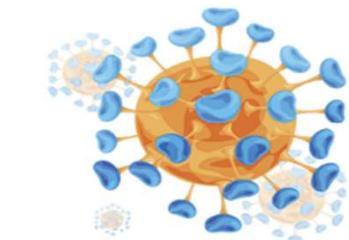


# INTRODUCTION

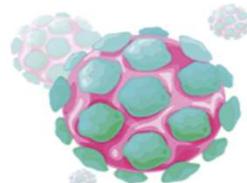


- Viruses exist in nature however they are not classified under the 5 kingdoms of living things.
- Recall and mention the 5 kingdoms under which living things are classified and mention examples of organisms under each.
- A virus is a tiny particle that can only be seen using an electron microscope.
- They are infectious with both living and non living characteristics

# EXAMPLES



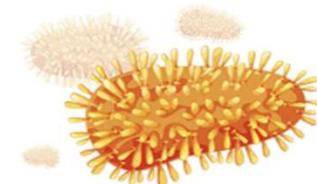
Hiv



Astrovirus/  
magsjuka



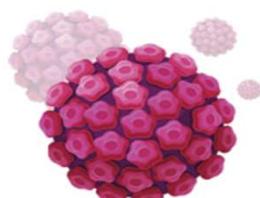
Coronavirus



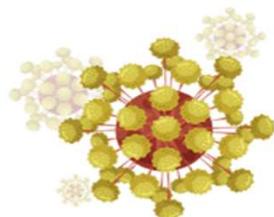
Rabiesvirus



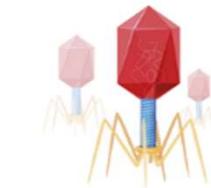
Smittkoppor



HPV



Herpesvirus



Bakteriofag



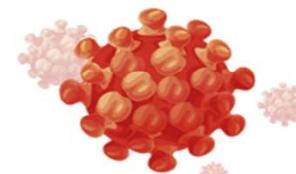
Parotitvirus/  
påssjuka



Rotavirus/  
magsjuka



Ebolavirus



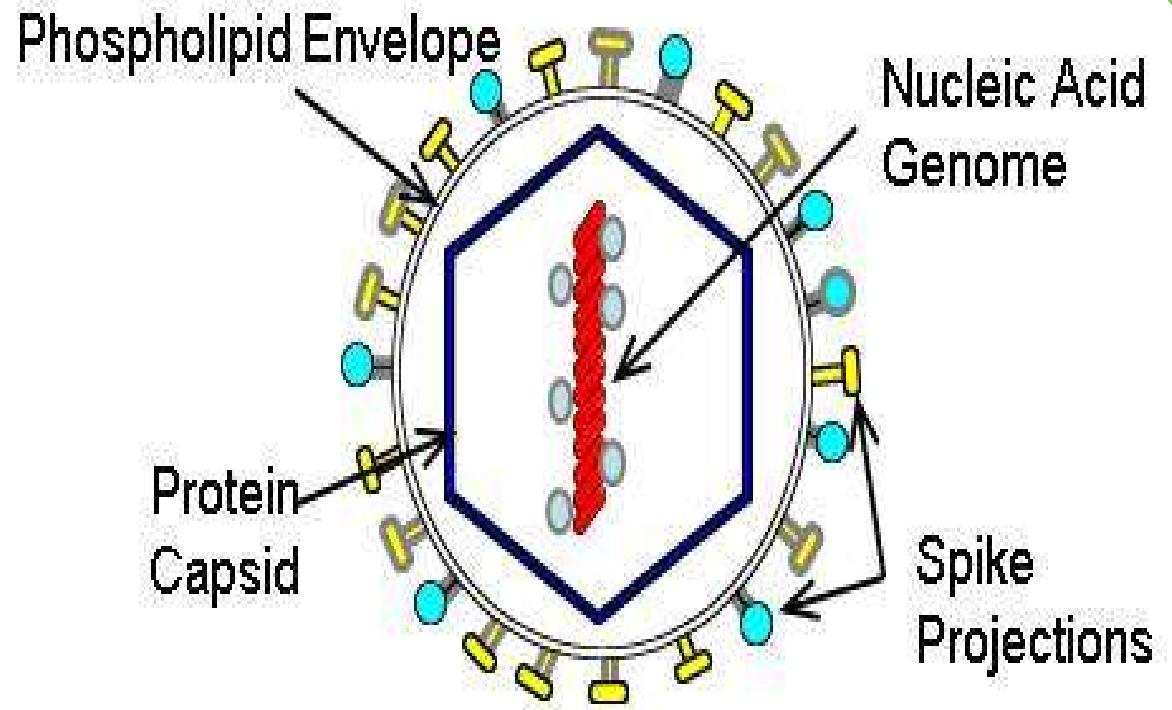
Hepatit B



# STRUCTURE OF A VIRUS

- Viruses are able to multiply only while in living cells of the host organism.
- It is made up of genetic material (DNA or RNA) inside a protein coating

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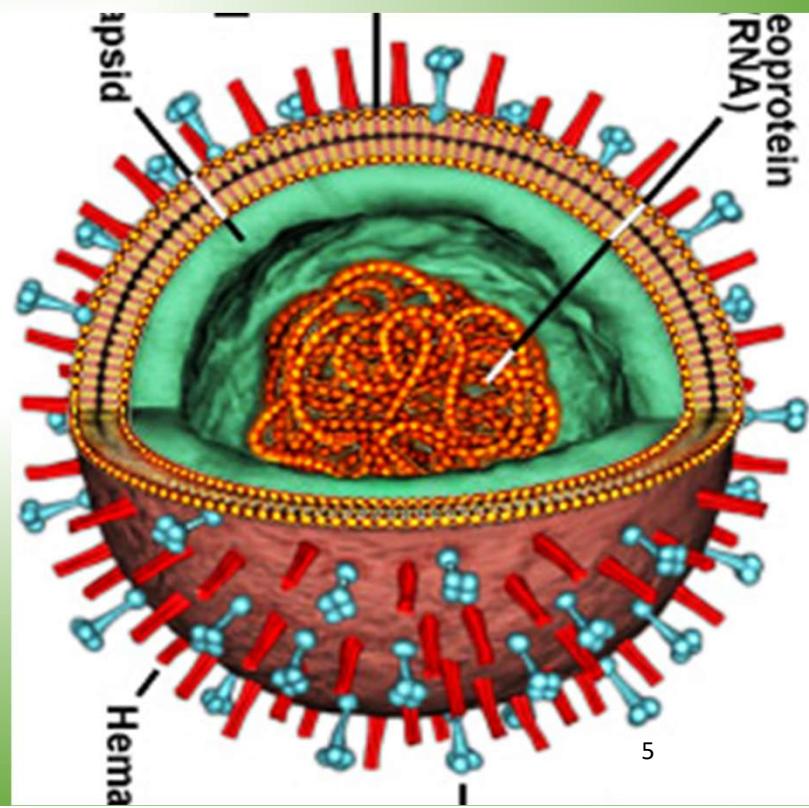
A typical enveloped virus

