



Cancers in The Gambia

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Session Outline

At the end of this talk, you should:

- Know the most common cancers affecting the people in The Gambia
- Understand cancer-related symptoms
- Know about screening for cancer
- Be aware of treatments available
- Know of the resources available in The Gambia

Interactive: What 5 cancers do you think are the most common in **The Gambia**?

1.

2.

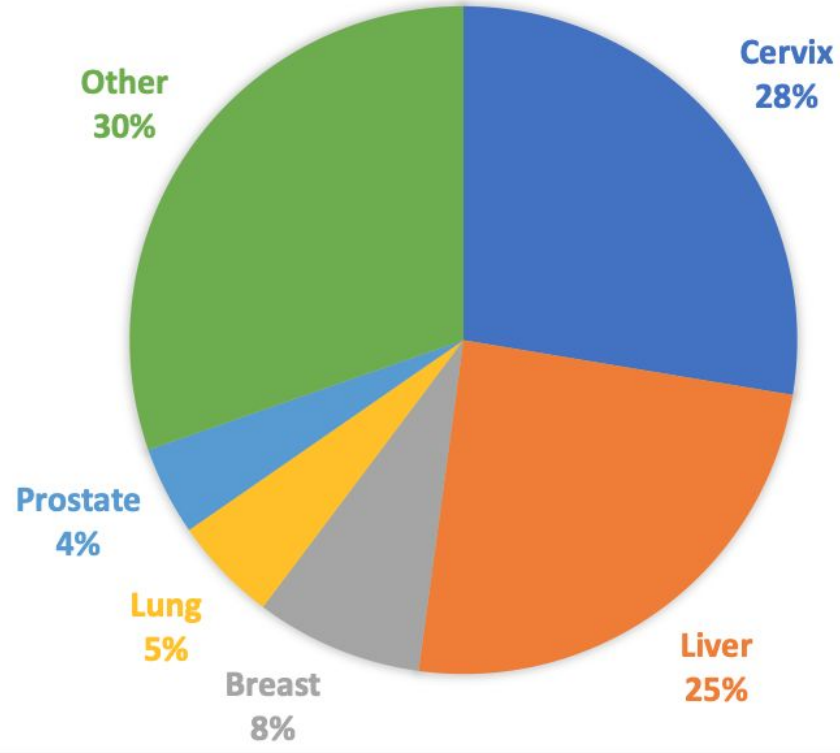
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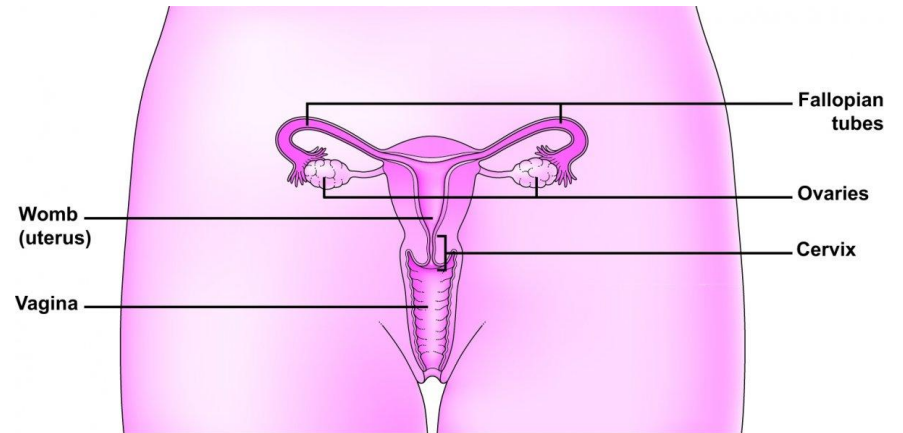
Cancers in The Gambia



What is cancer?

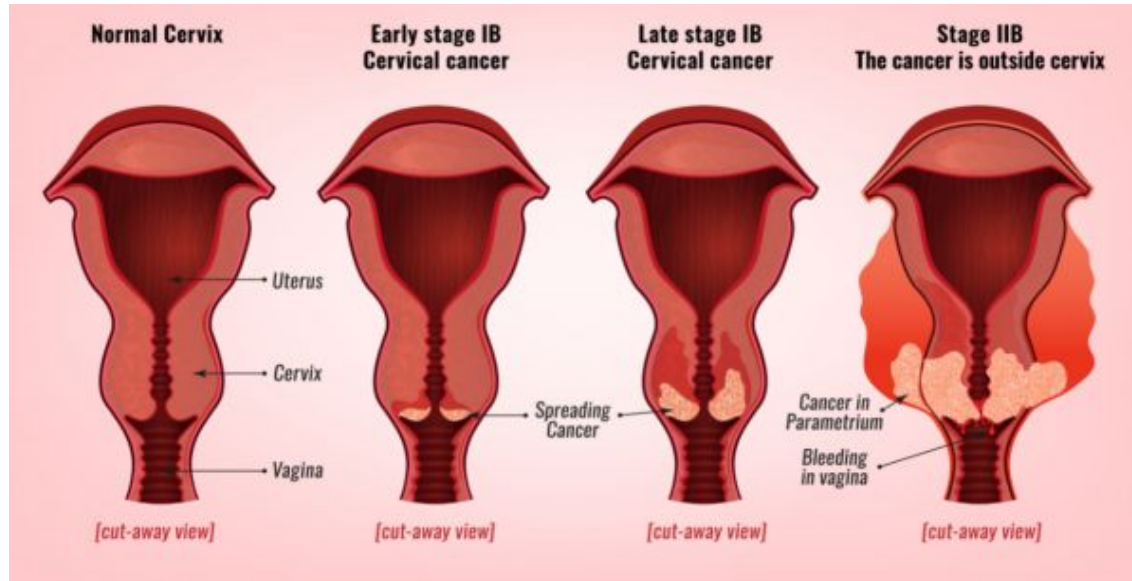
- General term for a disease that can affect any part of the body
 - Also known as tumour, malignancy
- Forms from abnormal cells that grow beyond their normal features & invade and spread to other organs
- The spread of cancer is called metastasis
 - Metastasis is often the primary cause of death in cancer

Cervical Cancer



What is Cervical Cancer?

