized reducing obesity by decreasing body weight, keeping BMI < 23, and reducing intake of calories. He put a lot of focus on doing regular exercise, walking, and other physical activities for reducing the risk of cancer. Control of infections and Genetic Counseling for familial cancers, such as Breast, Ovary, and Colon were among some other approaches mentioned by him.

Dr. Lalit mentioned an important document “**Operational Framework**” for screening and management of common cancers, released by the Ministry of Health and Family Welfare (MOHFW), GOI in 2016. The document discusses the methods and frequency of screening for various types of cancer. The screen-positive cases are to be referred to CHC (Community Health Centre) or DH (District Hospital) for further evaluation.

Concluding his talk, Dr. Lalit said, cancer diagnosis and treatment are both stressful events. Chronic stress promotes cancer growth and progression and worsens the chances of survival. He further said **Yoga, Meditation, Pranayama, and Sudarshan Kriya** are centuries-old and time-tested practices that energize the body and relax the mind. He proposed a three-pronged approach involving Medicine (Science), Harmony, and Humanism for combating cancer.

Answering a question on the high cost of treatment of cancer, Dr. Lalit said hospitals and institutions treating cancer have to follow guidelines for treating cancer patients. Avoiding unnecessary investigations should be one of the strategies to economize the cost of the treatment.



CANCER: A GLOBAL CHALLENGE

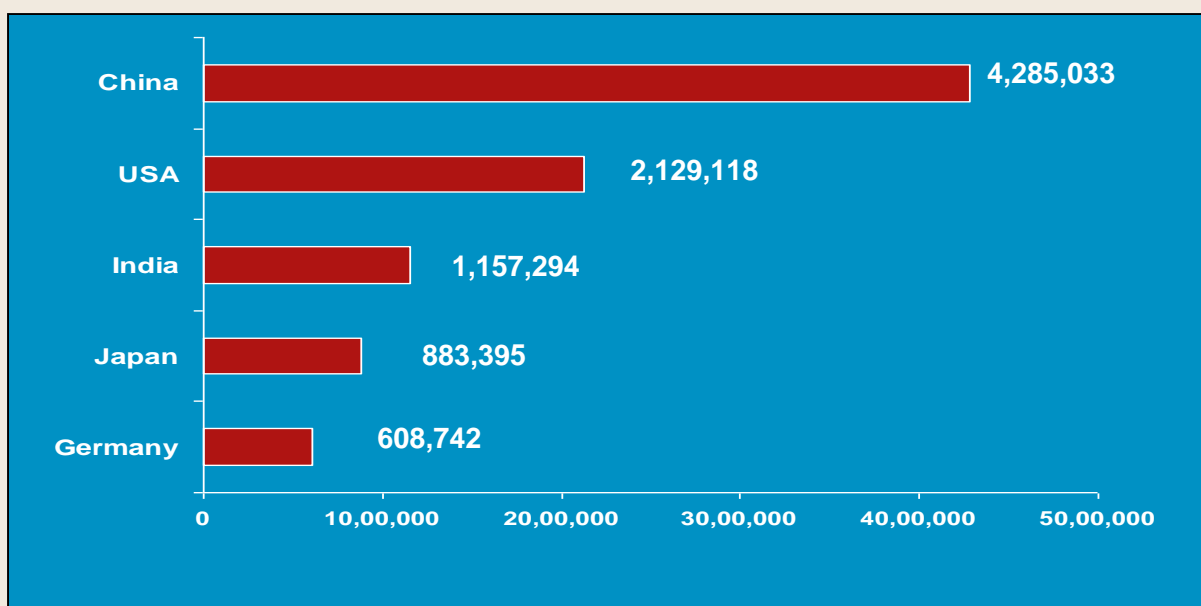


Lalit Kumar

Department of Medical Oncology

IRCH, All India Institute of Medical Sciences, New Delhi 110029

NEW CANCER BURDEN – TOP 5 COUNTRIES, YEAR 2018

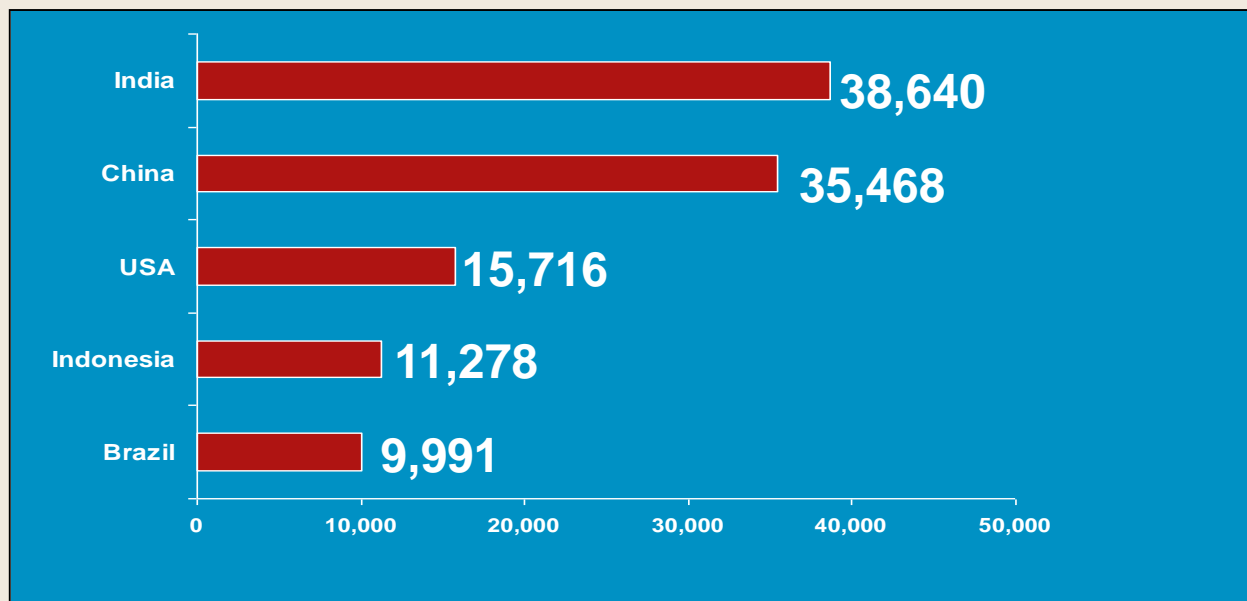


Source: GLOBOCAN 2018, IARC

India ranks 3rd and accounts for 6.4% of new cancer burden in the world (~ 18 million)



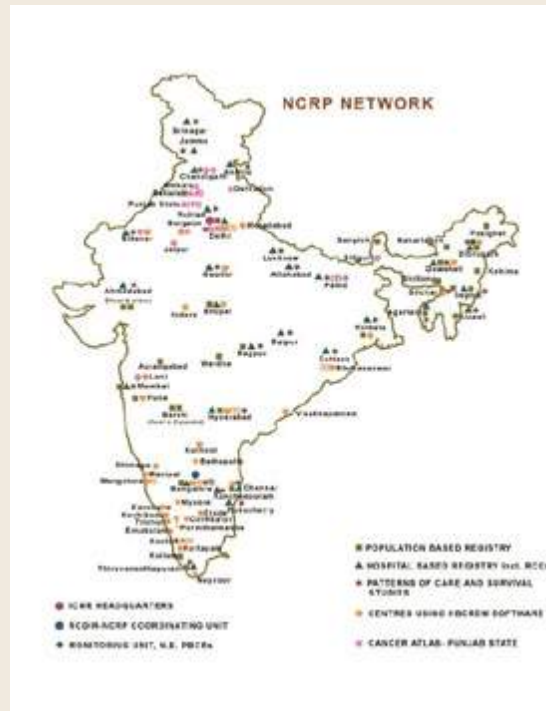
NEW CANCER BURDEN IN CHILDREN (0-19) – TOP 5 COUNTRIES, YEAR 2018



Source: GLOBOCAN 2018, IARC

Annual burden of new cancer among children is the highest in India accounting for 14.2% of all cancer burden in the world (~ 2.7 lakhs)