ELLY KENEDDY

# LIVING CHARACTERISTICS



- They are able to replicate inside host organisms
- They are able to mutate
- They are obligate parasites causing infectious diseases
- They are antigenic( stimulate production of antibodies)





# NON LIVING CHARACTERISTICS

- They don't respire on their own
- Outside host cells, they are unable to reproduce
- They posses DNA or RNA but not both
- They don't divide by mitosis or binary fission
- They have a wide range of shapes

# TRANSMISSION OF VIRAL DISEASES



## Research

- Identify any 6 viral diseases you know
- How are the above viral infections transmitted?
- Mention the signs and symptoms of the viral diseases and infections mentioned
- How can the above mentioned viral diseases be prevented.
- Include HIV, Ebola, hepatitis B and covid 19

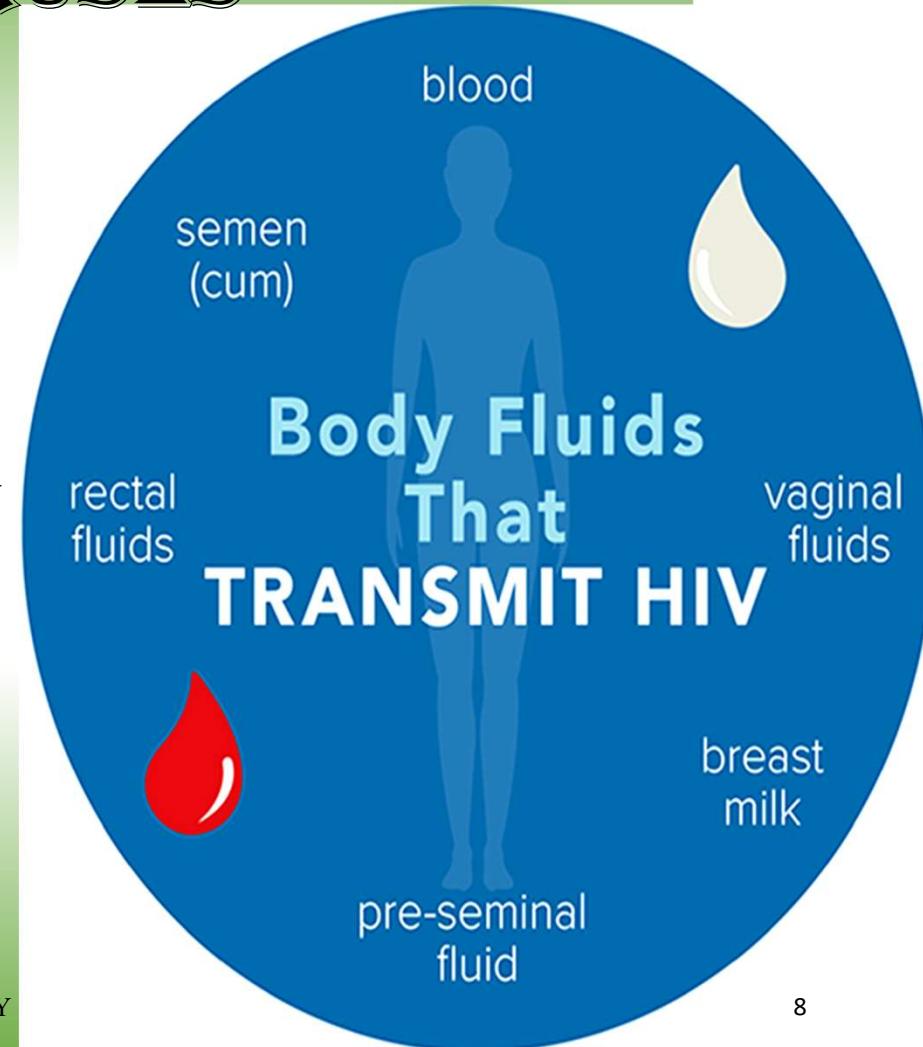
# TRANSMISSION OF VIRUSES



## Human Immunodeficiency Virus (HIV)

This virus causes Acquired Immune Deficiency Syndrome (AIDs).

- ❖ HIV/AIDs is a life long condition with no cure
- ❖ The virus weakens the immune system by killing body cells making it hard for the body to fight against other infections.
- ❖ The virus is transmitted through body fluids as shown. Identify them.





## HIV Symptoms

What to Look for 2 Weeks  
After Infection?



ELLY KENNEDY

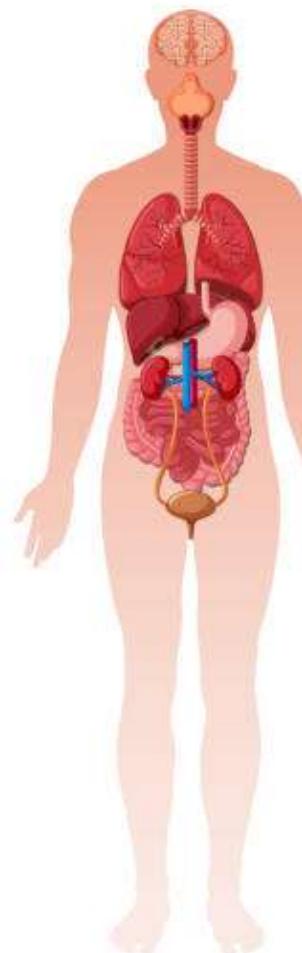
## HIV symptoms....