- In 2020, it made up for 50% of new cancer cases in women in The Gambia and 1/4 of deaths caused by cancer



Cervical Cancer - Risk factors

1. Human Papilloma Virus (see next slide)
2. HIV (see next slide)
3. Age
4. Smoking
5. Combined contraceptive pill
6. How many children you have & when

Human Papillomavirus (HPV)

- Major risk factor associated with cervical cancer
- Very common virus. Most sexually active people come into contact with it, but for most it is harmless & goes away
 - Passed on through close skin contact
- Linked to anal, vaginal, vulval, penile & throat cancer
- Many different types of HPV
 - HPV 16 & 18 - most linked to cervical cancer (70% of cases)
- Prevention: practice safe sex & vaccines

Human Immunodeficiency Virus (HIV)

- HIV is virus that targets the immune system & weakens your ability to fight infections & disease
 - A weakened immunity leaves you more susceptible to cancer
- Spread through contact with an infected persons blood or bodily fluids or vertically (mum to baby)
- AIDS - a collection of diseases that occurs when your immune system has been severely damaged by the HIV virus
- Cervical cancer is the most common cancer in women with HIV
- No cure for HIV but many effective treatments
- Prevention: practice safe sex, early diagnosis

Cervical Cancer - Symptoms




Cervical Cancer - Screening

- Why is screening important?
 - Early diagnosis
 - Allows for early treatment
 - Likely a better outcome
- Every 5 years
- Method: Visual Inspection with acetic acid (VIA)
 - Apply acetic acid to the cervix with cotton pad & visualise the colours produced. Abnormal cells will show up as white, whereas normal cells will show up as pink

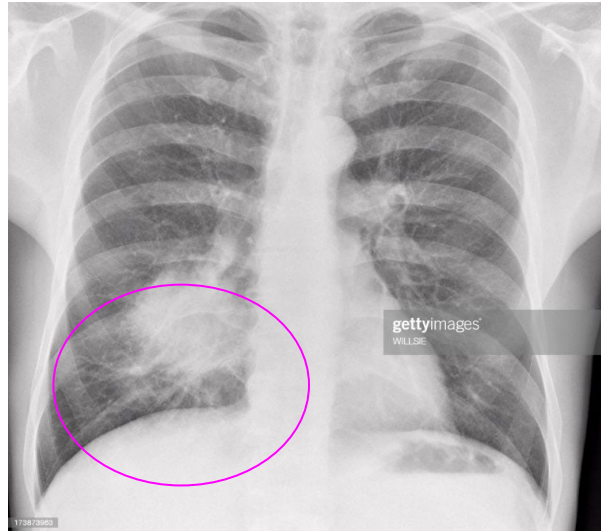


Any Questions?

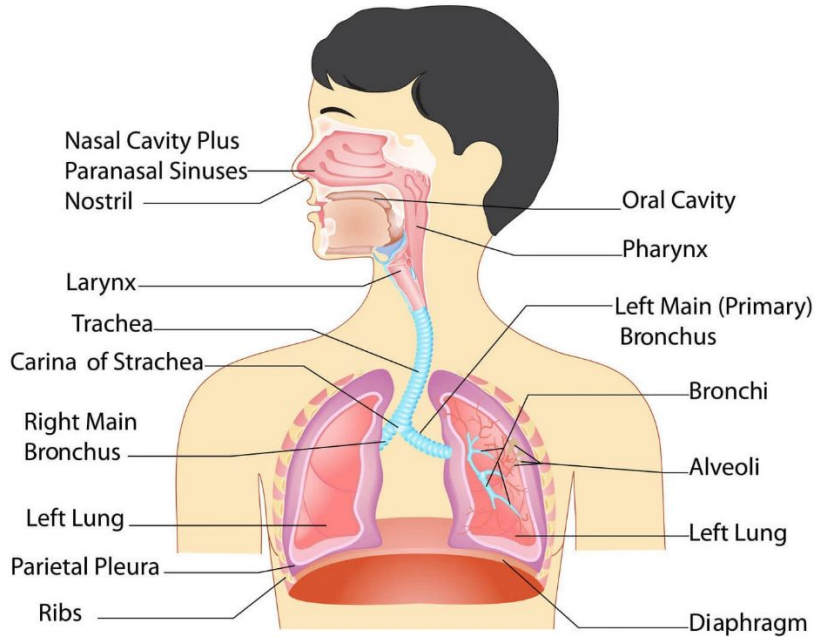
*Treatment options will be
discussed at the end of the talk*



Lung Cancer



The Lung

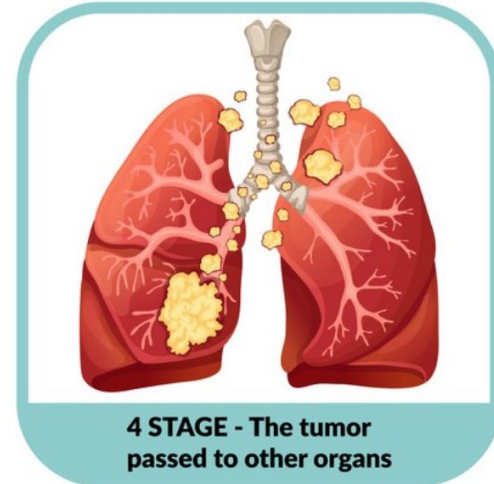
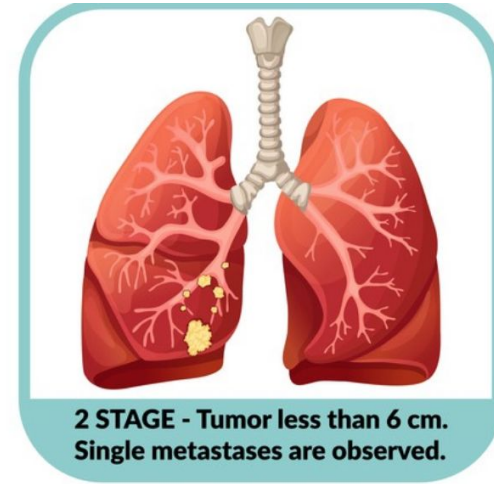
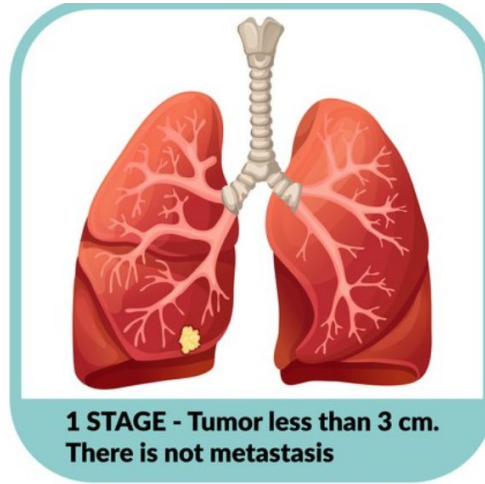