RESOURCES OF CANCER INFORMATION - INDIA

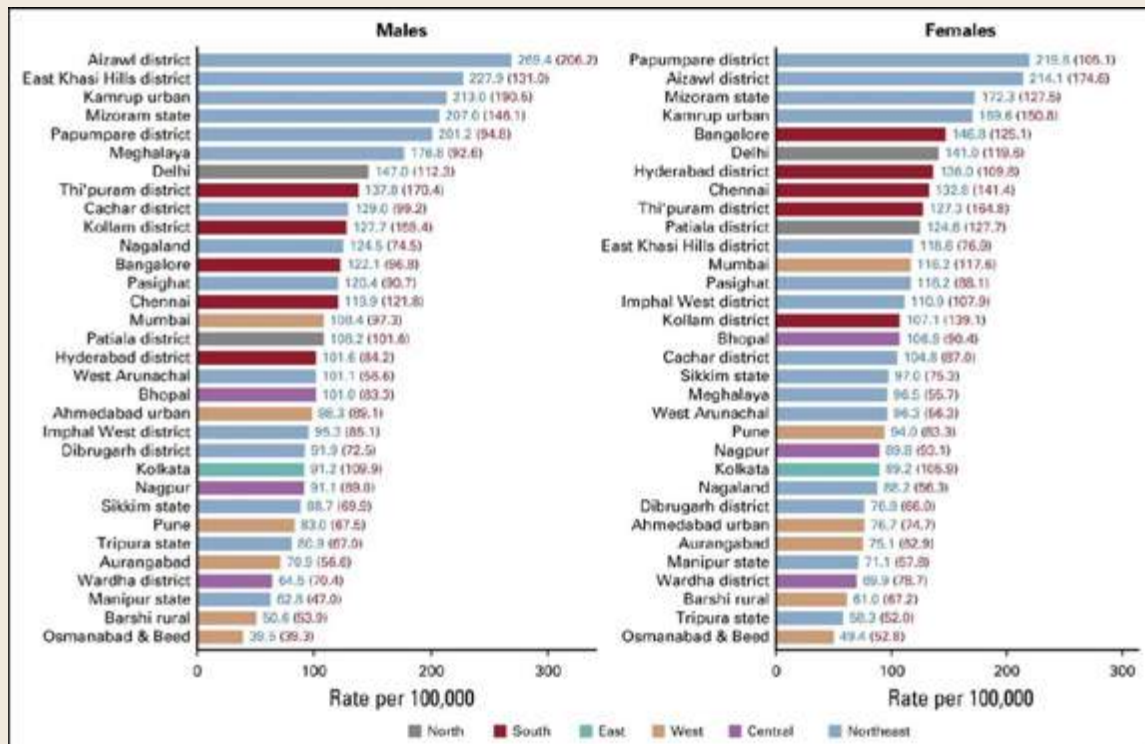


<http://www.ncdirindia.org/>

- National Cancer Registry Program (NCRP) of ICMR since 1982
- Registry based surveillance as of now
 - ❖ 36 Pop-based
 - ❖ 32 Hospital-based
 - ❖ 46 special studies
 - ❖ Cancer Atlas programs
- Demographic registries cover only ~ 10-12% of India population
- Predominantly urban based & systematic registration of cases done by active method

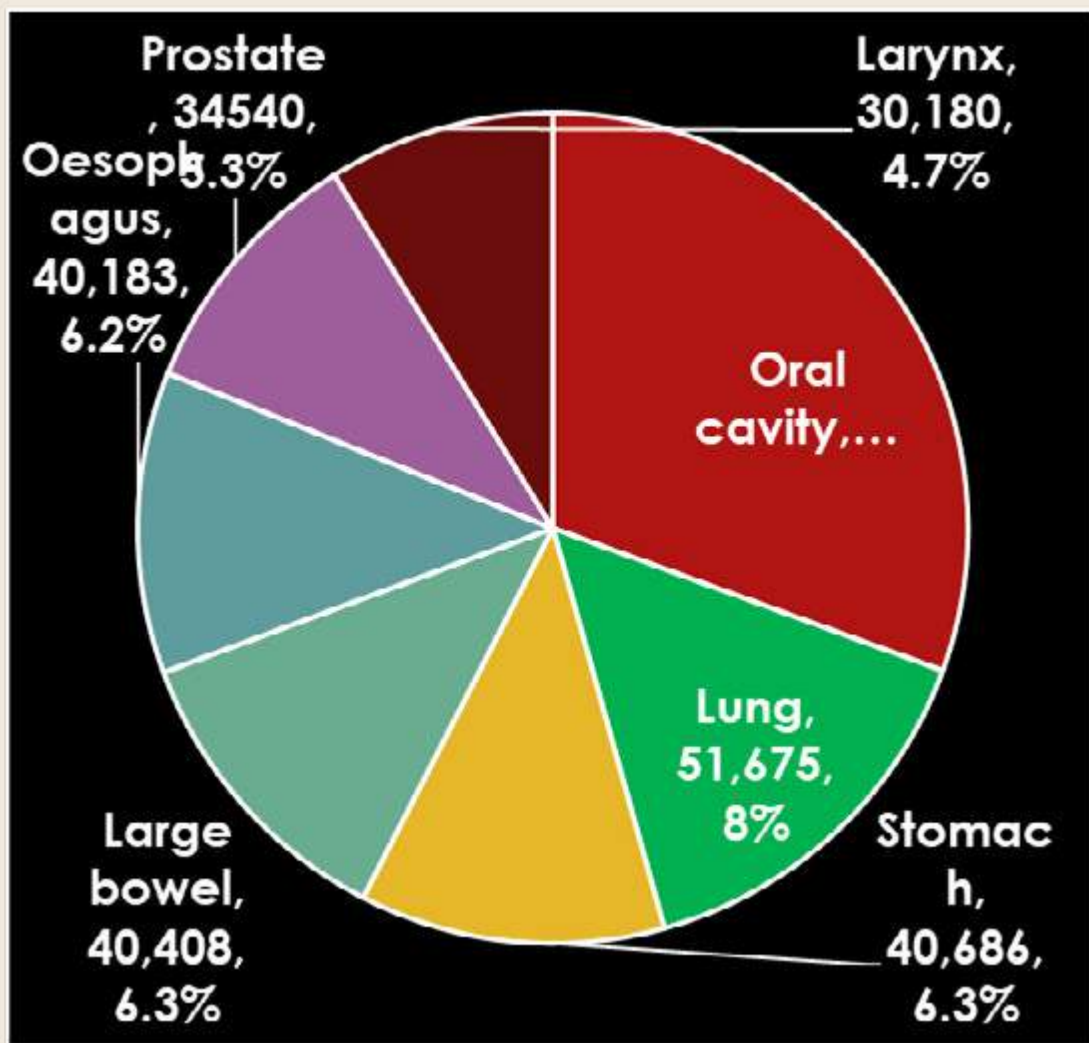


AGE ADJUSTED CANCER INCIDENCE OF ALL POPULATION BASED CANCER REGISTRIES IN INDIA (2012-16)