		
<b>MUSCLE ACHES</b>	<b>CHILLS</b>	<b>MOUTH ULCERS</b>
		
<b>FEVER</b>	<b>SORE THROAT</b>	<b>FATIGUE</b>
	 Swollen lymph nodes	
<b>NIGHT SWEATS</b>	<b>SWOLLEN LYMPH NODES</b>	<b>SKIN RASHES</b>

**Dr.Vinod Raina**

Contact us now:- 9136363692, 9871605858

# COMMON SYMPTOMS OF HIV



## Flu-like symptoms

**Flu-like symptoms:** In the early stages of HIV, some people may experience symptoms similar to the flu, such as fever, fatigue, headache, muscle aches, and sore throat.

## Night sweats

**Night sweats:** Drenching sweats during the night may occur.

## Mouth sores

**Mouth sores:** Painful sores or ulcers in the mouth may develop.

## Rash

**Rash:** A rash may occur on the trunk or face, and can be accompanied by itching.

## Swollen lymph nodes

**Swollen lymph nodes:** Swelling of the lymph nodes in the neck, armpits, or groin may occur, which can persist for several weeks.

## Yeast infections

**Yeast infections:** Yeast infections, such as thrush, may occur in the mouth, throat, or vagina.



Image credit: istockphoto.com/RuslanDashinsky

# HIV

# SYMPTOMS



# PREVENTION OF AIDS



- Consistent Use of Condoms: significantly reduces the risk of HIV transmission.
- Post-Exposure Prophylaxis (PEP): a short-term treatment taken after potential HIV exposure to prevent infection. It must be started within 72 hours of exposure.
- Avoid sharing needles or other drug-injecting equipment, as this is a common way HIV is transmitted.
- Male Circumcision: Research has shown that male circumcision can reduce the risk of heterosexual men acquiring HIV.
- Regular HIV Testing: Regular testing helps in early detection and prevention.
- Limiting Sexual Partners: Reducing the number of sexual partners can lower the risk of HIV transmission.
- People living with HIV can take antiretroviral therapy (ART) to suppress the virus in their body. When the viral load is undetectable, the risk of transmission to others is effectively zero.
- Education and Awareness: Raising awareness about HIV transmission and prevention is crucial in reducing its spread among people.

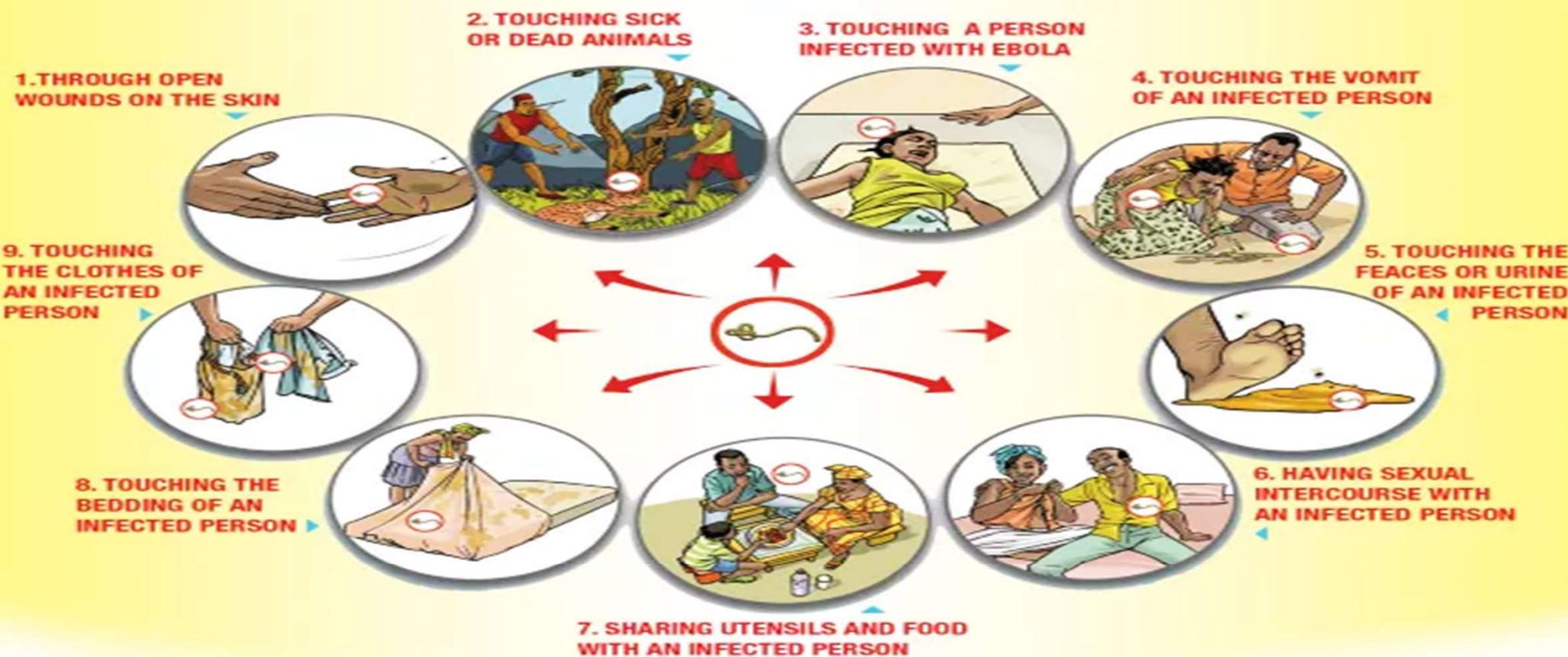
# EBOLA VIRUS



- This virus is rare but very deadly most commonly affecting people and other primates ( monkeys, gorillas, chimpanzee)
- It causes Ebola Hemorrhagic Fever (EHF) or simply Ebola
- Its spreads fast through body fluids such as blood, saliva, sweat causing quick body weakening and death.
- A total of **28,616** cases of Ebola have been recorded and reported in Africa with **11,310 deaths**.
- The viral disease has no cure however some drugs have been approved for treating it.