Function

- Breathing
 - Delivers oxygen
 - Removes waste products
- Filter & Protection from infection

What is Lung Cancer

- An invasive growth which starts inside the lungs and prevents the lung carrying out its essential functions
- In 2020, it made up 5% of new cancer cases in The Gambia and 6% of deaths caused by cancer.



Lung Cancer: Risk Factors

- Tobacco smoke
- 2nd hand smoke
- Air pollution
- Workplace chemicals
- Previous radiotherapy
- personal/family history of lung cancer

Tobacco

- Biggest risk factor for lung cancer
- Responsible for 70% of cases
- Tobacco smoke contains more than 60 different toxic substances, which are known to cause cancer



Non-Smoker



Smoker

Outdoor Air Pollution

- Outdoor air pollution is a mixture of tiny dust-like particles and substances in the air
 - fumes from vehicles or factories
 - smoke from burning fuels like wood or coal
- Tiny particles build up in the lungs which causes damage and cancerous changes in cells
- causes 1 in 10 cases of lung cancer
 - 62 000 lung cancer deaths per year worldwide
- This is an increasing problem in urban and industrialised areas

Workplace Chemicals

Chemicals

- Radon gas- naturally occurring gas that forms in rocks, soil, and water.
- Asbestos
- Radioactive ores e.g. uranium
- Inhaled chemicals such as arsenic, beryllium, cadmium, silica, vinyl chloride, nickel compounds, chromium compounds, coal products, mustard gas, and chloromethyl ethers
- Diesel exhaust

High risk occupations

- Construction
- Quarries, sand pits and mining
- Transportation
- Painting
- Welding


Lung Cancer: Symptoms

- having a cough most of the time
- having a change in a cough you have had for a long time - it may sound different or be painful when you cough
- getting out of breath doing things you could previously do without a problem
- coughing up phlegm (sputum) with blood in it
- having an ache or pain in the chest or shoulder
- chest infections that keep coming back or a chest infection that doesn't get better
- losing your appetite
- feeling tired all the time (fatigue)
- losing weight

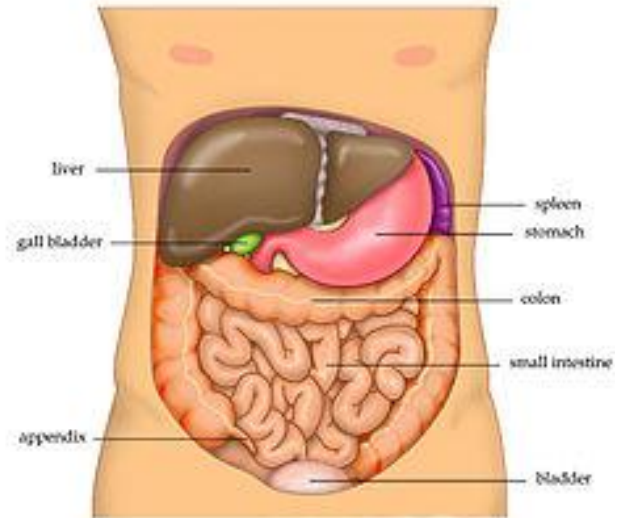


Any Questions?

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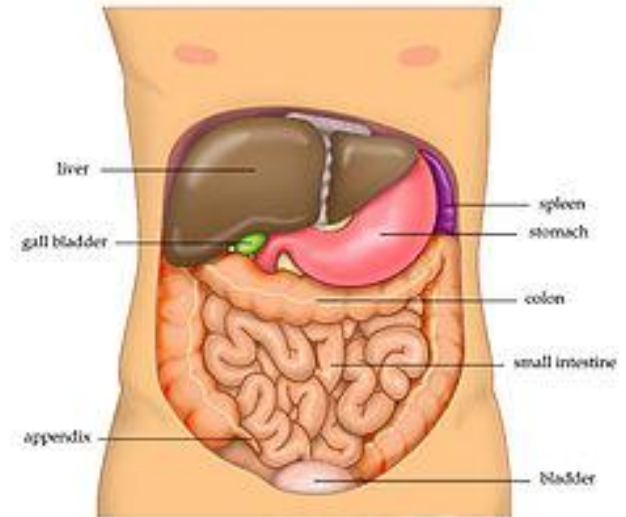


Liver Cancer



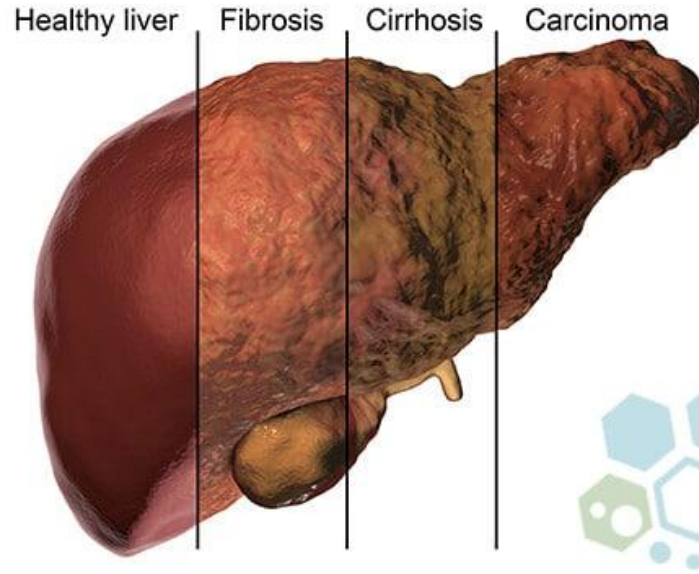
The Liver

- The liver is the 2nd largest organ in the body
- Able to regenerate
- Functions:
 - Stores nutrients (carbohydrates, protein, fats & vitamins)
 - Energy production (through breakdown of nutrients)
 - Aids digestion (production of bile)
 - Makes important proteins
 - Helps with blood clotting
 - Breaks down harmful substances