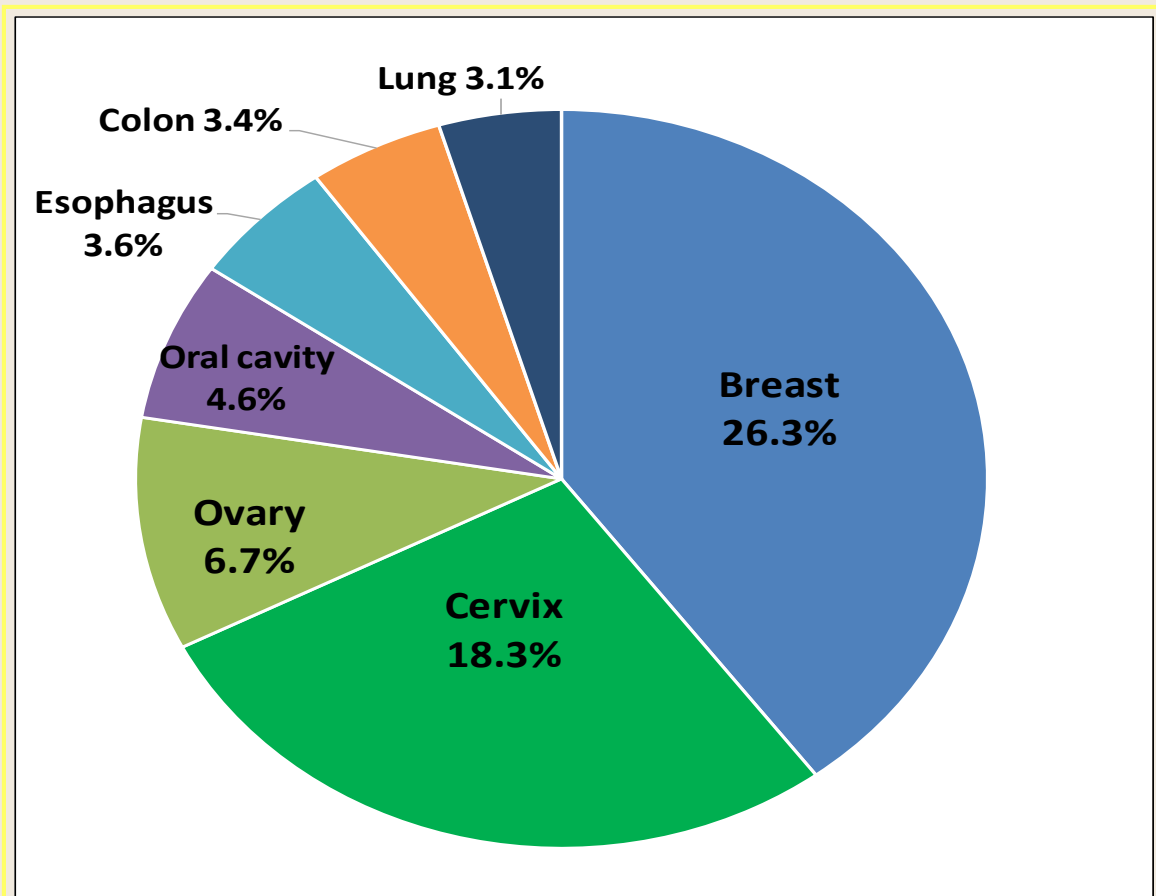


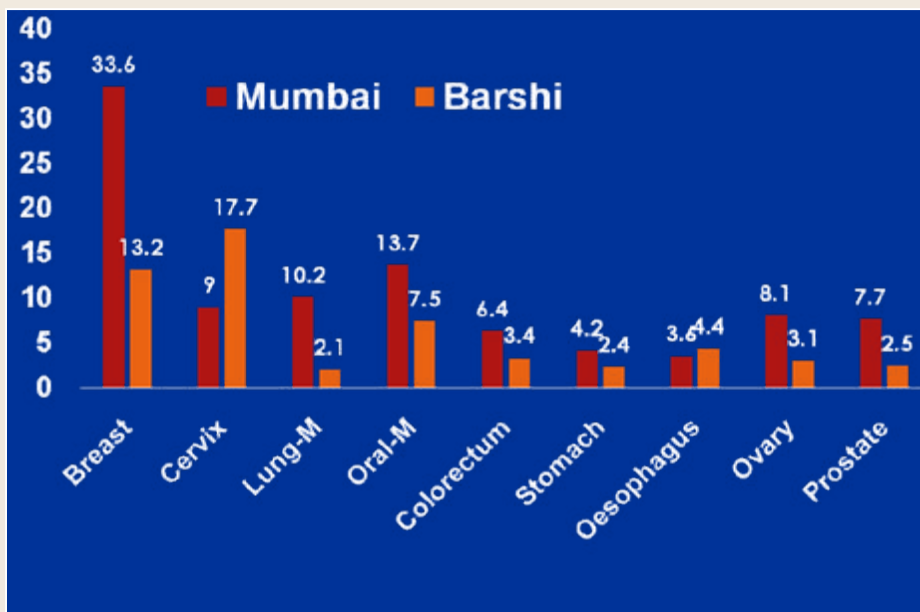
Published in: Prashant Mathur; Krishnan Sathishkumar; Meesha Chaturvedi; Priyanka Das; Kondalli Lakshminarayana Sudarshan; Stephen Santhappan; Vinodh Nallasamy; Anish John; Sandeep Narasimhan; Francis Selvaraj Roselind; *JCO Global Oncology* 2020 6:1063-1075.
 DOI: 10.1200/JGO.20.00122
 Copyright © 2020 American Society of Clinical Oncology

COMMON CANCERS IN INDIA, MALE, YEAR 2020

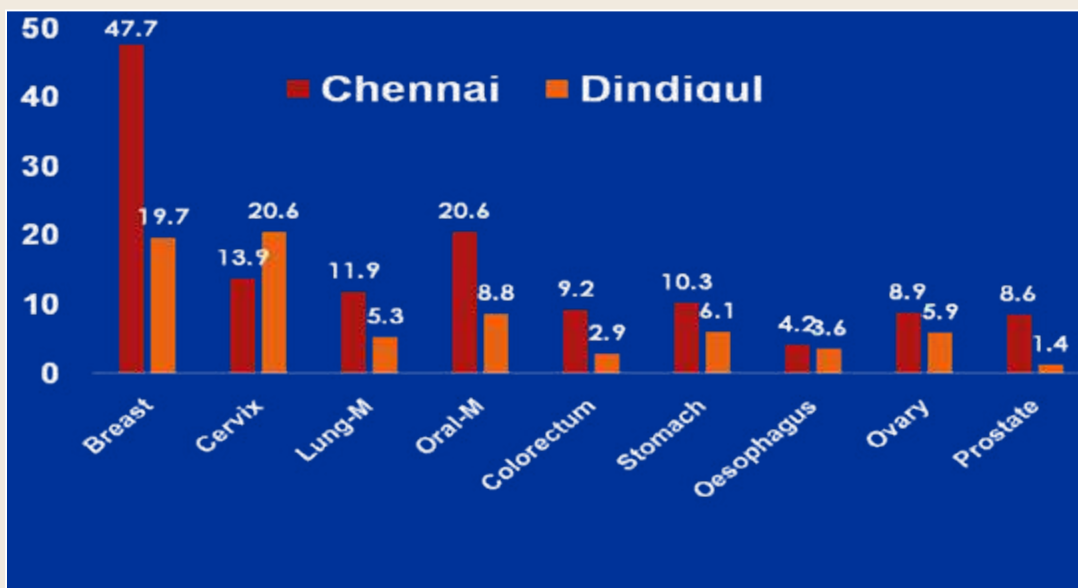


COMMON CANCERS IN INDIA, FEMALE, YEAR 2020





**Variable cancer incidence
Urban vs. rural areas**



Cancer incidence is higher in urban than rural areas excepting for cervix cancer



RELATIVE PROPORTION OF PATIENTS ACCORDING TO STAGE OF DISEASE

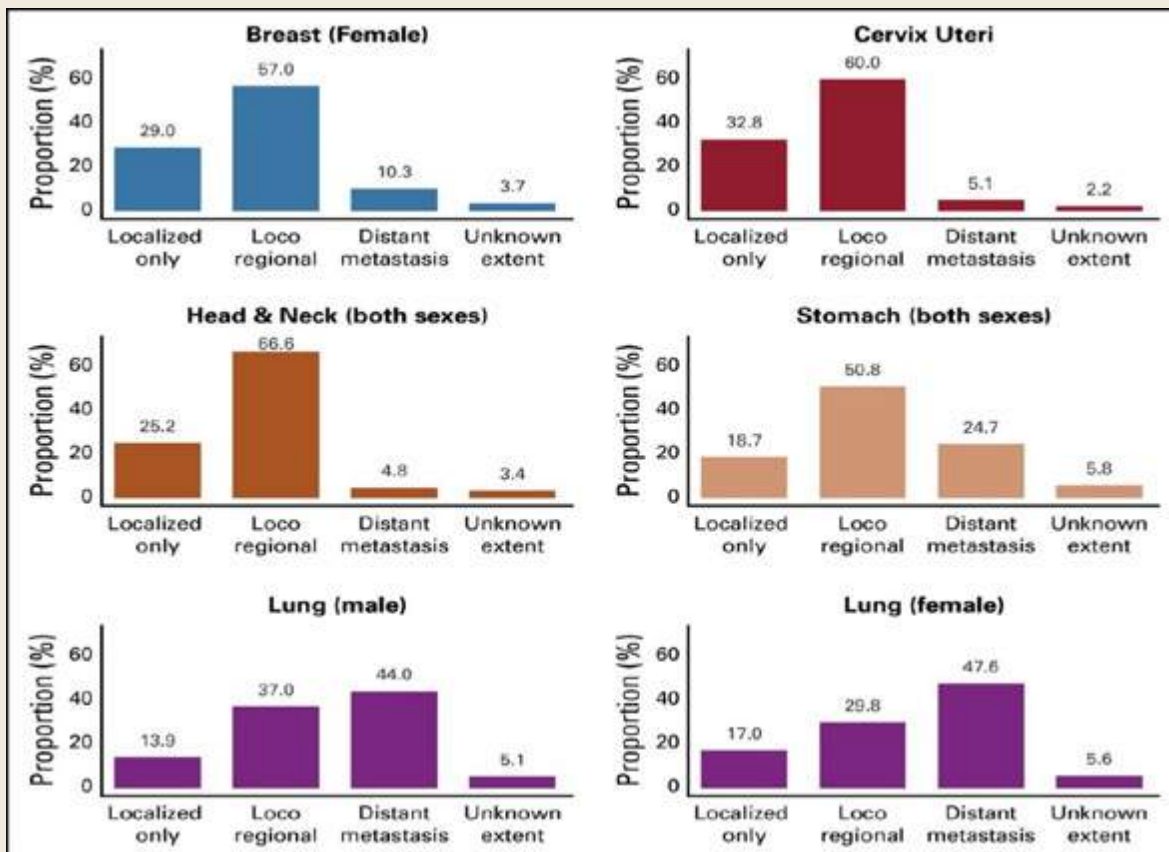


FIG 3 Relative proportion (%) of patients according to clinical extent of disease, 2012-2016 (proportion [%] may not total 100% because of rounding).