# HOW DOES EBOLA SPREAD?

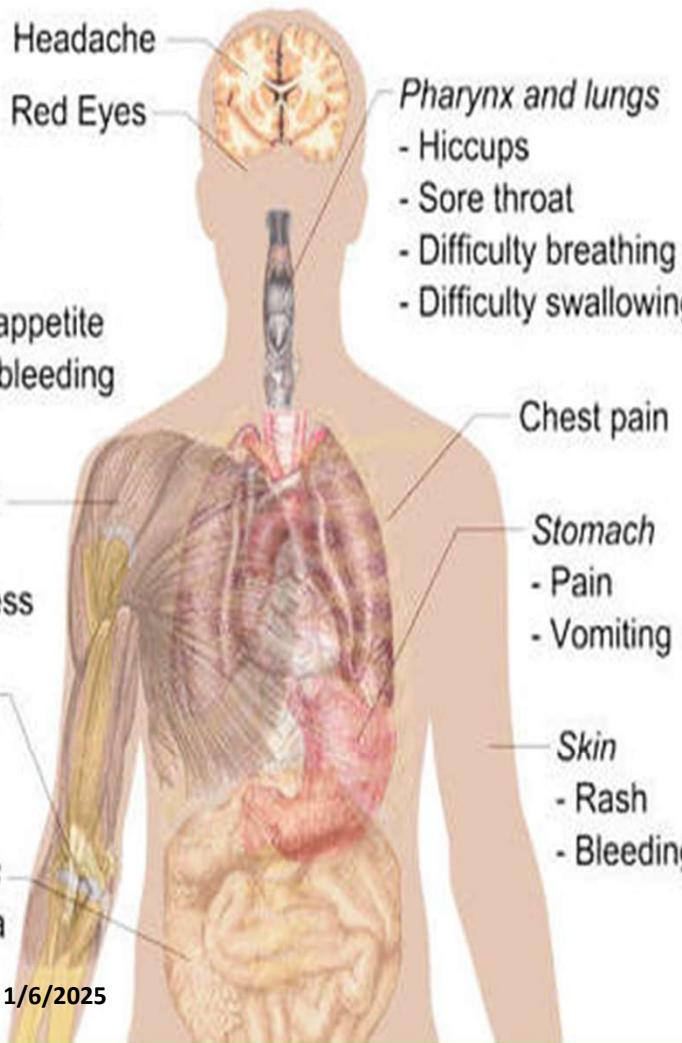


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#PreventEbola

ELLY KENEDDY

## Symptoms of Ebola



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## SIGNS AND SYMPTOMS OF EBOLA

A PERSON WITH EBOLA EXPERIENCES:

1. Fever
  2. Headache
  3. Muscle pain
  4. Vomiting
  5. Body weakness
  6. Bloody diarrhoea or urine
  7. Sore throat
  8. Bleeding from body openings
- 
- Each numbered symptom is accompanied by a circular illustration depicting a person experiencing that symptom.



ELLY KENEDDY  
REPUBLIC OF UGANDA  
MINISTRY OF HEALTH

#PreventEbola



# ASSIGNMENT

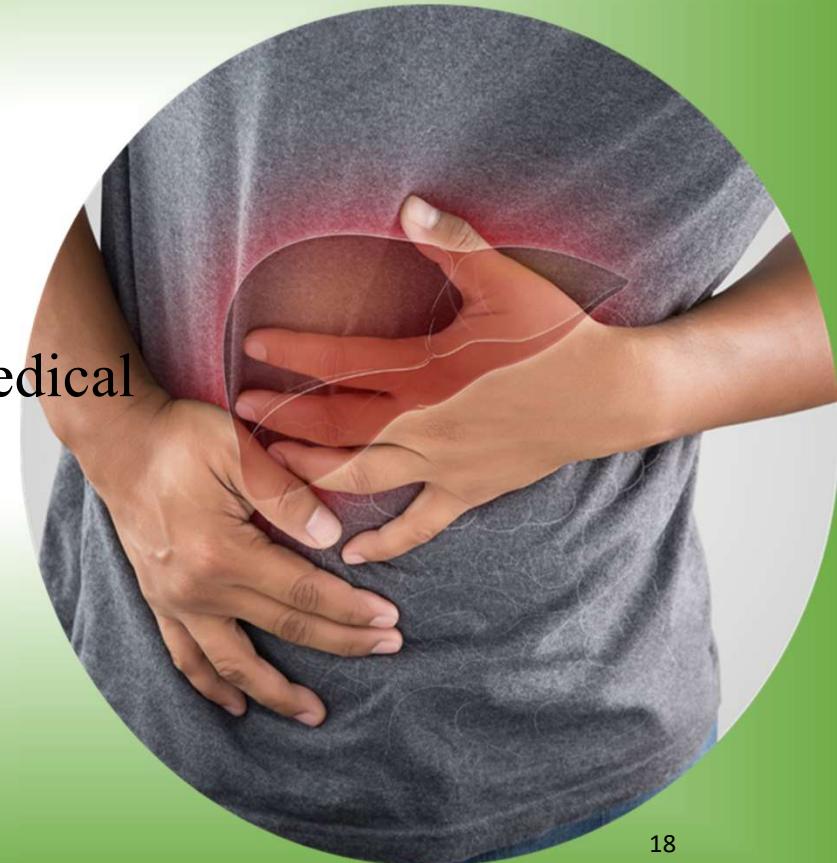
- Attempt activity 3.3.2(a) only conclusion and application part.
- Attempt activity 3.3.2(b) basing on knowledge you have.



