بسم ألله الرحمن الرحيم

{يَا أَيُّهَا النَّاسُ قَدْ جَاءتْكُم مَّوْعِظَةٌ مِّن رَّبِّكُمْ وَشِفَاء لِّمَا فِي الصُّدُورِ وَهُدًى وَرَحْمَةٌ لِّلْمُؤْمِنِينَ}.

صدق ألله العظيم

(سورة يونس – الآية 57)

By

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Introduction

- **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 immediately due to any external injury.
- **Diseases** are often known to be **medical conditions** that are associated with specific signs and symptoms.
- **A disease** may be caused by external factors such as pathogens **or** by internal dysfunctions.
- **For example:** internal dysfunctions of the immune system can produce a variety of different diseases, including various forms of immunodeficiency, hypersensitivity, allergies and autoimmune disorders.
- **In humans, disease** is often used more broadly to refer to any condition that causes pain**, dysfunction, , or** death to the person affected, or similar problems for those in contact with the person.

- **Signs refer to** identifying characteristics of a disease such as: swelling, weight loss, or fever.
- **Signs:** Objective evidence of disease is noted by physician or doctor, like: fever.
- **Symptoms** are the features of a disease recognized by a patient and/or their doctor. Symptoms can include: nausea, fatigue, irritability, and pain.
- **Symptoms:** Subjective evidence of disease is sense by patients, like: nausea.

- **The most common causes are viruses, bacteria, fungi and parasites.** Infectious diseases usually spread from person to person, through contaminated food or water and through bug bites. Some infectious diseases are minor and some are very serious.
- Death due to disease is called **death by natural causes**. There are four main types of disease: **infectious diseases, deficiency diseases, hereditary diseases** (including both: **genetic diseases** and **non-genetic hereditary diseases**), and **physiological diseases**.

I. **Diseases can also be classified** in other ways, **such as:** I/ **communicable:** which are caused by pathogens and can be transferred from one person to another or from one organism to another.

- **In humans** these include: measles, food poisoning and malaria.
- II/ **non-communicable** **diseases:** which are not transferred between people or other organisms..

- **Only some diseases** such as: **influenza** are contagious and commonly believed infectious.
- **The microorganisms** that cause these diseases are known as **pathogens** and include varieties of: **bacteria, viruses, protozoa, and fungi**.

- Infectious diseases can be transmitted, **e.g. by hand-to-mouth contact** with infectious material on surfaces, by **bites of** insects or other carriers of the disease, and from **contaminated water or food** (often via fecal contamination), ***etc***.
- **Also, there are** sexually transmitted diseases.

- **In some cases,** microorganisms that are not readily spread from person to person play a role, while other diseases can be **prevented** or **ameliorated** with appropriate **nutrition** or other lifestyle changes.

- **Some diseases,** such as: most (**but not all**) forms of **cancer**, **heart disease**, and mental disorders, are **non-infectious diseases**.

- **Many non-infectious diseases** have a partly or completely genetic basis (see **genetic disorder**) and may thus be transmitted from one generation to another.

Introduction

- **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.**
- **Signs** (Objective evidence of disease is noted by physician or doctor, like: fever).
- **Symptoms** (Subjective evidence of disease is sense by patients, like: nausea).
- **Vary depending on** the organism causing the infection, but often include: fever and fatigue.

- **Mild infections** may respond to rest and home remedies, **while** some life-threatening infections may need hospitalization.
- **Many infectious diseases,** such as: **measles** and **chickenpox**, can be prevented by vaccines.
- **Frequent and thorough** hand-washing also helps protect you from most infectious diseases.

Q1/ What are common infectious diseases?

- Common cold.
- The flu (influenza).
- COVID-19

- **COVID-19** caused by the virus **SARS-CoV-2**, became a top cause of death in 2020.
- **According to** data analyzed by the **Centers for Disease Control and Prevention (CDC),** COVID-19 was listed as **the third** leading cause of death during 2020 in the United States, behind heart disease and cancer.
- Stomach flu (gastroenteritis).
- Hepatitis.
- Respiratory syncytial virus (RSV).

Symptoms of Infectious disease

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

a) **Fever.**
b) **Diarrhea.**
c) **Fatigue.**
d) **Muscle aches.**
e) **Coughing**.

Causes of Infectious disease

Infectious diseases can be caused by:

1- Bacteria: These one-cell organisms are responsible for illnesses such as: strep throat, urinary tract infections and tuberculosis.

2- Viruses: Even **smaller than bacteria**, viruses cause a multitude of diseases ranging from the **common cold to AIDS.**

3- Fungi: Many skin diseases, such as: ringworm and athlete's foot are caused by **fungi**. Other types of fungi can infect **lungs** or **nervous system**.