Published in: Prashant Mathur; Krishnan Sathishkumar; Meesha Chaturvedi; Priyanka Das; Kondalli Lakshminarayana Sudarshan; Stephen Santhappan; Vinodh Nallasamy; Anish John; Sandeep Narasimhan; Francis Selvaraj Roselind; *JCO Global Oncology* 2020 61063-1075.
DOI: 10.1200/GO.20.00122 Copyright © 2020 American Society of Clinical Oncology

TREND IN INCIDENCE OF CANCER (MALES-2.7%, FEMALES-3% INCREASE)

Increasing

- ▶ Colon
- ▶ Rectum
- ▶ Lung
- ▶ Breast (4.7%)
- ▶ Corpus Uteri
- ▶ Ovary
- ▶ Prostate

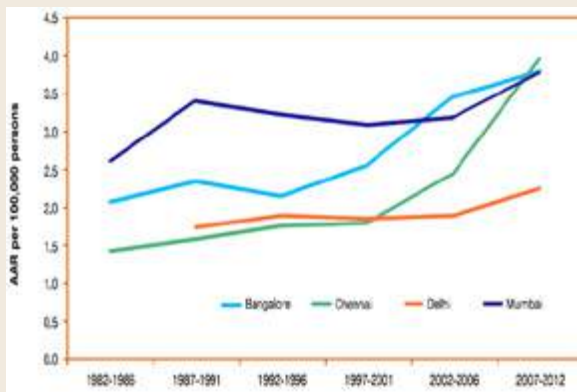
Decreasing

- Cervical Cancer

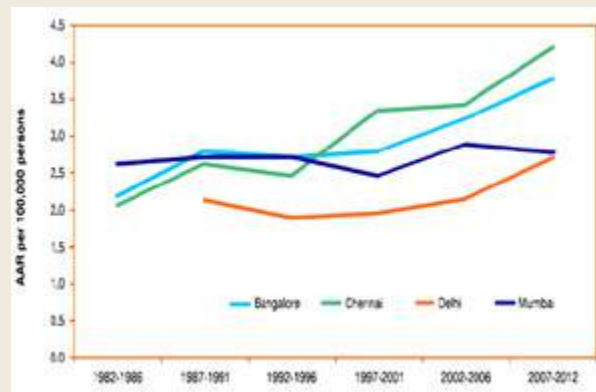


CANCER WITH RISING TREND

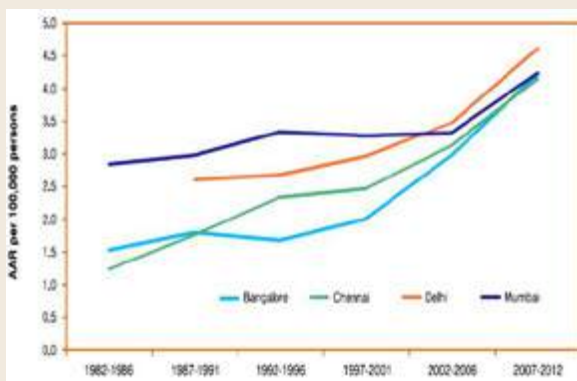
Colon (Male)



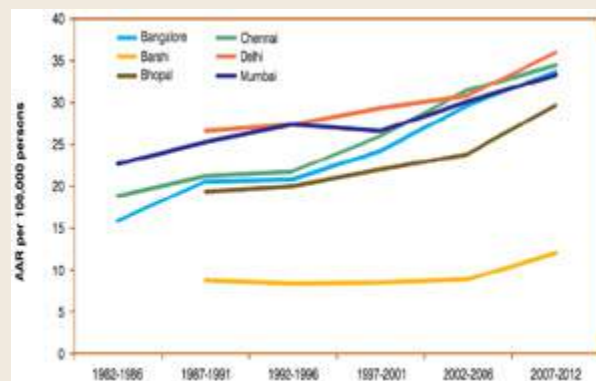
Rectum (Male)



Lung (Female)



Breast





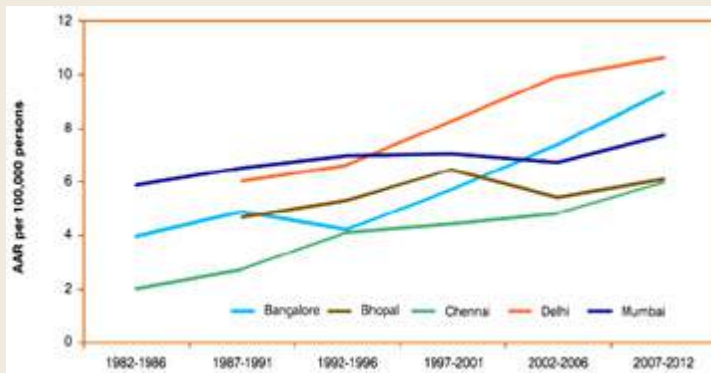
BREAST CANCER : RISING INCIDENCE

- ▶ More awareness
- ▶ Better facilities for diagnosis
- ▶ Ca : no longer a taboo
- ▶ Industrialization/ urbanization
- ▶ Changing life style
- ▶ Late marriage
- ▶ Decreased child bearing & breast feeding
- ▶ Diet
- ▶ Obesity and less physical activity
- ▶ Increased exogenous hormone exposure