# HEPATITIS B



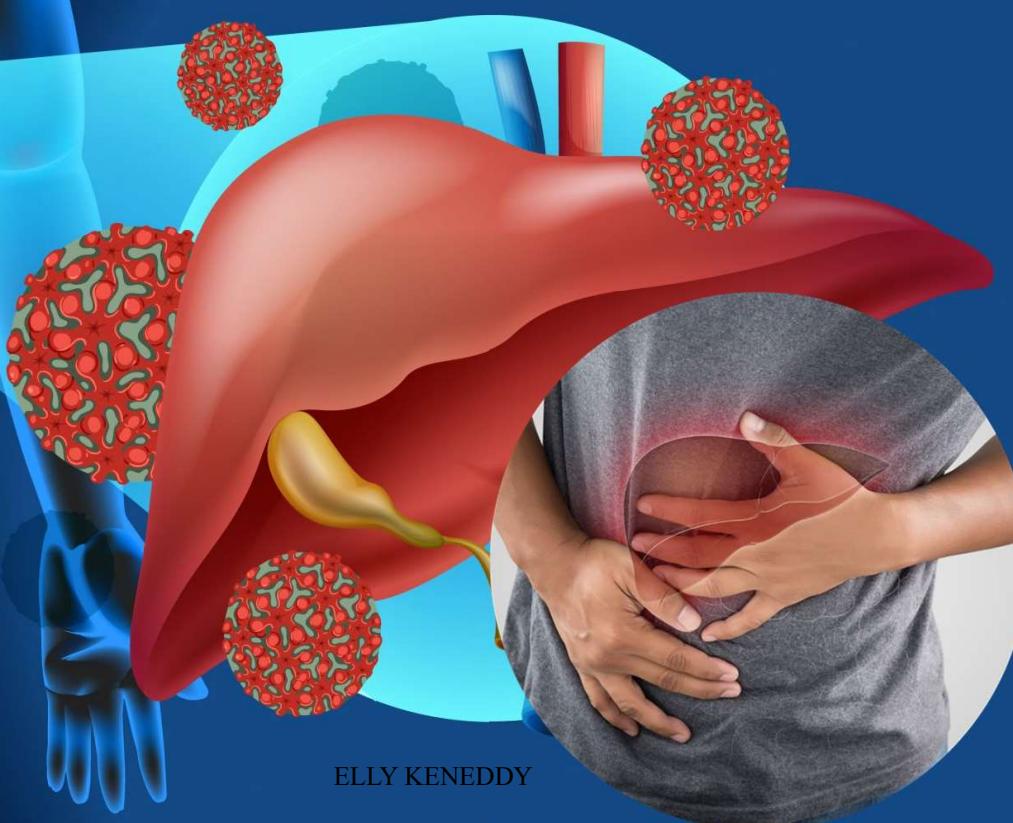
- ❖ Hepatitis can be transmitted through the bodily fluids such as blood, semen etc.
- ❖ Sharing sharp items with infected persons e.g. needles, syringe
- ❖ Having unsafe sex with an infected person
- ❖ Sharing items such as toothbrushes, razors, or medical equipment with infected person
- ❖ From mother to child during birth
- ❖ Transfusion of blood from infected person





# HEPATITIS B

**Hepatitis B** is viral infection that affects the liver, transmitted through blood or bodily fluids, which can cause liver inflammation and damage if left untreated.

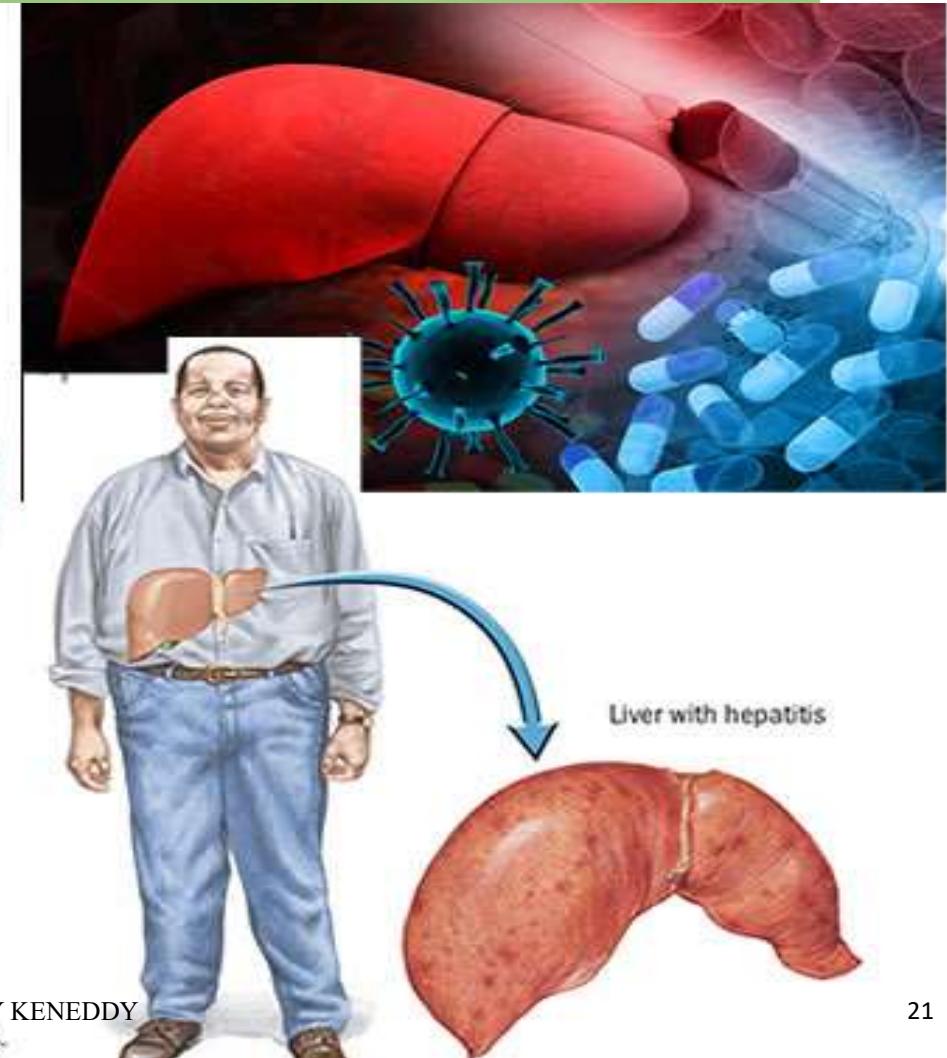
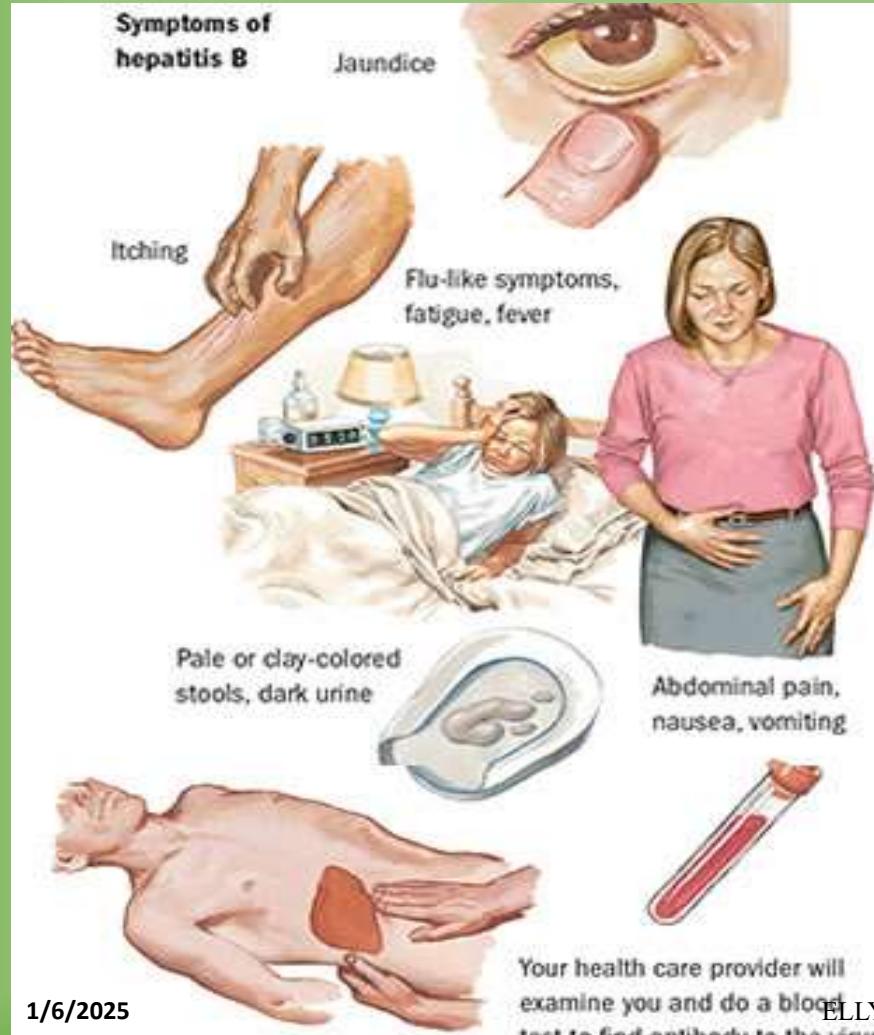