What is Liver Cancer

- In 2020, it made up for 40% of new cancer cases in men & 10% in women
- $\frac{1}{3}$ of deaths caused by cancer



Various risk factors
cause inflammation



Scarred tissue. Unable
to regenerate



Abnormal cells > cancer

Liver Cancer - Risk Factors

- Age
- Viral Hepatitis (B or C) - see next slide
- Excessive alcohol intake - see next slide
- Lifestyle
 - Diet, smoking, diabetes, obesity
- Aflatoxins
 - Found in mouldy groundnuts, peanuts, soya beans & rice
- Genetic causes
- Autoimmune causes
- HIV

Viral Hepatitis (B & C)

- Thought to affect 10% of adult Gambian population
- A viral infection that causes liver inflammation & damage
 - Acute & chronic infections
 - Many cases are asymptomatic.
 - Chronic hepatitis leads to liver cancer
- Spread through contact with an infected persons blood or bodily fluids or **vertically** (mum to baby)
- No cure for viral hepatitis
 - Very effective treatments available for Hepatitis B & C
- Vaccine available for Hepatitis B only
 - Offered in The Gambia in infancy

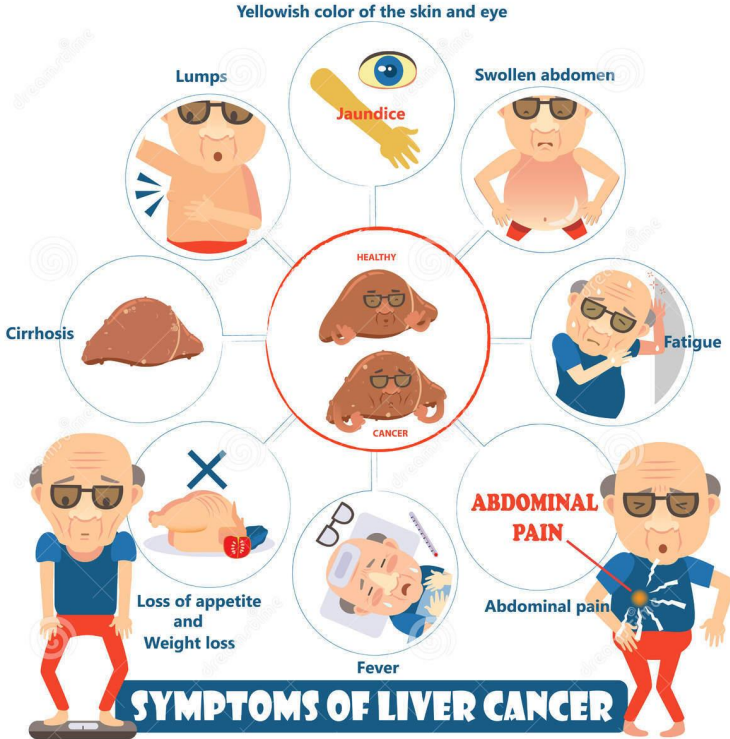
Alcohol

- Alcohol contributes to 3 millions deaths each year globally
 - Volume of alcohol intake & pattern of drinking
- Drinking alcohol long term causes liver inflammation & scarring which can lead to liver cancer
- Gambia
 - Majority follow Islamic faith so most abstain from drinking, selling or having it present in their compound

Lifestyle

- Various lifestyle factors lead to 'Non Alcoholic Fatty Liver Disease' which increases the risk of cancer
 - Fat builds up in the liver > inflammation & scarring > liver cancer
- Factors include
 - Obesity
 - High blood pressure
 - Smoking
 - Poor diet (high cholesterol)
 - High sugar intake
 - Local drinks such as Wonjo juice, ginger beer, Attaya
 - Diabetes (*perhaps a future session*)


Liver Cancer - Symptoms



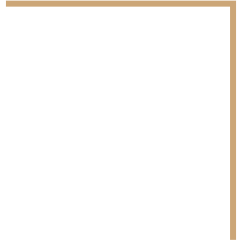
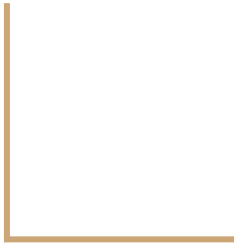


Any Questions?

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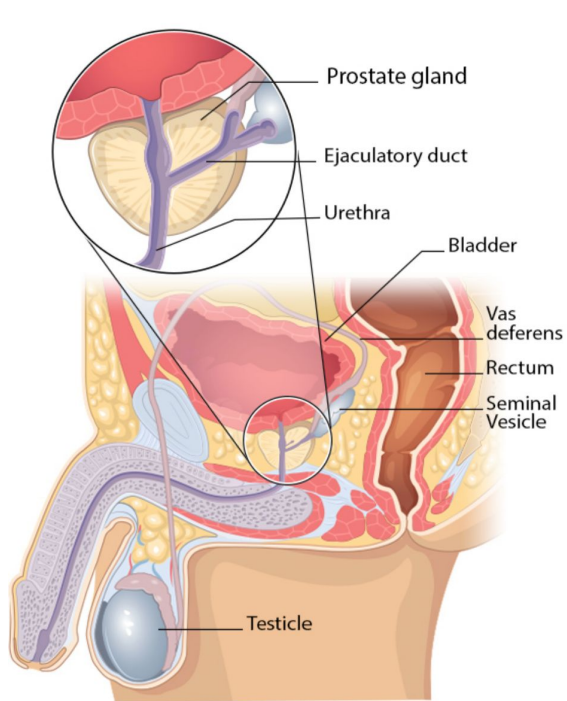


