MEDICAL NOTEBOOK

EDI Guidebook

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HIV - Human Immunodeficiency Virus

Symptoms:

- Fever
- Fatigue
- Persistent cough
- Weight loss
- Swollen Lymph Nodes
- Headache
- Muscle aches
- Possible rash and mouth sores

How is it Contracted? :

- Unprotected Sex
- Contact with blood from an infected person (e.g., needles, razors)
- Contact with specific body fluids (e.g., breast milk, semen, vaginal fluid)

Diagnosis:

- Nucleic acid tests (NATs). These tests look for the virus in your blood, called viral load.
- Antibody tests. These tests look for antibodies to HIV in blood or saliva.
- Rapid HIV Tests

Treatment:

- Antiretroviral therapy (ART)
- Everyone diagnosed with HIV should take antiretroviral therapy medicines, also called ART. This is true no matter what stage the disease is in or what the complications are.

Prevention:

- Safe sex practices (e.g. wearing condoms)
- Avoid sharing needles
- Use of preventive medications like PrEP and PEP
- PMTCT: For pregnant women (ARVs reduce transmission to <1%)

High-Risk Areas:

- Sub-Saharan Africa, especially Southern Africa (countries like South Africa, Lesotho, Eswatini, Botswana)

Summary:

- HIV (Human Immunodeficiency Virus) is a virus that weakens the immune system and is primarily transmitted through unprotected sex, contact with infected blood, and specific body fluids. It is diagnosed through HIV antibody tests, and treatment involves antiretroviral therapy (ART) along with regular exercise. Prevention includes safe sex practices and the use of preventive medications like PrEP and PEP. Sub-Saharan Africa remains the region with the highest HIV prevalence.

AIDS - Acquired Immunodeficiency Syndrome

Symptoms:

- chronic fever
- persistent diarrhea
- profound fatigue
- rapid weight loss
- swollen lymph nodes
- skin rashes or lesions.
- Neurological issues like memory loss or confusion can also occur
- Encephalitis and Meningitis
- Retinitis
- Pneumocystis, pneumonia, Tuberculosis, Tumours
- Skin Tumours
- Esophagitis, Chronic diarrhea and Tumours

How is it Contracted? :

- (AIDS) is contracted through the transmission of the Human Immunodeficiency Virus (HIV). HIV is primarily transmitted through specific bodily fluids: blood, semen (including pre-seminal fluid), vaginal fluids, rectal fluids, and breast milk. This typically occurs through unprotected anal or vaginal sex, sharing needles for drug injection, or from mother to child during pregnancy, childbirth, or breastfeeding.

Diagnosis:

- CD4 count below 200 cells/mm^3 or
- Develops one or more AIDS-defining illnesses, regardless of their CD4 count.

Treatment:

- Acquired Immunodeficiency Syndrome (AIDS) is treated with antiretroviral therapy (ART), it can still help rebuild the immune system.
- Types of ART;
- NRTIs (e.g., Tenofovir, Emtricitabine)
- NNRTIs (e.g., Efavirenz, Rilpivirine)
- Protease Inhibitors (e.g., Darunavir)
- Integrase Inhibitors (e.g., Dolutegravir)

Prevention:

- AIDs is caused by HIV therefore;
- Safe sex practices (e.g. wearing condoms)
- Avoid sharing needles
- Use of preventive medications like PrEP and PEP
- PMTCT: For pregnant women (ARVs reduce transmission to <1%)
- ART: Antiretroviral therapy (ART) is a combination of medications that reduces the amount of HIV in the body. When taken as prescribed, ART can make the virus undetectable, meaning it cannot be transmitted to others through sex.

High-Risk Areas:

- Sub-Saharan Africa, especially Southern Africa (countries like South Africa, Lesotho, Eswatini, Botswana)

Summary:

- AIDS - Acquired Immunodeficiency Syndrome is the most advanced stage of HIV infection, characterized by severe damage to the immune system. It occurs when HIV, the virus that causes AIDS, weakens the body's ability to fight off infections and certain cancers. Without treatment, AIDS can lead to death, but with proper management through antiretroviral therapy (ART), individuals with HIV can live long and healthy lives.

TB – Tuberculosis:

Symptoms:

- **Active TB disease in the lungs may cause symptoms such as:**
  - A bad cough that lasts 3 weeks or longer
  - Pain in the chest
  - Coughing up blood or sputum (phlegm) from deep inside the lungs
  - Weakness or fatigue,
  - Weight loss,
  - No appetite,
  - Chills,
  - Fever, and
  - Sweating at night.
- **Symptoms of active TB disease in other parts of the body depend on the area affected:**
  - TB disease of the lymph nodes may cause a firm red or purple swelling under the skin.
  - TB disease of the kidney may cause blood in the urine.
  - TB meningitis (TB disease of the brain) may cause headache or confusion.
  - TB disease of the spine may cause back pain.
  - TB disease of the larynx may cause hoarseness

How is it Contracted?:

- TB can spread when a person with active TB coughs, sneezes, talks, sings or laughs. Only people with an active lung infection are contagious.
- You usually have to spend a lot of time in contact with someone who’s contagious to catch TB.
- Most people who breathe in TB bacteria can fight the bacteria and stop it from growing. This causes a latent TB infection.
- **You might be at a higher risk for TB exposure if you:**
  - Are a resident or employee in group settings where TB can spread, such as jails, hospices, skilled nursing facilities, shelters and other healthcare facilities

    - Work in a mycobacteriology laboratory
    - Have lived in a region where TB is common, like Latin America, the Caribbean, Africa, Asia, Eastern Europe and Russia
    - Have been in contact with someone who's known or suspected to have TB disease
- **You might be at a higher risk for getting active TB if you:**
    - Inject intravenous drugs
    - Have an immature, impaired or weakened immune system (including babies and children)
    - Have kidney disease, diabetes or other chronic (long-term) illness
    - Have received an organ transplant
    - Are on chemotherapy treatment for cancer

Diagnosis:

- Healthcare providers use a skin or blood test to diagnose TB.
- Lab tests on sputum and lung fluid
- Chest X-ray
- Computed tomography (CT) scans

Treatment:

- To treat both active and inactive tuberculosis with specific kinds of antibiotics. You'll likely need to take a combination of medications to get rid of the infection.
- You'll have to take these medications for a long time, several months. You must take them exactly as your provider prescribes to get rid of all the bacteria. It's very important to finish your entire prescription.
- Isoniazid
- Rifampin
- Ethambutol
- Pyrazinamide
- Rifapentine

Prevention:

- Washing your hands thoroughly and often
- Coughing into your elbow or covering your mouth when you cough
- Avoiding close contact with other people
- Making sure you take all your medications as prescribed
- Not returning to work or school until you've been cleared by your healthcare provider
- Good hygiene practices

High-Risk Areas:

- The World Health Organization (WHO) identifies several countries with a high burden of TB, including India, Indonesia, China, the Philippines, Pakistan, Nigeria, Bangladesh, and the Democratic Republic of the Congo.
- Those with HIV/AIDS, malnutrition, diabetes, or those undergoing immunosuppressive treatments are more vulnerable to TB.

Summary:

- Tuberculosis (TB) is a contagious disease, primarily affecting the lungs, caused by the bacterium Mycobacterium tuberculosis. It spreads through the air when an infected person coughs, sneezes, or spits. TB is a significant global health concern, with millions affected annually, but it is both preventable and curable with appropriate treatment.

HTN - Hypertension (High Blood Pressure):

Symptoms:

- Most people with hypertension don't feel any symptoms. Very high blood pressures can cause headaches, blurred vision, chest pain and other symptoms.
- Checking your blood pressure is the best way to know if you have high blood pressure. If hypertension isn't treated, it can cause other health conditions like kidney disease, heart disease and stroke.
- **People with very high blood pressure (usually 180/120 or higher) can experience symptoms including:**
    - severe headaches
    - chest pain
    - dizziness
    - difficulty breathing
    - nausea
    - vomiting
    - blurred vision or other vision changes
    - anxiety
    - confusion
    - buzzing in the ears
    - nosebleeds
    - abnormal heart rhythm

How is it Contracted?:

- **Primary hypertension doesn't have a single, clear cause. Usually, many factors come together to cause it. Common causes include:**
    - Unhealthy eating patterns (including a diet high in sodium)
    - Lack of physical activity
    - High consumption of beverages containing alcohol
- **Secondary hypertension has at least one distinct cause that healthcare providers can identify. Common causes of secondary hypertension include:**
    - Certain medications, including immunosuppressants, NSAIDs and oral contraceptives (the pill)
    - Kidney disease
    - Obstructive sleep apnea
    - Primary aldosteronism (Conn's syndrome)
    - Recreational drug use (including amphetamines and cocaine)

    - Renal vascular diseases, which are conditions that affect blood flow in your kidneys' arteries and veins (renal artery stenosis is a common example)
    - Tobacco use (including smoking, vaping and using smokeless tobacco)

Diagnosis:

- when blood pressure readings are consistently at or above 130/80 mm Hg. A diagnosis is usually based on the average of two or more readings taken on separate occasions.
- Normal blood pressure is less than 120/80 mmHg
- Elevated blood pressure is 120/80 to 129/80 mmHg
- Stage 1 hypertension is 130/80 to 139/89 mmHg
- Stage 2 hypertension is 140/90 mmHg or higher

Treatment:

- eating a healthy, low-salt diet
- losing weight
- being physically active
- quitting tobacco.
- Limit alcohol
- Get enough Potassium

Prevention:

- Follow a healthy eating plan. This is an important step in keeping your blood pressure normal.
- Cut down on sodium. To prevent hypertension, you should reduce the amount of sodium in your diet. Try to keep it below 1,500 milligrams a day.
- Keep a healthy weight. Going hand-in-hand with a proper diet is keeping a weight that's healthy for you. Losing excess weight with diet and exercise will help lower your blood pressure to healthier levels.
- Keep active. Even simple physical activities, such as walking, can lower your blood pressure (and your weight).
- Drink alcohol in moderation. Having more than one drink a day (for women) or more than two drinks a day (for men) can raise blood pressure.

High-Risk Areas:

- Many countries in the sub-Saharan region, such as Ethiopia, Malawi, Niger, Chad, and Mali, face significant burdens of high blood pressure.
- Countries like India, Bangladesh, and Nepal also have high rates of hypertension.
- Slovenia, Lithuania, and Croatia are examples of countries with high rates of hypertension in the central and eastern European region.

Summary:

- High blood pressure, also known as hypertension, is a condition where the force of blood pushing against the artery walls is consistently too high. This can damage blood vessels and lead to serious health problems like heart attack, stroke, and kidney disease. It is often called the "silent killer" because it frequently has no noticeable symptoms, especially in its early stages. High blood pressure is when blood pressure

readings are consistently at or above 140/90 mmHg. Age, genetics, obesity, lack of physical activity, and a high-salt diet can increase the risk. Most people with high blood pressure have no symptoms. Some may experience headaches, dizziness, or vision problems, especially at very high levels.

DM - Diabetes Mellitus:

Symptoms:

- Increased thirst (polydipsia): Feeling unusually thirsty and needing to drink more than usual.
- Frequent urination (polyuria): Needing to urinate more often than normal, including at night.
- Unexplained weight loss: Losing weight without trying to change your diet or exercise routine.
- Increased hunger (polyphagia): Feeling hungry even after eating a meal.
- Fatigue: Feeling unusually tired or weak.
- Blurred vision: Having difficulty focusing or seeing clearly.
- Slow-healing sores or cuts: Cuts and sores taking longer than usual to heal.
- Tingling or numbness in hands or feet (diabetic neuropathy): Experiencing a pins and needles sensation, numbness, or pain in the extremities.
- Frequent infections: Experiencing more infections than usual, such as urinary tract infections, skin infections, or yeast infections.
- Dry skin: Having excessively dry skin.
- **Other possible symptoms:**
    - Dry mouth: Experiencing a persistently dry mouth.
    - Itching, especially around the genital area: This can be associated with yeast infections.
    - Darkening of skin in certain areas: Velvety, dark skin changes (acanthosis nigricans) in the neck, armpits, or groin.
    - Erectile dysfunction (ED) or impotence: This can be a complication of diabetes.
    - Ketones in the urine: This indicates the body is breaking down fat for energy, which can be a sign of type 1 diabetes.

How is it Contracted?:

- Diabetes mellitus is not a condition that is "contracted" in the sense of being contagious. It is a chronic disease characterized by high blood sugar levels, and it develops due to the body's inability to produce or effectively use insulin. Diabetes can be broadly categorized into Type 1, Type 2, and gestational diabetes.
- Type 1 diabetes is an autoimmune disease where the body's immune system attacks and destroys insulin-producing cells in the pancreas. The exact cause is unknown, but genetics and environmental factors are believed to play a role. It is often diagnosed in childhood or young adulthood.
- Type 2 diabetes occurs when the body either doesn't produce enough insulin or the cells become resistant to insulin, preventing glucose from entering them properly. Risk

factors for Type 2 include obesity, lack of physical activity, family history, and ethnicity. It is more common in adults, but can also occur in children.

- Insulin resistance: Type 2 diabetes mainly results from insulin resistance. Insulin resistance happens when cells in your muscles, fat and liver don't respond as they should to insulin. Several factors and conditions contribute to varying degrees of insulin resistance.
- Autoimmune disease: Type 1 diabetes and LADA happen when your immune system attacks the insulin-producing cells in your pancreas.
- Hormonal imbalances: During pregnancy, the placenta releases hormones that cause insulin resistance. You may develop gestational diabetes if your pancreas can't produce enough insulin to overcome the insulin resistance. Other hormone-related conditions like acromegaly and Cushing syndrome can also cause Type 2 diabetes.
- Pancreatic damage: Physical damage to your pancreas, from a condition, surgery or injury can impact its ability to make insulin, resulting in Type 3c diabetes.
- Genetic mutations: Certain genetic mutations can cause MODY and neonatal diabetes.

Diagnosis:

- Blood tests that measure glucose levels.
- A fasting plasma glucose level of 126 mg/dL (7.0 mmol/L) or higher, a random plasma glucose of 200 mg/dL (11.1 mmol/L) or higher with symptoms, or an HbA1c of 6.5% or higher are diagnostic criteria.

Treatment:

- Healthy Eating: Emphasize a balanced diet rich in fruits, vegetables, whole grains, and lean proteins, while limiting sugary drinks and processed foods.
- Regular Exercise: Aim for at least 30 minutes of moderate-intensity activity most days of the week, such as brisk walking, swimming, or cycling.
- Weight Management: Weight loss, if needed, is crucial for improving blood sugar control and reducing the risk of complications.
- Stress Management: Find healthy ways to manage stress, as stress can affect blood sugar levels.
- Regular Checkups: Routine checkups with a healthcare professional are essential for monitoring overall health and detecting any potential complications early.
- Vaccinations: Staying up-to-date on vaccinations is important for people with diabetes, as they may be more susceptible to certain infections.
- Foot Care: Proper foot care is crucial to prevent complications like foot ulcers and nerve damage.
- Eye Exams: Regular eye exams are important to monitor for diabetic retinopathy.
- Insulin: For type 1 diabetes, insulin is essential. Different types of insulin (rapid-acting, short-acting, intermediate-acting, and long-acting) are available to meet individual needs. Consult your doctor first*
- Oral Medications: Various oral medications are used for type 2 diabetes, including metformin, sulfonylureas, and SGLT-2 inhibitors. Consult your doctor first*
- Other Injectable Medications: Non-insulin injectables like GLP-1 receptor agonists are also used in type 2 diabetes management. Consult your doctor first*

Prevention:

- Weight Management: If overweight or obese, losing even a small amount of weight can significantly reduce the risk of developing type 2 diabetes.
- Physical Activity: Aim for at least 150 minutes of moderate-intensity aerobic exercise per week, such as brisk walking, swimming, or cycling.
- Healthy Diet: Focus on a balanced diet rich in fruits, vegetables, whole grains, and lean protein. Limit intake of saturated and trans fats, sugary drinks, and processed foods.
- Stress Management: Practice stress-reducing techniques like yoga, meditation, or spending time in nature.
- Adequate Sleep: Aim for 7-9 hours of quality sleep per night.
- Avoid Smoking: Smoking increases the risk of developing diabetes and exacerbates its complications.
- Limit Alcohol Consumption: Excessive alcohol intake can negatively impact blood sugar levels.
- Monitor Blood Sugar: Regular monitoring can help identify potential issues early and allow for timely intervention.
- Consider Metformin: For individuals with prediabetes, especially those who are obese, a doctor may prescribe metformin to help manage blood sugar levels and reduce the risk of developing type 2 diabetes.
- Early Intervention: If you have prediabetes, participating in a structured lifestyle change program, like the National Diabetes Prevention Program, can be very beneficial in preventing or delaying the onset of type 2 diabetes.
- Pregnancy: If you are pregnant, maintaining a healthy weight and managing blood sugar levels are crucial for the health of both mother and child. Consult with your healthcare provider for guidance on healthy weight gain during pregnancy and strategies for managing gestational diabetes.

High-Risk Areas:

- Geographically, the highest proportions of undiagnosed diabetes are in Africa, the Western Pacific, and South-East Asia.
- The highest proportions were in Africa (53.6%), the Western Pacific (52.8%) and South-East Asia (51.3%), respectively. These parts of the world include significant rural areas that may result in difficulty in identifying undiagnosed diabetes due to limited resources, poor access to healthcare services and the prioritisation of other health issues. The lowest proportion of undiagnosed diabetes was found in the North America and Caribbean Region (24.2%).

Summary:

- Diabetes mellitus (DM) is a chronic metabolic disorder characterized by elevated blood glucose levels, resulting from either insufficient insulin production or the body's inability to effectively use insulin. This leads to impaired glucose regulation and can cause damage to various organs over time.
- Type 2 diabetes: With this type, your body doesn’t make enough insulin and/or your body’s cells don’t respond normally to the insulin (insulin resistance). This is the most common type of diabetes. It mainly affects adults, but children can have it as well.

- Prediabetes: This type is the stage before Type 2 diabetes. Your blood glucose levels are higher than normal but not high enough to be officially diagnosed with Type 2 diabetes.
- Type 1 diabetes: This type is an autoimmune disease in which your immune system attacks and destroys insulin-producing cells in your pancreas for unknown reasons. Up to 10% of people who have diabetes have Type 1. It's usually diagnosed in children and young adults, but it can develop at any age.
- Gestational diabetes: This type develops in some people during pregnancy. Gestational diabetes usually goes away after pregnancy. However, if you have gestational diabetes, you're at a higher risk of developing Type 2 diabetes later in life.
- Type 3c diabetes: This form of diabetes happens when your pancreas experiences damage, which affects its ability to produce insulin. Pancreatitis, pancreatic cancer, cystic fibrosis and hemochromatosis can all lead to pancreas damage that causes diabetes. Having your pancreas removed also results in Type 3c.
- Latent autoimmune diabetes in adults (LADA): Like Type 1 diabetes, LADA also results from an autoimmune reaction, but it develops much more slowly than Type 1. People diagnosed with LADA are usually over the age of 30.
- Maturity-onset diabetes of the young (MODY): MODY, also called monogenic diabetes, happens due to an inherited genetic mutation that affects how your body makes and uses insulin. There are currently over 10 different types of MODY. It affects up to 5% of people with diabetes and commonly runs in families.
- Neonatal diabetes: This is a rare form of diabetes that occurs within the first six months of life. It's also a form of monogenic diabetes. About 50% of babies with neonatal diabetes have the lifelong form called permanent neonatal diabetes mellitus. For the other half, the condition disappears within a few months from onset, but it can come back later in life. This is called transient neonatal diabetes mellitus.
- Brittle diabetes: Brittle diabetes is a form of Type 1 diabetes that's marked by frequent and severe episodes of high and low blood sugar levels. This instability often leads to hospitalization. In rare cases, a pancreas transplant may be necessary to permanently treat brittle diabetes.

BA - Asthma:

Symptoms:

- Wheezing: A whistling or squeaky sound during exhalation, though it can sometimes be heard during inhalation as well.
- Coughing: Especially at night or early morning, or during exercise.
- Shortness of breath: Feeling like you can't get enough air into your lungs.
- Chest tightness: A feeling of pressure or constriction in the chest.
- **Signs that your asthma is probably worsening include:**
    - Asthma signs and symptoms that are more frequent and bothersome
    - Increasing difficulty breathing, as measured with a device used to check how well your lungs are working (peak flow meter)
    - The need to use a quick-relief inhaler more often
- **Other potential symptoms:**

- Trouble sleeping: Due to coughing, wheezing, or shortness of breath.
- Fatigue: Due to the extra effort required to breathe.
- Increased mucus production.
- Runny or stuffy nose.
- Raised shoulders or slouching.
- Itchy neck or chin.
- Anxiety.

How is it Contracted?:

- Asthma is not contracted from another person. It is a chronic respiratory condition that develops due to a combination of genetic predisposition and environmental factors. While asthma itself is not contagious, certain triggers like respiratory infections can worsen asthma symptoms.
- A family history of asthma, allergies, or other respiratory conditions can increase the likelihood of developing asthma.
- Asthma is not caused by a virus or bacteria, so it's not an illness that can be caught from someone else.

Diagnosis:

- primarily involves assessing symptoms,
- reviewing medical history,
- performing lung function tests like spirometry.
- Allergy testing
- blood tests (looking for eosinophils and IgE levels)
- Medical History and Physical Exam: Doctors will ask about your symptoms (cough, shortness of breath, wheezing, chest tightness), their frequency, triggers, and family history of asthma or allergies. They will also perform a physical exam, listening for wheezing and checking your nose and throat.
- Spirometry: Measures how much air you can breathe in and out, and how quickly.
- Bronchodilator Responsiveness Test: Measures how much your lung function improves after using a bronchodilator (medication to open airways).
- Peak Flow Meter: Measures how fast you can blow air out of your lungs, often used at home to monitor asthma control.
- Challenge Tests: Involve inhaling substances that can trigger airway narrowing to assess sensitivity.
- Allergy Testing: Blood or skin tests can identify allergens (like pollen, dust mites, or pet dander) that may trigger your asthma.
- Blood Tests: Elevated levels of eosinophils and IgE in the blood can indicate asthma, particularly severe asthma.
- Exhaled Nitric Oxide (FeNO) Test: Measures the amount of nitric oxide in your breath, which can be elevated in inflamed airways.
- Imaging Tests: Chest X-rays or CT scans may be used to rule out other conditions that can cause similar symptoms.

Treatment:

- Identifying and Avoiding Triggers: Recognizing and minimizing exposure to asthma triggers like allergens, irritants, and exercise-induced factors is crucial.

- Asthma Action Plan: A personalized plan outlining medication use, symptom management, and emergency procedures is essential for effective asthma control.
- Regular Monitoring: Regular check-ups with a healthcare provider are necessary to assess asthma control and adjust the treatment plan as needed.
- Using a Spacer: Using a spacer with an inhaler can improve medication delivery to the lungs, especially for children and those who have difficulty using inhalers effectively.
- Emergency Treatment: Inhaled bronchodilators, oxygen, and corticosteroids may be used in emergency situations to treat severe asthma attacks.
- Inhaled Corticosteroids: These are the cornerstone of long-term asthma control, reducing inflammation in the airways. Examples include fluticasone, budesonide, and beclomethasone.
- Quick-Relief Inhalers (Bronchodilators): These medications, like albuterol, provide rapid relief during asthma attacks by relaxing the muscles around the airways.
- Leukotriene Modifiers: These oral medications help reduce inflammation and prevent airway narrowing.
- Oral Steroids: Short courses of oral steroids may be prescribed for asthma flare-ups to reduce inflammation.
- Biologic Therapies: These injectable medications are used for severe, persistent asthma that is not controlled by other treatments.
- Bronchial Thermoplasty: This procedure uses heat to thin the airway muscles and is considered for severe asthma cases unresponsive to other treatments.