## SYMPTOMS

- Fever
- Jaundice
- Dark urine, pale poop
- Nausea and vomiting
- Pain in the right side of the abdomen
- Headache
- Hives
- Joint Pain
- Weakness, fatigue
- Losing your appetite



# SIGNS AND SYMPTOMS



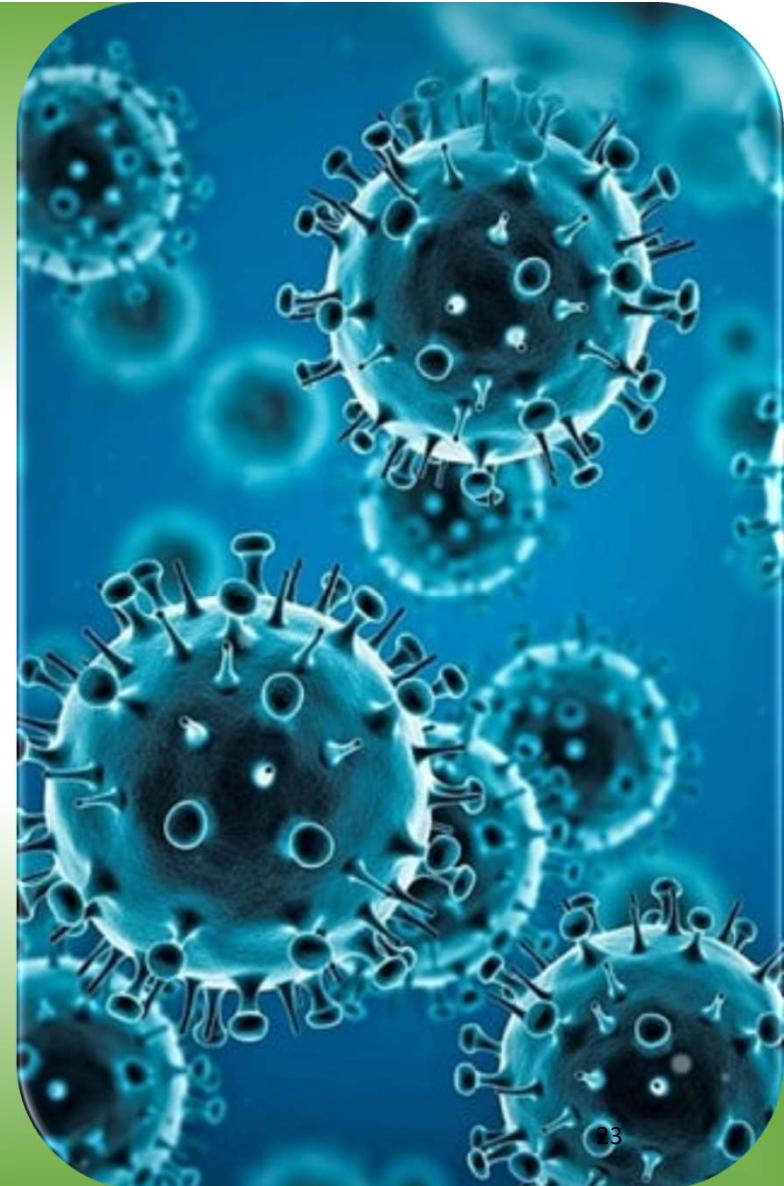
# **PREVENTION STRATEGIES OF HEPATITIS**



- HBV vaccination of all infants and adults
- Screening of donor blood for HBV before transfusion
- Safe and appropriate use of injection equipment e.g. by sterilization
- Community sensitization on transmission and prevention
- Avoid sharing sharp instruments such as needles
- Safe sex practice through condom use
- Regular medical check up
- Proper nutrition and balanced diet for strong immunity

# COVID-19

- COVID-19 is an infectious disease caused by the **CORONA** virus.
- It was first identified in December 2019 in Wuhan, China, and quickly spread globally, resulting in the COVID-19 pandemic.
- The virus primarily spreads through **respiratory droplets** and can cause symptoms ranging from mild, like fever and cough, to severe respiratory illnesses that may require hospitalization.