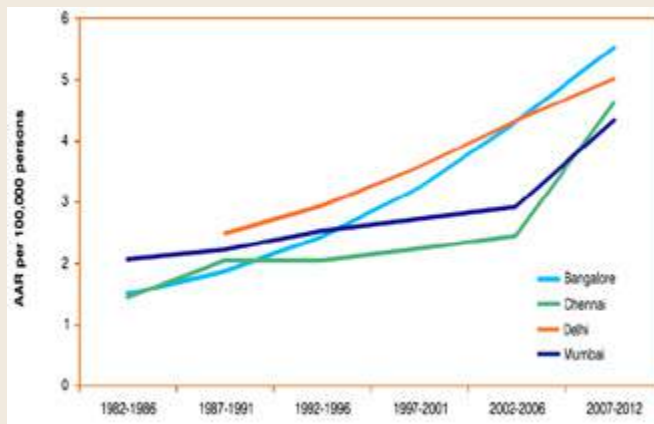
Ind J Cancer 2009; 46:73-74



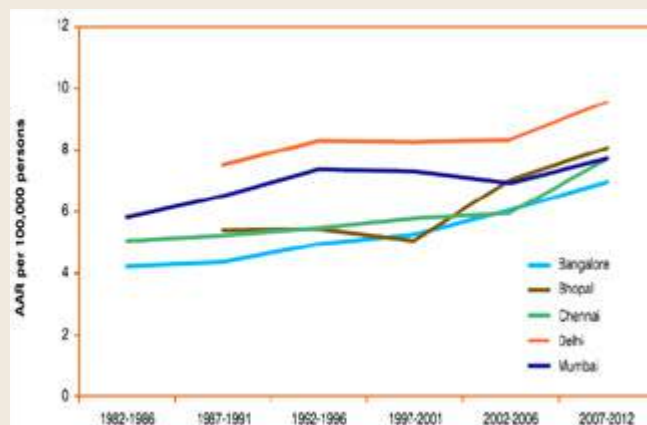
CANCER WITH RISING TREND



Prostate

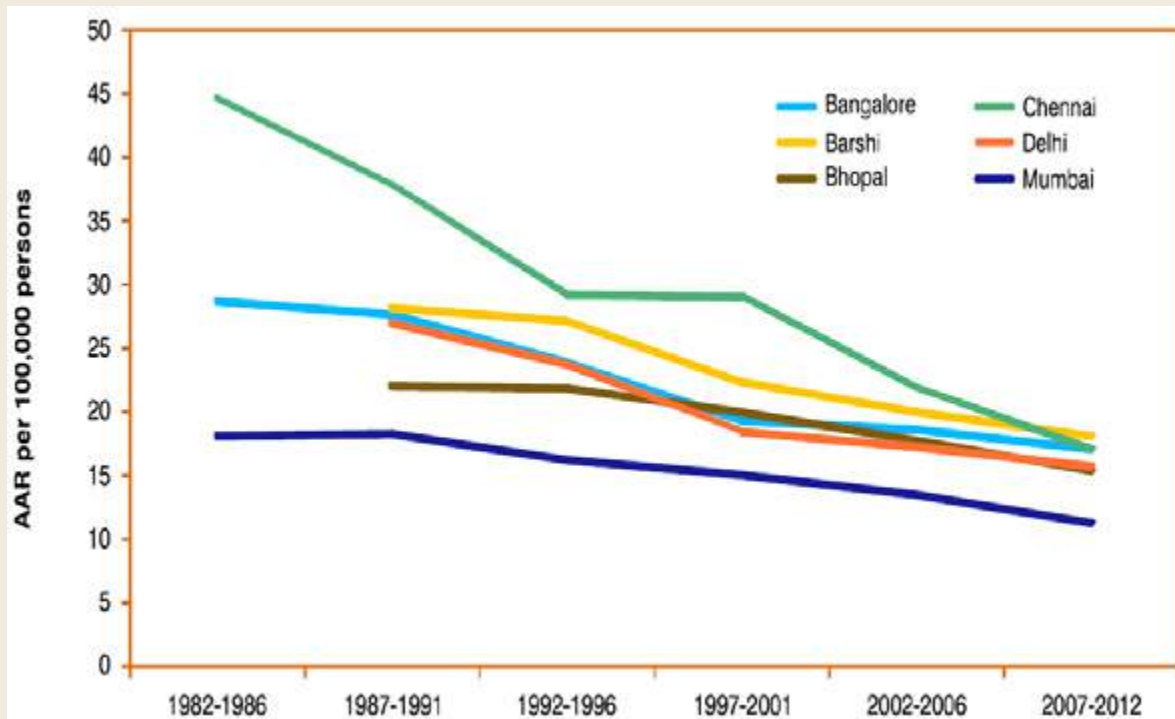


Corpus Uteri

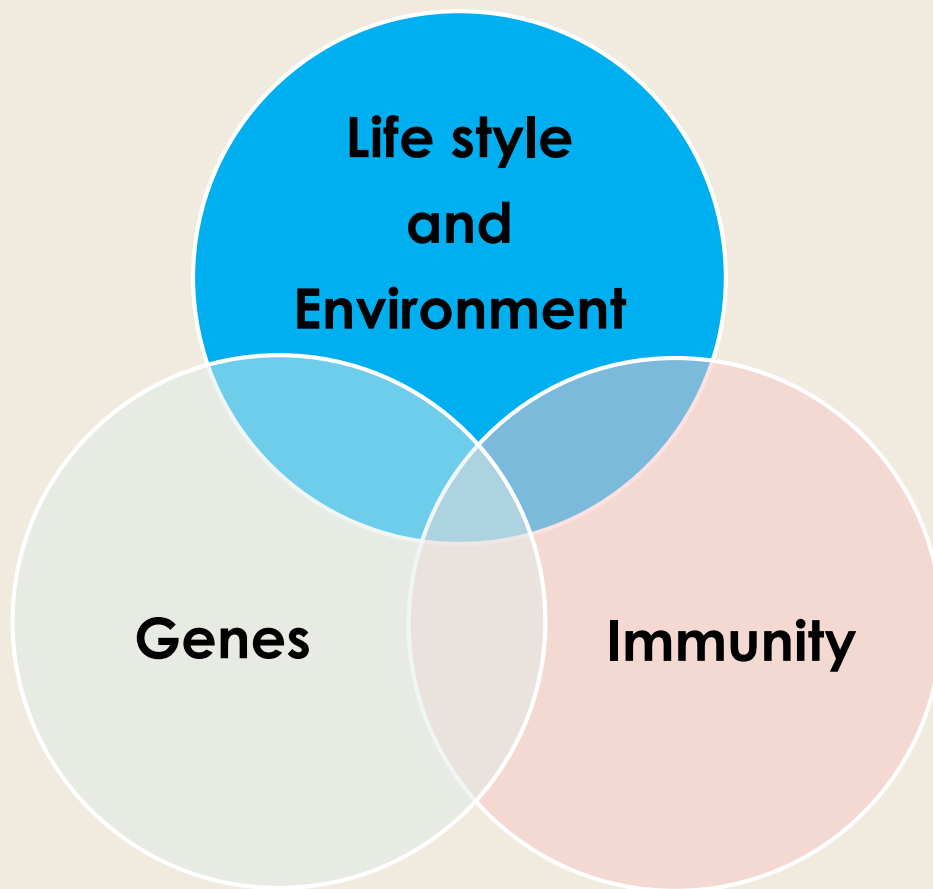


Ovary

CERVIX CANCER WITH DECLINING TREND



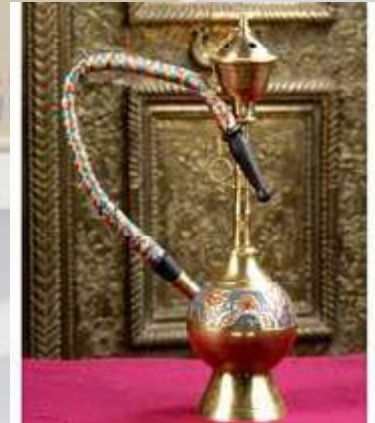
CANCER IS A RESULT OF INTERPLAY BETWEEN





LIFESTYLE FACTORS

- ▶ Tobacco
- ▶ Diet (fried foods, red meat, processed)
- ▶ Alcohol
- ▶ Environmental pollutants
- ▶ Infections
- ▶ Obesity and physical inactivity
- ▶ Stress



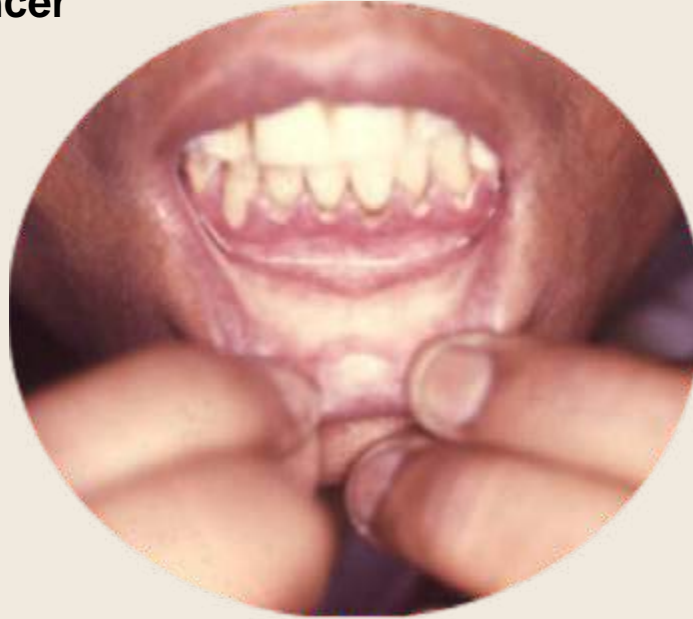


TOBACCO RELATED CANCERS (TRC) BURDEN IN INDIA ESTIMATES FOR YEAR 2015

	Male	Female	M+F
Incidence Rate/100,000 Population	47.4	15.9	32.1
% of TRCs to total cancers	43%	14%	29%
New Cases of Cancer per year	305,900	96,700	402,600