Prevention:

- While asthma can't always be prevented, especially because the exact cause is unknown, several steps can be taken to reduce the risk of developing it and to manage asthma effectively. These include identifying and avoiding triggers, taking prescribed medications, and maintaining a healthy lifestyle.
- Follow your asthma action plan. With your doctor and health care team, write a detailed plan for taking medications and managing an asthma attack. Then be sure to follow your plan.
- Asthma is an ongoing condition that needs regular monitoring and treatment. Taking control of your treatment can make you feel more in control of your life.
- Get vaccinated for influenza and pneumonia. Staying current with vaccinations can prevent flu and pneumonia from triggering asthma flare-ups.
- Identify and avoid asthma triggers. A number of outdoor allergens and irritants ranging from pollen and mold to cold air and air pollution can trigger asthma attacks. Find out what causes or worsens your asthma and take steps to avoid those triggers.
- Monitor your breathing. You may learn to recognize warning signs of an impending attack, such as slight coughing, wheezing or shortness of breath.
- Identify and treat attacks early. If you act quickly, you're less likely to have a severe attack. You also won't need as much medication to control your symptoms.
- Take your medication as prescribed. Don't change your medications without first talking to your doctor, even if your asthma seems to be improving. It's a good idea to bring your medications with you to each doctor visit. Your doctor can make sure you're using your medications correctly and taking the right dose.

- Pay attention to increasing quick-relief inhaler use. If you find yourself relying on your quick-relief inhaler, such as albuterol, your asthma isn't under control. See your doctor about adjusting your treatment.

High-Risk Areas:

- Areas with high levels of air pollution, such as those near industrial zones or major roadways, pose a higher risk for asthma development and exacerbation. Additionally, workplaces with exposure to certain chemicals, dusts, or fumes can also be high-risk environments for occupational asthma.
- South Africa: Remains one of the countries with the highest prevalence of childhood asthma in Africa, with a high prevalence of severe symptoms in adolescents in Cape Town, according to the Global Asthma Report.
- Haiti, Poland, and Puerto Rico: These countries have some of the highest asthma incidence rates globally.
- Australia, Sweden, UK, Netherlands, and Brazil: These countries have high prevalence rates of clinical asthma.
- Parts of Europe: The burden of asthma, particularly related to smoking and occupational asthmagens, is notable in some European countries.
- South and Southeast Asia: These regions also experience high asthma burden related to smoking and occupational factors.
- Certain areas of Africa: Especially North and South Africa, experience high asthma death rates related to smoking.

Summary:

- Asthma is a chronic lung disease affecting people of all ages. It is caused by inflammation and muscle tightening around the airways, which makes it harder to breathe. Symptoms can include coughing, wheezing, shortness of breath and chest tightness. These symptoms can be mild or severe and can come and go over time.
- For some people, asthma is a minor nuisance. For others, it can be a major problem that interferes with daily activities and may lead to a life-threatening asthma attack.
- Asthma can't be cured, but its symptoms can be controlled. Because asthma often changes over time, it's important that you work with your doctor to track your signs and symptoms and adjust your treatment as needed.

Malar - Malaria:

Symptoms:

- Early Symptoms:
    - Fever: Often a hallmark symptom, can be sudden and severe.
    - Chills: Often accompany fever and can be intense.
    - Headache: Can be a persistent and severe headache.
    - Muscle aches and pains: Contribute to the overall discomfort.
    - Fatigue: Extreme tiredness and weakness.
- Other Symptoms:
    - Nausea and vomiting: Can be accompanied by abdominal pain.
    - Diarrhea: Can also occur.

    - Sweating: Profuse sweating is common, often alternating with chills and fever.
    - Anemia: Low red blood cell count.
    - Jaundice: Yellowing of the skin and eyes.
- Severe Symptoms (potentially life-threatening):
    - Seizures: Especially in young children.
    - Mental confusion: Can lead to coma in severe cases.
    - Difficulty breathing: Can indicate serious complications.
    - Organ failure: Kidney or liver failure can occur.
    - Coma: In severe cases, malaria can lead to coma.

How is it Contracted?:

- Uninfected mosquito. A mosquito becomes infected by feeding on a person who has malaria.
- Transmission of parasite. If this mosquito bites you in the future, it can transmit malaria parasites to you.
- In the liver. Once the parasites enter your body, they travel to your liver where some types can lie dormant for as long as a year.
- Into the bloodstream. When the parasites mature, they leave the liver and infect your red blood cells. This is when people typically develop malaria symptoms.
- On to the next person. If an uninfected mosquito bites you at this point in the cycle, it will become infected with your malaria parasites and can spread them to the other people it bites.
- In rare cases, malaria can pass from a pregnant woman to the fetus during pregnancy or birth.

Diagnosis:

- Malaria diagnosis involves clinical evaluation and laboratory testing. Common methods include blood smear microscopy, rapid diagnostic tests (RDTs), and polymerase chain reaction (PCR) tests to confirm the presence and species of the parasite.
- Blood Smear Microscopy: This involves examining a blood sample under a microscope to identify the malaria parasite. It's considered the gold standard for diagnosis.
- Rapid Diagnostic Tests (RDTs): These tests detect malaria antigens in the blood and provide quick results.
- Polymerase Chain Reaction (PCR): This molecular test is highly sensitive and can detect even low levels of the parasite.
- Other tests: Antigen detection and molecular diagnosis (like PCR) are also used.

Treatment:

- Malaria is treated with prescription drugs to kill the parasite. The types of drugs and the length of treatment will vary, depending on: Which type of malaria parasite you have, The severity of your symptoms, Your age, Whether you're pregnant
- artemisinin-based combination therapy (ACT) is a combination of two or more drugs that work against the malaria parasite in different ways. This is usually the preferred treatment for chloroquine-resistant malaria. Examples include artemether-lumefantrine (Coartem) and artesunate-mefloquine. Seek a medical professional first.
- Chloroquine phosphate. Chloroquine is the preferred treatment for any parasite that is sensitive to the drug. But in many parts of the world, parasites are resistant to

chloroquine, and the drug is no longer an effective treatment. Seek a medical professional first.

Prevention:

- Two vaccines that help protect against malaria are available.
- If you're traveling to an area where malaria is common, talk to a healthcare provider about ways you can prevent being infected.
- Your provider might prescribe antimalarial medications for you to take before, during and after your stay. Medications can greatly reduce the chances of getting malaria. If you get sick with malaria while on an antimalarial drug, it won't work to treat it. Your provider will prescribe a different medication in that case.
- Cover your skin. Wear pants and long-sleeved shirts. Tuck in your shirt, and tuck pant legs into socks.
- Apply insect repellent to skin. Use an insect repellent registered with the Environmental Protection Agency on any exposed skin. These include repellents that contain DEET, picaridin, IR3535, oil of lemon eucalyptus, para-menthane-3,8-diol or 2-undecanone. Do not use a spray directly on your face. Do not use products with oil of lemon eucalyptus or p-Menthane-3,8-diol on children under age 3.
- Apply repellent to clothing. Sprays containing permethrin are safe to apply to clothing.
- Sleep under a net. Bed nets, particularly those treated with insecticides, such as permethrin, help prevent mosquito bites while you are sleeping.

High-Risk Areas:

- In South Africa, malaria risk is concentrated in the low-altitude areas of Limpopo, Mpumalanga, and northeastern KwaZulu-Natal, particularly during the wet summer months (September to May). Malaria transmission is primarily limited to regions below 1,000m above sea level. Kruger National Park is also considered a high-risk area.
- Sub-Saharan Africa: This region accounts for the vast majority of global malaria cases and deaths. Several countries, like Nigeria, the Democratic Republic of Congo, and Tanzania, bear a significant portion of the burden.
- South America: Certain areas within South America, such as parts of Brazil, Colombia, and Venezuela, are considered high-risk zones.
- Southeast Asia: Countries like Cambodia, Myanmar, and Papua New Guinea have significant malaria transmission.

Summary:

- Malaria is a life-threatening disease caused by parasites transmitted through the bites of infected female Anopheles mosquitoes. It's a significant global health issue, particularly in tropical and subtropical regions, with over 249 million cases and 608,000 deaths reported in 2022. Symptoms include fever, chills, and flu-like illness, and if left untreated, it can lead to severe illness and death, especially with Plasmodium falciparum infections. Malaria is both preventable and treatable, with early diagnosis and treatment being crucial.

HAV - Hepatitis A:

Symptoms:

- Fever: A low-grade fever is common.
- Fatigue: Feeling unusually tired and weak.
- Loss of appetite: Decreased desire to eat.
- Nausea and vomiting: Can be a common symptom.
- Abdominal discomfort: Pain or discomfort, especially in the upper right side of the abdomen, where the liver is located.
- Jaundice: Yellowing of the skin and whites of the eyes, caused by a buildup of bilirubin.
- Dark urine and/or pale stools: Changes in urine and stool colour can indicate liver issues.
- Itchy skin: Can be a symptom of jaundice.
- Diarrhea: Some individuals may experience diarrhea.
- Joint pain: Can be experienced by some.

How is it Contracted?:

- Hepatitis A is primarily contracted through the fecal-oral route, meaning it spreads when a person ingests the virus from contaminated objects, food, or water. This can happen through close contact with an infected person, especially if they don't wash their hands properly after using the restroom, or through consuming contaminated food or water.
- Contaminated food and water: This is a common way to get hepatitis A. It can occur from eating food that has been handled by an infected person who didn't wash their hands, or from consuming food or water contaminated with fecal matter.
- Close contact with an infected person, including sexual contact (especially if it involves anal-oral contact), can also transmit the virus.
- Sharing needles with someone who has hepatitis A can also lead to infection, as it involves direct blood-to-blood contact.
- In crowded and unsanitary environments, hepatitis A can spread rapidly through contaminated food and water sources.
- Individuals traveling to or living in areas with poor sanitation are at higher risk of contracting hepatitis A

Diagnosis:

- physical signs of liver disease, like Jaundice, enlarged liver, Enlarged spleen.
- Serological Testing: The most common method involves testing for IgM anti-HAV antibodies, which appear shortly before or at the onset of symptoms and indicate a current infection.
- Total anti-HAV and IgG anti-HAV tests: These can indicate past infection or immunity.
- Liver function tests: ALT and AST blood tests can help assess liver damage.
- PCR Testing: If needed, PCR can detect the virus's RNA, offering early diagnosis and monitoring of the infection.

Treatment:

- There's no specific antiviral treatment for Hepatitis A. Treatment focuses on supportive care to manage symptoms and allow the body to fight off the virus.
- Rest and Hydration: Adequate rest is crucial, as fatigue is a common symptom. Staying hydrated by drinking plenty of fluids is also important, especially if experiencing vomiting or diarrhea.
- Nutritional Support: A balanced diet with healthy foods and drinks is recommended. In some cases, small, frequent meals may be easier to tolerate if nausea is present.
- Avoid Liver Stressors: Avoid alcohol and any medications that can put extra strain on the liver, such as acetaminophen (paracetamol), unless specifically recommended by a doctor.
- Symptom Management: Over-the-counter pain relievers like ibuprofen or acetaminophen can help manage fever and discomfort, but it's important to consult with a healthcare provider about appropriate dosages.
- Close Monitoring: Regular check-ups with a healthcare provider are important to monitor recovery and address any potential complications.

Prevention:

- The hepatitis A vaccine can prevent infection with the virus. The vaccine is typically given in two shots. The first shot is followed by a booster shot six months later. The hepatitis A vaccine can be given in a combination that includes the hepatitis B vaccine. This vaccine combination is given in three shots over six months.
- Practice Good Hygiene.
- Wash all fresh fruits and vegetables in bottled water and peel them yourself. Avoid pre-cut fruit and vegetables.
- Don't eat raw or undercooked meat and fish.
- Drink bottled water and use it when brushing your teeth.
- Avoid all beverages of unknown purity. The same goes for ice.
- If bottled water isn't available, boil tap water before drinking it or using it to make ice.
- The Centers for Disease Control and Prevention recommends the hepatitis A vaccine for the following people:
    - All children at age 1 year, or older children who didn't receive the childhood vaccine
    - Anyone age 1 year or older who is homeless
    - Infants ages 6 to 11 months traveling to parts of the world where hepatitis A is common
    - Family and caregivers of adoptees from countries where hepatitis A is common
    - People in direct contact with others who have hepatitis A
    - Laboratory workers who may come into contact with hepatitis A
    - Men who have sex with men
    - People who work or travel in parts of the world where hepatitis A is common
    - People who use any type of recreational drugs, not just injected ones
    - People with chronic liver disease, including hepatitis B or hepatitis C
    - Anyone wishing to obtain protection (immunity).

High-Risk Areas:

- Caribbean: Many islands in the Caribbean are popular tourist destinations but also have higher rates of Hepatitis A.
- South Asia: Countries in South Asia, including India, Pakistan, and Bangladesh, often have lower sanitation standards and therefore pose a higher risk.
- Sub-Saharan Africa: This region has a high prevalence of Hepatitis A due to limited access to clean water and sanitation.
- Central Asia: Similar to Sub-Saharan Africa, countries in Central Asia have challenges with sanitation, increasing the risk.
- Latin America: Many countries in Latin America, especially those with less developed infrastructure, have elevated Hepatitis A risk.
- North Africa and the Middle East: Some countries in these regions also experience higher rates of infection due to sanitation issues.
- Oceania: This region includes many islands with varying degrees of sanitation, impacting Hepatitis A risk.
- Europe: While Hepatitis A is generally less common in Western Europe, Eastern European countries like Hungary, Croatia, Romania, and Bulgaria have higher notification rates.

Summary:

- Hepatitis A is a highly contagious liver infection caused by the hepatitis A virus (HAV). It's typically spread through contaminated food or water or by close contact with an infected person. While most cases are mild and resolve on their own, causing no long-term liver damage, some can be severe. A vaccine is available to prevent infection

HBV – Hepatitis B:

Symptoms:

- Symptoms of acute hepatitis B range from mild to serious. The symptoms usually start about 1 to 4 months after you've been infected with HBV. But you could notice them as early as two weeks after you're infected. Some people with acute or chronic hepatitis B may not have any symptoms, especially young children.
- Pain in the stomach area, also called the abdomen.
- Dark urine.
- Fever.
- Nausea and vomiting
- rashes
- Muscle and Joint pain.
- Loss of appetite.
- Upset stomach and vomiting.
- Weakness and extreme tiredness.
- Jaundice, which is a yellowing of the whites of the eyes and the skin. Depending on skin colour, this change may be harder or easier to see.

How is it contracted?:

- sharing needles and other injecting drug equipment
- sharing razors, toothbrushes or nail clippers
- sexual contact.
- tattooing with unsterilised needles and equipment
- close family contact with someone who has hepatitis B
- being born to a mother with hepatitis B.
- accidental exposure, such as a needlestick injury or being splashed with infected blood or body fluid
- blood transfusion, this is now very rare as blood in Australia is screened for hepatitis B
- You cannot catch hepatitis B by being coughed or sneezed on by infected people or by having contaminated food and drink. You cannot catch the virus from saliva, breast milk or tears.

Diagnosis:

- Hepatitis B is diagnosed through blood tests that detect the presence of the hepatitis B virus or antibodies to it and can also help determine if the infection is acute or chronic. Further assessment with imaging like liver ultrasound or biopsy may be used to evaluate liver damage.
- Hepatitis B surface antigen (HBsAg): Detects active hepatitis B virus infection.
- Hepatitis B surface antibody (anti-HBs or HBsAb): Indicates immunity, either from vaccination or past infection.
- Hepatitis B core antibody (anti-HBc or HBcAb): Indicates past or present infection.
- Hepatitis B e antigen (HBeAg) and antibody (anti-HBe): Provide information about the level of virus in the blood and infectivity.
- Hepatitis B virus DNA (HBV DNA): Measures the amount of virus in the blood, particularly useful in chronic infections.
- Liver ultrasound: Uses sound waves to create images of the liver and assess for damage or scarring (fibrosis).
- Liver biopsy: Involves taking a small sample of liver tissue for microscopic examination to assess the degree of inflammation and damage.
- Acute infection: Characterized by the presence of HBsAg and IgM antibody to hepatitis B core antigen (IgM anti-HBc). The infection may resolve on its own, but in some cases, it can become chronic.
- Chronic infection: Characterized by the persistent presence of HBsAg for more than 6 months. Chronic hepatitis B can lead to serious liver problems like cirrhosis and liver cancer.
- Immunity: Indicates protection from future infection, either due to vaccination or successful recovery from a past infection.

Treatment:

- Treatment for hepatitis B depends on whether the infection is acute or chronic. Acute hepatitis B, which is usually self-limiting, often does not require specific treatment, while chronic hepatitis B can be managed with antiviral medications. Liver transplant may be an option in cases of severe liver damage.
- Acute Hepatitis B:

    - Most adults with acute hepatitis B recover fully without specific treatment.
    - Treatment focuses on supportive care, such as rest, adequate nutrition, and hydration.
    - There are no medications for acute hepatitis B.
    - Monitoring of liver function is important.
- Chronic Hepatitis B:
    - Antiviral medications are available to treat chronic hepatitis B.
    - These medications can help reduce the risk of liver damage and complications.
    - Commonly used antiviral medications include tenofovir and entecavir.
    - Interferon injections may also be used, but they come with a higher risk of side effects.
    - Some individuals with chronic hepatitis B may need lifelong treatment.
    - Regular monitoring for liver damage and potential complications is crucial.
    - Liver transplant may be an option in cases of severe liver damage.
    - In some cases, chronic hepatitis B can be managed with lifestyle changes, such as avoiding alcohol and maintaining a healthy diet.

Prevention:

- The hepatitis B vaccine is the main way to prevent infection with HBV. The vaccine is given as two shots one month apart, or three or four shots over six months. How many shots you get depends on the type of hepatitis B vaccine that you're given.
- Know the HBV status of any sexual partner. Don't have sex without a condom unless you know that your partner doesn't have hepatitis B or another sexually transmitted infection.
- Use a new latex or polyurethane condom every time you have sex if you don't know the health status of your partner. Condoms can lower your risk of catching HBV, but they don't get rid of the risk completely.
- Don't use street drugs. If you use drugs, get help to stop. If you can't stop, use a sterile needle each time you inject drugs. Never share needles.
- Be cautious about body piercing and tattooing. If you want to get a piercing or tattoo, look for a reputable shop. Ask about how the equipment is cleaned. Make sure the employees use sterile needles. If you can't get answers, look for another shop.
- Ask about the hepatitis B vaccine before you travel. If you're traveling to a region where hepatitis B is common, ask your healthcare professional about the hepatitis B vaccine in advance. It's usually given in a series of three shots over a six-month period.

High-Risk Areas:

- Hepatitis B is a global health concern, with the highest prevalence in the Western Pacific and African regions. Popular travel destinations like the Caribbean, Far East, Middle East, South America, Eastern Europe, and Central Asia are also considered high-risk areas.

Summary:

- Hepatitis B is a viral infection that primarily affects the liver, causing inflammation. It can be either a short-term (acute) or long-term (chronic) illness, with chronic hepatitis B significantly increasing the risk of severe liver damage, including cirrhosis and liver cancer. Transmission occurs through contact with infected blood or bodily fluids, such

as semen or vaginal fluids. While many adults with acute hepatitis B recover without long-term issues, chronic infection can be serious and potentially life-threatening. Fortunately, hepatitis B is preventable through vaccination, which is highly effective and recommended for nearly everyone.

- Cause: Hepatitis B virus (HBV).
- Transmission: Contact with infected blood, semen, vaginal fluids, and from mother to child during birth.
- Acute vs. Chronic: Acute hepatitis B is a short-term illness, while chronic hepatitis B can persist for more than six months.
- Symptoms: Many people with acute hepatitis B have no symptoms, while others may experience fever, fatigue, loss of appetite, nausea, vomiting, jaundice, and abdominal pain.
- Risks of Chronic Infection: Liver damage, cirrhosis, and liver cancer.
- Prevention: Hepatitis B vaccination is highly effective and recommended for most people.
- Treatment: While there is no cure for chronic hepatitis B, antiviral medications can help manage the virus and prevent liver damage.

CVA - Stroke:

Symptoms:

- Sudden Weakness or Numbness: This often affects the face, arm, or leg, typically on one side of the body.
- Speech Problems: Difficulty speaking, slurred speech, or trouble understanding others.
- Vision Problems: Sudden dimness or loss of vision in one or both eyes, or double vision.
- Dizziness and Balance Issues: Sudden loss of balance or coordination or feeling unsteady.
- Severe Headache: A sudden, severe headache with no known cause can also be a sign.
- Confusion or agitation
- Coma
- Memory loss (amnesia)
- Mood swings or sudden personality changes
- Nausea and vomiting
- Neck stiffness
- Passing out or fainting
- Seizures

How is it Contracted?:

- A stroke is not "contracted" like an infectious disease. It occurs when blood flow to the brain is interrupted, either by a blockage (ischemic stroke) or a ruptured blood vessel (haemorrhagic stroke). This interruption deprives brain cells of oxygen and nutrients, causing them to die.
- Are older than 65
- Smoke or use other forms of tobacco or nicotine (like vaping)

- Use of recreational or nonprescription drugs
- Ischemic Stroke: This is the most common type and is caused by a blockage in a blood vessel in the brain. This blockage can be due to:
    - Blood clots: Clots can form in the brain's blood vessels or travel from other parts of the body (like the heart) to the brain.
    - Plaque buildup: Fatty deposits (plaque) can narrow arteries, restricting blood flow.
- Haemorrhagic Stroke: This type occurs when a blood vessel in the brain ruptures and bleeds, damaging surrounding tissue. Common causes include:
    - Brain aneurysms: Weakened blood vessel walls can bulge and rupture.
    - High blood pressure: Sustained high blood pressure can weaken blood vessels and increase the risk of rupture.

Diagnosis:

- Stroke diagnosis typically involves a combination of neurological exams, imaging tests like CT or MRI scans, and blood tests to assess the extent of brain damage and determine the cause of the stroke. Emergency room staff will likely perform these tests to quickly confirm the stroke and begin treatment.
- Initial Assessment: Healthcare professionals will first evaluate the patient's symptoms and medical history. A physical and neurological exam will assess the patient's motor skills, sensation, vision, speech, and other functions controlled by the brain.
- A CT scan is often one of the first tests used in the emergency room. It can quickly identify bleeding in the brain (haemorrhagic stroke) or damage to brain cells (ischemic stroke).
- An MRI provides more detailed images of the brain and is often used to diagnose small or deep-brain injuries and to assess the extent of damage from the stroke.
- Blood tests can help determine the cause of the stroke and assess the patient's overall health. They can check for blood clotting issues, blood sugar levels, and other factors that may be related to the stroke.
- Electrocardiogram (ECG or EKG): This test can help determine if a heart condition caused the stroke.
- Carotid Ultrasound: This test examines the carotid arteries in the neck for blockages or narrowing that can restrict blood flow to the brain.
- Cerebral Angiography: This procedure uses X-rays, CT scans, or MRIs to visualize blood vessels in the brain and identify blockages or aneurysms.
- Echocardiogram: This test can produce images of the heart and check for any problems that could be related to the stroke.

Treatment:

- Stroke treatment focuses on restoring blood flow to the brain, managing symptoms, and preventing future strokes. Treatment options depend on the type of stroke (ischemic or haemorrhagic) and may include medication, surgery, and rehabilitation.
- 1. Ischemic Stroke Treatment:
    - Thrombolytics: Medications like tPA (tissue plasminogen activator) are used to dissolve blood clots that cause ischemic strokes, but they must be administered within a limited time window (3-4.5 hours after symptom onset).

