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# LIFE ORIENTATION LEVEL 3

PREPARED BY  
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**AFTER COMPLETING THIS LESSON, YOU  
WILL BE ABLE TO:**

- Define disease and infection
- Discuss immune system
- Seek medical attention if needed
- Distinguish between different types of infections
- Outline HIV/AIDS

# WHAT IS A DISEASE?

- An damage of health or condition of abnormal functioning.
- The damage usually results in a reduction of strength or quality.
- A disease is a particular abnormal condition that negatively affects the structure or function of all or part of an organism, and that is not due to any immediate external injury.
- Diseases are often known to be medical conditions that are associated with specific symptoms and signs

# WHAT IS INFECTION?

- An infection occurs when another organism enters your body and causes disease. The organisms that cause infections are very diverse and can include things like viruses, bacteria, fungi, and parasites.
- **Infectious diseases** are disorders caused by organisms — such as bacteria, viruses, fungi or parasites. Many organisms live in and on our bodies. They're normally harmless or even helpful. But under certain conditions, some organisms may cause disease.
- Some infectious diseases can be passed from person to person. Some are transmitted by insects or other animals. And you may get others by consuming contaminated food or water or being exposed to organisms in the environment
- **Infectious diseases** are caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi; the diseases can be spread, directly or indirectly, from one person to another. Zoonotic diseases are infectious diseases of animals that can cause disease when transmitted to humans.

# IMMUNE SYSTEM

- The organs and processes of the body that provide resistance to infection and toxins. Organs include the ***thymus, bone marrow, and lymph nodes.***
- The immune system is a host defence system comprising many biological structures and processes within an organism that protects against disease. ... Even simple unicellular organisms such as bacteria possess a rudimentary immune system in the form of enzymes that protect against bacteriophage infections

# SYMPTOMS

Each infectious disease has its own specific signs and symptoms. General signs and symptoms common to a number of infectious diseases include:

- Fever
- Diarrhoea
- Fatigue
- Muscle aches
- Coughing
- When to see a doctor

## SEEK MEDICAL ATTENTION IF YOU:

- Have been bitten by an animal
- Are having trouble breathing
- Have been coughing for more than a week
- Have severe headache with fever
- Experience a rash or swelling
- Have unexplained or prolonged fever
- Have sudden vision problems
- Request an Appointment at Mayo Clinic

## CAUSES INFECTIOUS DISEASES CAN BE CAUSED BY:

- Bacteria. These one-cell organisms are responsible for illnesses such as strep throat, urinary tract infections and tuberculosis.
- Viruses. Even smaller than bacteria, viruses cause a multitude of diseases ranging from the common cold to AIDS.
- Fungi. Many skin diseases, such as ringworm and athlete's foot, are caused by fungi. Other types of fungi can infect your lungs or nervous system.
- Parasites. Malaria is caused by a tiny parasite that is transmitted by a mosquito bite. Other parasites may be transmitted to humans from animal faces.

AN EASY WAY TO CATCH MOST INFECTIOUS DISEASES IS BY COMING IN CONTACT WITH A PERSON OR AN ANIMAL WITH THE INFECTION. INFECTIOUS DISEASES CAN BE SPREAD THROUGH **DIRECT CONTACT** SUCH AS:

- Person to person. Infectious diseases commonly spread through the direct transfer of bacteria, viruses or other germs from one person to another. This can happen when an individual with the bacterium or virus touches, kisses, or coughs or sneezes on someone who isn't infected.
- These germs can also spread through the exchange of body fluids from sexual contact. The person who passes the germ may have no symptoms of the disease, but may simply be a carrier.
- Animal to person. Being bitten or scratched by an infected animal — even a pet — can make you sick and, in extreme circumstances, can be fatal. Handling animal waste can be hazardous, too. For example, you can get a toxoplasmosis infection by scooping your cat's litter box.
- Mother to unborn child. A pregnant woman may pass germs that cause infectious diseases to her unborn baby. Some germs can pass through the placenta or through breast milk. Germs in the vagina can also be transmitted to the baby during birth.

# INDIRECT CONTACT

- Disease — causing organisms also can be passed by indirect contact. Many germs can linger on an inanimate object, such as a table top, doorknob or faucet handle.
- When you touch a doorknob handled by someone ill with the flu or a cold, for example, you can pick up the germs he or she left behind. If you then touch your eyes, mouth or nose before washing your hands, you may become infected.
- Insect bites-Some germs rely on insect carriers — such as mosquitoes, fleas, lice or ticks — to move from host to host. These carriers are known as vectors. Mosquitoes can carry the malaria parasite or West Nile virus. Deer ticks may carry the bacterium that causes Lyme disease.
- Food contamination — Disease-causing germs can also infect you through contaminated food and water. This mechanism of transmission allows germs to be spread to many people through a single source. Escherichia coli (E. coli), for example, is a bacterium present in or on certain foods — such as undercooked hamburger or unpasteurized fruit juice.

# PREVENTION OF INFECTIONS

- Follow these tips to decrease the risk of infection:
- Wash your hands. This is especially important before and after preparing food, before eating, and after using the toilet. And try not to touch your eyes, nose or mouth with your hands, as that's a common way germs enter the body.
- Get vaccinated. Vaccination can drastically reduce your chances of contracting many diseases. Make sure to keep up to date on your recommended vaccinations, as well as your children's.
- Stay home when ill. Don't go to work if you are vomiting, have diarrhoea or have a fever. Don't send your child to school if he or she has these signs, either.
- Prepare food safely

# HIV & AIDS

- About HIV & AIDS
- What Are HIV and AIDS?
- How Is HIV Transmitted?
- Who Is at Risk for HIV?
- Symptoms of HIV
- How Do You Get or Transmit HIV?