Source: NCRP Report, 2016

Oral Cancer



Fibrosis

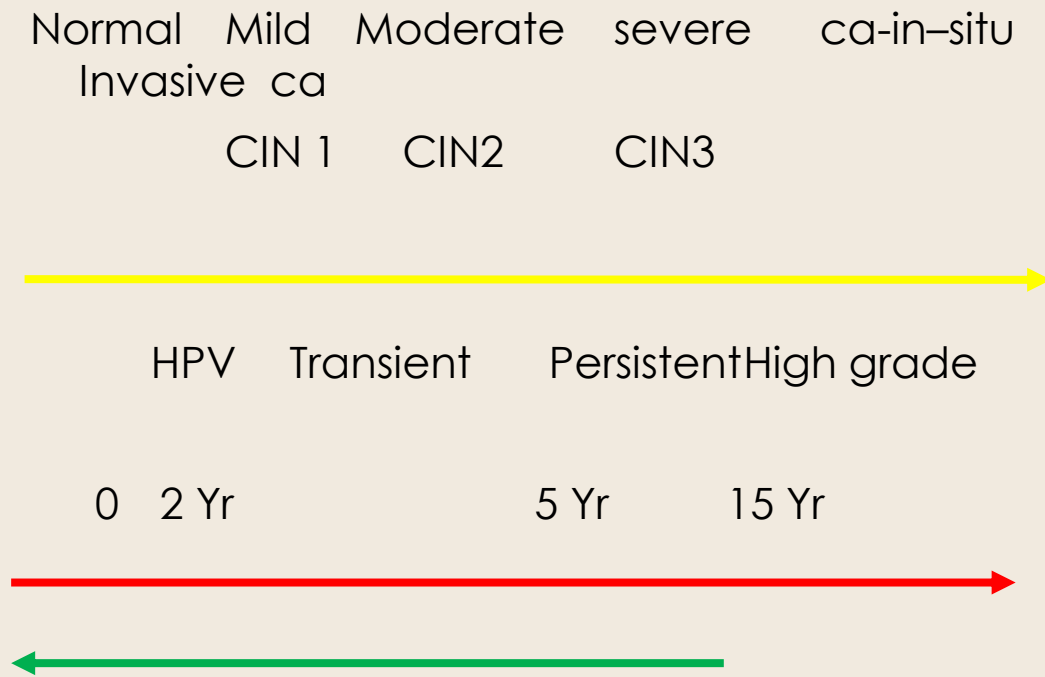
Submucous Fibrosis



Cancer



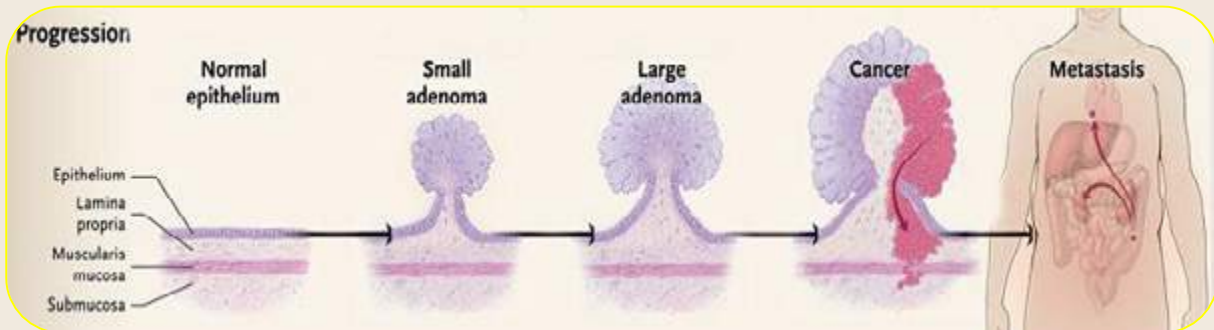
CANCER CERVIX : NATURAL HISTORY



HPV VACCINES

- ▶ Monovalent (MERCK)
 - ▶ HPV 16 L1
 - ▶ Expressed in yeast cells
 - ▶ Dose 40 mcg +225 mcg alum adjuvant = 0.5 mL
 - ▶ Schedule 1,2,6 month
- ▶ Bivalent (GLAXO)
 - ▶ HPV 16,18
 - ▶ Dose 20 +20 mcg
 - ▶ Schedule 0,1,6 month

COLON CANCER





**“Let your food (diet)
be your medicine”**

Hippocrates

CANCERS RELATED TO DIET AS CAUSATIVE FACTOR

Site	Possible Reasons
Breast	High fat diet
Prostate	High fat diet
Oropharynx	Spicy, fried food
Oesophagus	Spicy, fried food
Stomach	Smoked food
Liver	Aflatoxins
Colon	Low fibre diet, high fat intake



RELATIVE RISK ASSOCIATED WITH OVERWEIGHT AND OBESITY

Cancer (site)	Overweight	Obese
Breast (post menopausal)	1.12	1.25
colorectum	1.15	1.32
Esophagus (adenocarcinoma)	1.55	2.40
Kidney	1.31	1.72
Endometrium	1.52	2.31
Gall bladder	1.23	1.51
Pancreas	1.14	1.30

BMI

18.5–24.9	Normal weight
25.0–29.9	Overweight
30.0–39.9	Obese
40.0 and above	Extreme obesity

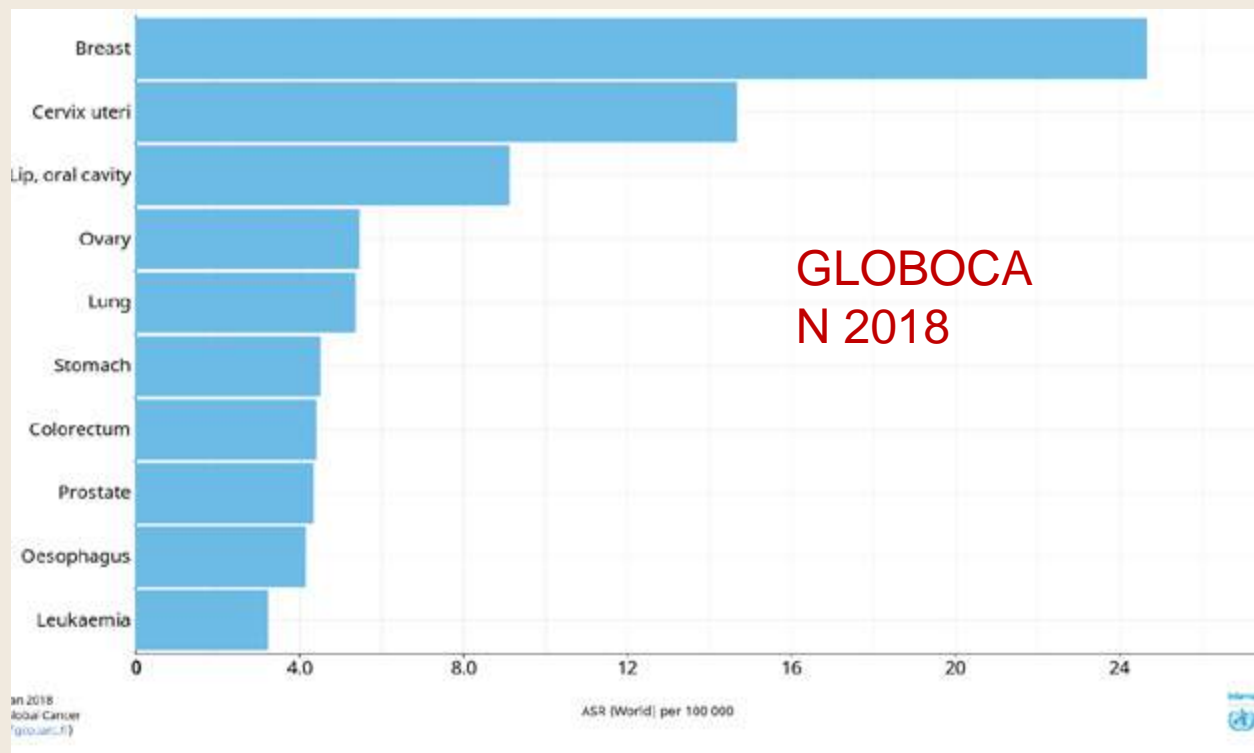
Brit J Cancer 2011;105:S34-37

CAN WE PREVENT CANCER ?



BURDEN OF CANCER IN INDIA

ESTIMATED AGE-STANDARDIZED INCIDENCE RATES: BOTH SEXES



Cancers of Breast, cervix and oral cavity together constitute 34% of all cancers.

Amenable to prevention/early detection.



CAN WE PREVENT CANCER ?

- ▶ Tobacco
 - ▶ Awareness, Education, Legislation,
 - ▶ Community participation and
 - ▶ Tobacco cessation services
- ▶ Alcohol abstinence
- ▶ Diet
 - ▶ High in vegetables/fruits
 - ▶ Avoid red meat
- ▶ Major sources of fat
 - ▶ Meat, eggs, dairy products
 - ▶ Salad dressings, and oils used in cooking

CAN WE PREVENT CANCER ?