    - Antithrombotic: These medications, including antiplatelet drugs (like aspirin) and anticoagulants (blood thinners), help prevent new clots from forming and prevent existing clots from growing larger.
    - Mechanical Thrombectomy: In some cases, a catheter-based procedure (mechanical thrombectomy) can be used to physically remove large clots from the brain's arteries.
    - Carotid Angioplasty and Stenting: This procedure can be used to open blocked carotid arteries (major blood vessels in the neck supplying the brain).
- 2. Haemorrhagic Stroke Treatment:
    - Medications: Medications may be used to control blood pressure, reduce intracranial pressure, and stop the bleeding.
    - Surgery: Surgery may be necessary to clip or coil aneurysms, drain blood, or relieve pressure on the brain.
- 3. Supportive Treatments:
    - Rehabilitation: Physical therapy, occupational therapy, and speech therapy are crucial for regaining lost function and adapting to any disabilities resulting from the stroke.
    - Nutritional Support: Feeding tubes (nasogastric or PEG tubes) may be necessary if swallowing is impaired.
    - Oxygen and Fluid Management: Oxygen may be needed if blood oxygen levels are low, and intravenous fluids may be administered to prevent dehydration.

Prevention:

- Control high blood pressure, known as hypertension. This is one of the most important things you can do to reduce your stroke risk. If you've had a stroke, lowering your blood pressure can help prevent a TIA or stroke in the future. Healthy lifestyle changes and medicines often are used to treat high blood pressure.
- Lower the amount of cholesterol and saturated fat in your diet. Eating less cholesterol and fat, especially saturated fats and trans fats, may reduce buildup in the arteries. If you can't control your cholesterol through dietary changes alone, you may need a cholesterol-lowering medicine.
- Quit tobacco use. Smoking raises the risk of stroke for smokers and nonsmokers exposed to second-hand smoke. Quitting lowers your risk of stroke.
- Manage diabetes. Diet, exercise and losing weight can help you keep your blood sugar in a healthy range. If lifestyle factors aren't enough to control blood sugar, you may be prescribed diabetes medicine.
- Maintain a healthy weight. Being overweight contributes to other stroke risk factors, such as high blood pressure, cardiovascular disease and diabetes.
- Eat a diet rich in fruits and vegetables. Eating five or more servings of fruits or vegetables every day may reduce the risk of stroke. The Mediterranean diet, which emphasizes olive oil, fruit, nuts, vegetables and whole grains, may be helpful.
- Exercise regularly. Aerobic exercise reduces the risk of stroke in many ways. Exercise can lower blood pressure, increase the levels of good cholesterol, and improve the overall health of the blood vessels and heart. It also helps you lose weight, control diabetes and reduce stress. Gradually work up to at least 30 minutes of moderate physical activity on most or all days of the week

- Drink alcohol in moderation, if at all. Drinking large amounts of alcohol increases the risk of high blood pressure, ischemic strokes and haemorrhagic strokes. Alcohol also may interact with other medicines you're taking. However, drinking small to moderate amounts of alcohol may help prevent ischemic stroke and decrease the blood's clotting tendency. A small to moderate amount is about one drink a day. Talk to your healthcare professional about what's appropriate for you.
- Treat obstructive sleep apnea (OSA). OSA is a sleep disorder that causes you to stop breathing for short periods several times during sleep. Your healthcare professional may recommend a sleep study if you have symptoms of OSA. Treatment includes a device that delivers positive airway pressure through a mask to keep the airway open while you sleep.
- Don't use illicit drugs. Certain illicit drugs such as cocaine and methamphetamine are established risk factors for a TIA or a stroke.
- Anti-platelet drugs. Platelets are cells in the blood that form clots. Anti-platelet medicines make these cells less sticky and less likely to clot. The most used anti-platelet medicine is aspirin. Your healthcare professional can recommend the right dose of aspirin for you.
- If you've had a TIA or minor stroke, you may take both an aspirin and an anti-platelet medicine such as clopidogrel (Plavix). These medicines may be prescribed for a period to reduce the risk of another stroke. If you can't take aspirin, you may be prescribed clopidogrel alone. Ticagrelor (Brilinta) is another anti-platelet medicine that can be used for stroke prevention.
- Blooding-thinning medicines, known as anticoagulants. These medicines reduce blood clotting. Heparin is a fast-acting anticoagulant that may be used short-term in the hospital.
- Slower acting warfarin (Jantoven) may be used over a longer term. Warfarin is a powerful blood-thinning medicine, so you need to take it exactly as directed and watch for side effects. You also need regular blood tests to monitor warfarin's effects.

High-Risk Areas:

- High-risk stroke areas are primarily found in East Asia, Central and Eastern Europe, and parts of Oceania. Within these regions, countries like China, Latvia, Romania, Montenegro, and Bosnia and Herzegovina have some of the highest estimated lifetime stroke risks. Globally, there's a nearly five-fold difference in lifetime stroke risk, with East Asia and Central and Eastern Europe showing the highest risk and sub-Saharan Africa generally showing the lowest.
- East Asia: China has a particularly high estimated lifetime stroke risk.
- Central and Eastern Europe: Countries like Latvia, Romania, Montenegro, and Bosnia and Herzegovina are at high risk.
- Oceania: Some parts of Oceania also experience high stroke burden.
- Sub-Saharan Africa: This region generally has the lowest lifetime stroke risk.
- Other regions: The study also found high risks in Russia and other countries in Eastern Europe.

Summary:

- A stroke occurs when blood flow to the brain is interrupted, either by a blockage or bleeding in the brain. This interruption deprives brain cells of oxygen and nutrients, causing them to die within minutes. Strokes are medical emergencies requiring immediate attention, as they can lead to permanent brain damage, disability, or death.
- Ischemic Stroke: This is the most common type, where a blood clot blocks an artery, preventing blood flow to the brain.
- Haemorrhagic Stroke: This type occurs when a blood vessel in the brain ruptures and bleeds, increasing pressure on brain tissue.
- Symptoms can vary depending on the area of the brain affected and the extent of the damage.
- Sudden numbness or weakness of the face, arm, or leg, especially on one side of the body.
- Sudden confusion, difficulty speaking or understanding speech
- Sudden vision problems.
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden severe headache with no known cause.

COPD - Chronic Obstructive Pulmonary Disease:

Symptoms:

- Trouble catching your breath, especially during physical activities.
- Wheezing or whistling sounds when breathing.
- Ongoing cough that may bring up a lot of mucus. The mucus may be clear, white, yellow or greenish.
- Chest tightness or heaviness.
- Lack of energy or feeling very tired.
- Frequent lung infections.
- Losing weight without meaning to. This may happen as the condition worsens.
- Swelling in ankles, feet or legs.
- People with COPD also are likely to have times when their symptoms become worse than the usual day-to-day variation. This time of worsening symptoms is called an exacerbation. Exacerbations can last for several days to weeks. They can be caused by triggers such as smells, cold air, air pollution, colds or infections. Symptoms may include:
    - Working harder than usual to breathe or having trouble breathing.
    - Chest tightness.
    - Coughing more often.
    - More mucus or changes in mucus colour or thickness.
    - Fever.

How is it Contracted?:

- Chronic Obstructive Pulmonary Disease (COPD) is not contracted from a virus or bacteria; it develops over time due to long-term exposure to irritants that damage the lungs and airways. The primary cause is smoking, with air pollution, occupational exposures, and genetic factors like alpha-1 antitrypsin deficiency also playing significant roles.
- Alpha-1 antitrypsin deficiency ("alpha-1"), a genetic disorder that can lead to lung damage.
- Second-hand smoke.
- Air pollution.
- Exposure to dust and fumes from your job or hobbies.

Diagnosis:

- diagnosis primarily relies on spirometry, a breathing test that measures airflow, to confirm the presence of airflow obstruction. This is typically done after a doctor assesses symptoms and risk factors, such as smoking history. Other tests, like chest X-rays, CT scans, and blood tests,
- Medical History and Physical Exam: A doctor will inquire about your symptoms, smoking history, and any exposure to lung irritants (like air pollution or occupational hazards). They will also perform a physical exam to assess your breathing and overall health.
- Spirometry: This test measures how much air you can exhale and how quickly. A post-bronchodilator FEV1/FVC ratio (forced expiratory volume in one second divided by forced vital capacity) of less than 0.7 confirms the diagnosis of COPD.
- Imaging Tests: Chest X-rays and CT scans can visualize the lungs and identify any structural changes, like emphysema, that may be present.
- Other Tests: Blood tests can help rule out other conditions that may mimic COPD symptoms, such as anemia or alpha-1 antitrypsin deficiency. Exercise testing and electrocardiograms (ECGs) may be used to assess the impact of COPD on your overall health and rule out heart problems.

Treatment:

- There's no cure for COPD. Treatment focuses on improving your symptoms and reducing and treating exacerbations.
- Smoking cessation programs. If you smoke, quitting can slow down the progression of COPD.
- Inhaled medications. Bronchodilators and steroids can reduce inflammation and open your airways. These might come in an inhaler or as a liquid you put in a nebulizer.
- Oxygen therapy. You may need supplemental oxygen to improve your oxygen levels.
- Pulmonary rehabilitation. This is an exercise and education program that can strengthen your lungs and help you manage COPD.
- Corticosteroids. You might need a course of steroids to reduce inflammation during an exacerbation.
- Positive airway pressure. Your provider might have you use a BiPAP machine to help you breathe, especially during an exacerbation.
- Antibiotics. If you have frequent bacterial infections in your lungs, your provider may prescribe antibiotics to prevent infections and exacerbations.

- Lung volume reduction (LVR). If you have severe COPD and you're a good candidate, your provider may suggest surgery or a valve procedure that reduces the trapped air in your lungs.
- Clinical trials. Clinical trials are tests of new treatments to see if they're safe and effective. Your provider might recommend one if a new treatment could be a good fit.

Prevention:

- Quit Smoking: Smoking is the leading cause of COPD, so quitting is the single most effective way to prevent it. Even if you've smoked for a long time, quitting can still make a positive difference.
- Avoid Second-hand Smoke: Exposure to second-hand smoke can also damage your lungs and increase your risk of developing COPD.
- Get Help to Quit: Various resources are available to help you quit smoking, including counselling, medications, and support groups.
- Air Pollution: Be aware of air quality in your area and try to limit your exposure, especially during periods of high pollution.
- Workplace Hazards: If your work involves exposure to dust, fumes, or other lung irritants, take precautions to protect your lungs. This may include wearing appropriate respiratory protection.
- Indoor Air Quality: Improve indoor air quality by reducing exposure to mold, radon, and other pollutants.
- Flu and Pneumonia Vaccines: Vaccinations against the flu and pneumococcal pneumonia can help prevent respiratory infections that can worsen COPD.
- COVID-19 Vaccine: Stay up-to-date on COVID-19 vaccinations as recommended by your healthcare provider.
- Asthma: If you have asthma, managing it effectively can help prevent the development of COPD.
- Alpha-1 Antitrypsin Deficiency: If you have this genetic condition, your doctor may recommend specific measures to protect your lungs.

High-Risk Areas:

- High-risk areas for Chronic Obstructive Pulmonary Disease (COPD) include regions with poor air quality, high levels of indoor air pollution, and where smoking prevalence is high.
- Urban centers: Cities with high traffic density and industrial activity often experience higher levels of particulate matter and other pollutants, increasing the risk of COPD.
- Regions with industrial emissions: Areas with factories and other industrial facilities that release pollutants into the air are also at higher risk.
- Dusty environments: Occupational exposure to dust and other airborne irritants in certain workplaces can contribute to COPD development.
- Developing countries with biomass fuel use: In many low- and middle-income countries, traditional cooking and heating methods using wood, coal, or dung result in high levels of indoor air pollution, significantly impacting respiratory health.
- Areas with poor ventilation: Homes with inadequate ventilation exacerbate the effects of indoor air pollution, regardless of the fuel source.
- Sub-Saharan Africa: Countries like Nigeria, South Africa, and the Democratic Republic of Congo experience high COPD-related disability-adjusted life years (DALYs).

- South Asia: Nepal, in particular, has shown high rates of COPD incidence and mortality.
- Other Regions: Papua New Guinea, the Solomon Islands, and some countries in North Africa and the Middle East also show high COPD burden

Summary:

- Chronic Obstructive Pulmonary Disease (COPD) is a progressive lung disease characterized by restricted airflow and breathing difficulties. It encompasses conditions like emphysema and chronic bronchitis, where the airways become narrowed, inflamed, and scarred, or air sacs in the lungs are damaged. COPD primarily results from long-term exposure to irritants like cigarette smoke, but other factors like air pollution and genetic predisposition can also play a role. While COPD is not curable, various treatments can help manage symptoms, reduce exacerbations (flare-ups), and improve quality of life.
- Progressive airflow limitation: The airways narrow, making it difficult to exhale, and lung tissue can be damaged.
- Symptoms: Common symptoms include shortness of breath (especially during physical activity), persistent cough with mucus, wheezing, and frequent chest infections.
- Causes: Smoking is the primary cause, but other irritants like air pollution, occupational exposures, and genetic factors can also contribute.
- Not curable, but treatable: While COPD cannot be cured, treatments like medications, pulmonary rehabilitation, and oxygen therapy can help manage symptoms and improve lung function.
- Exacerbations: COPD can have periods of worsening symptoms called exacerbations, which may require emergency care or hospitalization.
- Impact: COPD can significantly impact a person's ability to perform daily activities, exercise, and participate in social situations.
- Prevention: Quitting smoking and avoiding exposure to irritants are crucial for preventing COPD and slowing its progression.

PNA – Pneumonia:

Symptoms:

- Cough: A persistent cough that may produce phlegm (mucus) is a key symptom. The mucus can be various colours, including green, yellow, or even bloody.
- Fever: High fever is a common sign of pneumonia.
- Chills: Shaking chills often accompany the fever.
- Shortness of breath: Difficulty breathing or feeling breathless, especially during physical activity, is a symptom.
- Chest pain: Pain in the chest, especially when breathing or coughing, can be a sign.
- Fatigue: Feeling unusually tired or weak is common.
- Rapid breathing: Breathing faster than usual.
- Nausea and vomiting: Especially in children.
- Confusion: Particularly in older adults.

- Loss of appetite.
- Thick, blood-tinged or yellowish-greenish sputum: (phlegm).
- Difficulty breathing.

How is it Contracted?:

- Community-acquired pneumonia is the most common type of pneumonia. It occurs outside of hospitals or other health care facilities.
- Droplets: When someone with pneumonia coughs or sneezes, they release tiny droplets containing the infection-causing germs. These droplets can be inhaled by others, leading to infection.
- Bacteria and viruses: Common culprits like Streptococcus pneumoniae (bacteria) and influenza viruses (viruses) can spread this way.
- Direct Contact with Contaminated surfaces: Germs can linger on surfaces like doorknobs, tables, or personal items. Touching these surfaces and then touching your face (especially your eyes, nose, or mouth) can transfer the infection.
- Inhaling foreign substances: Sometimes, pneumonia can develop when substances like food, vomit, or saliva are inhaled into the lungs, carrying bacteria with them. This is more common in people with swallowing difficulties.
- Weakened immune system: Individuals with weakened immune systems, due to illness or other factors, are more susceptible to pneumonia.
- Crowded living conditions: Living near others, like in a nursing home or prison, can increase the risk of transmission.
- Smoking and alcohol abuse: These habits can compromise the body's ability to clear out germs from the lungs, making it easier for pneumonia to develop.

Diagnosis:

- Imaging: Your provider can use chest X-ray or CT scan to take pictures of your lungs to look for signs of infection.
- Blood tests: Your provider can use a blood test to help determine what kind of infection is causing your pneumonia.
- Sputum test: You’re asked to cough and then spit into a container to collect a sample for a lab to examine. The lab will look for signs of an infection and try to determine what’s causing it.
- Pulse oximetry: A sensor measures the amount of oxygen in your blood to give your provider an idea of how well your lungs are working.
- Pleural fluid culture: Your provider uses a thin needle to take a sample of fluid from around your lungs. The sample is sent to a lab to help determine what’s causing the infection.
- Arterial blood gas test: Your provider takes a blood sample from your wrist, arm or groin to measure oxygen levels in your blood to know how well your lungs are working.
- Bronchoscopy: In some cases, your provider may use a thin, lighted tube called a bronchoscope to look at the inside of your lungs. They may also take tissue or fluid samples to be tested in a lab.

Treatment:

- Pneumonia treatment depends on the cause and severity of the infection. Bacterial pneumonia is treated with antibiotics, while viral pneumonia often resolves on its own. Supportive care, such as rest, hydration, and fever management, is also crucial for both types. Severe cases may require hospitalization with intravenous fluids, oxygen therapy, and other breathing treatments.
- Antibiotics: Prescribed for bacterial pneumonia, often leading to improvement within 24-36 hours.
- Antivirals: May be used for severe cases of viral pneumonia, but most cases resolve without medication.
- Antifungals: Used to treat fungal pneumonia.
- Oxygen Therapy: May be necessary to improve oxygen levels in the blood.
- IV Fluids: Used to prevent or treat dehydration, especially in severe cases.
- Corticosteroids or Immunosuppressants: May be prescribed to reduce lung inflammation.
- Supportive Care: Includes rest, increased fluid intake, fever management (acetaminophen or ibuprofen), and cough management (coughing helps clear mucus).

Prevention:

- Get vaccinated. Vaccines are available to prevent some types of pneumonia and the flu. Talk with your doctor about getting these shots. The vaccination guidelines have changed over time so make sure to review your vaccination status with your doctor even if you recall previously receiving a pneumonia vaccine.
- Make sure children get vaccinated. Doctors recommend a different pneumonia vaccine for children younger than age 2 and for children ages 2 to 5 years who are at particular risk of pneumococcal disease. Children who attend a group child care centre should also get the vaccine. Doctors also recommend flu shots for children older than 6 months.
- Practice good hygiene. To protect yourself against respiratory infections that sometimes lead to pneumonia, wash your hands regularly or use an alcohol-based hand sanitizer.
- Don't smoke. Smoking damages your lungs' natural defences against respiratory infections.
- Keep your immune system strong. Get enough sleep, exercise regularly and eat a healthy diet.

High-Risk Areas:

- Geographic Locations: Southern Asia and sub-Saharan Africa experience the highest rates of childhood pneumonia, according to the World Health Organization (WHO).
- Crowded Environments: Living or spending time in places like nursing homes, homeless shelters, military barracks, or prisons can increase exposure.

Summary:

- Pneumonia is an infection that inflames the air sacs in one or both lungs, causing them to fill with fluid or pus. This inflammation is typically caused by bacteria, viruses, or fungi, and it can lead to a range of symptoms including cough, fever, chills, and difficulty

breathing. While most people recover with treatment, pneumonia can be serious, especially for infants, older adults, and those with underlying health conditions.

- Cause: Pneumonia is an infection that can be caused by various microorganisms, including bacteria (like Streptococcus pneumoniae), viruses (like influenza or COVID-19), and fungi.
- Symptoms: Common symptoms include cough with phlegm or pus, fever, chills, shortness of breath, and fatigue. In some cases, confusion, particularly in older adults, can also occur.
- Severity: Pneumonia can range from mild to severe, and it can be life-threatening, especially for vulnerable populations.
- Treatment: Treatment depends on the cause and severity of pneumonia. Antibiotics are used for bacterial pneumonia, while viral pneumonia often resolves on its own or with supportive care. Other treatments may include rest, fluids, and over-the-counter medications for pain and fever.
- Prevention: Vaccinations are available for some bacterial pneumonias (like pneumococcal pneumonia). Maintaining good hygiene and a healthy lifestyle can also help reduce the risk of infection.

CVD - cardiovascular disease:

Symptoms:

- Chest pain or discomfort: This can range from mild pressure or tightness to severe pain, and may radiate to the arm, jaw, or back.
- Shortness of breath: This can occur during activity, at rest, or even when lying flat.
- Pain, numbness, or coldness in the arms or legs: This indicates reduced blood flow to these areas.
- Palpitations: Feeling like your heart is racing, fluttering, or skipping beats.
- Dizziness or light-headedness: This can be a sign of low blood pressure or reduced blood flow to the brain.
- Fatigue: Persistent tiredness or exhaustion, especially with exertion.
- Less Common but Important Symptoms:
    - Nausea or vomiting: Particularly during a heart attack.
    - Sweating: Unexplained sweating, especially with other symptoms.
    - Swelling in the legs, ankles, or feet: This can be a sign of heart failure.
    - Cough: A persistent cough, especially if accompanied by other symptoms.
    - Anxiety or feeling of impending doom: Can be a sign of a heart attack.
- Symptoms in Women:
    - Chest pain: While men often experience sharp, crushing chest pain, women may experience a more diffuse discomfort, or pain in the back, neck, or jaw.
    - Shortness of breath: Can be a more prominent symptom in women than men.
    - Fatigue: Women may experience extreme fatigue, even at rest.
    - Nausea, vomiting, or indigestion: These symptoms can be more common in women during a heart attack.

How is it Contracted? :

- Cardiovascular disease (CVD) is not contracted in the same way as infectious diseases. Instead, it develops over time due to a combination of risk factors, including lifestyle choices and underlying medical conditions. These risk factors contribute to the gradual buildup of plaque in the arteries (atherosclerosis), which can lead to heart attacks, strokes, and other CVD events.
- Unhealthy Diet: Diets high in saturated and trans fats, cholesterol, and sodium can contribute to plaque buildup.
- Physical Inactivity: Lack of exercise increases the risk of obesity, high blood pressure, high cholesterol, and diabetes, all of which are risk factors for CVD.
- Tobacco Use: Smoking damages blood vessels and increases the risk of blood clots.
- Excessive Alcohol Consumption: Can raise blood pressure and triglyceride levels.
- Stress: Chronic stress can contribute to inflammation and increase the risk of CVD.
- High Blood Pressure: Damages blood vessels, making them more susceptible to plaque buildup.
- High Cholesterol: Contributes to the formation of plaque in arteries.
- Diabetes: High blood sugar levels can damage blood vessels and increase the risk of CVD.
- Family History: Having a family history of heart disease can increase your risk.
- Age: The risk of CVD increases with age.
- Obesity: Increases the risk of other CVD risk factors like high blood pressure and diabetes.
- Atherosclerosis: Plaque buildup in the arteries, often due to the factors listed above, gradually narrows the arteries and restricts blood flow.
- Coronary Artery Disease (CAD): When plaque buildup affects the arteries supplying blood to the heart, it can lead to angina (chest pain) or a heart attack.
- Stroke: If a blood clot blocks an artery in the brain, it can cause a stroke.
- Heart Failure: When the heart is weakened and cannot pump blood effectively, it can lead to heart failure.
- Arrhythmias: Irregular heartbeats can also be a form of CVD.

Diagnosis:

- Cardiovascular disease (CVD) diagnosis involves a combination of methods to assess heart and blood vessel health. This includes reviewing medical history, conducting physical exams, and using various diagnostic tests to identify potential problems.
- Blood tests: Assess cholesterol levels, blood sugar, and other substances that indicate cardiovascular health.
- Electrocardiogram (ECG or EKG): Records the heart's electrical activity to detect abnormalities in heart rhythm and potential damage from a heart attack.
- Echocardiogram: Uses ultrasound to visualize the heart's structure and function, including blood flow through the heart and valves.
- Exercise stress test: Evaluates heart function during physical activity to identify problems that may not be apparent at rest.
- Cardiac catheterization and angiogram: Invasive procedures that involve inserting a catheter into a blood vessel and injecting dye to visualize the heart's arteries and identify blockages.