Prostate Cancer



The Prostate

Anatomy

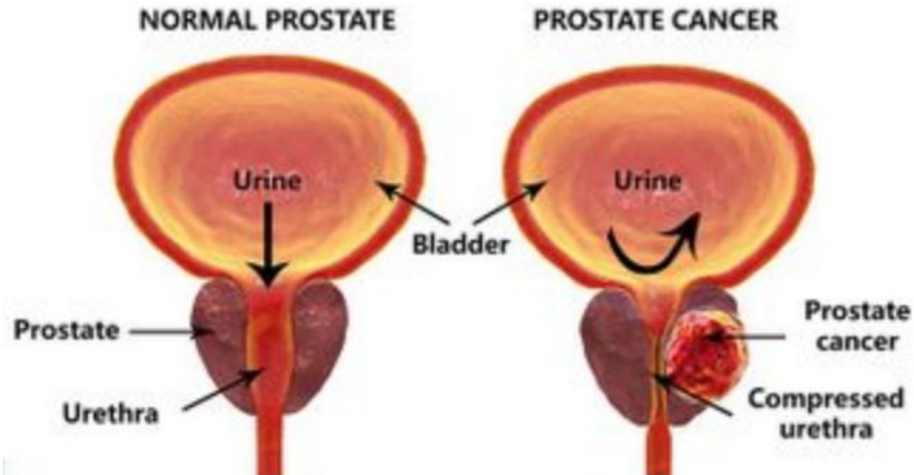


Function

produce the fluid that nourishes and transports sperm (seminal fluid)

What is Prostate Cancer?

- In 2020, it made up 9.6% of new cancer cases in men in The Gambia and 3.2% of deaths caused by cancer.



Prostate Cancer: Risk Factors

- Increasing Age
- Ethnicity- Black African
- Family History/Genes
- Overweight/Obese

Family History/BRCA

- Your risk of prostate cancer is higher if :
 - You have a close relative, such as a brother or father, who has had prostate cancer
 - Other members of your family have been diagnosed with breast, ovarian, or pancreatic cancer
 - You inherit certain genes
 - a. The risk increases by up to 5 times in men with the gene BRCA2. And the risk might increase with the BRCA1 gene.
 - b. Men with a rare syndrome called Lynch syndrome have a higher chance of developing prostate cancer. A change in one of the genes that fixes mistakes in DNA causes this syndrome eg. MSH2 and MLH1 genes.

Prostate Cancer: Symptoms

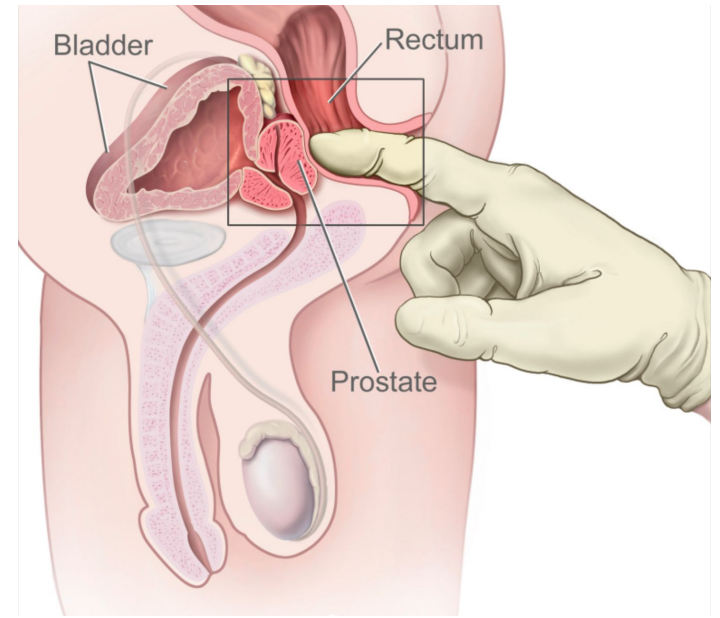
Prostate cancer does not usually cause any symptoms until the cancer has grown large enough to put pressure on the tube that carries urine from the bladder out of the penis (urethra).

Symptoms:

- needing to pee more frequently, often during the night
- needing to rush to the toilet
- difficulty in starting to pee (hesitancy)
- straining or taking a long time while peeing
- weak flow
- feeling that your bladder has not emptied fully
- blood in urine or blood in semen

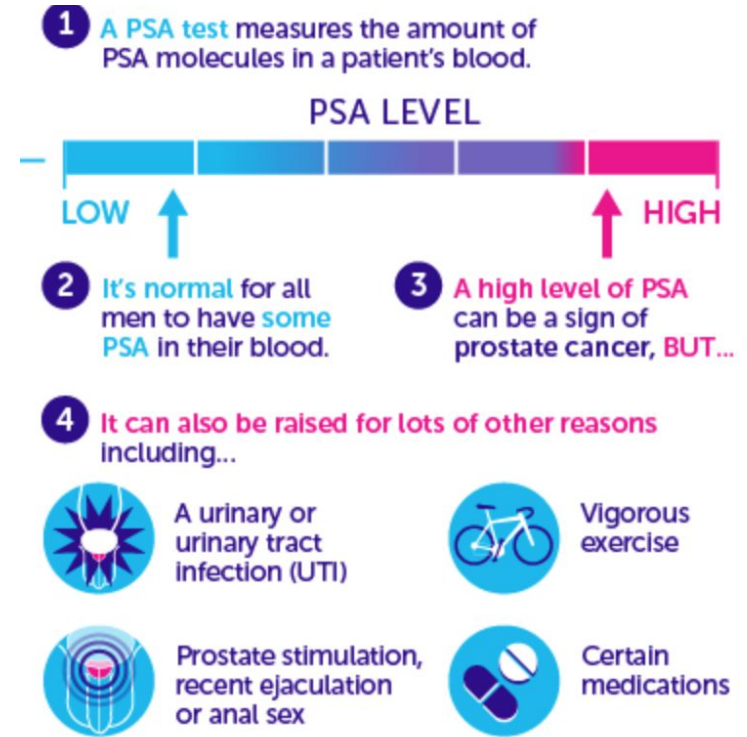
Screening

- Digital Rectal Examination (DRE)
 - a health care provider inserts a gloved, lubricated finger into a man's rectum to feel the prostate for anything abnormal, such as cancer



Screening


- Prostate Specific Antigen (PSA) Test
 - This is a blood test
 - The higher the PSA level in the blood, the more likely a prostate problem is present
 - Many factors e.g. age, race, diet, physical activity, infection etc can affect PSA levels





Any Questions?