4- Parasites: **Malaria is caused by a tiny parasite** that is transmitted by a **mosquito bite**. **Other parasites** may be **transmitted to humans from animal feces**.

(A) Contact of Infectious disease

1- Direct contact:

- **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:

a- 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.**

B- 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 cat's litter box.**

c- 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.

(B) Indirect contact of Infectious disease

- **Disease**-causing organisms also can be passed by indirect contact. Many germs can linger on an inanimate object, such as: a **tabletop or doorknob**.
- **If you then touch your eyes, mouth or nose before washing your hands**, you may **become infected**.

A- 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**.

B- Food contamination

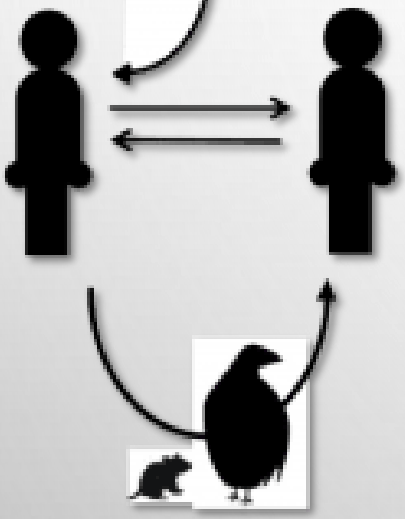
- **Disease**-causing germs can also infect you through **contaminated food and water**.
- **This mechanism of transmission** allows germs to be spread to many people **through a single source**.
- ***Escherichia coli (E. coli),*** for example: is a **bacterium present in or on certain foods** such as: undercooked hamburger or unpasteurized fruit juice.

Modes of Infectious Disease Transmission

A. General Transmission

Abiotic environmental factors

- Wind
- Water
- Inhalation of spores
- Entry into skin



Animal vectors

- Mosquitoes (malaria, dengue)
- Fleas (bubonic plague)

B. Human to Human Transmission

Direct Contact

- Pathogen survives best inside the body
- Eg: HIV, Herpesviruses, Ebola

Indirect Contact

- Pathogen survives harsh environment
- Pick up pathogen from surface or air
- Eg Influenza, norovirus

Droplets

- Pathogens are in droplets, but do not survive long this way
- Eg: Ebola, *Bordetella pertussis*

Airborne

- Pathogens aerosolized and stay infective
- Eg: Influenza, Tuberculosis

Fecal - Oral

- Through contaminated water or food
- Eg: Cholera, Norovirus, Shigella

Risk factors of Infectious disease

While anyone can catch infectious diseases, you may be more likely to get **sick if your immune system isn't working properly.** This may occur if:

I. You're taking steroids or other medications that suppress your immune system, such as: anti-rejection drugs for a transplanted organ.

II. You have HIV or AIDS.

III. You have certain types of cancer or other disorders that affect your immune system.

IV. In addition, certain other medical conditions may predispose you to infection, including: implanted medical devices, malnutrition and among others.

Complications

1) **Most infectious diseases** have only minor complications. But some infections such as: pneumonia, AIDS and meningitis can become **life-threatening**.