- Cardiac CT scan: Uses X-rays to create detailed images of the heart and blood vessels, allowing for the detection of blockages and other abnormalities.
- Cardiac MRI: Uses magnetic and radio waves to create detailed images of the heart and blood vessels, providing information about tissue damage and blood flow.
- Holter monitoring: A portable device that records the heart's electrical activity over a longer period, usually 24-48 hours, to detect irregular heartbeats.
- Chest X-ray: Helps assess the size and shape of the heart and identify fluid in the lungs, which can be related to heart disease.
- Ankle-brachial index (ABI): Compares blood pressure in the ankles and arms to assess blood flow to the legs and identify peripheral artery disease.
- Medical history: Review of past illnesses, family history of heart disease, and lifestyle factors like smoking and diet.
- Physical examination: Assessment of vital signs, listening to heart sounds, and checking for signs of swelling or other abnormalities.
- Symptoms: Fainting, chest pain or tightness, shortness of breath, and swelling in the legs or feet can be indicators of heart problems.

Treatment:

- Cardiovascular disease (CVD) treatment typically involves a combination of lifestyle changes, medication, and potentially procedures or surgery. The specific approach depends on the type and severity of the CVD, as well as individual patient factors.
- Lifestyle changes: Examples include changing your diet, increasing your aerobic activity and quitting smoking or tobacco products (including vaping).
- Medications: Your healthcare provider may prescribe medications to help manage cardiovascular disease. Medication type will depend on what kind of cardiovascular disease you have.
- Procedures or surgeries: If medications aren’t enough, your healthcare provider may use certain procedures or surgeries to treat your cardiovascular disease. Examples include stents in your heart or leg arteries, minimally invasive heart surgery, open-heart surgery, ablations or cardioversion.
- Cardiac rehabilitation: You may need a monitored exercise program to help your heart get stronger.
- Active surveillance: You may need careful monitoring over time without medications or procedures/surgeries.

Prevention:

- Don't smoke.
- Eat a diet that's low in salt and saturated fat.
- Exercise at least 30 minutes a day on most days of the week.
- Maintain a healthy weight.
- Reduce and manage stress.
- Control high blood pressure, high cholesterol and diabetes.
- Get good sleep. Adults should aim for 7 to 9 hours daily.

High-Risk Areas:

- Cardiovascular disease (CVD) prevalence and mortality vary geographically, with high-risk areas including Central and Eastern Europe, Central Asia, and Sub-Saharan Africa. Within these regions, specific factors like high blood pressure, unhealthy diets, and lack of physical activity contribute to the increased risk.
- Central and Eastern Europe, Central Asia: This region experiences high levels of CVD mortality.
- Sub-Saharan Africa: CVD mortality rates are also elevated in this region, particularly in Central Sub-Saharan Africa.
- South Asia: This region shows a high proportion of countries achieving the maximum score for the World Heart Federation Policy Index, indicating a focus on policy implementation for CVD prevention.
- North Africa and Middle East: While generally lower CVD mortality rates than men, some countries in this region show higher rates in women.

Summary:

- Cardiovascular disease (CVD) encompasses a range of conditions affecting the heart and blood vessels. It's the leading cause of death globally, with heart attacks and strokes being the most common fatal outcomes. CVD includes conditions like coronary heart disease, cerebrovascular disease, and peripheral artery disease. Atherosclerosis, the buildup of plaque in arteries, is a major contributor to many forms of CVD.
- Key aspects of cardiovascular disease:
- CVD refers to disorders of the heart and blood vessels.
- CVD is the number one killer worldwide, responsible for millions of deaths annually.
- Coronary heart disease: Affects the arteries supplying the heart, often due to atherosclerosis.
- Cerebrovascular disease: Impacts blood vessels in the brain, potentially leading to stroke.
- Peripheral artery disease: Affects blood vessels in the limbs, causing pain or other issues.
- Rheumatic heart disease: Damage to the heart valves, often following rheumatic fever.
- Congenital heart disease: Heart defects present at birth.
- Deep vein thrombosis and pulmonary embolism: Blood clots in the veins.
- Atherosclerosis: A common process where plaque (fatty deposits) builds up in artery walls, narrowing them and restricting blood flow.
- Symptoms: Vary depending on the specific condition, but may include chest pain, shortness of breath, dizziness, fatigue, and swelling in the lower body.
- Risk Factors: Include high blood pressure, high cholesterol, smoking, obesity, diabetes, and family history.
- Prevention: Healthy diet, regular exercise, maintaining a healthy weight, not smoking, and managing other conditions like diabetes and high blood pressure can help prevent or manage CVD.
- Diagnosis: Involves medical history, physical examination, blood tests, imaging studies (like ECG, echocardiogram), and other tests.
- Treatment: Varies depending on the specific condition and may include medications, lifestyle changes, and in some cases, procedures or surgery.

Flu – Influenza:

Symptoms:

- Fever and chills: A hallmark of influenza, often accompanied by chills.
- Cough: Usually dry and can become severe.
- Sore throat: A common complaint with the flu.
- Muscle aches and pains: Can be quite intense and widespread throughout the body.
- Headache: A frequent symptom, often severe.
- Fatigue and feeling unwell: A general sense of exhaustion and malaise.
- Runny or stuffy nose: Can be present alongside other symptoms.
- Diarrhea or vomiting: More frequent in children.
- Eye pain, watery eyes, or sensitivity to light: Can also occur.
- Severe symptoms:
    - Difficulty breathing or shortness of breath.
    - Chest pain.
    - Persistent dizziness or confusion.
    - Severe vomiting or diarrhea.
    - Symptoms that don't improve or worsen after 1-2 weeks.
    - Fever with a rash.

How is it Contracted?:

- Influenza, or the flu, is primarily contracted through respiratory droplets expelled when an infected person coughs, sneezes, or talks. These droplets can be inhaled directly or can land on surfaces, and then be transferred to the nose, mouth, or eyes via touch.
- Droplet Transmission: When someone with the flu coughs, sneezes, or talks, they release tiny droplets containing the influenza virus into the air.
- Direct Inhalation: These droplets can be inhaled directly by those nearby, leading to infection.
- Indirect Contact: The virus can also land on surfaces like doorknobs, keyboards, or phones. If someone touches these contaminated surfaces and then touches their face (eyes, nose, or mouth), they can become infected.
- Contagious Period: People with the flu are contagious from about a day before symptoms appear until 5-7 days after symptoms start. Children and those with weakened immune systems may be contagious for longer.

Diagnosis:

- Molecular tests. These tests look for genetic material from the flu virus. Polymerase chain reaction tests, shortened to PCR tests, are molecular tests. You also may hear this type of test called an NAAT test, short for nucleic acid amplification test.

- Antigen tests. These tests look for viral proteins called antigens. Rapid influenza diagnostic tests are one example of antigen tests.

Treatment:

- Rest and fluids: Getting plenty of rest and staying hydrated are crucial for recovery.
- Over-the-counter pain relievers: Acetaminophen (Tylenol) or ibuprofen (Advil, Motrin) can help reduce fever and body aches.
- Humidifier: A cool-mist humidifier can help relieve cough and congestion.
- Avoid aspirin: Do not give aspirin to children or teenagers due to the risk of Reye's syndrome.
- Stay home: Stay home from work or school for at least 24 hours after your fever is gone without fever-reducing medication to prevent spreading the virus.
- High-risk individuals: People with chronic illnesses, pregnant women, young children, and the elderly are at higher risk for complications and should seek medical care if they develop flu symptoms.
- Emergency symptoms: Seek immediate medical attention for emergency symptoms like difficulty breathing, chest pain, confusion, or severe dehydration.
- Worsening symptoms: If your symptoms worsen or don't improve, seek medical care.

Prevention:

- The best way to prevent influenza is to get an annual flu vaccine. Beyond vaccination, practicing good hygiene, such as regular handwashing and covering coughs and sneezes, can significantly reduce the spread of the virus. Avoiding close contact with sick individuals and staying home when feeling unwell are also crucial preventative measures.
- Vaccination: Annual vaccination is the most effective way to prevent influenza and its complications. It's recommended for everyone six months and older.
- Hand Hygiene: Wash hands frequently and thoroughly with soap and water for at least 20 seconds, especially after coughing or sneezing. If soap and water aren't available, use an alcohol-based hand sanitizer with at least 60% alcohol.
- Respiratory Etiquette: Cover your mouth and nose with a tissue or your elbow when coughing or sneezing. Dispose of used tissues properly.
- Avoid Touching Face: Germs can enter your body through your eyes, nose, and mouth. Try to avoid touching your face, especially after touching potentially contaminated surfaces.
- Stay Home When Sick: If you are experiencing flu symptoms, stay home from work or school to prevent further spread of the virus.
- Avoid Crowds: During peak flu season, avoid crowded places where the virus can easily spread.
- Healthy Habits: Maintaining a healthy lifestyle, including getting enough sleep, eating nutritious foods, and managing stress, can help support your immune system.
- Surface Cleaning: Regularly clean and disinfect frequently touched surfaces like doorknobs, light switches, and phones, especially in public areas.

High-Risk Areas:

- Temperate Climates (like South Africa): Influenza is seasonal, with outbreaks concentrated in the winter months.
- Tropical Regions: Influenza can occur throughout the year in tropical areas.
- Areas with High Poultry, Waterfowl, and Dairy Cow Populations: People working in these industries are at increased risk for avian influenza.
- Crowded Environments: Influenza spreads easily in crowded settings, increasing risk for those in these environments.
- Specific Settings: Schools, daycare centres, and long-term care facilities can experience higher rates of influenza transmission due to close proximity and potential for frequent contact.
- Hospitals: Hospitals are high-risk areas due to the presence of vulnerable individuals with weakened immune systems.
- Areas with High Prevalence of Chronic Illnesses: Individuals with chronic illnesses like asthma, diabetes, and heart disease are at higher risk of complications from influenza.
- Migratory Bird Routes: Waterfowl and other migratory birds are natural reservoirs for avian influenza viruses, and areas near migration routes may experience increased risk.

Summary:

- Influenza, commonly known as the flu, is a contagious respiratory illness caused by influenza viruses. It typically causes symptoms like fever, cough, sore throat, runny or stuffy nose, muscle aches, and fatigue. While most people recover within a week, influenza can lead to serious complications, especially in high-risk groups such as young children, the elderly, and those with underlying health conditions. Influenza viruses are constantly changing, and new strains can emerge, sometimes leading to pandemics.
- Causative Agent: Influenza is caused by influenza viruses, primarily types A and B, which circulate seasonally.
- Transmission: The virus spreads through respiratory droplets produced when infected individuals cough or sneeze, and also by touching contaminated surfaces.
- Symptoms: Common symptoms include fever, cough, sore throat, runny nose, muscle aches, fatigue, and sometimes vomiting or diarrhea, particularly in children.
- Severity: While most people recover with supportive care (rest, fluids), influenza can lead to severe illness, including pneumonia, and even death, especially in vulnerable populations.
- Prevention: Vaccination is the most effective way to prevent influenza. Good hygiene practices, such as frequent handwashing, can also help reduce the spread of the virus.
- Pandemics: Influenza viruses can mutate and evolve, sometimes leading to pandemics, as seen with the 1918 Spanish Flu.

RA - Rheumatoid Arthritis:

Symptoms:

- The severity and combination of symptoms can vary from person to person.

- Joint Pain: RA can cause pain in multiple joints, including the hands, wrists, feet, and other joints.
- Joint Stiffness: Stiffness is typically worse in the morning or after inactivity and can last for 30 minutes or longer.
- Joint Swelling: Inflamed joints may appear red, warm, and swollen.
- Fatigue: Many people with RA experience tiredness, lack of energy, and low energy levels.
- Fever: Low-grade fever can be another symptom of RA.
- Loss of Appetite: Reduced appetite and weight loss may also occur.
- Symmetrical Involvement: RA often affects the same joints on both sides of the body (e.g., both hands or both feet).
- Flu-like Symptoms: Some individuals may experience systemic symptoms like fatigue, malaise, and depression.
- Joint Deformities: Over time, RA can lead to joint damage and deformities, particularly in the hands and feet.
- Rheumatoid Nodules: These are firm, non-tender lumps that can develop under the skin, often near pressure points.
- Extra-articular Manifestations: RA can also affect other parts of the body, such as the lungs, heart, skin, nerves, and blood vessels.

How is it Contracted?:

- Rheumatoid arthritis (RA) is not contracted or contagious; it's an autoimmune disease where the body's immune system mistakenly attacks the joints. While the exact cause is unknown, it's believed to be a combination of genetic predisposition and environmental factors that trigger the disease.
- Normally, your immune system protects your body from disease. With RA, something triggers your immune system to attack your own joints. An infection, smoking, or physical or emotional stress may be triggers.
- Biological family history. You're more likely to develop RA if you have a close relative who also has it.
- Sex. Women are three times more likely to develop rheumatoid arthritis than men.
- Smoking. Smoking increases a person's risk of rheumatoid arthritis and makes the disease worse.
- Obesity. Your chances of developing RA are higher if you have obesity.

Diagnosis:

- Medical History and Physical Exam:
- A healthcare provider, often a rheumatologist, will ask about your symptoms (like joint pain, stiffness, swelling, and fatigue), family history of RA, and perform a physical exam to assess joint tenderness, swelling, and range of motion.
- Erythrocyte Sedimentation Rate (ESR) and C-Reactive Protein (CRP): These tests measure inflammation levels in the body.
- Rheumatoid Factor (RF) and Anti-cyclic Citrullinated Peptide (anti-CCP) Antibodies: These are antibodies often found in people with RA.
- Other Tests: Tests like anti-nuclear antibody (ANA) and complete blood count (CBC) may also be used to rule out other conditions.

- X-rays: Can reveal bone damage, but may not be helpful in early stages.
- Ultrasound: Can detect soft tissue swelling and inflammation.
- MRI (Magnetic Resonance Imaging): Offers detailed images of joints and can help diagnose RA in its early stages.
- Joint Aspiration and Biopsy: In some cases, fluid may be extracted from a swollen joint (aspiration) to check for infection or other conditions, or a tissue sample (biopsy) may be taken to examine under a microscope.

Treatment:

- Disease-modifying antirheumatic drugs (DMARDs): These medications slow down the progression of RA and help prevent joint damage. Examples include methotrexate, sulfasalazine, leflunomide, and biologics like etanercept and infliximab.
- Biologic DMARDs: These newer medications target specific parts of the immune system to reduce inflammation.
- Corticosteroids: Medications like prednisone can quickly reduce inflammation and pain but are typically used for short-term relief due to potential side effects.
- Nonsteroidal anti-inflammatory drugs (NSAIDs): NSAIDs like ibuprofen help reduce pain and inflammation, but they don't slow the progression of RA.
- Pain relievers (analgesics): Medications like acetaminophen can help with pain relief but do not address inflammation.
- Janus kinase (JAK) inhibitors: These newer DMARDs work by stopping inflammation from inside the cell.
- Physical and Occupational Therapy:
- Physical therapy: Helps improve joint mobility, strength, and range of motion through exercises and other therapies.
- Occupational therapy: Helps individuals adapt daily activities to minimize stress on joints and maintain independence.
- Regular exercise: Low-impact exercises like walking, swimming, and cycling can help maintain joint flexibility and muscle strength.
- Weight management: Maintaining a healthy weight reduces stress on weight-bearing joints.
- Rest and pacing: Balancing rest and activity is important to avoid overexertion and manage fatigue.
- Assistive devices: Canes, braces, and other devices can help with mobility and reduce strain on affected joints.
- Heat and cold therapy: Heat can relax muscles and improve blood flow, while cold can help reduce inflammation and pain.

Prevention:

- While rheumatoid arthritis (RA) is not entirely preventable, several lifestyle and environmental factors can significantly reduce the risk of developing the disease or help manage its progression.
- Quit Smoking: Smoking is a major modifiable risk factor for RA, particularly for seropositive RA.
- Maintain a Healthy Weight: Obesity is linked to an increased risk of RA, and losing weight can help reduce inflammation and joint stress.

- Exercise Regularly: Physical activity can improve joint flexibility, strengthen muscles, and help manage weight, all of which can benefit RA prevention and management.
- Eat a Balanced Diet: Focus on a diet rich in fruits, vegetables, and omega-3 fatty acids (found in fish like salmon and tuna) while limiting processed foods, red meat, and sugary drinks.
- Manage Stress: Chronic stress can exacerbate inflammation, so finding healthy ways to manage stress, such as through exercise or mindfulness, can be beneficial.
- Good Oral Hygiene: Maintaining good oral hygiene and treating gum disease (periodontitis) may help reduce the risk of RA.
- Consider Vitamin D: Some studies suggest that maintaining adequate vitamin D levels may play a role in RA prevention.
- Reduce Exposure to Environmental Toxins: Minimizing exposure to cigarette smoke, pesticides, and heavy metals can also be beneficial.
- Early diagnosis and treatment of RA can help slow the progression of the disease and prevent further joint damage.
- If you experience any symptoms of RA, such as joint pain, stiffness, swelling, or fatigue, it's important to see a doctor promptly.

High-Risk Areas:

- Global disease but can vary in amount.

Summary:

- Rheumatoid arthritis (RA) is a chronic, systemic autoimmune disease that primarily affects joints, causing inflammation, pain, stiffness, and potential joint damage. It can also impact other body parts like the eyes, heart, lungs, and blood vessels. RA is characterized by the immune system mistakenly attacking the body's own tissues, specifically the lining of the joints.
- RA occurs when the body's immune system attacks its own tissues, particularly the synovium (joint lining).
- The inflammation in RA can be persistent and lead to joint damage over time.
- RA often affects the same joints on both sides of the body (e.g., both knees or both hands).
- Common symptoms include joint pain, stiffness (especially in the morning), swelling, warmth, and tenderness.
- RA can also cause fatigue, fever, loss of appetite, and affect other organs like the heart, lungs, and eyes.
- While there's no cure for RA, early diagnosis and treatment can help manage symptoms, reduce joint damage, and improve quality of life.
- Risk Factors: Women, older adults, and smokers have an increased risk of developing RA.
- Treatment options include medications (disease-modifying antirheumatic drugs - DMARDs, biologics), physical and occupational therapy, and in some cases, surgery.
- Early diagnosis and treatment can help prevent or slow down joint damage and improve long-term outcomes.

CKD - Kidney Disease:

Symptoms:

- Fatigue and weakness: Feeling unusually tired or weak can be an early sign, as the kidneys play a role in energy production.
- Swelling (edema): Kidneys help regulate fluid balance. When they don't work properly, excess fluid can accumulate, causing swelling, especially in the feet, ankles, and around the eyes.
- Changes in urination: This could include increased frequency, especially at night, or decreased urine output, which can be a sign of kidney failure.
- Skin problems: Dry, itchy skin or a change in skin colour can indicate kidney disease, as can a metallic taste in the mouth.
- Shortness of breath: Fluid buildup in the lungs can cause shortness of breath, especially during physical activity.
- Nausea and vomiting: Waste buildup due to impaired kidney function can cause nausea and vomiting, especially later in the disease.
- Loss of appetite and weight loss: Reduced kidney function can also lead to decreased appetite and unintended weight loss.
- Muscle cramps: Imbalances in electrolytes due to kidney dysfunction can cause muscle cramps.
- Difficulty concentrating: Cognitive fatigue, also known as "brain fog", can make it hard to focus or think clearly.
- High blood pressure: Kidney disease can be both a cause and a consequence of high blood pressure.
- Blood in the urine: This is a more serious symptom that should be checked by a doctor.

How is it Contracted?:

- Kidney disease is typically not contracted like an infection. It's usually a result of other health conditions damaging the kidneys over time or from genetic factors. The most common causes are diabetes and high blood pressure. Other factors like heart disease, obesity, and urinary tract issues can also contribute to kidney disease. While kidney disease itself isn't contagious, some risk factors like family history and lifestyle choices can increase the likelihood of developing it.
- High blood sugar levels in diabetes can damage the blood vessels and filtering units (glomeruli) in the kidneys, leading to chronic kidney disease (CKD).
- High Blood Pressure: Elevated blood pressure can strain and damage the blood vessels in the kidneys, hindering their ability to filter waste effectively.
- Heart Disease and Obesity: These conditions can indirectly affect kidney health due to their impact on blood flow and overall bodily function.
- Urinary Tract Issues: Infections or blockages in the urinary tract can lead to kidney damage if left untreated.
- Glomerulonephritis: Inflammation of the glomeruli can impair kidney function.
- Polycystic Kidney Disease: This is a genetic disorder where cysts develop in the kidneys, potentially leading to kidney failure.

- Certain Medications: Long-term use of some medications, like NSAIDs, can be toxic to the kidneys.
- Autoimmune Diseases: Conditions like lupus can cause the body's immune system to attack the kidneys.
- Genetic Predisposition: A family history of kidney disease, particularly conditions like polycystic kidney disease, can increase an individual's risk.
- Kidney disease is not spread from person to person like an infection.
- However, family members may share similar risk factors, such as genetic predispositions or lifestyle habits, which could increase their risk.

Diagnosis:

- Kidney disease is diagnosed through a combination of blood and urine tests, imaging, and sometimes a kidney biopsy. Blood tests assess kidney function by measuring levels of creatinine and urea nitrogen, while urine tests can reveal abnormalities like protein or blood. Imaging tests, such as ultrasounds, help visualize kidney structure and size. A kidney biopsy may be necessary to determine the cause of kidney problems.
- A healthcare provider will start by taking your medical history, asking about your symptoms, medications, and any family history of kidney disease. They will also perform a physical exam.
- Creatinine: Measures the level of creatinine in your blood. High levels indicate that kidneys aren't filtering waste effectively.
- Blood Urea Nitrogen (BUN): Measures urea nitrogen, another waste product, in the blood. Elevated BUN levels can also signal kidney problems.
- Estimated Glomerular Filtration Rate (eGFR): Calculates how well your kidneys filter blood, providing a measure of kidney function.
- Urine tests help identify abnormalities like protein or blood in the urine, which can be indicators of kidney damage.
- Albumin-to-creatinine ratio (UACR): Measures the amount of albumin (a type of protein) in your urine and is a sensitive indicator of early kidney damage.
- Dipstick test: A quick test that can detect large amounts of protein in the urine.
- Imaging tests help visualize the kidneys and surrounding structures to detect abnormalities.
- Ultrasound: Uses sound waves to create images of the kidneys, allowing assessment of their size and structure.
- CT scan and MRI: Can provide more detailed images of the kidneys and surrounding areas.
- Kidney Biopsy: In some cases, a kidney biopsy may be necessary to obtain a tissue sample for microscopic examination. This helps determine the specific cause of kidney disease.

Treatment:

- Diet: A low-salt, low-protein diet can help manage blood pressure and reduce strain on the kidneys.
- Exercise: Regular physical activity, like aiming for at least 150 minutes per week, is recommended.
- Weight Management: Losing weight if overweight or obese can significantly improve kidney health.

- Smoking Cessation: Quitting smoking is crucial for overall health and can slow kidney disease progression.
- Alcohol Consumption: Moderating alcohol intake is also advised.
- Blood Pressure Control: ACE inhibitors or ARBs are often prescribed to manage high blood pressure, a common cause of kidney disease.
- Diuretics: These medications help the body remove excess fluid, reducing swelling and blood pressure.
- Statins: Used to lower cholesterol, which can be a risk factor for kidney disease.
- Erythropoiesis-stimulating agents: These medications help the body produce red blood cells, addressing anemia, a common complication of kidney disease.
- Vitamin D and Calcitriol: These helps prevent bone loss, a potential consequence of kidney disease.
- Phosphate Binders: These medications help regulate phosphorus levels in the blood.