YOU CAN ONLY GET HIV BY COMING INTO DIRECT CONTACT WITH CERTAIN BODY FLUIDS FROM A PERSON WITH HIV WHO HAS A DETECTABLE VIRAL LOAD. THESE FLUIDS ARE:

- Blood
- Semen (cum) and pre-seminal fluid
- Rectal fluids
- Vaginal fluids
- Breast milk
- For transmission to occur, the HIV in these fluids must get into the bloodstream of an HIV-negative person through a mucous membrane (found in the rectum, vagina, mouth, or tip of the penis); open cuts or sores; or by direct injection.
- People with HIV who take HIV medicine daily as prescribed and get and keep an undetectable viral load have effectively no risk of sexually transmitting HIV to their HIV-negative partners.

## HOW IS HIV SPREAD FROM PERSON TO PERSON?

- HIV can only be spread through specific activities. In the United States, the most common ways are:
  - Having vaginal or anal sex with someone who has HIV without using a condom or taking medicines to prevent or treat HIV. Anal sex is riskier than vaginal sex.
  - Sharing injection drug equipment (“works”), such as needles, with someone who has HIV.
  - Less common ways are:
    - From mother to child during pregnancy, birth, or breastfeeding. However, the use of HIV medicines and other strategies have helped lower the risk of mother-to-child transmission of HIV to 1% or less in the United States.
    - Getting stuck with an HIV-contaminated needle or other sharp object. This is a risk mainly for health care workers. The risk is very low.

## HIV is spread only in extremely rare cases by:

- Having oral sex. But in general, the chance that an HIV-negative person will get HIV from oral sex with an HIV-positive partner is extremely low.
- Receiving blood transfusions, blood products, or organ/tissue transplants that are contaminated with HIV. The risk is extremely small these days because of rigorous testing of the U.S. blood supply and donated organs and tissues.
- Being bitten by a person with HIV. Each of the very small number of documented cases has involved severe trauma with extensive tissue damage and the presence of blood. There is no risk of transmission if the skin is not broken.
- Contact between broken skin, wounds, or mucous membranes and HIV-infected blood or blood-contaminated body fluids.
- Deep, open-mouth kissing if both partners have sores or bleeding gums and blood from the HIV-positive partner gets into the bloodstream of the HIV-negative partner. HIV is not spread through saliva.
- Eating food that has been pre-chewed by a person with HIV. The contamination occurs when infected blood from a caregiver's mouth mixes with food while chewing. The only known cases are among infants.

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  - Sharing injection drug equipment (“works”), such as needles, with someone who has HIV.
  - Less common ways are:
    - From mother to child during pregnancy, birth, or breastfeeding. However, the use of HIV medicines and other strategies have helped lower the risk of mother-to-child transmission of HIV
    - Getting stuck with an HIV-contaminated needle or other sharp object. This is a risk mainly for health care workers.

# THE RISK IS VERY LOW.

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## TUBERCULOSIS (TB) WHAT IS TUBERCULOSIS?

- Tuberculosis -- or TB, as it's commonly called -- is a contagious infection that usually attacks your lungs. It can spread to other parts of your body, like your brain and spine. A type of bacteria called *Mycobacterium tuberculosis* causes it.
- In the early 20th century, TB was a leading cause of death in the United States. Today, most cases are cured with antibiotics. But it takes a long time. You have to take meds for at least 6 to 9 months.

# TUBERCULOSIS TYPES

- A TB infection doesn't mean you'll get sick. There are two forms of the disease:
  - Latent TB. You have the germs in your body, but your immune system stops them from spreading. That means you don't have any symptoms and you're not contagious. But the infection is still alive in your body and can one day become active. If you're at high risk for re-activation -- for instance, you have HIV, your primary infection was in the past 2 years, your chest X-ray is abnormal, or your immune system is compromised --- your doctor will treat you with antibiotics to lower the risk for developing active TB.
  - Active TB. This means the germs multiply and can make you sick. You can spread the disease to others. Ninety percent of adult cases of active TB are from the reactivation of a latent TB infection
  - Tuberculosis Signs and Symptoms
  - There aren't any for latent TB. You'll need to get a skin or blood test to find out whether you have it.

## THERE ARE USUALLY SIGNS/SYMPTOMS IF YOU HAVE ACTIVE TB DISEASE. THEY INCLUDE:

- A cough that lasts more than 3 weeks
- Chest pain
- Coughing up blood
- Feeling tired all the time
- Night sweats
- Chills
- Fever
- Loss of appetite
- Weight loss
- If you have any of these symptoms, see your doctor to get tested. Get medical help right away if you have chest pain

## HOW COULD YOU PREVENT TB INFECTION?

1. Involve patients & community in advocacy campaigns
2. Infection control plan
3. Safe sputum collection
4. Cough etiquette and cough hygiene
5. Triage TB suspects to fast track or separation
6. Rapid TB diagnosis and treatment
7. Improve room air ventilation
8. Protect health care workers
9. Capacity building
10. Monitor infection control practices

## AN ACTIVITY TO DO:

- Activity 8
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- Activity 10
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- Activity 11 (number 2,1-2,5 only)
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# EDUCATION IS THE MOVEMENT FROM DARKNESS TO LIGHT



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