# PREVENTIVE MEASURES

- Public health guidelines emphasize wearing masks  
**Protect yourself and your families from Corona Virus Infection:**
- Maintaining social distance
- Hand hygiene
- Vaccination
- Quarantine
- Sanitizing.



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1166 HELPLINE  
corona.info@phsri.gov.pk EMAIL  
ELLY KENEDDY WEBSITE  
www.phsrc.gov.pk

## CORONAVIRUS (COVID-19) PREVENTION

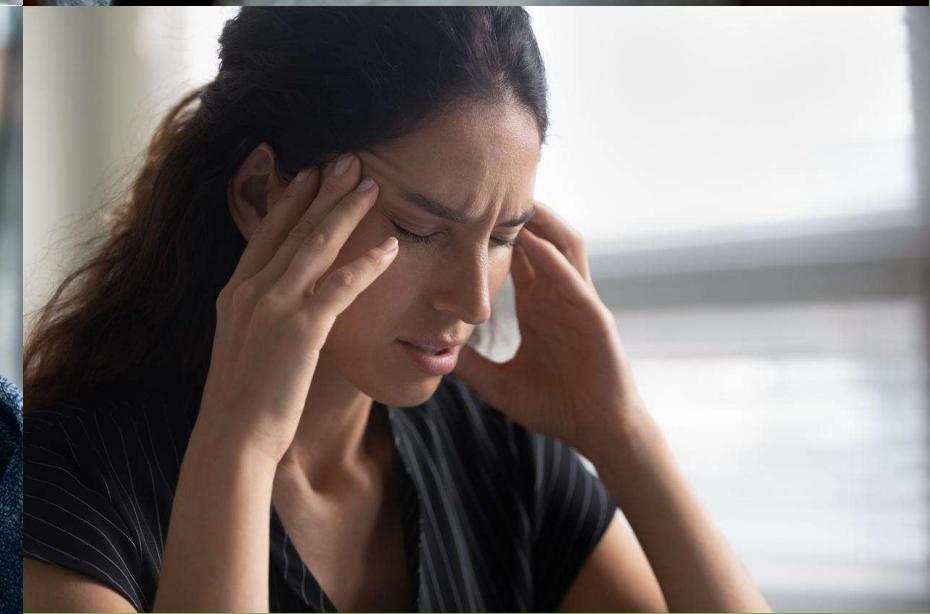
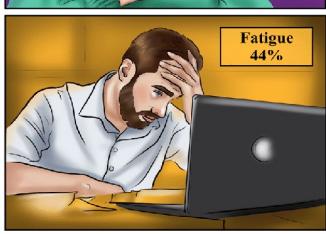


more information, visit [miamidade.gov/coronavirus](http://miamidade.gov/coronavirus)

Individuals in Miami-Dade County who believe they may have been exposed to COVID-19, should call the Florida Department of Health at 305-324-2400. This should be done prior to traveling to any medical office or facility.

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# SYMPTOMS OF COVID-19



FEVER OVER  
100.4 DEGREES



COUGH OR  
SORE THROAT



NEW SHORTNESS  
OF BREATH



CHILLS



NEW  
MUSCLE PAIN



NEW LOSS OF  
TASTE OR SMELL



NAUSEA/  
VOMITING



DIARRHEA



NEW HEADACHE/  
EXCESSIVE FATIGUE

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CONGESTION/  
RUNNY NOSE

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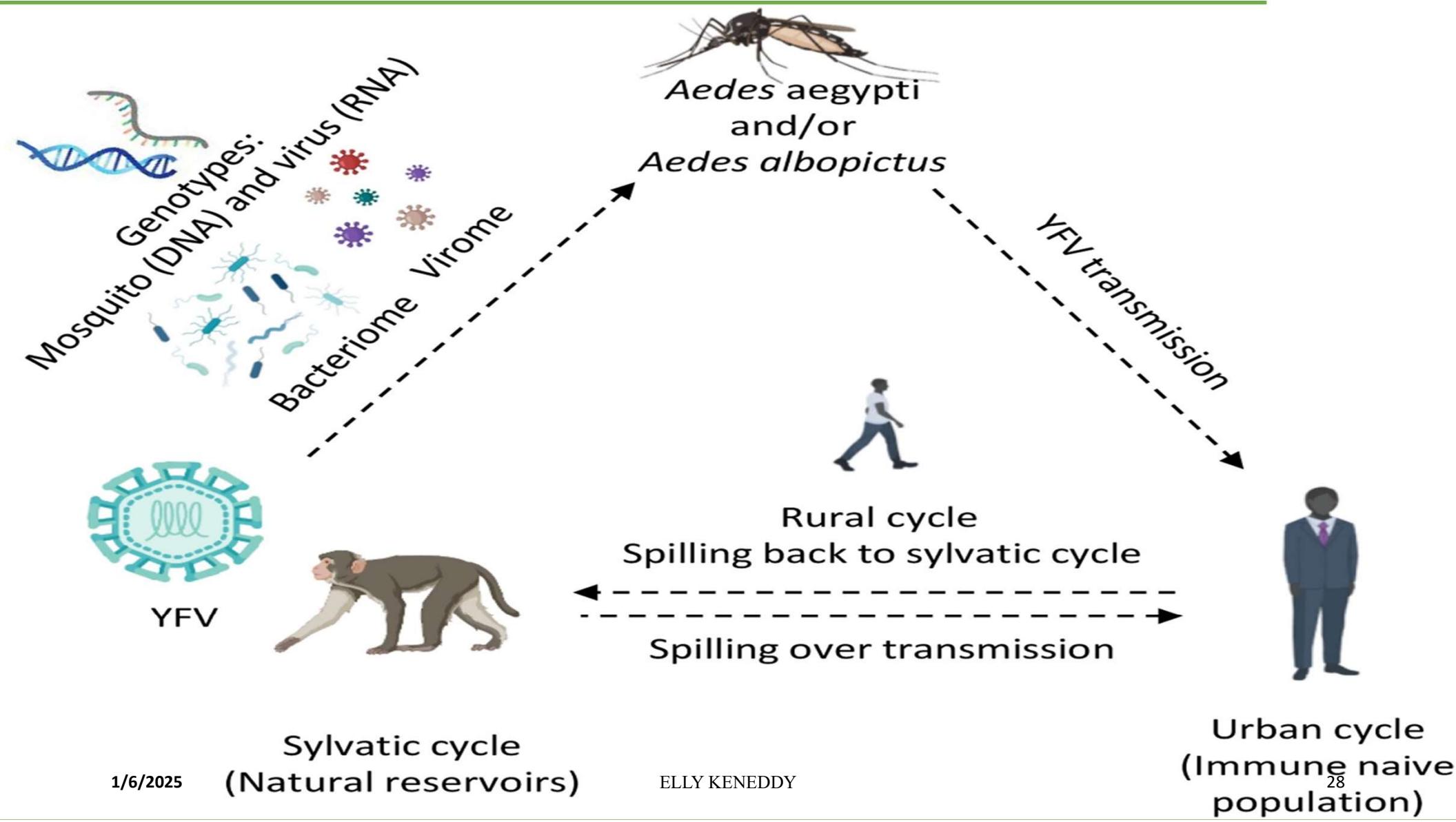
**FACTS.** ■■■  
**OVER FEAR**  
COVID-19