Prevention:

- Diabetes: High blood sugar can damage blood vessels in the kidneys. Work with your doctor to keep your blood sugar levels within the target range.
- High Blood Pressure: Elevated blood pressure can strain the kidneys. Manage your blood pressure through diet, exercise, and medication as prescribed by your doctor.
- Healthy Diet: Focus on a balanced diet rich in fruits, vegetables, whole grains, and lean protein. Limit sodium, added sugars, and processed foods.
- Regular Exercise: Aim for at least 30 minutes of moderate intensity exercise most days of the week.
- Maintain a Healthy Weight: Obesity can contribute to diabetes and high blood pressure, increasing your risk of kidney disease.
- Limit Alcohol Consumption: Excessive alcohol intake can raise blood pressure and contribute to kidney damage.
- Quit Smoking: Smoking reduces blood flow to the kidneys and can worsen existing kidney problems.
- Adequate Sleep: Ensure you are getting enough sleep to help regulate kidney function.
- NSAIDs (like ibuprofen) can harm the kidneys if taken in excess or for extended periods. Always follow dosage instructions and consult your doctor if you have concerns.
- Early Detection: Regular checkups and kidney function tests can help detect kidney disease early, allowing for timely intervention and management.
- High-Risk Individuals: People with diabetes, high blood pressure, or a family history of kidney disease should have more frequent checkups.

High-Risk Areas:

- Certain racial and ethnic groups, including those of African, Hispanic or Latino, Asian, and Native American descent, are at higher risk for developing chronic kidney disease. Additionally, individuals with diabetes, high blood pressure, heart disease, and a family history of kidney disease are also at increased risk. Lifestyle factors like smoking and obesity also play a significant role.

Summary:

- Kidney disease, also known as renal disease, refers to a range of conditions where the kidneys are damaged and can't filter blood effectively. This can lead to a buildup of waste and excess fluid in the body, potentially causing serious health problems. Chronic kidney disease (CKD) is a long-term condition where kidney damage progresses over time. High blood pressure and diabetes are major risk factors for CKD. While there's no cure for CKD, treatments like dialysis or kidney transplant are available for advanced stages.
- Function of the kidneys: Kidneys filter waste and excess fluid from the blood, regulate electrolyte balance, and produce hormones that control blood pressure and red blood cell production.
- Types of kidney disease: Besides CKD, there's also acute kidney injury, kidney cysts, kidney stones, and kidney infections.
- Chronic Kidney Disease (CKD): CKD is characterized by kidney damage or reduced kidney function (eGFR below 60 mL/min/1.73 m^2) for at least 3 months.
- Stages of CKD: CKD is often categorized into five stages, with the severity increasing with each stage.
- Symptoms: Early-stage CKD often has no noticeable symptoms. Later-stage symptoms can include fatigue, swelling, changes in urination, nausea, and shortness of breath.
- Causes of CKD: High blood pressure and diabetes are major contributors. Other factors include heart disease, a family history of kidney disease, and certain medications.
- Treatment: Treatment focuses on managing underlying conditions like diabetes and high blood pressure, slowing disease progression, and managing complications. Dialysis and kidney transplant are options for end-stage kidney disease.
- Prevention: Managing diabetes and high blood pressure, maintaining a healthy weight, and avoiding smoking can help prevent or delay the onset and progression of kidney disease.
- Early detection is crucial: Regular checkups and blood/urine tests can help detect kidney disease early, allowing for timely intervention and better outcomes.

COVID-19 – Coronavirus Disease:

- fever
- chills
- sore throat
- muscle aches and heavy arms or legs
- severe fatigue or tiredness
- runny or blocked nose, or sneezing
- headache
- sore eyes
- dizziness
- new and persistent cough
- tight chest or chest pain
- shortness of breath
- hoarse voice
- numbness or tingling
- appetite loss, nausea, vomiting, abdominal pain or diarrhoea

- loss or change of sense of taste or smell
- difficulty sleeping
- People with the following symptoms should seek immediate medical attention:
    - difficulty breathing, especially at rest, or unable to speak in sentences
    - confusion
    - drowsiness or loss of consciousness
    - persistent pain or pressure in the chest
    - skin being cold or clammy, or turning pale or a bluish colour
    - loss of speech or movement

How is it Contracted? :

- COVID-19 is caused by infection with the severe acute respiratory syndrome coronavirus 2, also called SARS-CoV-2.
- The coronavirus spreads mainly from person to person, even from someone who is infected but has no symptoms. When people with COVID-19 cough, sneeze, breathe, sing or talk, their breath may be infected with the COVID-19 virus.
- The coronavirus carried by a person's breath can land directly on the face of a nearby person, after a sneeze or cough, for example. The droplets or particles the infected person breathes out could possibly be breathed in by other people if they are close together or in areas with low air flow. And a person may touch a surface that has respiratory droplets and then touch their face with hands that have the coronavirus on them.
- It's possible to get COVID-19 more than once.
- Over time, the body's defence against the COVID-19 virus can fade. A person may be exposed to so much of the virus that it breaks through their immune defence.
- As a virus infects a group of people, the virus copies itself. During this process, the genetic code can randomly change in each copy. The changes are called mutations. If the coronavirus that causes COVID-19 changes in ways that make previous infections or vaccination less effective at preventing infection, people can get sick again.

Diagnosis:

- Two types of tests can help diagnose COVID-19. Molecular tests. These tests look for genetic material from the COVID-19 virus. Polymerase chain reaction tests, shortened to PCR tests, are molecular tests.
- Understanding test results If you get a negative PCR test, you most likely do not have COVID-19. If you have a negative antigen test, the FDA recommends that you repeat an antigen test two days after the first test. With or without symptoms, repeating the test helps get the correct diagnosis.

Treatment:

- Most people with COVID-19 have mild illness and can recover at home. You can treat symptoms with over-the-counter medicines, such as acetaminophen or ibuprofen, to help feel better.

Prevention:

- Wash Your Hands Often. Scrub with soap and water for at least 20 seconds. ...
- Improve Ventilation.

- Disinfect if You Have COVID-19.
- Stay Home if You Feel Unwell.
- Wear a Mask.
- Proper diet with exercise to help boost your immune system.

High-Risk Areas:

- Prevalent in both low-, middle- and upper-income countries.

Summary:

- Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. Most people infected with the virus will experience mild to moderate respiratory illness and recover without requiring special treatment. However, some will become seriously ill and require medical attention.

BRCA - Breast Cancer:

Symptoms:

- Breast cancer symptoms can include a lump in the breast or underarm, changes in breast size or shape, skin changes like dimpling or redness, nipple discharge (especially if bloody or not from breastfeeding), and nipple changes such as inversion. It's important to consult a doctor if you experience any of these changes, even if they don't seem painful.
- Lump or thickening in the breast or underarm: This is often the first sign noticed by women. Lumps can be hard or soft, with jagged or smooth edges.
- Changes in breast size or shape: One breast might become noticeably larger than the other, or there might be overall swelling.
- Changes in breast skin: This can include dimpling (resembling an orange peel), redness, or a rash.
- Nipple changes: A nipple may turn inward (inversion), or there might be a rash or scaling on or around the nipple.
- Nipple discharge: Any discharge from the nipple other than breast milk, especially if it's bloody, can be a sign.
- Breast or nipple pain: While not always a symptom, persistent pain or tenderness in the breast or armpit should be checked.
- Swelling in the armpit: This could indicate that the cancer has spread to the lymph nodes in the armpit.
- Changes in skin texture: The skin of the breast may feel different, such as thicker or harder than usual.
- Unexplained weight loss: This can be a sign of advanced breast cancer.
- Fatigue: Feeling unusually tired, even after getting enough rest, can also be a symptom.
- Nausea or loss of appetite: These can occur if the cancer has spread to other organs.

How is it Contracted?:

- Breast cancer is not contracted in the way a contagious illness is. It develops due to genetic mutations in breast cells, which cause them to grow and divide uncontrollably, forming tumours. These mutations can be inherited or arise spontaneously during a person's lifetime.
- Genetic Mutations: Breast cancer arises from changes in a cell's DNA, which controls cell growth and behaviour.
- Inherited Mutations: Some people inherit gene mutations (like in BRCA1 and BRCA2) that significantly increase their risk.
- Acquired Mutations: Most breast cancer mutations occur randomly during a person's life due to various factors.
- Lymph Vessels: Cancer cells can enter lymph vessels and travel to lymph nodes, often the first place of spread outside the breast.
- Blood Vessels: Cancer cells can enter blood vessels and spread to distant organs, such as the bones, liver, or lungs.
- Age: The risk increases with age, particularly after 55.
- Sex: Women are far more likely to develop breast cancer than men.
- Family History: A family history of breast cancer can indicate inherited genetic risks.
- Lifestyle Factors: Smoking, alcohol consumption, obesity, and lack of physical activity can contribute to increased risk.
- Hormonal Factors: Early menstruation, late menopause, and hormone replacement therapy can influence risk.
- Environmental Factors: Radiation exposure and certain chemicals can also play a role.

Diagnosis:

- Breast cancer diagnosis typically involves a combination of imaging tests, physical exams, and biopsies. Doctors use mammograms, ultrasounds, and MRIs to visualize breast tissue and identify abnormalities. A biopsy, which involves removing a sample of tissue for examination, is crucial to confirm whether cancer is present and to determine its characteristics.
- 1. Breast Examination: A doctor physically examines the breasts and surrounding areas (armpits) for lumps, thickening, or other changes.
- 2. Mammogram: This X-ray imaging technique helps detect abnormalities in breast tissue, including lumps and calcifications.
- 3. Ultrasound: Ultrasound uses sound waves to create images of breast tissue, helping to differentiate between solid masses (which may be cancerous) and fluid-filled cysts.
- 4. MRI: Breast MRI provides detailed images of breast tissue and can be used for screening in high-risk individuals or when other tests are inconclusive.
- 5. Biopsy: If imaging tests reveal suspicious areas, a biopsy is performed to obtain a tissue sample for microscopic examination. Common biopsy types include core needle biopsy and surgical biopsy.
- 6. Pathological Examination: The tissue sample is analysed by a pathologist to determine if cancer cells are present and to assess their characteristics (e.g., hormone receptor status, grade, stage).

- 7. Staging: Once a diagnosis of breast cancer is confirmed, further tests (like PET scans or bone scans) may be used to determine if the cancer has spread to other parts of the body (metastasis).
- Early detection is crucial: Regular breast cancer screenings (mammograms) and prompt evaluation of any breast changes are vital for successful treatment.
- Multiple tests may be needed: Doctors often use a combination of imaging and biopsy techniques to accurately diagnose breast cancer.
- Individualized approach: The specific diagnostic tests and treatment plan will be tailored to the individual patient's situation and the characteristics of their cancer.

Treatment:

- Surgery Lumpectomy: Removal of the tumour and a small amount of surrounding tissue.
- Surgery Mastectomy: Removal of the entire breast.
- Surgery Lymph node removal: Often performed to check for cancer spread.
- Surgery Breast reconstruction: May be an option after mastectomy.
- 2. Radiation Therapy: Uses high-energy rays to kill cancer cells and reduce the risk of recurrence. May be used after surgery or as a primary treatment for some patients.
- 3. Chemotherapy: Uses drugs to kill cancer cells and is often used after surgery to reduce recurrence risk. May be used before surgery to shrink tumours. Can be administered orally or intravenously.
- 4. Hormone Therapy: Used for hormone receptor-positive breast cancers (meaning the cancer cells have receptors for hormones like oestrogen or progesterone). Works by blocking hormones from fuelling cancer cell growth or by reducing hormone production.
- 5. Targeted Therapy: Uses drugs that target specific molecules on or within cancer cells. May be used alone or in combination with other treatments.
- 6. Immunotherapy: Uses the body's immune system to fight cancer. May be used for certain types of triple-negative breast cancer.

Prevention:

- Get to and stay at a healthy weight: This is a weight that’s right for you. Ask a healthcare provider for information on setting up healthy weight management.
- Eat a healthy diet: Some studies show a diet that includes vegetables, fruit, calcium-rich dairy foods and lean protein may reduce your risk of breast cancer. Avoiding red meat and processed meat may also reduce your risk.
- Get moving: Studies show that regular physical activity lowers breast cancer risk.
- Avoid beverages containing alcohol: Research shows a link between breast cancer and alcohol. The American Medical Association recommends women limit alcohol to one drink a day.
- Get screened: Mammograms often detect tumours when they’re too small to be felt.
- Do regular self-exams: Examining your breasts regularly helps to maintain breast health and may allow you to find breast cancer tumours.
- Genetic screening for breast cancer genes.
- Medication that may lower breast cancer risk.
- Frequent breast cancer screenings and physical examinations. If you have an increased risk for breast cancer, ask your provider if you should have additional tests to detect breast cancer, particularly if you’re under age 40 and have increased risk.

High-Risk Areas:

- While some factors like diet, environmental exposures, and lifestyle choices are also associated with breast cancer risk, they are not considered high-risk factors in the same way as the ones listed above. For example, some studies suggest a link between high-fat diets and increased risk, but the evidence is not conclusive.

Summary:

- Breast cancer is a disease where malignant (cancerous) cells form in the breast tissue. It's the most common cancer in women, and while it can also affect men, it's far less common. Symptoms can include a lump, swelling, or skin changes in the breast or underarm area. Treatment varies depending on the stage and type of cancer, but often involves surgery, radiation, chemotherapy, and/or hormone therapy.
- What it is: Abnormal breast cells grow out of control, forming tumours that can spread.
- Where it starts: Breast cancer can begin in the milk ducts or lobules (milk-producing glands).
- Types: Invasive ductal carcinoma (starting in the ducts) is the most common type.
- Risk factors: Age, family history, genetics, and certain lifestyle factors can increase risk.
- Symptoms: A lump, swelling, skin changes (dimpling, redness), nipple discharge, or pain.
- Diagnosis: A combination of physical exam, imaging (mammogram, ultrasound, MRI), and biopsy.
- Treatment: Surgery, radiation, chemotherapy, hormone therapy, and targeted therapies, often in combination.
- Importance of early detection: Screening (mammograms) can help find breast cancer early, when it's most treatable.
- Prognosis: Survival rates vary, but early detection significantly improves outcomes.

CC - Cervical Cancer:

Symptoms:

- Cervical cancer symptoms often don't appear in the early stages, making regular screening vital. However, when symptoms do occur, they can include unusual vaginal bleeding (after sex, between periods, or after menopause), watery or bloody vaginal discharge with a foul odour, pelvic pain, and pain during intercourse.
- Abnormal Vaginal Bleeding: This can include bleeding after intercourse, between periods, or after menopause. Menstrual periods may also be heavier or longer than usual.
- Unusual Vaginal Discharge: Discharge that is watery, bloody, or has a foul odour can be a sign.
- Pelvic Pain: Pain in the pelvic area, lower back, or lower abdomen can occur.
- Pain During Intercourse: Pain or discomfort during sexual activity can be a symptom.
- Swelling in Legs: Advanced cervical cancer can sometimes cause swelling in one or both legs due to pressure on lymph nodes.

- Other Symptoms: In some cases, advanced cervical cancer can cause fatigue, weight loss, loss of appetite, and shortness of breath.

How is it Contracted?:

- Cervical cancer is primarily contracted through a persistent infection with certain types of the human papillomavirus (HPV), a sexually transmitted infection. While most HPV infections resolve on their own, persistent infections with high-risk HPV types can lead to cervical cancer.
- HPV Infection: HPV is a very common virus transmitted through sexual contact, including vaginal, anal, and oral sex.
- High-Risk HPV Types: Certain HPV types (like HPV-16 and HPV-18) are considered high-risk and can cause abnormal cell changes in the cervix.
- Persistence is Key: While many people are exposed to HPV, most clear the infection naturally. However, persistent infection with high-risk HPV types is a major risk factor for cervical cancer.
- While HPV is the primary cause, other factors like smoking, weakened immune system, and family history of cervical cancer can increase the risk.

Diagnosis:

- Cervical cancer is typically diagnosed through a combination of screening tests and diagnostic procedures. Screening methods like Pap tests and HPV DNA tests can identify abnormal cells or HPV infections, leading to further investigation. Diagnostic procedures such as colposcopy, biopsy, and cone biopsy help confirm the presence of cancer and determine its extent.
- Pap Test: This test involves collecting cells from the cervix and examining them under a microscope for abnormalities.
- HPV DNA Test: This test detects the presence of high-risk HPV types, which are a major cause of cervical cancer.
- Colposcopy: A magnified view of the cervix using a colposcope allows doctors to identify abnormal areas.
- Biopsy: A tissue sample is taken from the cervix and examined under a microscope to confirm the presence and type of cancer.
- Cone Biopsy: A cone-shaped piece of tissue is removed from the cervix, often used to diagnose and treat precancerous conditions or early-stage cancer.
- Endocervical curettage: A spoon-shaped instrument is used to scrape tissue from the endocervical canal for examination.

Treatment:

- Cervical cancer treatment options vary based on the stage of the cancer and the individual's overall health and preferences, but generally include surgery, radiation therapy, chemotherapy, and targeted therapy. In some cases, immunotherapy and clinical trials are also options.
- Hysterectomy: Removal of the uterus and cervix, often used for early-stage cervical cancer.
- Radical Trachelectomy: A fertility-sparing option that removes the cervix and surrounding tissue but preserves the uterus.

- Large Loop Excision of the Transformation Zone (LLETZ): Removal of abnormal cervical tissue for diagnosis and treatment of precancerous changes.
- Cone Biopsy: Similar to LLETZ but used when abnormal glandular cells are present or early-stage cancer is suspected.
- Radiation Therapy: Uses high-energy rays to kill cancer cells.
- External Beam Radiation Therapy (EBRT): Radiation delivered from a machine outside the body.
- Brachytherapy: Radiation placed inside or near the tumour.
- Often combined with chemotherapy (chemoradiation) for certain stages.
- Chemotherapy: Uses drugs to kill cancer cells. May be given alone or in combination with radiation therapy.
- Targeted Therapy: Uses drugs to target specific molecules involved in cancer cell growth and survival.
- Immunotherapy: Uses drugs to stimulate the body's immune system to fight cancer cells.
- Clinical Trials: Research studies testing new treatments for cervical cancer.
- Palliative Care: Focuses on improving quality of life by managing symptoms and side effects.

Prevention:

- Ask your doctor about the HPV vaccine. Receiving a vaccination to prevent HPV infection may reduce your risk of cervical cancer and other HPV-related cancers. Ask your health care team if an HPV vaccine is right for you.
- Have routine Pap tests. Pap tests can detect precancerous conditions of the cervix. These conditions can be monitored or treated in order to prevent cervical cancer. Most medical organizations suggest beginning routine Pap tests at age 21 and repeating them every few years.
- Practice safe sex. Reduce your risk of cervical cancer by taking measures to prevent sexually transmitted infections. This may include using a condom every time you have sex and limiting the number of sexual partners you have.
- Don't smoke. If you don't smoke, don't start. If you do smoke, talk to a health care professional about ways to help you quit.

High-Risk Areas:

- Cervical cancer high-risk areas are primarily located in sub-Saharan Africa, Central America, and Southeast Asia. These regions experience the highest incidence and mortality rates due to factors like limited access to vaccination, screening, and treatment services, as well as higher prevalence of HIV and other social and economic determinants like poverty. Particularly in sub-Saharan Africa, Central America, and South-East Asia.

Summary:

- Cervical cancer is a malignant neoplasm that originates in the cells of the cervix, the lower part of the uterus that connects to the vagina. It's primarily caused by persistent infection with the human papillomavirus (HPV), a common sexually transmitted infection. Cervical cancer can be effectively prevented through HPV vaccination, regular cervical cancer screening, and timely treatment of precancerous lesions.

- Cause: Persistent HPV infection is the main cause of cervical cancer.
- Prevention: HPV vaccination and regular cervical cancer screening (like Pap tests and HPV tests) are crucial for prevention.
- Symptoms: Early-stage cervical cancer often has no symptoms. Later-stage symptoms can include abnormal vaginal bleeding (after intercourse, between periods, or after menopause), unusual vaginal discharge, pelvic pain, and pain during urination.
- Treatment: Treatment options depend on the stage of the cancer and may include surgery, radiation therapy, chemotherapy, and targeted therapy.
- Survival rates: Cervical cancer is highly treatable when detected early. Five-year survival rates are high for early-stage diagnoses and decrease as the cancer progresses.
- Global impact: Cervical cancer disproportionately affects women in low- and middle-income countries, where access to screening and treatment services is limited.

CRC – Colorectal Cancer:

Symptoms:

- Changes in bowel habits: This can include diarrhoea, constipation, or a change in the frequency or consistency of your stools.
- Blood in the stool: This can be bright red or dark and tarry, and it's important to note that blood in the stool can be caused by other conditions as well, so it's crucial to consult a healthcare professional for proper diagnosis.
- Abdominal pain or discomfort: This can manifest as cramping, bloating, or persistent pain in the abdomen.
- Unexplained weight loss: Losing weight without trying to can be a sign of colorectal cancer, especially if accompanied by other symptoms.
- Fatigue and weakness: Feeling unusually tired or weak, even after resting, can be a symptom.
- Feeling that your bowel doesn't empty completely: This can be a sign of colorectal cancer, especially if it persists.
- Narrow or pencil-thin stools: This can be a sign of a tumour obstructing the bowel.
- Frequent gas pains or bloating: These can be associated with colorectal cancer, especially if they are persistent or accompanied by other symptoms.
- Vomiting: While vomiting can be caused by many things, it can also be a symptom of colorectal cancer, especially if it occurs frequently or is accompanied by other symptoms.
- Iron deficiency anaemia: This can occur due to chronic blood loss from the tumour, and can lead to fatigue, weakness, and paleness.

How is it Contracted?:

- Colorectal cancer is not contracted or contagious like an infection. It develops due to genetic mutations and lifestyle factors that increase the risk of abnormal cell growth in the colon or rectum. While some genetic mutations are inherited, others arise during a person's lifetime, often with unknown causes. Lifestyle factors like diet, smoking, and alcohol consumption can also play a significant role in its development.

- Inherited Mutations: Some individuals inherit genetic mutations that increase their susceptibility to colorectal cancer.
- Acquired Mutations: Most genetic changes leading to colorectal cancer occur during a person's lifetime, and the exact cause is often unknown.
- Diet: A diet high in red and processed meats, and low in fibre, fruits, and vegetables can increase the risk.
- Smoking: Tobacco use is linked to an increased risk of colorectal cancer and polyps.
- Alcohol Consumption: Excessive alcohol consumption is a risk factor.
- Obesity: Being overweight or obese can raise the risk.
- Lack of Physical Activity: A sedentary lifestyle is associated with a higher risk.
- Colorectal cancer typically begins with the development of polyps (small, abnormal growths) in the colon or rectum. Most polyps are benign (non-cancerous), but some can become cancerous over time. Cancer cells can then spread to other parts of the body through the bloodstream or lymphatic system.

Diagnosis:

- Colorectal cancer diagnosis involves a combination of methods including physical exams, imaging (like CT scans and MRIs), colonoscopy, biopsies, and blood tests. These tests help determine if cancer is present, its stage, and guide treatment decisions.
- Doctors may perform a digital rectal exam to check for any abnormalities in the rectum.
- A colonoscopy is a procedure where a long, flexible tube with a camera is inserted into the rectum and colon to visualize the lining and identify any polyps or cancerous growths.
- Biopsy: During colonoscopy or other procedures, tissue samples (biopsies) are taken for microscopic examination to confirm the presence of cancer.
- CT scans: Can be used to assess the extent of tumour spread and check for metastasis to other organs.
- MRI scans: Provide detailed images of soft tissues and can be helpful in staging rectal cancer.
- Ultrasound: Used to examine the rectum and abdomen and may be used to check for spread to other organs.