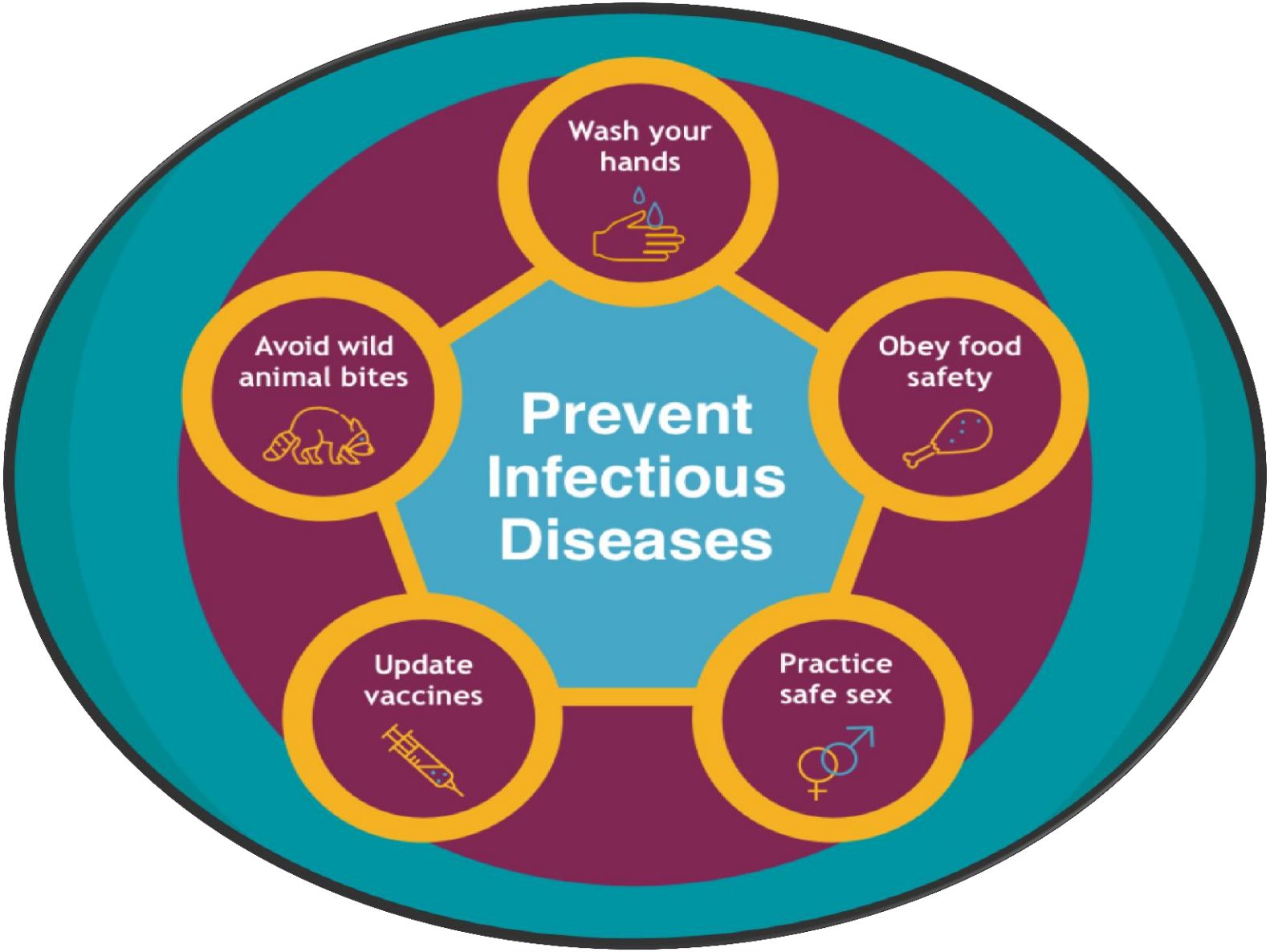
2) **A few types of infections** have been linked to a long-term increased risk of **cancer**:

✓ Human papillomavirus is linked to cervical cancer.

✓ Helicobacter pylori is linked to stomach cancer and peptic ulcers.

✓ Hepatitis B and C have been linked to liver cancer.

Prevention


Wash your hands
Avoid wild animal bites
Obey food safety
Prevent Infectious Diseases
Update vaccines
Practice safe sex

Follow these tips to decrease the risk of infection:

1. **Immunize** against infectious diseases.
2. **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.
3. **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.
4. **Stay home when ill:** Don't go to work if you are vomiting, have diarrhea or have a fever. Don't send your child to school if he or she has these signs, either.
5. **Prepare food safely:** Keep counters and other kitchen surfaces clean when preparing meals. Cook foods to the proper temperature, using a food thermometer to check for doneness. For ground meats, that means at least 160 F (71 C); for poultry, 165 F (74 C); and for most other meats, at least 145 F (63 C).

6. Don't share personal items. Use your own toothbrush, comb and razor. Avoid sharing drinking glasses or dining utensils.

Q2/ What is the difference between infection and infectious disease?

Infection implies the presence of a pathogen, whereas disease relates to the occurrence of cases and outbreaks caused by a pathogen in a population.

Q3/ Is infectious disease a disease?

Infectious diseases are caused by pathogenic microorganisms, such as: **bacteria, viruses, parasites or fungi**. These diseases can spread from **the environment** or from **one person to another** resulting in illness in our communities.

Q4/ What's the Difference Between Infectious and Contagious?

Infectious diseases are caused by **microscopic germs** (such as: bacteria or viruses) that get into the body and cause problems. **Some but not all** infectious diseases spread directly from one person to another. **Infectious diseases that spread from person to person** are said to be **contagious**.

- **Some infections** spread to people **from an animal or insect**, **but are not contagious from another human.**
- **Contagious diseases** (such as: the flu, colds, or strep throat) spread from person to person in several ways.
- One way is through direct **physical contact**, like: **touching or kissing a person** who has the infection.
- **Another** way is when an infectious microbe travels **through** the **air after someone nearby sneezes or coughs.**


THANK
YOU