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# YELLOW FEVER

- Yellow fever is primarily spread through the bite of an infected mosquito, especially **Aedes** and **Haemagogus** mosquitoes.
- These mosquitoes are common in tropical and subtropical areas, particularly in parts of Africa and South America.
- The virus is not spread directly from person to person.





# SIGNS AND SYMPTOMS OF YELLOW FEVER



- Yellow fever progresses in stages, and symptoms can range from mild to severe.

**Initial Symptoms** (3-6 days after infection): **Symptoms of Yellow Fever**

- Fever
- Headache
- Muscle pain (especially in the back)
- Nausea or vomiting
- Fatigue and weakness
- Loss of appetite



# Yellow Fever

Transmitted to humans from infected mosquitoes

Symptoms include:



**HEADACHE**



**SUDDEN FEVER**



**BODY PAIN**



**YELLOWNESS OF THE EYE/DARK URINE**



**BLEEDING (FROM THE NOSE, EAR & MOUTH)**



NCDC.GOV.NG

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**Take all sick persons with the symptoms above to a health care facility immediately.**

**NCDC Toll-Free Number: 0800-970000-10. SMS: +234 809 955 5577. WhatsApp: +234 708 711 0839.**

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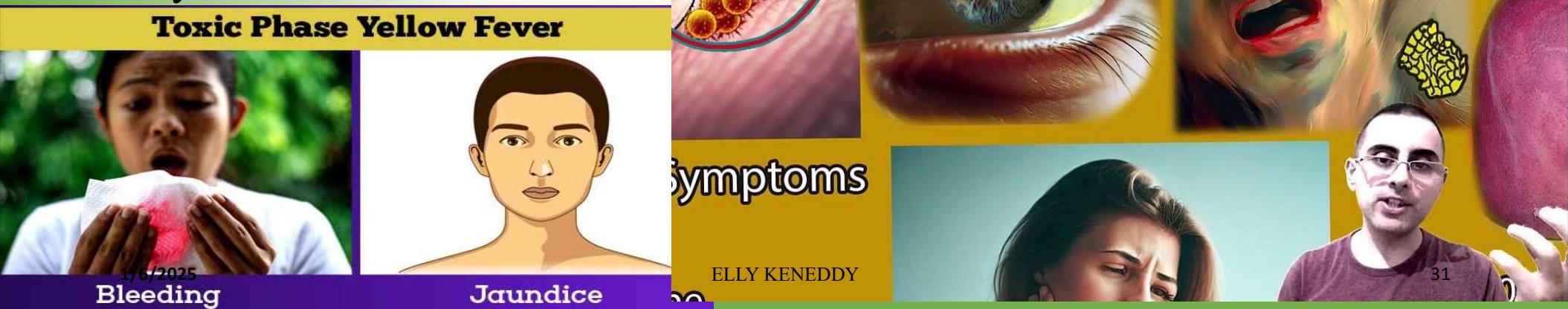
30



## • Toxic Phase (in severe cases)

After initial improvement, some patients may enter a more severe phase that includes:

- High fever
- Jaundice (yellowing of the skin and eyes)
- Abdominal pain
- Vomiting (sometimes with blood)
- Bleeding from the nose, mouth, eyes, or stomach
- Kidney and liver failure



# PREVENTION OF YELLOW FEVER:



- **Vaccination:** The yellow fever vaccine is the most effective way to prevent infection. A single dose provides lifelong protection in most cases. It is recommended for people living in or traveling to areas where yellow fever is common.
- **Avoid Mosquito Bites:** Since yellow fever is spread by mosquitoes, particularly Aedes mosquitoes. **Use insect repellent, wear long sleeves and pants, and stay in places proper screens.**
- **Control Mosquito Populations:** Eliminate breeding sites such as **standing water** in containers, and **use insecticide-treated bed nets** and **indoor spray**

# VIRAL INFECTIONS IN PLANTS



## Cassava mosaic virus

- Cassava mosaic virus causes cassava mosaic, a disease in cassava plant.
- Cassava mosaic disease (CMD) reduces productivity leading to great losses for farmers especially in areas where cassava is a staple food

## Signs of Cassava mosaic disease.

- White or pale yellow leaves
- Twisted, distorted and stunted leaves
- Stunted/retarded/dwarf growth
- Pale green spotted leaves.



# SIGNS OF CASSAVA MOSAIC.



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# TRANSMISSION OF CASSAVA MOSAIC DISEASE



- Through movement of infected stem cuttings during propagation
- Within the field, its spread by **White fly** vector (*Bemisia tabaci*).
- Use of unclean agricultural implements

## Prevention strategies of Cassava mosaic disease

- Use of cassava resistant varieties
- Use of disease free planting materials ( stem cuttings)
- Disinfecting/ sterilization of agricultural implements after use
- Destroying infected plant
- Controlling white flies by spraying
- Avoid planting alternative hosts of the virus like castor bean, tomatoes



# NOTE



- Why is it hard to destroy viruses/vaccinate against them/ develop medicine that cure viral infection: why are viral pandemics so harmful?

## Response.

Viruses are so harmful, difficult to treat or have no treatment at all because **they reproduce so quickly, do not respond to antibiotics and constantly change into new strains.**