Treatment:

- Colorectal cancer treatment typically involves a combination of surgery, chemotherapy, radiation therapy, targeted therapy, and immunotherapy, depending on the cancer's stage and the patient's overall health. For early-stage colon cancer, surgery to remove the tumour is often the primary treatment and may be followed by chemotherapy. Advanced colorectal cancer may be treated with chemotherapy, targeted therapy, and immunotherapy to control the disease and manage symptoms.
- Surgery: This is the most common treatment for colorectal cancer, especially when the cancer is localized to the bowel. Surgical options include removing a portion of the bowel (partial colectomy), removing the entire colon (colectomy), or removing the rectum and anus (abdominoperineal resection).
- Chemotherapy drugs are used to kill cancer cells and can be administered before surgery to shrink tumours (neoadjuvant therapy) or after surgery to eliminate any remaining cancer cells (adjuvant therapy). Chemotherapy is also a primary treatment for advanced colorectal cancer.

- Radiation Therapy: High-energy rays are used to kill cancer cells and can be used before or after surgery, or to relieve symptoms.
- Targeted Therapy: This treatment targets specific molecules involved in cancer cell growth and survival and can be used in combination with chemotherapy. Examples include anti-VEGF and anti-EGFR therapies.
- Immunotherapy: This treatment leverages the body's immune system to fight cancer cells and may be an option for tumours with specific genetic characteristics like high microsatellite instability (MSI-H) or deficient mismatch repair (dMMR).

Prevention:

- Colorectal cancer prevention involves a combination of regular screening, lifestyle choices, and medical interventions. Screening, particularly colonoscopies, is crucial for detecting and removing precancerous polyps. Lifestyle changes like maintaining a healthy weight, engaging in regular physical activity, and adopting a diet rich in fruits, vegetables, and whole grains can significantly reduce risk. Avoiding tobacco and excessive alcohol consumption is also important.
- Regular colorectal cancer screening, starting at age 45 for average-risk individuals, is the most effective way to prevent colorectal cancer. Screening can detect precancerous polyps before they turn cancerous, allowing for their removal.
- Diet: A diet high in fruits, vegetables, and whole grains, while limiting red and processed meats, can lower the risk of colorectal cancer. Fiber-rich foods, like fruits, vegetables, and whole grains, promote healthy bowel function and may reduce cancer risk.
- Weight Management: Maintaining a healthy weight is crucial. Excess body fat can contribute to chronic inflammation and hormonal imbalances, potentially increasing cancer risk.
- Physical Activity: Regular physical activity, including moderate to vigorous exercise, is associated with a lower risk of colorectal cancer.
- Avoid Tobacco: Smoking is a known risk factor for colorectal cancer, and quitting smoking is a crucial preventative measure.
- Limit Alcohol: Excessive alcohol consumption is linked to an increased risk of colorectal cancer. Limiting or avoiding alcohol intake is recommended.

High-Risk Areas:

- In South Africa, colorectal cancer (CRC) incidence varies across population groups and geographic locations. While the highest incidence rates are observed in the White population group, the Black and Coloured populations are experiencing increasing rates, with the Black population also showing a trend towards younger onset of the disease. The Western and Northern Cape have been identified as areas with a higher prevalence of inherited colorectal cancers.

Summary:

- Colorectal cancer, also known as colon or rectal cancer, is a type of cancer that develops in the colon or rectum. It often starts as polyps, which are small, benign growths, that can become cancerous over time. Early detection through screening is crucial for successful treatment, as it can often lead to a complete cure.
- Location: Colorectal cancer affects the colon (large intestine) and/or rectum.

- Cause: It's often caused by the abnormal development of polyps, which can be benign or cancerous.
- Risk Factors: Age (especially over 50), family history of colorectal cancer, inflammatory bowel disease, obesity, and lifestyle factors like diet, smoking, and lack of physical activity can increase the risk.
- Symptoms: Early stages may have no symptoms, but later stages can include changes in bowel habits, blood in the stool, abdominal pain, fatigue, and unexplained weight loss.
- Prevention: Lifestyle choices like a healthy diet, regular physical activity, avoiding smoking and excessive alcohol consumption can help reduce the risk.
- Screening: Regular screenings, like colonoscopies, are essential for early detection and improved survival rates.
- Treatment: Treatment options include surgery, chemotherapy, and other therapies, depending on the stage and extent of the cancer.
- Prognosis: Localized colorectal cancer has a high survival rate (around 91%), while survival rates decrease with more advanced stages.

PCa – Prostate Cancer:

Symptoms:

- Early prostate cancer often has no noticeable symptoms. As the cancer progresses, symptoms can include changes in urination, blood in the urine or semen, erectile dysfunction, and pain in the lower back, hips, or thighs. More advanced prostate cancer can cause bone pain, fatigue, and weight loss.
- Urinary Changes: Difficulty starting urination, a weak or interrupted urine stream, frequent urination (especially at night), and a feeling of incomplete bladder emptying.
- Blood in Urine or Semen: Pink, red, or cola-coloured urine or blood in the semen can be a sign.
- Erectile Dysfunction: Difficulty getting or maintaining an erection.
- Bone Pain: Pain in the lower back, hips, or thighs, which may indicate the cancer has spread to the bones.
- Fatigue and Weight Loss: Feeling unusually tired or losing weight without trying.
- Painful Ejaculation: Pain during or after ejaculation.

How is it Contracted?:

- Prostate cancer is not contracted through any form of contact or transmission. It develops due to changes in the DNA of prostate cells, causing them to grow and divide uncontrollably, forming a tumour. While the exact cause is unknown, several risk factors can increase the likelihood of developing prostate cancer.
- DNA changes: Prostate cancer arises from genetic mutations within the prostate cells, causing them to grow and divide abnormally.
- Age: The risk increases with age, particularly after 50.
- Race: Prostate cancer is more common in African American men.
- Family history: Having a family history of prostate or breast cancer can elevate the risk.

- Obesity: Being overweight or obese can increase the risk of advanced prostate cancer.
- Genetics: Certain inherited gene mutations can significantly increase the risk.

Diagnosis:

- PSA Blood Test: Measures the level of prostate-specific antigen in the blood. Elevated PSA levels can indicate prostate cancer, but also other conditions like benign prostatic hyperplasia (BPH) or prostatitis.
- Digital rectal exam. Your provider inserts a gloved, lubricated finger into your rectum and feels your prostate gland. Bumps or hard areas may mean cancer.
- Prostate-specific antigen (PSA) blood test. The prostate gland makes a protein called prostate-specific antigen (PSA). High PSA levels may indicate cancer. Levels also rise if you have benign conditions, such as benign prostate hyperplasia or prostatitis.
- Imaging. An MRI or a transrectal ultrasound can show images of your prostate gland, including suspicious areas that may be cancer. Imaging results can help your provider decide whether to perform a biopsy.
- Biopsy. During a needle biopsy, a healthcare provider removes a tissue sample to check for cancer. This is the only way to confirm prostate cancer and know how aggressive it is. Genetic testing of the sample may help guide treatment.
- Bone Scan: If cancer is suspected to have spread, a bone scan can detect if cancer has metastasized to the bones.

Treatment:

- Active Surveillance/Watchful Waiting: For low-risk prostate cancer, monitoring with regular checkups and PSA tests may be recommended. This approach is often chosen when the cancer is slow-growing and not causing symptoms.
- Surgery: Radical prostatectomy, the surgical removal of the prostate gland, is a common treatment for localized prostate cancer. It can be performed using open surgery or minimally invasive techniques like laparoscopy or robotic surgery.
- Radiation Therapy: Radiation therapy uses high-energy rays to kill cancer cells. It can be delivered externally (external beam radiation) or internally (brachytherapy).
- Hormone Therapy: Prostate cancer often relies on testosterone for growth. Hormone therapy aims to lower testosterone levels or block its effects, thus slowing or stopping cancer growth.
- Chemotherapy: Chemotherapy drugs are used to kill cancer cells. It's typically used for advanced or metastatic prostate cancer, often in combination with hormone therapy.
- Targeted Therapy: Targeted therapies focus on specific molecules involved in cancer cell growth and survival. These therapies are often used for metastatic prostate cancer with certain genetic mutations.
- Immunotherapy: Immunotherapy boosts the body's immune system to fight cancer cells.
- Cryotherapy: Freezing prostate tissue to destroy cancer cells.
- High-Intensity Focused Ultrasound (HIFU): Using ultrasound waves to heat and destroy cancer cells.
- Focal Therapy: Newer treatments targeting specific areas within the prostate.

Prevention:

- Choose a healthy diet. Eat a variety of fruits, vegetables and whole grains. Limit the amount of animal fats you eat. Fruits and vegetables contain many vitamins and nutrients that can do good for your health.
- Foods that have been linked to a lower risk of prostate cancer include tomatoes, broccoli, cauliflower and soy. No studies have proved that these foods can prevent cancer. If you already enjoy eating these foods, there may be some added benefit in including them in your diet.
- Exercise most days of the week. It's not clear whether exercise can prevent prostate cancer. It may help you maintain a healthy weight. Exercise also may improve your overall health and your mood. Try to exercise most days of the week. If you're new to exercise, talk about it with a healthcare professional. Start slow and work your way up to more exercise time each day.
- Maintain a healthy weight. If your current weight is healthy, work to maintain it. Choose a healthy diet and exercise most days of the week. If you need to lose weight, add more exercise and eat fewer calories. Ask your healthcare professional for help creating a plan for healthy weight loss.
- Don't smoke. If you don't smoke, don't start. If you smoke, talk with a healthcare professional about what might help you quit. Medicines, nicotine replacement products and counselling can help.
- Medicines to lower the risk of prostate cancer. If you have a high risk of prostate cancer, you and your healthcare professional may consider medicines to lower the risk. These medicines include finasteride (Propecia, Proscar) and dutasteride (Avodart). They are most often used to treat prostate gland enlargement. Seek advice first from Medical Advisor.

High-Risk Areas:

- Research indicates that Southern Africa, including South Africa, has a higher incidence of prostate cancer compared to other African regions, but not the highest mortality rates. Within South Africa, black men are more likely to be diagnosed at a younger age and with a more aggressive form of prostate cancer.

Summary:

- Prostate cancer is a type of cancer that develops in the prostate gland, a small, walnut-shaped gland in males that produces fluid for semen. It is one of the most common cancers in men, often growing slowly and potentially remaining asymptomatic for years. While most prostate cancers are initially localized and can be effectively treated, some can grow aggressively and spread to other parts of the body, posing a greater threat.

Lung Cancer:

Symptoms:

- Lung cancer symptoms can include a persistent cough, coughing up blood, chest pain, shortness of breath, and fatigue. Other symptoms may include hoarseness, loss of

appetite, unexplained weight loss, and frequent lung infections. Some people may also experience swelling in the face or neck, or changes in their voice. It's important to note that some individuals may not experience any symptoms in the early stages of lung cancer.

- Persistent Cough: A cough that doesn't go away or worsens over time is a common early symptom.
- Coughing up Blood: Any amount of blood in your sputum (phlegm) should be checked by a doctor.
- Chest Pain: This can be a persistent pain, sometimes worse with deep breaths, coughing, or laughing.
- Shortness of Breath: Difficulty breathing or feeling winded can be a sign of lung cancer.
- Fatigue: Feeling unusually tired or weak can also be a symptom.
- Hoarseness: Changes in your voice that persist for a while should be evaluated.
- Loss of Appetite and Weight Loss: Significant weight loss without trying to lose weight should be checked out.
- Frequent Lung Infections: Pneumonia or bronchitis that keeps returning may be a sign of lung cancer.
- Swelling: In some cases, lung cancer can cause swelling in the face, neck, or arms.
- Horner's Syndrome: This is a group of symptoms that can occur when a tumour affects certain nerves, causing a drooping eyelid, a smaller pupil, and reduced sweating on the affected side of the face.
- Bone Pain, Headaches, or Seizures: These can occur if the cancer spreads to other parts of the body.

How is it Contracted?:

- Lung cancer is primarily caused by exposure to harmful substances, with smoking being the leading risk factor. While cancer itself is not contagious, meaning it can't be "caught" from someone else, various environmental and lifestyle factors can increase the risk of developing lung cancer.
- Smoking, including cigarettes, cigars, and pipes, is the most significant risk factor, responsible for most lung cancer cases. Tobacco smoke contains numerous carcinogens (cancer-causing substances) that damage lung cells and increase the risk of mutations leading to cancer. The risk increases with the number of cigarettes smoked and the duration of smoking. Even second-hand smoke (breathing in smoke from others) can increase the risk of lung cancer.
- Radon: This naturally occurring radioactive gas can seep into buildings and, when inhaled, can damage lung cells.
- Asbestos: Exposure to asbestos fibres, often in construction or industrial settings, is a known cause of mesothelioma (a cancer of the lining of the lungs) and can also increase the risk of lung cancer.
- Other Occupational Hazards: Exposure to substances like arsenic, chromium, nickel, and diesel exhaust can also elevate the risk.
- Air Pollution: Long-term exposure to air pollution, including particulate matter, can contribute to lung cancer development.
- Radiation Therapy: Previous radiation treatment to the chest for other cancers (like breast cancer or lymphoma) can increase lung cancer risk.

- Family History: Having a family history of lung cancer can slightly increase an individual's risk.
- HIV Infection: People with HIV infection have an increased risk of lung cancer.
- Lung Diseases: Certain lung diseases, like pulmonary fibrosis and emphysema, can also elevate the risk.

Diagnosis:

- Chest X-ray: Used as an initial screening tool to detect potential abnormalities.
- CT scan: Provides more detailed images of the lungs and can help identify the size and location of tumours.
- PET/CT scan: Can reveal if cancer has spread to other parts of the body.
- MRI: Used to assess if cancer has spread to the brain or spinal cord.
- Bronchoscopy: A lighted tube is inserted into the airways to visualize and collect tissue samples.
- Mediastinoscopy: Surgical procedure to examine lymph nodes in the chest.
- Needle Biopsy: A needle is guided by imaging to collect tissue from suspicious areas.

Treatment:

- Surgery: May be an option for early-stage non-small cell lung cancer to remove the tumour and surrounding tissue.
- Chemotherapy: Uses drugs to kill cancer cells and can be used before or after surgery, or as the primary treatment for some cancers.
- Radiation Therapy: Uses high-energy rays to kill cancer cells, often used for both non-small cell and small cell lung cancers.
- Targeted Therapy: Drugs that target specific mutations in cancer cells, often used for advanced lung cancers.
- Immunotherapy: Helps the body's immune system fight cancer cells, often used for advanced lung cancers.
- Palliative Care: Focuses on symptom relief and improving quality of life, particularly for advanced lung cancer. This can include pain management, breathing support, and emotional support.

Prevention:

- Don’t smoke or quit smoking if you do. Your risk of lung cancer starts coming down within five years of quitting.
- Avoid second hand smoke and other substances that can harm your lungs.
- Eat a healthy diet and maintain a weight that’s healthy for you. Some studies suggest that eating fruits and vegetables (two to six-and-a-half cups per day) can help reduce your risk of cancer.
- Get screened for lung cancer if you’re at high risk.
- You can increase your chances of catching cancer in its earliest stages with screening tests.

High-Risk Areas:

- Lung cancer rates vary geographically, with some areas having higher incidence and mortality than others. Generally, regions with high smoking prevalence and exposure to

certain environmental hazards tend to have higher lung cancer rates. Specific countries and regions in Eastern Europe, Western Asia, and Northern Africa have particularly high mortality rates among men, while North America and Northern Europe have high rates among women.

Summary:

- Lung cancer is a disease where abnormal cells grow uncontrollably in the lungs, potentially spreading to other parts of the body. It's the leading cause of cancer deaths worldwide. The two main types are non-small cell lung cancer (NSCLC) and small cell lung cancer (SCLC), with NSCLC being more common. Smoking is the primary risk factor, but lung cancer can also occur in non-smokers.
- Non-small cell lung cancer (NSCLC): The most common type, further divided into subtypes like adenocarcinoma and squamous cell carcinoma.
- Small cell lung cancer (SCLC): Less common but often more aggressive, growing and spreading rapidly.
- Smoking: The leading cause of lung cancer, including both active smoking and exposure to second-hand smoke.
- Other risk factors: Exposure to radon, asbestos, air pollution, certain occupational substances (like arsenic and nickel), and a family history of lung cancer.

NMSC - Non-Melanoma Skin Cancer:

Symptoms:

- Non-melanoma skin cancer symptoms typically appear as changes in the skin, such as new growths, sores that don't heal, or changes in existing moles or spots. These changes can manifest as pearly or waxy bumps, rough or scaly patches, or sores that may bleed, ooze, or crust over. It's crucial to consult a doctor if you notice any unusual skin changes that persist for more than a few weeks.
- New growths: These can be bumps, moles, or scabs that appear on the skin.
- Changes in existing growths: This includes changes in size, shape, colour, or texture of moles or other skin spots.
- Rough or scaly patches: These patches may be red and could bleed or crust over.
- Sores that don't heal: Sores that persist for several weeks and don't show signs of healing, or that repeatedly open and close, should be checked.
- Itching, pain, or crusting: These symptoms can accompany skin growths or sores.
- Non-melanoma skin cancers frequently appear on sun-exposed areas such as the face, ears, neck, scalp, arms, and hands.
- They can also develop in other areas like the lips, fingernails, and genital areas.

How is it contracted?:

- Non-melanoma skin cancer is not contagious and is not contracted from another person. Instead, it develops due to cell damage caused by prolonged or chronic exposure to ultraviolet (UV) radiation from the sun or tanning beds. This radiation

damages the DNA within skin cells, leading to abnormal cell growth and, potentially, cancer.

- UV Radiation: The primary cause of non-melanoma skin cancer is overexposure to UV radiation. This radiation can come from sunlight or artificial sources like tanning beds and sunlamps.
- DNA Damage: UV radiation can damage the DNA in skin cells. This damage can disrupt the normal growth and behaviour of cells, causing them to divide uncontrollably and potentially become cancerous.
- Fair skin: People with lighter skin tones are more susceptible to sunburn and skin cancer due to lower levels of melanin, which protects against UV damage.
- Excessive sun exposure: Spending a lot of time in the sun, especially without protection, significantly increases risk.
- Sunburns: Severe sunburns, particularly those with blistering, can cause DNA damage and increase the risk of skin cancer.
- Tanning beds: Tanning beds expose the skin to intense UV radiation, making them a major risk factor.
- Weakened immune system: Individuals with weakened immune systems (due to conditions like HIV or medications like immunosuppressants) are more vulnerable.
- Family history: A family history of skin cancer can indicate a genetic predisposition to the disease.

Diagnosis:

- Physical Examination: A doctor will examine the suspicious area of skin, looking for changes in size, shape, colour, or texture of existing moles or spots, or for new growths.
- Patient History: The doctor will ask about the patient's health history, including sun exposure, family history of skin cancer, and any symptoms like itching, pain, or bleeding from the area.
- Biopsy: A biopsy is a procedure where a small piece of tissue is removed from the suspicious area and sent to a lab for microscopic examination. Several types of biopsies can be performed, including shave biopsies, punch biopsies, and excisional biopsies, depending on the location and characteristics of the lesion.
- Dermoscopy: Dermoscopy, a technique that uses a magnifying device to examine the skin more closely, can improve diagnostic accuracy, especially in identifying different types of non-melanoma skin cancer.
- Staging: If cancer is confirmed, further tests (like CT scans, PET scans, or MRI) may be needed to determine the stage of the cancer, which helps guide treatment decisions.

Treatment:

- Excisional Surgery: This involves cutting out the tumour and some surrounding healthy tissue to ensure complete removal.
- Mohs Surgery: A specialized technique where the tumour is removed layer by layer, with each layer examined under a microscope until all cancerous tissue is gone.
- Curettage and Electrodesiccation: This method uses a sharp, looped instrument to scrape away the cancer, followed by an electric needle to destroy any remaining cancer cells.
- Cryotherapy: Liquid nitrogen is used to freeze and destroy the cancer cells.

- Radiotherapy: High-energy radiation is used to kill cancer cells, often used for tumours near the eyes or on the nose or forehead.
- Chemotherapy Creams: Topical creams containing chemotherapy drugs can be used to treat superficial cancers.
- Photodynamic Therapy (PDT): A drug is applied to the skin and activated by a special light to kill cancer cells.

Prevention:

- Limit Sun Exposure: Avoid prolonged sun exposure, especially during peak UV hours (usually between 10 a.m. and 4 p.m.).
- Protective Clothing: Wear clothing that covers your arms and legs and choose hats with wide brims to protect your face, neck, and ears.
- Check Regularly: Examine your skin monthly for any new moles, growths, or changes in existing moles, including size, shape, and colour. If you notice any suspicious changes, consult a dermatologist or healthcare professional for evaluation and diagnosis.
- While sun exposure is a primary cause of skin cancer, it's also a source of vitamin D. If you are limiting sun exposure, discuss with your doctor about appropriate vitamin D supplementation.
- Some medications can increase skin sensitivity to the sun. Consult your doctor or pharmacist about any medications you are taking and their potential impact on sun sensitivity.

High-Risk Areas:

- High-risk areas for non-melanoma skin cancer (NMSC) include countries with high levels of sun exposure and fair-skinned populations. Globally, countries like Australia, New Zealand, and the United States, particularly in sunbelt regions, tend to have higher incidence rates. Also, regions with high occupational exposure to solar ultraviolet radiation, such as certain parts of Europe and Canada, show increased risk.
- In Africa, South Africa has the highest incidence of non-melanoma skin cancer (NMSC) due to its geographical location and high levels of ultraviolet radiation. Other countries in Southern Africa, like Zimbabwe, also show high rates, while countries closer to the equator, like the Gambia and Niger, have lower rates.

Summary:

- Non-melanoma skin cancer refers to common types of skin cancer that are not melanoma. The two main types are basal cell carcinoma (BCC) and squamous cell carcinoma (SCC). These cancers typically develop in the outer layer of the skin (epidermis) due to prolonged exposure to ultraviolet (UV) radiation from the sun or tanning beds. While generally less aggressive than melanoma, non-melanoma skin cancer can still cause local tissue damage and, in rare cases, spread to other parts of the body.
- Types: Basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) are the most common types.
- Cause: UV radiation exposure is the primary cause, with sun exposure being the most significant factor.
- Risk Factors: Fair skin, a history of sunburns, and a family history of skin cancer increase the risk.

- Symptoms: Non-melanoma skin cancers often appear as a new growth, a sore that doesn't heal, or a scaly patch on the skin.
- Treatment: Surgery is the most common treatment, with other options including radiation therapy, topical medications, and photodynamic therapy.
- Prognosis: Most non-melanoma skin cancers are curable, especially when detected early.

MDD – Depression:

Symptoms:

- Persistent sadness, anxiety, or emptiness: Feeling down, tearful, or hopeless for extended periods.
- Loss of interest or pleasure: Not enjoying things that used to be fun or pleasurable.
- Irritability: Feeling easily frustrated, agitated, or restless.
- Feelings of worthlessness or guilt: Experiencing excessive self-blame or low self-esteem.
- Difficulty concentrating, remembering, or making decisions: Trouble focusing, thinking clearly, or making choices.
- Thoughts of death or suicide: Including suicidal ideation or suicide attempts.
- Fatigue and low energy: Feeling tired, sluggish, or lacking energy.
- Sleep disturbances: Insomnia (difficulty sleeping), oversleeping, or waking up too early.
- Changes in appetite or weight: Significant weight loss or gain, or noticeable changes in eating habits.
- Physical aches and pains: Headaches, stomach-aches, or other unexplained physical discomfort.
- Changes in physical activity: Increased restlessness or slowed movements and speech.