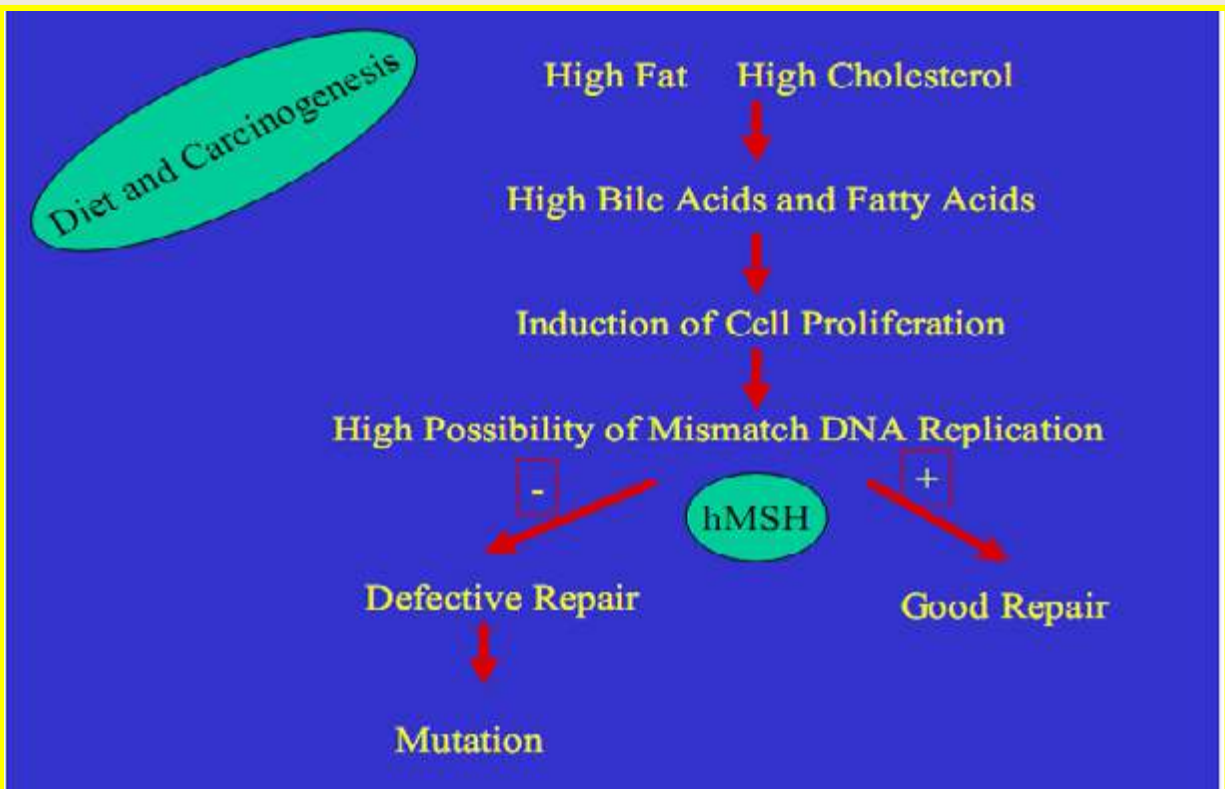
- ▶ Obesity
 - ▶ Weight reduction
 - ▶ BMI <23
 - ▶ Reduced calorie intake
- ▶ Exercise
- ▶ Control of infections
- ▶ Genetic counselling for familial cancers
 - ▶ Breast, Ovary, Colon (10%)