*Treatment options will be
discussed at the end of the talk*



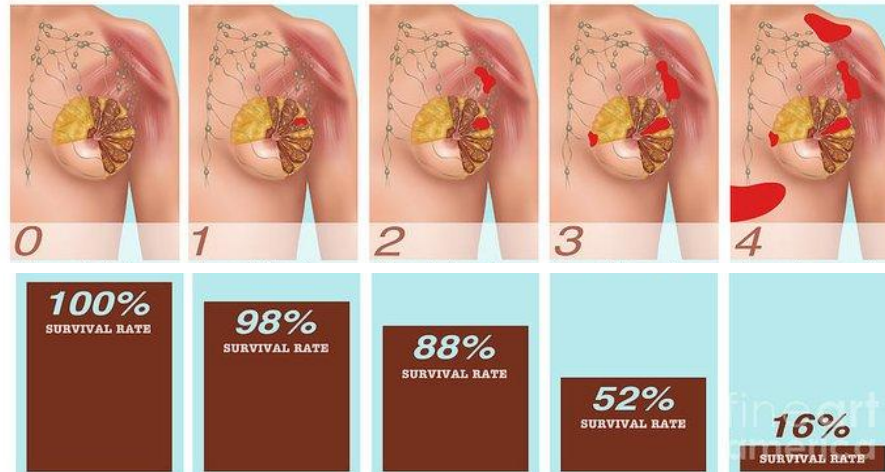
Breast Cancer



What is Breast Cancer?

- In 2020, it made up for 15% of new cancer cases in women in The Gambia and 5% of deaths caused by cancer (1 in 20).

Stages of Breast Cancer



Breast Cancer - Risk factors

- Age
- Family history (see next slide)
- Early menarche
- Late menopause
- Hormone replacement therapy (see next slide)
- Obesity (see next slide)
- Combined contraceptive pill
- Radiation exposure

BRCA genes/Family History

- Having a mother, sister or daughter with breast cancer increases your risk of developing breast cancer
 - Risk is high if the relative had cancer under the age of 50
- Thought to be linked to genetics
 - Inheritance of faulty BRCA 1 & 2 genes
- Every human has BRCA genes
 - BRCA helps to repair faulty DNA in cells which prevents cells becoming cancerous
 - Inherited defect in these genes > cells can become cancerous
 - BRCA genetic mutations linked to breast, ovarian & prostate cancer

Most women who have a family history of breast cancer will never develop it

Hormone Replacement Therapy (HRT)

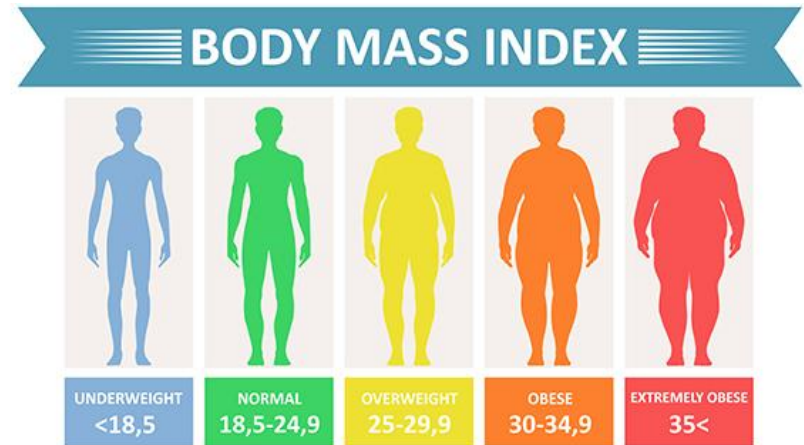
- Menopause is when a woman no longer has periods
 - Natural oestrogen levels decline > menopausal symptoms of varying severity
 - Symptoms treated with HRT
- HRT replaces the hormones no longer produced by the body
 - Oestrogen & Progesterone
 - Oestrogen only HRT
 - Combined HRT
 - Several benefits & risks
- HRT increases the risk of breast cancer.
 - Combined HRT
 - Use of HRT for more than 5 years
 - *The risk remains for at least 10 years after they stop*

Obesity

- Breast cancer is an oestrogen dependent cancer
- Body fat can be converted into oestrogen
 - High levels of oestrogen can increase the risk of breast cancer
- BMI (Body Mass Index) is a tool used to check whether you are a healthy weight
 - Calculated from weight & height

40% of adults in Gambia are overweight or obese

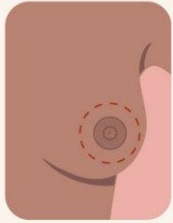
$$\text{BMI} = \frac{\text{weight (kg)}}{\text{height (m}^2\text{)}}$$



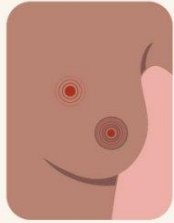
Protective Factors

- Physical activity
- Breastfeeding

Breast Cancer - Symptoms



Retracted or inverted nipple



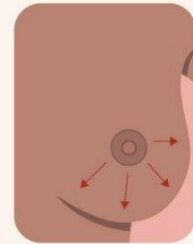
Breast or nipple pain



Lumps



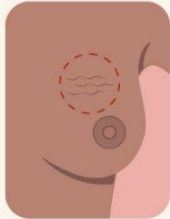
Nipple discharge



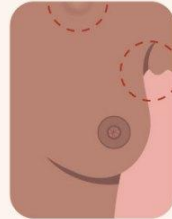
Swelling



Redness/rash



Changes to skin texture



Lump around collar bone or underarm


Breast Cancer - Self Examination





Any Questions?