How is it Contracted?:

- Depression is not contracted in the same way as a contagious illness. It's a complex mental health condition influenced by a combination of genetic, biological, environmental, and psychological factors. There's no single cause, but rather a combination of vulnerabilities that can lead to the development of depression.
- Family History: Depression can run in families, suggesting a genetic predisposition. Brain Chemistry: Imbalances in neurotransmitters like serotonin, dopamine, and norepinephrine may play a role. Hormonal Changes: Hormonal fluctuations during menstruation, pregnancy, postpartum, and menopause can trigger depression in some women.
- Personality Traits: Individuals with low self-esteem, a tendency towards pessimism, or those easily overwhelmed by stress may be more vulnerable.
- Trauma and Stress: Adverse life events like trauma, abuse, neglect, loss of a loved one, or financial difficulties can be triggers.
- Negative Thinking Patterns: Pessimistic thinking, rumination, and negative self-talk can contribute to and worsen depressive symptoms.

- Social Isolation: Lack of social support, loneliness, and social isolation can increase the risk.
- Poverty and Lack of Resources: Financial hardship, lack of access to healthcare and other resources can contribute to depression.
- Exposure to Violence and Abuse: Experiences of violence, abuse, or neglect can have a lasting impact on mental health.
- Chronic Illnesses: Long-term illnesses like diabetes, heart disease, and chronic pain can increase the risk of depression.

Diagnosis:

- A depression diagnosis is based on a pattern of persistent symptoms, including a low or depressed mood and/or a loss of interest or pleasure in activities, lasting for at least two weeks. Several other symptoms may be present, and a mental health evaluation by a healthcare professional is necessary for diagnosis.
- Mental Health Evaluation: A healthcare provider, such as a primary care doctor, psychologist, or psychiatrist, will conduct a mental health evaluation to assess symptoms and their impact on daily life.
- Physical Exam and Lab Tests: A physical exam and lab tests may be done to rule out other medical conditions that can cause similar symptoms, such as thyroid problems.
- Self-Report Questionnaires: Tools like the Beck Depression Inventory (BDI) or the Hamilton Rating Scale for Depression (HRSD) may be used to help assess the severity of symptoms.

Treatment:

- Talk therapy (Psychotherapy): This involves working with a mental health professional to identify and change negative thought patterns and behaviours associated with depression.
- Cognitive Behavioural Therapy (CBT): A type of therapy that focuses on identifying and challenging negative thoughts and developing coping mechanisms.
- Interpersonal Therapy (IPT): Focuses on improving interpersonal relationships and social functioning, which can be affected by depression.
- Antidepressants: These medications work by affecting brain chemicals to help regulate mood.
- SSRIs (Selective Serotonin Reuptake Inhibitors): A common first-line treatment, including medications like fluoxetine and sertraline.
- SNRIs (Serotonin-Norepinephrine Reuptake Inhibitors): Used for depression with pain disorders, including venlafaxine and duloxetine.
- Other antidepressants: Bupropion and mirtazapine are also used, with different side effect profiles.
- Electroconvulsive Therapy (ECT): A medical procedure that can be effective for severe depression that doesn't respond to other treatments.
- Brain Stimulation Therapy: Includes techniques like transcranial magnetic stimulation (TMS), which may help regulate brain activity.
- Lifestyle Adjustments: Exercise, healthy eating, and adequate sleep can also play a role in managing depression.

Prevention:

- Take steps to control stress, to increase your resilience and boost your self-esteem.
- Reach out to family and friends, especially in times of crisis, to help you weather rough spells.
- Get treatment at the earliest sign of a problem to help prevent depression from worsening.
- Consider getting long-term maintenance treatment to help prevent a relapse of symptoms.

High-Risk Areas:

- High-risk areas for depression often correlate with lower socio-economic status and can be found in less affluent parts of Gauteng, including areas like townships and informal settlements. Conversely, wealthier areas like Bryanston, Sandton, and Centurion tend to have lower risk levels. Other factors, such as age, gender, and specific life events, also influence an individual's risk of experiencing depression.
- Socio-economically disadvantaged areas: These areas often face challenges like unemployment, poverty, and limited access to resources, which can contribute to higher rates of depression. Examples include townships around Soweto, Tembisa, and Katlehong.
- Sprawling suburbs: Studies suggest that living in sprawling suburbs, even after adjusting for socioeconomic factors, may be linked to higher depression risk.
- Areas with higher unemployment: Unemployment is a significant risk factor for depression.
- Areas with fewer mental health resources: Limited access to mental health services can exacerbate depression risk.
- Areas with high rates of violence or trauma: Exposure to violence, abuse, or neglect can increase the likelihood of developing depression.
- Rural areas: While urban areas can also have high rates of depression, some studies suggest a higher prevalence in rural areas, particularly among older adults.

Summary:

- Depression is a mood disorder characterized by a persistent feeling of sadness, loss of interest, and a range of other symptoms that affect how a person feels, thinks, and behaves. It's more than just feeling down; it's a serious condition that can significantly impact daily life, including relationships, work, and overall well-being.
- patterns, fatigue, feelings of worthlessness or guilt, difficulty concentrating, and even thoughts of death or suicide.
- Impact on daily life: Depression can interfere with a person's ability to work, study, eat, sleep, and maintain relationships.
- Prevalence: Depression is a common mental health condition, affecting people of all ages, genders, and backgrounds.
- Causes: Depression is thought to be caused by a combination of genetic, biological, environmental, and psychological factors.
- Treatment: Treatment options include therapy (such as cognitive behavioural therapy or psychotherapy), medication (antidepressants), and lifestyle changes.

DF - Dengue Fever:

Symptoms:

- Sudden High Fever: A fever of 104°F (40°C) or higher is common.
- Severe Headache: Often described as a frontal headache, and pain behind the eyes.
- Muscle and Joint Pain: Dengue is sometimes called "breakbone fever" due to the intense pain.
- Extreme Fatigue: Feeling very tired and weak.
- Nausea and Vomiting: May occur, and in severe cases, can be persistent.
- Rash: A red, flat rash may appear on the body, sometimes followed by a measles-like rash.
- Bleeding: Bleeding from the nose, gums, or skin, as well as blood in the urine or stools.
- Severe Abdominal Pain: Pain and tenderness in the stomach area.
- Persistent Vomiting: Vomiting to the point where it's difficult to keep down fluids.
- Difficulty Breathing: Rapid or shallow breathing can be a sign of severe dengue.
- Lethargy or Restlessness: Changes in alertness or unusual agitation.

How is it Contracted?:

- Dengue fever is primarily contracted through the bite of an infected Aedes species mosquito, specifically Aedes aegypti and Aedes albopictus. These mosquitoes become infected when they bite a person who already has the dengue virus in their blood. The virus is then transmitted to other people through subsequent mosquito bites. Dengue is not directly contagious from person to person.
- Mosquito Bite: The main mode of transmission is through the bite of an infected Aedes mosquito.
- Infected Mosquitoes: These mosquitoes become infected when they feed on the blood of a person who is viraemic (has dengue virus in their blood).
- Virus Transmission: The infected mosquito then transmits the virus to another person through its bite.
- Not Contagious: Dengue fever is not spread through casual contact with infected individuals, such as through respiratory droplets or saliva.
- Rare Exceptions: In rare cases, dengue can be transmitted through organ transplants, blood transfusions, or from a mother to her fetus during pregnancy.

Diagnosis:

- Antibody Tests (IgM and IgG): These tests detect antibodies produced by the body in response to dengue virus infection. IgM antibodies appear early in the infection, while IgG antibodies indicate a past or present infection.
- Molecular Methods: Nucleic acid amplification tests (NAATs), such as RT-PCR, can detect the dengue virus's genetic material, providing a rapid diagnosis.
- Complete Blood Count (CBC): While not specific to dengue, a CBC can reveal leukopenia (low white blood cell count) and thrombocytopenia (low platelet count), which are common in dengue.

Treatment:

- There is no specific cure for dengue fever, and treatment focuses on managing symptoms and preventing complications. Supportive care includes rest, hydration, and pain relief with acetaminophen (paracetamol). Aspirin and ibuprofen should be avoided as they can increase the risk of bleeding. Severe cases may require hospitalization for intravenous fluids and other supportive measures.
- Rest: Allow your body to recover by getting plenty of rest.
- Hydration: Drink plenty of fluids to prevent dehydration, especially if you have a fever or are experiencing vomiting or diarrhea.
- Pain Relief: Acetaminophen (paracetamol) can be used to reduce fever and pain. Avoid aspirin, ibuprofen, or other NSAIDs, as they can increase the risk of bleeding.
- Monitor Symptoms: Watch for warning signs of severe dengue, such as severe abdominal pain, persistent vomiting, bleeding gums or nose, and difficulty breathing. Seek immediate medical attention if these symptoms occur.
- Hospitalization: Severe dengue may require hospitalization for intravenous fluids, electrolyte replacement, and potentially blood transfusions.
- Early diagnosis and appropriate medical care are crucial in reducing the risk of death from severe dengue.

Prevention:

- Use EPA-registered insect repellents that contain 20% to 30% DEET or other ingredients known to help keep Aedes mosquitos away.
- Cover exposed skin outdoors, especially at night when mosquitos are more likely to be around.
- Remove standing water (buckets or barrels, bird baths, old tires that may hold rainwater) and fill low spots where water can pool.
- Keep mosquitos outside of your home by repairing holes in screens and keeping windows and doors closed if possible.
- Use mosquito netting at night in areas where dengue is common.
- If you're pregnant, avoid traveling to areas where dengue is common if possible.
- When traveling, be sure to check with the CDC to understand if there are any outbreaks of illness in your destination before you leave.
- Vaccination: There are two dengue vaccines available, Dengvaxia and Qdenga, but their use may depend on age and prior dengue infection status.

High-Risk Areas:

- Dengue fever is a significant health concern in many tropical and subtropical regions worldwide, with outbreaks occurring frequently in parts of Africa, the Americas, and Southeast Asia. Several countries in these regions have reported high numbers of dengue cases, including Brazil, Colombia, Peru, and Mexico in the Americas, and Burkina Faso, Senegal, Ethiopia, Kenya and Mali in Africa

Summary:

- Dengue fever is a mosquito-borne viral illness causing flu-like symptoms, potentially severe, and is a leading cause of illness in many tropical and subtropical regions. The

disease ranges from mild, with flu-like symptoms and fever, to severe, including Dengue Haemorrhagic Fever (DHF) and Dengue Shock Syndrome (DSS), which can be fatal.

- Transmission: Spread through the bite of infected Aedes mosquitoes, primarily Aedes aegypti.
- Symptoms: Can include high fever, headache, pain behind the eyes, muscle and joint pain, nausea, vomiting, and rash.
- Severity: Mild dengue can be self-limiting, but severe dengue (DHF and DSS) involves bleeding, shock, and organ impairment.
- Geographic Distribution: Common in tropical and subtropical areas, including parts of Africa, Asia, South America, and some parts of Australia and the US.
- No specific treatment: Treatment focuses on managing symptoms and preventing complications.
- Prevention: Avoiding mosquito bites is crucial, which includes using mosquito repellent, wearing protective clothing, and eliminating mosquito breeding sites.
- Vaccines: Two dengue vaccines are available: Dengvaxia, for individuals previously infected, and Qdenga, suitable for a wider age range.

EC - Oesophageal Cancer:

Symptoms:

- Oesophageal cancer often doesn't cause symptoms in its early stages, but as the tumor grows, it can lead to difficulty swallowing (dysphagia), weight loss, and chest pain or pressure. Other symptoms may include a persistent cough or hoarseness, indigestion or heartburn, and vomiting.
- Difficulty Swallowing (Dysphagia): This is often the first noticeable symptom, and it can feel like food is stuck in the throat or chest.
- Unintentional weight loss can occur due to difficulty eating and decreased appetite.
- Pain, pressure, or burning in the chest, particularly behind the breastbone, can be associated with oesophageal cancer.
- A persistent cough or a hoarse voice can also be a sign.
- Indigestion or Heartburn: Worsening or persistent indigestion or heartburn, especially if it's not relieved by typical treatments, can be a symptom.
- Vomiting, especially after eating, can occur if the tumour is obstructing the oesophagus.
- Black, tar-like stools: This can indicate internal bleeding, a possible sign of oesophageal cancer.
- Pain behind the breastbone or between the shoulder blades, especially when swallowing, can also be a symptom.

How is it Contracted?:

- Oesophageal cancer is not contagious; it is not passed from person to person. Instead, it develops due to a combination of genetic mutations and risk factors that can lead to abnormal cell growth in the oesophagus.
- Smoking and heavy alcohol use: These habits can damage the cells in the oesophagus and increase the risk of cancer.

- Gastroesophageal reflux disease (GERD): Chronic acid reflux can irritate the oesophagus and potentially lead to Barrett's oesophagus, a precancerous condition, which increases the risk of adenocarcinoma.
- Obesity: Being overweight or obese can contribute to inflammation in the oesophagus and increase the risk of cancer.
- Diet: A diet low in fruits and vegetables may increase the risk of squamous cell carcinoma.
- Other factors: Age (older age), achalasia (a disorder of the oesophagus), and certain genetic syndromes can also play a role.

Diagnosis:

- Barium swallow: Healthcare providers look at your oesophagus through a series of X-rays. It's called a barium swallow because people drink a liquid with barium. Barium makes it easier for healthcare providers to see your oesophagus on the X-ray.
- Computed tomography (CT) scan: This test helps healthcare providers determine if tumours have spread to your chest and abdomen (belly).
- Esophagogastroduodenoscopy (EGD): Healthcare providers use a thin flexible tube called an endoscope to look at the inside of your oesophagus.
- Oesophageal endoscopic ultrasound: Sound waves create images of the inside of your oesophagus. Healthcare providers may do this test as part of an EGD.
- Biopsy: During the EGD, healthcare providers may remove a small piece of tissue to examine under a microscope to see if there are any cancer cells.

Treatment:

- Surgery: May involve removing part or all of the oesophagus (esophagectomy). Minimally invasive techniques can offer quicker recovery.
- Radiation Therapy: Uses high-energy rays to kill cancer cells. External beam radiation is a common method.
- Chemotherapy: Uses drugs to kill cancer cells. It may be used before surgery (neoadjuvant), after surgery (adjuvant), or as a primary treatment for advanced cases.
- Chemoradiation: A combination of chemotherapy and radiation therapy.
- Targeted Therapy: Uses drugs that target specific molecules involved in cancer growth.
- Immunotherapy: Boosts the body's immune system to fight cancer.
- Endoscopic Treatments: Procedures using an endoscope (a thin, flexible tube) to treat early-stage cancers or relieve symptoms of advanced cancer.

Prevention:

- Quit smoking: Tobacco use is a major risk factor for oesophageal cancer, particularly squamous cell carcinoma.
- Limit alcohol consumption: Excessive alcohol intake is also linked to an increased risk, especially for squamous cell carcinoma.
- Maintain a healthy weight: Obesity, particularly abdominal obesity, is associated with an increased risk of adenocarcinoma of the oesophagus.
- Eat a healthy diet: A diet rich in fruits and vegetables, particularly green and yellow ones, and cruciferous vegetables like cabbage, broccoli, and cauliflower, may help lower the risk.

- Manage GERD: If you experience frequent heartburn, which is a common symptom of GERD, consult with your doctor about managing this condition, as long-term GERD can increase the risk of oesophageal adenocarcinoma.
- Be physically active: Regular physical activity can also help to reduce the risk of oesophageal cancer.
- Screening for Barrett's Oesophagus: If you have Barrett's oesophagus, a condition where the lining of the oesophagus is damaged by stomach acid, your doctor may recommend regular screening to monitor for changes that could lead to cancer.
- Consider the HPV vaccine: Certain strains of HPV (human papillomavirus) can increase the risk of oesophageal cancer. Ask your doctor if the HPV vaccine is appropriate for you.

High-Risk Areas:

- The "oesophageal cancer belt," encompassing parts of northern Iran, southern Russia, central Asia, and northern China, experiences a particularly high prevalence of oesophageal squamous cell carcinoma (ESCC). Other high-risk areas include eastern and southern Africa.
- In South Africa, the Eastern Cape province, particularly the former Transkei region, is a high-risk area for oesophageal cancer. High incidence rates are also seen in KwaZulu-Natal (KZN). Factors like diet, tobacco use, and alcohol consumption are believed to contribute to the increased risk in these areas.

Summary:

- Oesophageal cancer is a disease where cancerous cells form in the oesophagus, the tube connecting the throat to the stomach. It's characterized by the uncontrollable growth of these cells, potentially forming a tumour that can obstruct swallowing. There are two main types: squamous cell carcinoma, often in the upper and middle oesophagus, and adenocarcinoma, usually in the lower oesophagus. Symptoms can include difficulty swallowing, chest pain, and weight loss.
- Key points about oesophageal cancer:
- What it is:
- Oesophageal cancer develops when cells in the oesophagus grow abnormally, forming tumours.
- It can occur anywhere along the oesophagus, but squamous cell carcinoma is more common in the upper and middle parts, while adenocarcinoma is more common in the lower part near the stomach.
- Early stages may be asymptomatic, but later stages can cause difficulty swallowing (dysphagia), chest pain, weight loss, and persistent cough.
- Squamous cell carcinoma: Develops in the flat cells lining the oesophagus.
- Adenocarcinoma: Develops in glandular cells, often related to Barrett's oesophagus and GERD.
- Smoking, heavy alcohol consumption, obesity, and GERD are associated with increased risk. Treatment options depend on the stage and type of cancer, and can include surgery, radiation therapy, chemotherapy, and targeted therapies. Survival rates vary based on stage and type, with higher survival rates for early-stage cancers.

TBM - Tuberculous Meningitis:

Symptoms:

- Low-grade fever: A persistent but not very high fever can be an early sign.
- Malaise: A general feeling of being unwell, tired, and weak.
- Headache: A persistent headache, often worsening over time.
- Personality changes: Subtle changes in behaviour, mood, or social interaction.
- Loss of appetite and weight loss.
- Sensitivity to light (photophobia): Difficulty looking at bright lights.
- Neck stiffness (meningismus): Difficulty bending the neck forward.
- Nausea and vomiting: May occur along with the headache.
- More severe headache: Intensifying and becoming more debilitating.
- Confusion and altered mental status: Difficulty thinking clearly, disorientation, and drowsiness.
- Seizures: Can occur as the disease progresses.
- Stupor or coma: Loss of consciousness.
- Focal neurological deficits: Depending on the location of inflammation, these may include paralysis, speech problems, or vision changes.

How is it Contracted?:

- Airborne Transmission: TBM is not spread through casual contact. It's contracted when a person breathes in droplets expelled by someone with active TB disease, usually through coughing, sneezing, speaking, or singing.
- Initial Lung Infection: The bacteria first infect the lungs, where they can multiply and potentially spread to the bloodstream.
- Meningeal Involvement: If the bacteria reach the meninges, they can cause inflammation and the formation of small abscesses (tubercles). Rupture of these tubercles can lead to TBM.
- Delayed Manifestation: TBM can develop soon after the initial lung infection or even years later, as the bacteria can remain dormant for extended periods.
- Risk Factors: Individuals with weakened immune systems (due to HIV, malnutrition, or other conditions), young children, and those with close contact to active TB cases are at higher risk.

Diagnosis:

- Tuberculous meningitis (TBM) diagnosis often relies on a combination of clinical findings, cerebrospinal fluid (CSF) analysis, and imaging, as confirmatory tests may have low yields. A high index of suspicion, especially with suggestive symptoms and risk factors, is crucial for timely diagnosis and treatment, as it is a medical emergency.
- History: A detailed history, including contact with individuals with active TB, is essential.
- Symptoms: TBM symptoms can be non-specific and insidious in onset, developing over weeks. Common symptoms include headache, fever, vomiting, neck stiffness (though sometimes absent in young children), and neurological deficits.
- Physical Examination: A thorough physical exam, including assessment of neurological function, is important.

- Lumbar Puncture: A lumbar puncture (spinal tap) is crucial for collecting CSF for analysis.
- Typical CSF findings: Lymphocytic pleocytosis (increased white blood cells), elevated protein, and low glucose levels are typical, but early or severe cases may have atypical findings, including normal counts or neutrophil predominance.
- Microscopy and Culture: CSF samples should be examined for acid-fast bacilli (AFB) using microscopy and cultured for Mycobacterium tuberculosis.
- Nucleic Acid Amplification Tests (NAATs): NAATs like Xpert MTB/RIF can provide rapid diagnosis but may not be highly sensitive.
- Repeat lumbar punctures: If the initial CSF analysis is unclear, repeat lumbar punctures may be necessary.
- MRI is superior: MRI is generally preferred for its higher resolution and ability to detect subtle changes, including infarcts, edema, and meningeal enhancement.
- CT scans are useful: CT scans are useful for ruling out hydrocephalus, a potential complication of TBM that may require urgent neurosurgical intervention.

Treatment:

- Intensive Phase (2 months): A four-drug regimen of rifampicin (RIF), isoniazid (INH), pyrazinamide (PZA), and either ethambutol (EMB) or streptomycin (SM).
- Continuation Phase (7-10 months): A two-drug regimen of rifampicin and isoniazid.
- Antibiotics: These drugs target the Mycobacterium tuberculosis bacteria that causes TBM.
- Corticosteroids: Dexamethasone or prednisone are commonly used to reduce inflammation and swelling in the brain and surrounding tissues, which can be severe in TBM.

Prevention:

- BCG Vaccination: The Bacille Calmette-Guérin (BCG) vaccine can offer protection against severe forms of TB, including TBM, particularly in young children in high-risk areas.
- Treating Latent TB: People with latent TB infection (positive TB test but no symptoms) can be treated with antibiotics to prevent the development of active TB disease, including TBM.
- Early Diagnosis and Treatment of TB: Prompt diagnosis and treatment of TB infections are vital to prevent the progression to TBM and other severe forms of TB.
- Public Health Efforts: Public health initiatives focused on vaccination and awareness campaigns can help reduce the burden of TBM.
- Hygiene Practices: Good hygiene practices, like covering the mouth and nose when coughing or sneezing, can help reduce the spread of TB bacteria.
- Ventilation and Sunlight: TB bacteria can be suspended in the air, so good ventilation and exposure to natural light (UV light kills TB bacteria) can help reduce the risk of infection.

High-Risk Areas:

- Tuberculous meningitis (TBM) is more prevalent in certain regions of the world, with high-risk areas including parts of Southeast Asia and Africa. Within these regions,

children are often more susceptible, while in higher-income countries, TBM is more common in adults.

- These include parts of Africa, Southeast Asia, and the Western Pacific regions. Within these regions, countries like India, Indonesia, China, the Philippines, and Nigeria are specifically highlighted as having a large share of the global TB burden. Additionally, countries with high HIV prevalence, like South Africa, also experience higher rates of TBM.

Summary:

- Tuberculous meningitis (TBM) is a severe form of extrapulmonary tuberculosis that affects the meninges, the membranes surrounding the brain and spinal cord. It's caused by the bacterium Mycobacterium tuberculosis and is characterized by inflammation and potential damage to these protective layers. TBM is a serious illness with high mortality and morbidity rates, particularly if diagnosis and treatment are delayed. TBM results from the spread of Mycobacterium tuberculosis bacteria from another site in the body, often the lungs, to the central nervous system.
- Basal Meningeal Enhancement: Inflammation in the base of the brain, visible on imaging. Hydrocephalus: Build-up of fluid within the skull, potentially increasing pressure on the brain. Vasculitis: Inflammation of blood vessels in the brain, increasing the risk of strokes. Exudates: Thickening of fluid around the brain and spinal cord. Infarcts: Brain damage due to blocked blood flow.
- Symptoms:
- TBM often develops sub acutely, meaning symptoms progress gradually over weeks. Initial symptoms may include: Fever, Headache, Malaise, Loss of appetite, Tiredness, Neck stiffness, confusion, and drowsiness can develop later, more severe symptoms like seizures, paralysis, and coma can occur if left untreated.
- Diagnosis can be challenging and may involve: Lumbar Puncture: Analysing cerebrospinal fluid (CSF) for TB bacteria and signs of inflammation. Neuroimaging (CT or MRI): Detecting characteristic features like meningeal enhancement and hydrocephalus.
- Treatment: TBM requires prompt and aggressive treatment with multiple anti-tuberculosis drugs, often including corticosteroids to reduce inflammation.
- If not treated, TBM can lead to severe complications, including, Permanent neurological damage, Hydrocephalus, Seizures, Vision or hearing loss, Death.
- Risk Factors: Individuals with HIV/AIDS, weakened immune systems, and diabetes are at higher risk of developing TBM.