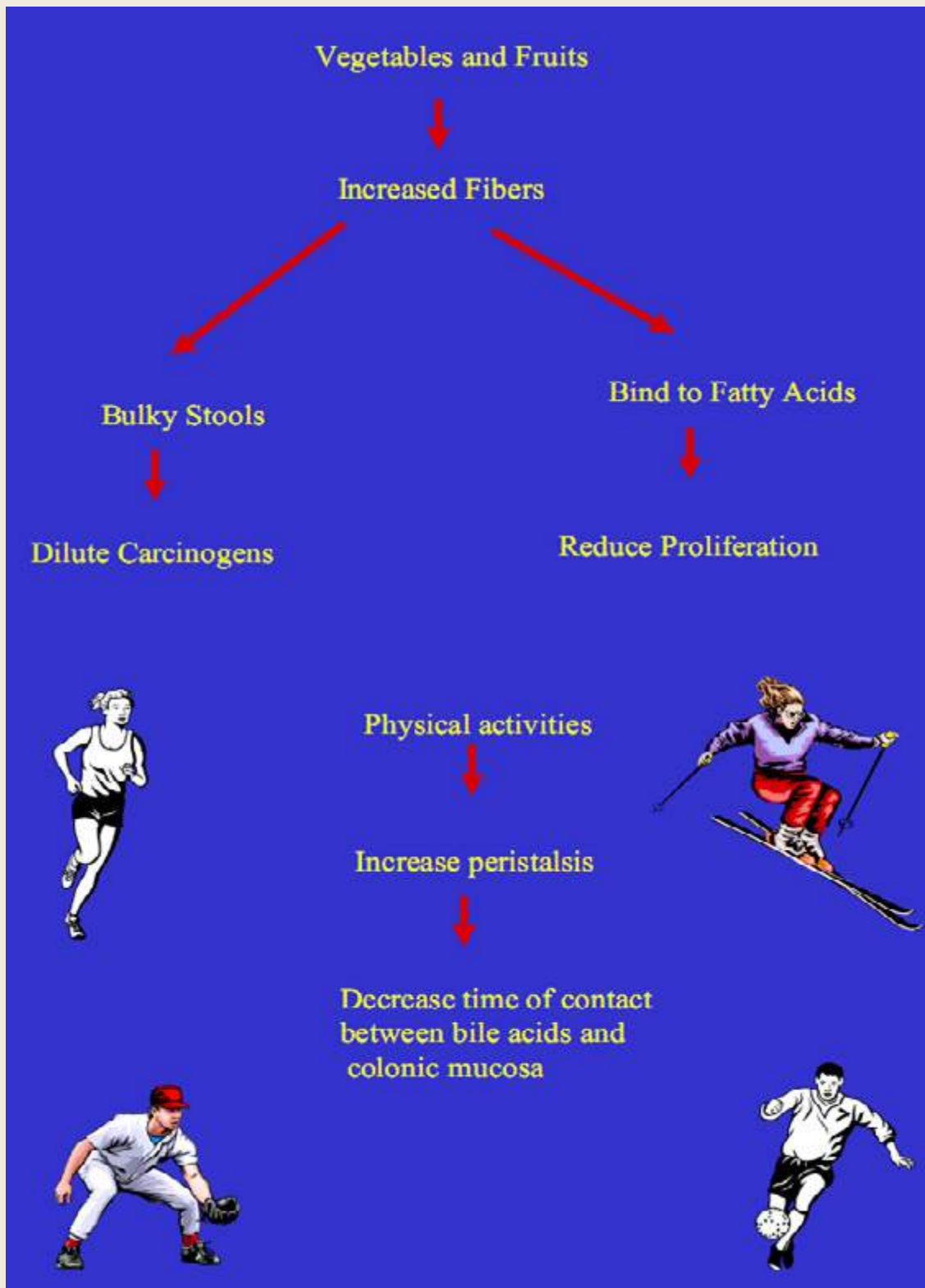


**“Walking is man's
best medicine ”**

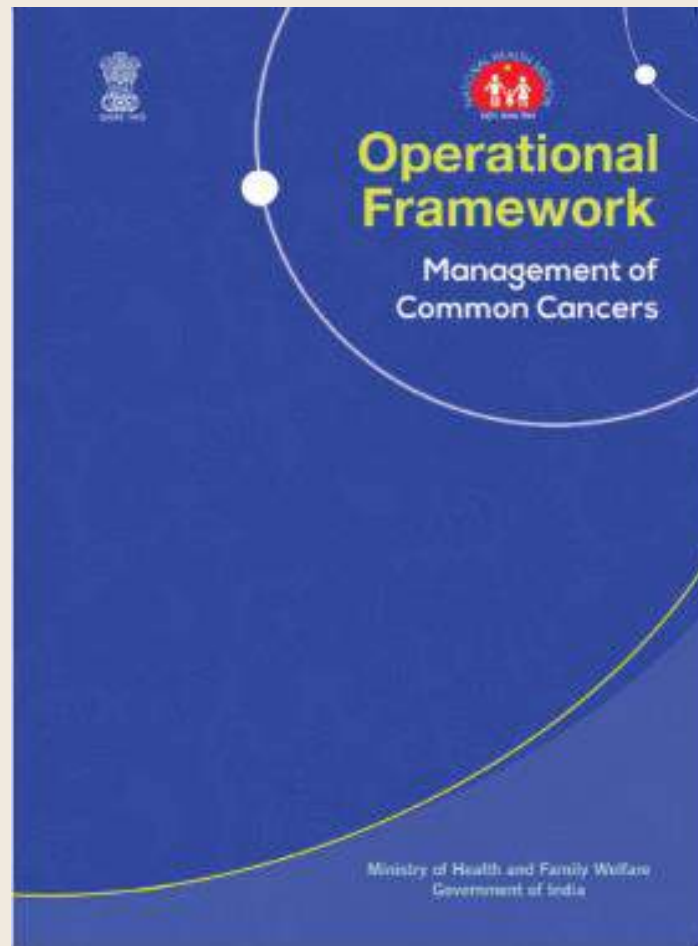
Hippocrates

COLON CANCER





NATIONAL CANCER SCREENING GUIDELINES: ORIENTATION TO OPERATIONAL FRAMEWORK



The **‘Operational Framework’** document for screening and management of common cancers, was released by the MOHFW during 3rd National Summit on Good and Replicable Practices and Innovations in Public Healthcare System held in Tirupati, Andhra Pradesh from **29th August 2016**



SCREENING PROCESS

Type of Cancer	Age of beneficiary	Method of Screening	Frequency of screening
Oral	30 -65 years	Oral Visual Examination (OVE)	Once in 5years
Cervical	30-65 years	Visual Inspection with Acetic acid (VIA)	Once in 5years
Breast	30-65 years	Clinical Breast Examination (CBE)	Once in 5years

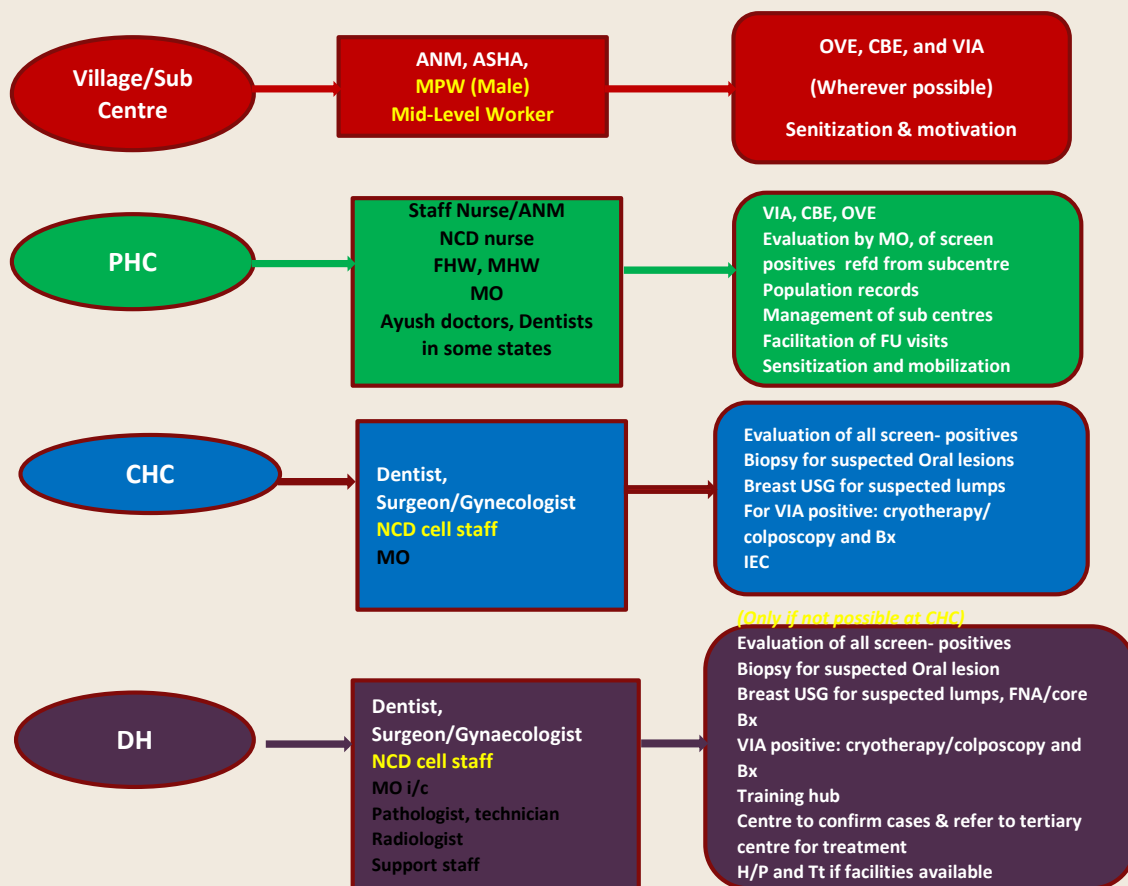


REFERRAL OF SCREEN POSITIVE CASES

Site	Method of Screening	If positive
Oral	Oral Visual Examination (OVE)	Referred to Surgeon/Dentist/ENT specialist/Medical officer at CHC/DH for confirmation and biopsy.
Cervical	Visual Inspection with Acetic acid (VIA)	Referred to the CHC/DH for further evaluation and management of pre-cancerous conditions where trained gynecologist is available.
Breast	Clinical Breast Examination (CBE)	Referred to Surgeon at CHC/DH for confirmation using a Breast ultra sound probe and biopsy.



ROLES AND RESPONSIBILITIES FOR CANCER SCREENING AT DIFFERENT LEVELS OF HEALTHCARE



Relaxation methods
originating in India

- ▶ Yoga, Meditation and Pranayama:
- ▶ Sudarshan Kriya

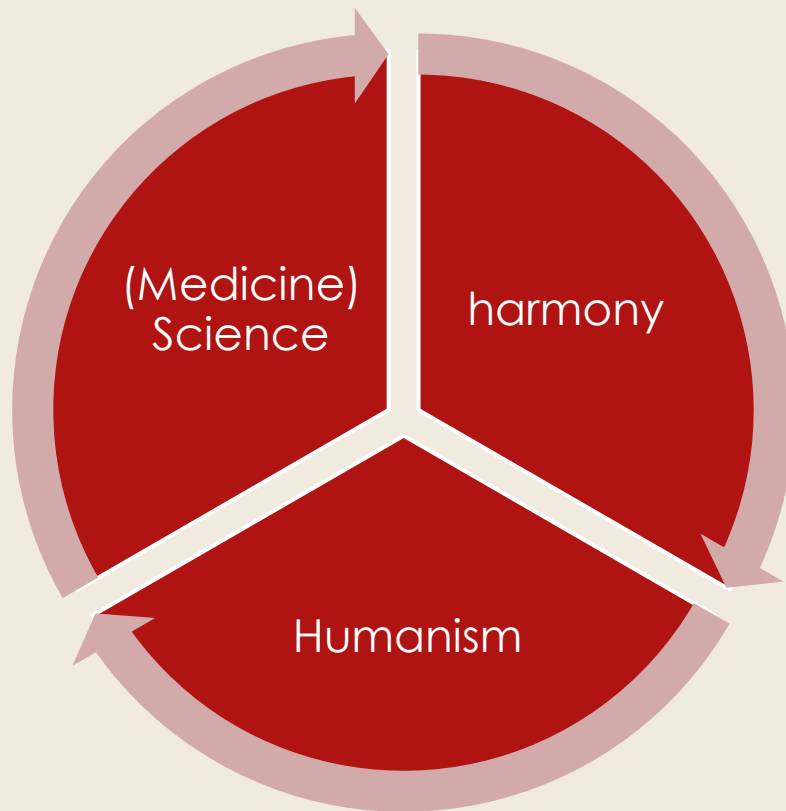
- ▶ Centuries old, time tested processes:
Energize the body and relax the mind.

Yoga and other relaxation techniques
An adjunct to cancer management

- Cancer diagnosis and treatment : both are stressful events
- Stress and depression:
Worse survival
- Chronic stress promotes cancer growth and progression

Safin et al; Cancer 2009, 115 (22): 5349

Lutgendorf et al; J Clin Oncol, 2010: 28(26): 4094





ORGANIZERS AND EXPERT SPEAKERS

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