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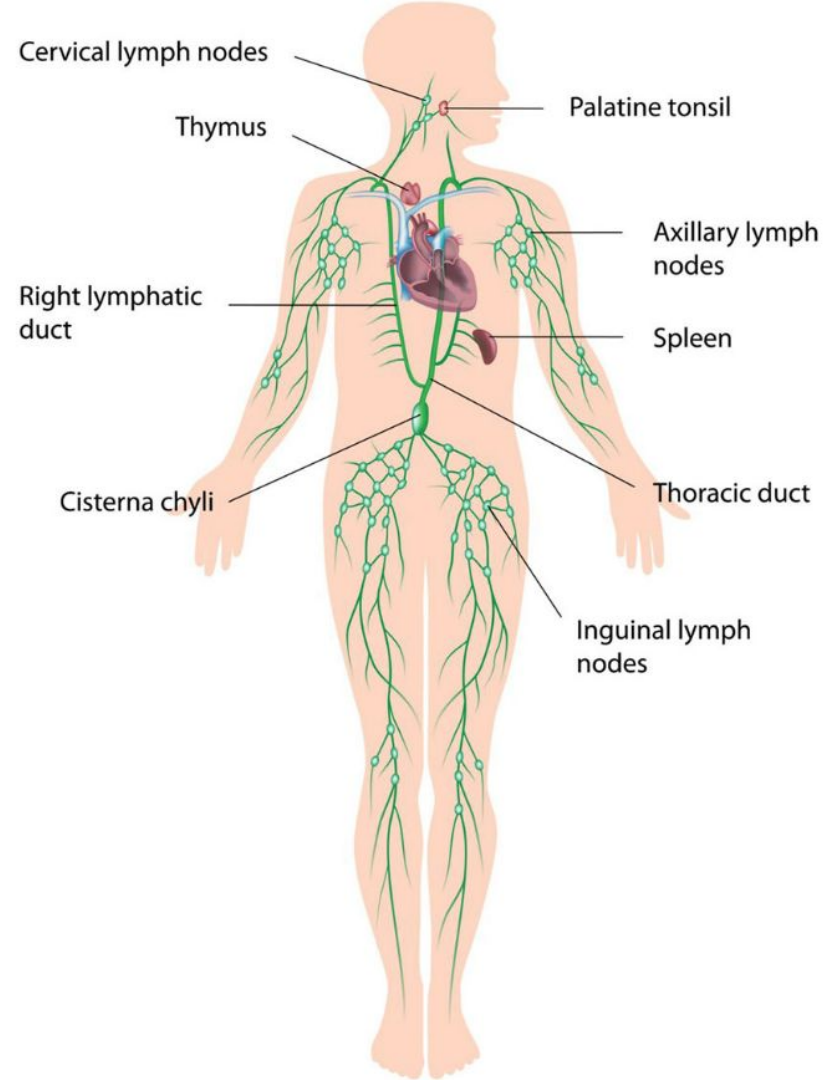
Non Hodgkin's Lymphoma



Lymphatic System

The lymph system is an important part of our immune system. It plays a role in:

- fighting bacteria and other infections
- destroying old or abnormal cells, such as cancer cells



What is Non Hodgkin's Lymphoma

lymphomas can start anywhere in the body where lymph tissue is found

This is the 6th most common cause of cancer in the Gambia causing 3.4% of new cases and 3% of cancer related deaths

Non Hodgkin's Lymphoma: Risk Factors

Increasing age

Male>female

race, ethnicity, geography

Family history

Exposure to chemicals- benzene and certain herbicide, pesticides, insecticides

Radiation exposure

Weakened immunity due to- HIV, immunosuppressant drugs

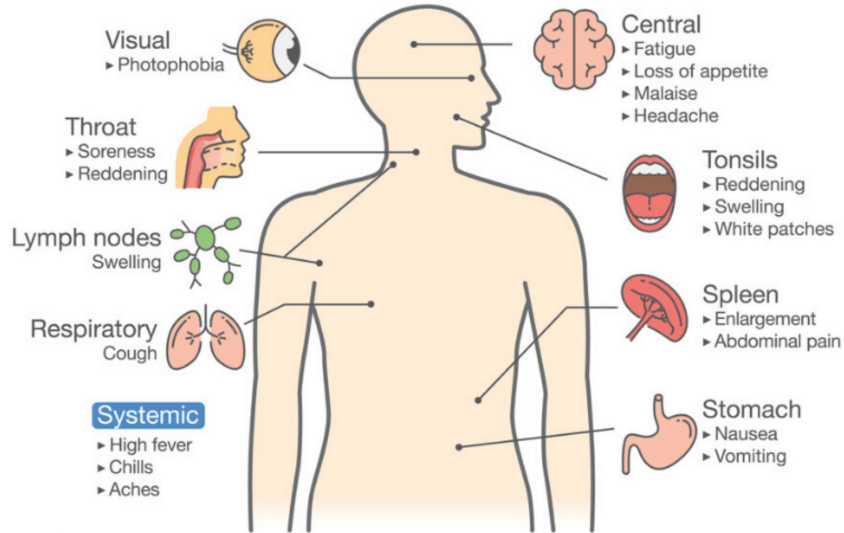
Infections that change lymphocytes e.g. human T-cell lymphotropic virus, EBV, Human herpes virus 8 (HHV-8)

Epstein-Barr Virus (EBV)

The Epstein-Barr virus (EBV) is the virus that causes mononucleosis, also known as "mono,"

it is associated with some types of NHL e.g. Burkitt lymphoma, lymphomas occurring after an organ transplant

NHL that arises from EBV is likely the result of the body's inability to regulate the virus.