HSV – Herpes:

Symptoms:

- Herpes symptoms can vary, but often include painful blisters or sores, tingling or itching sensations, and flu-like symptoms during the first outbreak. Recurrent outbreaks are typically less severe and shorter than the initial one.

- Initial Oral Outbreak: May include fever, body aches, swollen lymph nodes, sore throat, and headache, in addition to the characteristic blisters or sores.
- Recurrent Oral Outbreaks: Usually involve blisters or sores on or around the lips and mouth, tingling or itching sensations before the blisters appear, and may be accompanied by a burning sensation.
- Initial Genital Outbreak: Can include painful blisters or sores on or around the genitals, anus, or inner thighs, painful urination, fever, body aches, swollen lymph nodes, and flu-like symptoms.
- Recurrent Genital Outbreaks: Often involve tingling, itching, or burning sensations before the appearance of sores, which may be less painful and heal faster than during the initial outbreak.
- Tingling, itching, or burning: May occur before the appearance of sores, and can be a sign of a recurring outbreak.
- Painful sores or blisters: May appear on or around the genitals, mouth, or other areas of the skin.
- Flu-like symptoms: May include fever, headache, body aches, and swollen lymph nodes, particularly during the first outbreak.
- Painful urination: May occur if sores are present near the urethra.
- Swollen lymph nodes: Can occur in the groin area, neck, or underarms.
- Discharge: Unusual vaginal discharge or discharge from the urethra may be a symptom.

How is it Contracted?:

- Direct skin-to-skin contact: This is the most common way herpes is transmitted. It can occur during sexual activity (oral, anal, or vaginal) or even through close, non-sexual contact.
- Contact with sores: If an infected person has visible sores or blisters, touching those areas can transmit the virus.
- Contact with saliva: Oral herpes can be spread through saliva, even without visible sores. For example, kissing or sharing utensils can transmit the virus.
- Contact with genital fluids: Semen and vaginal secretions can contain the virus and transmit it during sexual contact.
- From mother to child: During childbirth, a mother with active herpes can transmit the virus to her baby.

Diagnosis:

- Physical Exam: A healthcare provider can often diagnose herpes by visually inspecting any sores or blisters present.
- Swab Test: If sores are present, a sample can be taken and tested for the herpes virus (HSV).
- Blood Test: If no sores are present, a blood test can be used to detect the presence of HSV antibodies, indicating a past or current infection.
- Lumbar Puncture: In rare cases, if herpes is suspected to have spread to the brain or spinal cord, a lumbar puncture (spinal tap) may be necessary.

Treatment:

- While there's no cure for herpes, prescription antiviral medications can effectively manage outbreaks and reduce their frequency and severity. These medications, such as acyclovir, famciclovir, and valacyclovir, can be taken during outbreaks to shorten their duration and lessen symptoms, or as a daily preventative measure to reduce recurrence.
- Acyclovir, famciclovir, and valacyclovir: are the most common antiviral medications used to treat herpes.
- They can be taken orally (pills) or, in some cases, topically (creams).
- During outbreaks: These medications can help sores heal faster, reduce pain, and shorten the duration of the outbreak.
- Suppressive therapy: Daily antiviral medication can significantly reduce the frequency of outbreaks and reduce the risk of transmission to others.
- Keeping the affected area clean and dry can help prevent secondary infections.
- Salt baths or sitz baths can soothe sores and reduce discomfort.
- Loose-fitting clothing can help minimize irritation.
- Ice packs (wrapped in a cloth) can help reduce swelling and pain.

Prevention:

- To prevent herpes transmission, the most important steps are to avoid contact with infected areas during outbreaks, use condoms consistently and correctly during sex, and consider antiviral medication for frequent outbreaks.
- Avoidance during outbreaks: Refrain from any sexual activity, including oral sex, when visible sores or blisters are present, as this is when the virus is most contagious.
- Consistent condom use: Latex or polyurethane condoms, when used correctly and consistently, significantly reduce the risk of transmission during sexual activity.
- Antiviral medication: For individuals with frequent outbreaks, daily antiviral medication can help reduce the frequency and severity of outbreaks and lower the risk of transmission according to the National Institutes of Health (NIH).
- Communication: Openly discuss herpes status with current and potential sexual partners to allow for informed decision-making about protection and risk reduction.
- Other preventive measures: Avoid sharing personal items like towels, razors, and lipstick, as these can harbour the virus according to MedlinePlus.

High-Risk Areas:

- While herpes infections are widespread globally, Sub-Saharan Africa has the highest prevalence of HSV-2 (genital herpes). Within the region, exact levels vary by country, but studies show high rates among both men and women. Other areas with high HSV-2 prevalence include South America and South and East Asia.
- Malawi, Lesotho, and Uganda: These countries in Sub-Saharan Africa have some of the highest incidence rates of genital herpes.
- China, India, and Brazil: These countries had the highest absolute number of incident cases of genital herpes in 2021, accounting for a large portion of global cases, according to a study from the National Institutes of Health (NIH).

Summary:

- Herpes is a common viral infection, primarily spread through skin-to-skin contact, causing painful blisters or sores. There are two types of herpes simplex virus (HSV): HSV-1, commonly associated with oral herpes (cold sores), and HSV-2, usually causing genital herpes. While there's no cure, antiviral medications can manage outbreaks and reduce transmission.
- Causes: Herpes simplex virus (HSV) types 1 and 2 are the culprits.
- Transmission: Primarily spread through direct skin-to-skin contact, including sexual contact.
- Symptoms: May include painful blisters or sores, sometimes accompanied by flu-like symptoms.
- No Cure: The virus remains in the body, but outbreaks can be managed with antiviral medications.
- Treatment: Antiviral medications can shorten the duration and severity of outbreaks and reduce the risk of transmission.
- HSV-1: Commonly associated with oral herpes (cold sores) but can also cause genital herpes.
- HSV-2: Typically causes genital herpes but can also infect the mouth.
- Outbreaks: Can be triggered by stress, illness, or other factors.
- Prevention: Safer sex practices and good hygiene can help reduce transmission.

CT – Chlamydia:

Symptoms:

- Symptoms in Women:
    - Vaginal discharge: Change in colour, amount, or odour of vaginal discharge.
    - Bleeding: Between periods or after sex.
    - Pain: In the lower abdomen or during intercourse.
    - Burning sensation: When urinating.
    - Rectal pain, discharge, or bleeding.
- Symptoms in Men:
    - Penile discharge: Can be clear, cloudy, or pus-like.
    - Pain: In the testicles, particularly one, or during urination.
    - Burning sensation: When urinating.
    - Rectal pain, discharge, or bleeding.
- Symptoms in both men and women:
    - Conjunctivitis: Redness, pain, and discharge in the eyes.
    - Sore throat: Though less common, can occur after oral sex.
    - Rectal pain, discharge, or bleeding.

How is it Contracted?:

- Vaginal, anal, and oral sex: Chlamydia is spread through contact with infected semen, pre-cum, or vaginal fluids.

- Mother to child: A pregnant woman with chlamydia can transmit the infection to her baby during childbirth, potentially causing eye or lung infections in the newborn.
- Sex toys: Sharing sex toys without washing them or using a condom between uses can spread chlamydia.
- Infected fluids in the eye: It's possible, though less common, to get chlamydia by getting infected semen or vaginal fluid into your eye.

Diagnosis:

- Asymptomatic nature: A significant number of people with chlamydia don't experience any symptoms, making regular screening important, especially for those at higher risk.
- NAAT testing: NAATs are the most sensitive and preferred method for diagnosing chlamydia, offering reliable results.
- Men: Urine samples are commonly used, but meatal swabs (collected from the tip of the penis) can also be used for testing.
- Women: Vaginal or cervical swabs are typically used, with patient-collected swabs being just as effective as those collected by a clinician, according to the CDC.
- Other locations: Chlamydia can also infect the rectum and throat, so anal or throat swabs might be collected if indicated.

Treatment:

- Partner Treatment: It's essential to inform all sexual partners so they can also get tested and treated, as chlamydia can be transmitted back and forth.
- Abstain from Sex: Avoid sexual activity during treatment until you have completed the full course of antibiotics and are symptom-free to prevent reinfection or spreading the infection.
- Follow-up: It's recommended to get retested for chlamydia about three months after treatment to ensure the infection has cleared.
- Complications: If left untreated, chlamydia can lead to serious health problems, including pelvic inflammatory disease (PID) in women and potential infertility.
- Azithromycin: A single dose of azithromycin is often prescribed according to the World Health Organization (WHO).
- Doxycycline: A seven-day course of doxycycline is another common treatment option.
- Other antibiotics: Alternative treatments like erythromycin or levofloxacin may be used but are less common.

Prevention:

- Abstinence: Not engaging in any sexual activity (vaginal, anal, or oral) is the only way to completely avoid chlamydia.
- Limit Sexual Partners: Having multiple sexual partners increases the risk of exposure to chlamydia and other STIs.
- Regular Testing: If you are sexually active, talk to your healthcare provider about how often you should be screened for chlamydia and other STIs.
- Partner Notification and Treatment: If you are diagnosed with chlamydia, it's important to inform your sexual partners so they can get tested and treated if necessary.

- Doxy PEP: For individuals at high risk, like men who have sex with men, Doxy PEP (doxycycline post-exposure prophylaxis) may be an option to reduce the risk of some bacterial STIs, including chlamydia.
- Proper Condom Use.

High-Risk Areas:

- Sub-Saharan Africa is noted to have the highest prevalence of sexually transmitted infections (STIs) globally. Within Europe, countries like Denmark, Finland, Iceland, Norway, and Sweden have reported high chlamydia rates
- In South Africa, several areas are identified as high-risk for chlamydia and other sexually transmitted infections (STIs). These include specific sub-districts in Johannesburg, like Alexandra/Sandton and the Inner City/Braamfontein/Hillbrow areas, as well as regions like Merafong on the West Rand and Katlehong. Additionally, Ekurhuleni South (including Germiston, Katlehong, and Vosloorus) and Lesedi in Sedibeng are also areas of concern.

Summary:

- Chlamydia is a common sexually transmitted infection (STI) caused by bacteria. It's often asymptomatic, but if left untreated, it can lead to serious health problems like pelvic inflammatory disease, infertility, and increased risk of HIV. Chlamydia is easily curable with antibiotics.
- Cause: Chlamydia trachomatis bacteria.
- Transmission: Primarily through unprotected vaginal, anal, or oral sex with an infected person.
- Symptoms: Many people with chlamydia have no symptoms. If symptoms do occur, they can include unusual discharge, pain during urination, or pain and discomfort in the genital area.
- Treatment: Antibiotics are very effective in treating chlamydia.
- Complications: If left untreated, chlamydia can lead to pelvic inflammatory disease (PID), ectopic pregnancy, infertility, and increased risk of HIV transmission.
- Prevention: Consistent and correct use of condoms during sex and getting tested regularly can help prevent chlamydia.
- Pregnancy: Pregnant women with chlamydia can pass the infection to their babies during childbirth, potentially causing conjunctivitis or pneumonia in the newborn.

GC – Gonorrhoea:

Symptoms:

- Symptoms in Men:
    - Pain or burning during urination: This can be an early indicator of gonorrhoea.
    - Discharge from the penis: This can be white, yellow, or green.
    - Swollen and painful testicles: This can indicate a more serious infection.
    - Sore throat and swollen glands: If the infection is contracted through oral sex.
    - Rectal pain, itching, or discharge: If the infection is contracted through anal sex.
- Symptoms in Women:

    - Increased vaginal discharge: This can be a sign of infection.
    - Pain or burning during urination: Like men, this can be an early symptom.
    - Vaginal bleeding between periods or after intercourse: This can be a sign of infection.
    - Lower abdominal or pelvic pain: This can indicate a more serious infection.
    - Sore throat and swollen glands: If the infection is contracted through oral sex.
    - Rectal pain, itching, or discharge: If the infection is contracted through anal sex.
- Fever and chills: These can indicate a more widespread infection.
- Joint pain or swelling: This can occur if the infection spreads to the joints.
- Eye pain, itching, or discharge: If the infection is transmitted to the eyes.
- Sore throat and swollen glands in the neck: If the infection is contracted through oral sex.
- Right upper quadrant abdominal pain: In some cases, gonorrhoea can cause inflammation around the liver, leading to pain in the right upper abdomen.

How is it Contracted?:

- Sexual Contact: Gonorrhoea is most commonly spread through unprotected sexual activity, including vaginal, anal, and oral sex.
- Bodily Fluids: The bacteria that cause gonorrhoea, Neisseria gonorrhoeae, are present in semen and vaginal fluids.
- Mucous Membranes: Infection occurs when these fluids come into contact with the mucous membranes in the genitals, rectum, or throat.
- Mother-to-Child Transmission: Gonorrhoea can be passed from a pregnant woman to her baby during childbirth, potentially leading to eye infections or other complications in the newborn.
- Unprotected Sex: Risk of contracting gonorrhoea is significantly higher with unprotected sex due to the direct transmission of bodily fluids.
- Other Transmission Methods: While less common, gonorrhoea can potentially be spread by touching an infected area and then touching other parts of the body, including the eyes, before washing hands thoroughly.

Diagnosis:

- Gonorrhoea is typically diagnosed through laboratory tests that detect the presence of the bacteria Neisseria gonorrhoeae. These tests often involve analysing samples of urine or swabs taken from the throat, rectum, or genitals, depending on the suspected site of infection. Nucleic acid amplification tests (NAATs) are commonly used due to their high sensitivity and ability to detect the bacteria's genetic material.

Treatment:

- Partner Treatment: All sexual partners within the past 60 days should be screened and treated, even if they don't have symptoms, to prevent reinfection.
- Abstinence: Avoid sexual activity for at least seven days after treatment and until partners are treated.
- Retesting: The CDC recommends a test of cure (TOC) three months after treatment to ensure the infection is cleared and to check for reinfection.
- Complications: Untreated gonorrhoea can lead to serious complications like pelvic inflammatory disease, infertility, and increased risk of HIV transmission.

- Drug Resistance: Emerging strains of drug-resistant gonorrhoea are a concern, making it crucial to follow treatment guidelines and potentially seek specialist advice if treatment is not effective.
- Ceftriaxone: The preferred treatment for uncomplicated gonorrhoea, administered as a single intramuscular injection.
- Cefixime: An alternative oral antibiotic, often used in combination with azithromycin, particularly when ceftriaxone is not an option.
- Azithromycin: A commonly used antibiotic, often combined with ceftriaxone or cefixime.
- Gentamicin: An injectable antibiotic that may be used in cases of ceftriaxone allergy.
- Doxycycline: May be prescribed to treat a co-infection with chlamydia.

Prevention:

- Abstinence: The most effective way to prevent gonorrhoea (and other STIs) is to abstain from all sexual activity.
- Consistent and Correct Condom Use: Using condoms (male or female) during vaginal, anal, and oral sex is crucial for preventing the spread of gonorrhoea. Ensure the condom is used correctly from start to finish of each sexual encounter.
- Limit Sexual Partners: Reducing the number of sexual partners lowers the risk of exposure to gonorrhoea. In a mutually monogamous relationship with a partner who has been tested and is free of gonorrhoea, the risk of infection is significantly reduced.
- Partner Testing and Communication: Before engaging in sexual activity, discuss STI status with your partner(s) and consider getting tested together. If either partner has symptoms of an STI, avoid sexual contact until both are tested and treated.
- Regular Screening: Annual screening for gonorrhoea is recommended for sexually active women under 25 and for older women at increased risk (e.g., those with multiple partners or new partners). If you suspect you might have gonorrhoea, seek testing and treatment promptly, and avoid sexual activity until cleared by a healthcare provider.
- Other Considerations: Avoid sexual contact with anyone who has symptoms of gonorrhoea. Consider doxycycline post-exposure prophylaxis (doxy PEP) as a preventative measure, especially for those at high risk.
- Treatment and Prevention of Future Infections: If diagnosed with gonorrhoea, complete the full course of prescribed antibiotics. After treatment, continue to use condoms and practice safe sex to prevent future infections.

High-Risk Areas:

- Gonorrhoea is prevalent worldwide, with some regions experiencing higher rates of infection. Globally, the WHO African Region, the Americas, and the Western Pacific have the highest incidence of gonorrhoea, while Europe generally has lower rates. Within these regions, certain populations are disproportionately affected, including men who have sex with men, sex workers, transgender women, and adolescents and young adults in high-burden countries.
- South Africa, for example, has one of the highest rates of sexually transmitted infections, including gonorrhoea, globally.

Summary:

- Gonorrhoea is a common sexually transmitted infection (STI) caused by the bacterium Neisseria gonorrhoeae. It can affect the genitals, rectum, and throat and is primarily

spread through sexual contact. While many people experience no symptoms, untreated gonorrhoea can lead to serious health complications.

- Cause: Gonorrhoea is caused by the bacterium Neisseria gonorrhoeae.
- Transmission: It is spread through vaginal, oral, or anal sex, and can also be passed from mother to child during childbirth.
- Symptoms: Symptoms can include painful urination, increased vaginal discharge, and abdominal pain in women, and painful urination and penile discharge in men. Some individuals may have no symptoms at all.
- Complications: Untreated gonorrhoea can lead to pelvic inflammatory disease (PID) in women, which can cause infertility and ectopic pregnancy. In men, it can cause epididymitis, which can also lead to infertility.
- Treatment: Gonorrhoea is treated with antibiotics.
- Prevention: Safe sex practices, such as condom use, can help prevent the spread of gonorrhoea.

PEM - Malnutrition:

Symptoms:

- Unintentional weight loss: Losing 5% to 10% of body weight over 3 to 6 months is a significant indicator.
- Low body weight: A BMI under 18.5 indicates risk of malnutrition.
- Fatigue and weakness: Feeling tired, weak, or lacking energy.
- Loss of appetite and interest in food: Reduced desire to eat or drink.
- Dizziness and poor coordination: Feeling lightheaded or having difficulty with balance.
- Changes in skin, hair, and nails: Dry skin, hair loss, brittle nails, and changes in skin pigmentation.
- Swelling (edema): Fluid retention, particularly in the abdomen, face, and limbs.
- Reduced muscle strength: Difficulty with everyday tasks like walking or lifting objects.
- Feeling cold: Experiencing chills or being unable to get warm.
- Slow or poor wound healing: Infections may take longer to resolve.
- In children: Not growing or gaining weight at the expected rate.
- Poor concentration and confusion: Difficulty focusing or thinking clearly.
- Changes in mood: Irritability, apathy, or depression.
- Reduced ability to perform everyday tasks: Difficulty with activities like cooking, showering, or dressing.

How is it Contracted?:

- Malnutrition occurs when the body doesn't receive the right amount of nutrients, either due to insufficient intake (undernutrition) or excessive intake (overnutrition). It can also result from the body's inability to properly absorb or utilize nutrients.
- Insufficient food intake: This is the most common cause, especially in developing countries, where factors like poverty, food insecurity, and inadequate food supplies play a role.

- Inability to absorb nutrients: Conditions like Crohn's disease, celiac disease, or bacterial overgrowth in the intestines can impair nutrient absorption, leading to malnutrition.
- Increased nutrient needs: Certain conditions, like chronic illnesses, infections, or recovery from surgery or injury, can increase the body's demand for nutrients, making it harder to maintain adequate levels.
- Excessive nutrient intake: While less common, overeating, consuming unhealthy foods, or excessive vitamin or mineral supplementation can also lead to malnutrition (overnutrition).
- Other factors: Social isolation, mental health disorders (like depression), and substance misuse can also contribute to malnutrition.

Diagnosis:

- Weight loss and low BMI.
- Loss of muscle mass and subcutaneous fat.
- Edema (swelling).
- Dry, flaky skin.
- Brittle nails.
- Delayed wound healing.
- BMI: Calculated using weight and height, with a healthy BMI generally between 18.5 and 24.9, according to News-Medical.net.
- General Screening: To check for anemia, vitamin and mineral deficiencies, and signs of infection.
- Specific Nutrient Levels: Testing for iron, vitamins, and other micronutrients.
- Prealbumin and Albumin: Levels can be affected by malnutrition and may indicate liver or kidney disease.
- Malnutrition Universal Screening Tool (MUST): A five-step tool designed for adults, especially older adults, to identify those at risk of malnutrition. It considers BMI, weight loss, and underlying health conditions.

Treatment:

- Dietary changes: Eating small, frequent meals with nutrient-rich foods is crucial.
- Nutritional supplements: These can include individual vitamins and minerals, or specialized high-calorie formulas, especially for severe cases.
- Addressing underlying conditions: Treating infections, managing swallowing problems, and addressing other medical issues that may be contributing to malnutrition are essential.
- Inpatient care: Severely malnourished individuals may require hospitalization for refeeding and monitoring, particularly to prevent refeeding syndrome, which can be dangerous.
- Community support: After inpatient care, ongoing support, including dietary guidance and monitoring, is vital to ensure continued recovery and prevent relapse.
- Weight loss: This can be achieved through a combination of diet and exercise plans, and in some cases, medications or medical procedures.
- Addressing underlying conditions: Treating conditions like diabetes or thyroid problems, which can contribute to weight gain, is important.

- Mental health support: Addressing any underlying mental health conditions that may contribute to overeating is also crucial.

Prevention:

- Balanced Diet: Encourage a diet rich in fruits, vegetables, and whole grains.
- Fortified Foods: Utilize fortified foods and supplements to address micronutrient deficiencies.
- Local Foods: Promote locally produced, affordable, and nutrient-dense foods, especially for vulnerable populations.
- Pregnant and Breastfeeding Women: Provide support and resources to ensure adequate nutrition for this group.
- Young Children: Focus on the first 1,000 days (from pregnancy to age 2) for optimal nutrition.
- Sustainable Food Production: Promote sustainable agriculture and resilient food systems.
- Supply Chain Improvements: Enhance the production, processing, and distribution of safe and nutritious foods.
- Growth Monitoring: Regularly monitor children's growth and development to identify malnutrition early.
- Community Health Workers: Train and empower community health workers to provide nutrition services.
- Exclusive Breastfeeding: Encourage exclusive breastfeeding for the first six months of life.
- Appropriate Complementary Feeding: Introduce complementary foods alongside breastfeeding at six months, ensuring they are nutritious and safe.

High-Risk Areas:

- Malnutrition high-risk areas are often concentrated in low- and middle-income countries, particularly in South Asia and sub-Saharan Africa. Within these regions, specific vulnerabilities exist, including impoverished communities, areas with limited access to basic services like clean water and healthcare, and those facing food insecurity. Children, pregnant women, and the elderly are particularly at risk.
- Malnutrition, encompassing both undernutrition and overnutrition, remains a significant public health challenge in South Africa, affecting many children and adults. While the country faces a complex dual burden of malnutrition, with issues like stunting alongside rising rates of overweight and obesity, the consequences of undernutrition, including child deaths and developmental delays, are particularly concerning.

Summary:

- Malnutrition, in general, refers to a state of imbalance in nutrient intake, either through deficiencies, excesses, or imbalances in energy, macronutrients, or micronutrients. It encompasses undernutrition (including wasting, stunting, and underweight) and overnutrition (including overweight, obesity, and diet-related diseases). Malnutrition can have significant adverse effects on body structure, function, and clinical outcomes.