Herbicides & Pesticides

Farming and Agricultural exposure increases risk of NHL

Specific substances:

- phenoxyherbicides
- dicamba containing herbicides
- carbamate insecticides
- organophosphorus insecticides

Non Hodgkin's Lymphoma: Symptoms

B symptoms

- Heavy sweating at night
- Temperatures that come and go with no obvious cause
- Losing a lot of weight (more than one tenth of your total weight)
- Unexplained itching




- One or more painless swellings in the:
 - Neck
 - Armpit
 - Groin
- Enlarged tonsils (these are at the back of your throat)
- A lump in your tummy (abdomen) - this could be due to an enlarged liver or spleen or enlarged lymph nodes in the tummy
- Breathlessness (if lymphoma is affecting nodes in your chest)



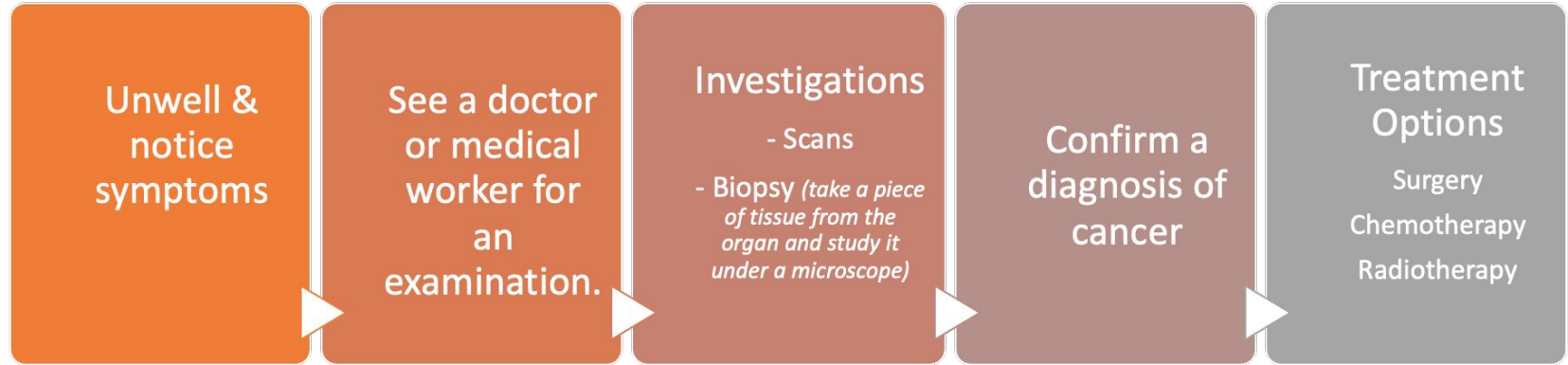
Any Questions?

*Treatment options will be
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Cancer: A Patient's Journey

Cancer: A Patient's Journey



Treatment Options

Intent of treatment

- Curative (cure the cancer)
- Palliative (to control symptoms caused by cancer)

1. Surgery

- a. Procedure where a surgeon surgically removes the cancer from your body
- b. Commonly done in early cancer, which has not spread

2. Chemotherapy

- a. Medicine is used to kill cancer cells. They kill cancer cells by stopping them from growing and spreading.
- b. Tablet or intravenous

3. Radiotherapy

- a. Radiation is used to kill cancer cells
- b. External machine, internal implant, liquid (swallowed or intravenous)

Cancer: Resources in Gambia

Burden of Cancer

Total population (2019)

2,347,696

Total # cancer cases
(2018)

705

Total # cancer deaths
(2018)

610

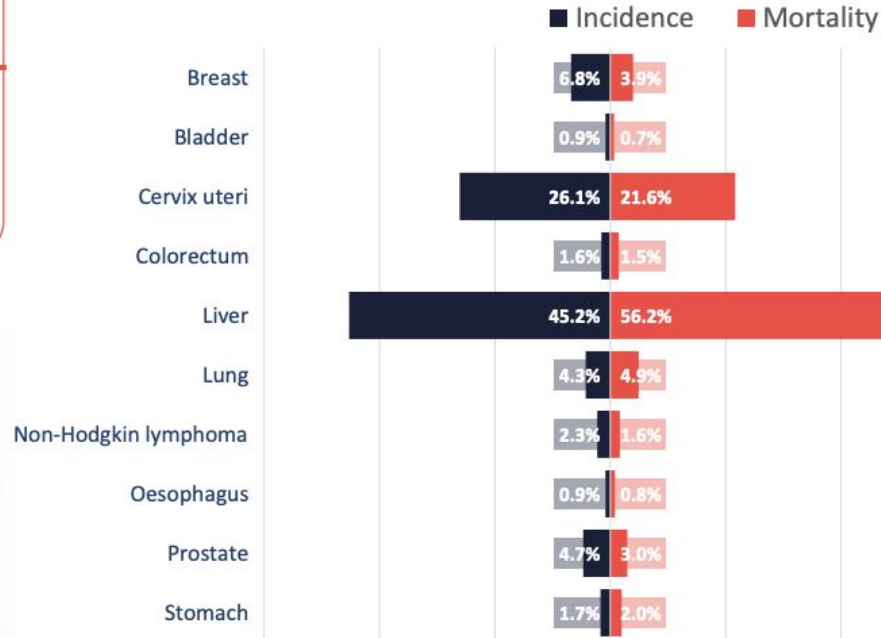
Premature deaths from NCDs (2016)

2,140

Cancer as % of NCD premature deaths (2016)

15.1%

Most common cancer cases (2018)



HEALTH SYSTEM CAPACITY

^a per 10,000 cancer patients

Availability of population-based cancer registry (PBCR)**	2019	PBCR
Quality of mortality registration***	2007-2016	No coverage
# of external beam radiotherapy (photon,electron) ^a	2019	0.0
# of mammographs ^a	2020	14.2
# of CT scanners ^a	2020	28.4
# of MRI scanners ^a	2020	14.2
# of PET or PET/CT scanners ^a	2020	0.0

WORKFORCE

^a per 10,000 cancer patients

Available staff in Ministry of Health who dedicates significant proportion of their time to cancer	2019	yes
# of radiation oncologist ^a	2019	n/a
# of medical physicist ^a	2019	n/a
# of surgeons ^a	2011	141.8
# of radiologist ^a	2019	0.0
# of nuclear medicine physician ^a	2019	0.0
# of medical & pathology lab scientists ^a	2015	156.0



Thank you for
listening.

Any Questions?



References

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7. Cancer Country Profile 2020- https://www.iccp-portal.org/system/files/plans/GMB_2020.pdf

Interactive: What 5 cancers do you think are the most common in **the world**?

1. Breast
2. Lung
3. Colon
4. Prostate
5. Stomach

