

Zoonotic diseases



Zoonotic disease

- A zoonotic disease is a disease that can be passed between animals and humans. Zoonotic diseases can be caused by viruses, bacteria, parasites, and fungi
- These diseases are very common
- 6 out of every 10 infectious diseases in humans are spread from animals



Zoonotic disease

- Animal are reservoirs/hosts for the pathogens
- Some of these diseases start in wildlife that is being displaced by deforestation in remote areas of the world
- Diseases can move around the globe quickly



Zoonotic disease – transmission

- Coming into contact with the saliva, blood, urine, or feces of an infected animal
- Airborne (e.g. Anthrax)
- Being bitten by a tick or mosquito (often called a “vector”)
- Eating or drinking something unsafe (such as unpasteurized milk, undercooked meat, or unwashed fruits and vegetables that are contaminated with feces from an infected animal)



Zoonotic disease

- Common (of 1,407 human pathogens)
 - 58% are zoonotic
 - 70% of emerging diseases are zoonotic
- Occur in numerous animal species
- Very diverse
 - Severity
 - Transmission dynamics
- Difficult to predict changes in incidence



Zoonoses: Animal Species

- **Dogs & Cats**
 - Rabies
 - Roundworm
 - Ringworm
 - Cat Scratch Disease
 - Toxoplasmosis
- **Food Animals**
 - Salmonella
 - *E.coli*
 - Brucellosis



Zoonoses: Animal Species

- **Birds**
 - Psittacosis
 - West Nile virus
 - Eastern Equine Encephalitis
 - Avian Influenza
- **Reptiles, Fish, & Amphibians**
 - Salmonella
 - Mycobacterium
- **Wild Animals**
 - Hantavirus
 - Plague
 - Tularemia
 - Lyme Disease



Zoonotic disease

New emerging infectious diseases:

- Viral hemorrhagic fevers, like Ebola
- Respiratory diseases, like SARS
- Novel influenza viruses, like pandemic

H1N1



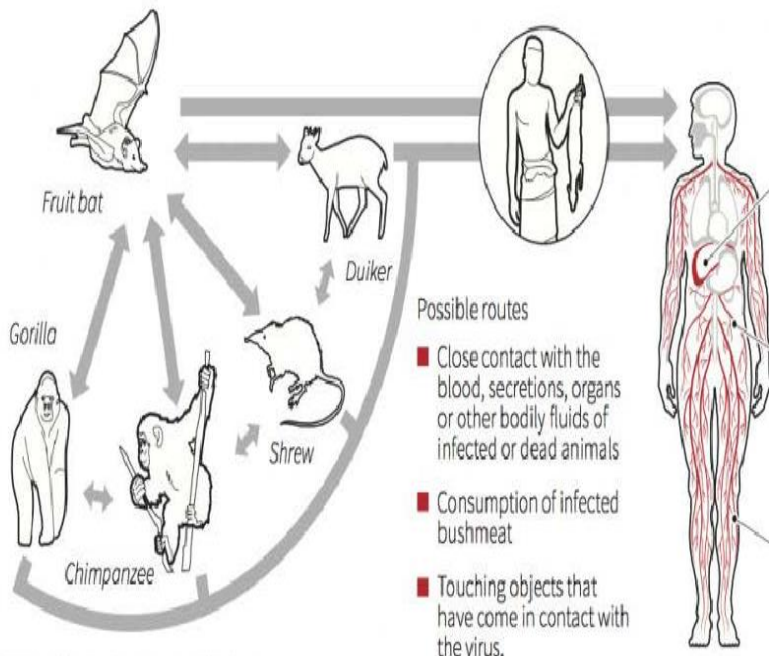
Ebola disease

SOURCE

In Africa, particular species of fruit bats are considered possible natural hosts for Ebola virus.

TRANSMISSION

Infected bats are thought to transmit the disease to humans, or indirectly through other animals which are hunted for their meat.



Note: List of animals is not exhaustive.

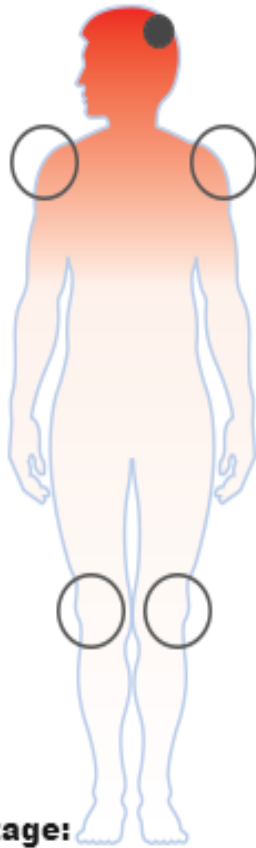
Sources: Centers for Disease Control and Prevention; World Health Organisation

G.Cabrera, 28/03/2014

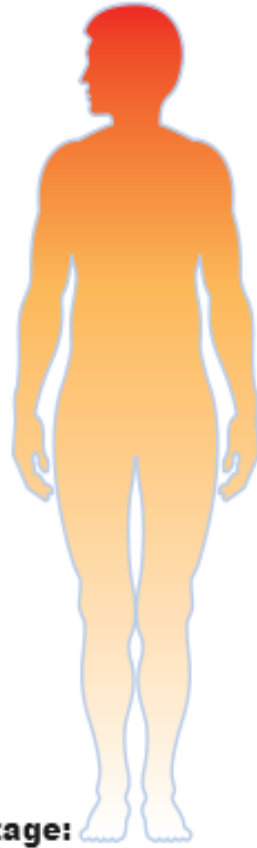


Ebola disease

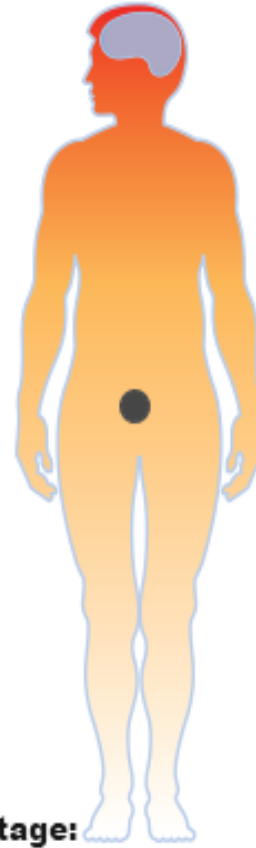
EBOLA SYMPTOMS: Occur 2 - 21 days after exposure, but 8 - 10 days is most common



1st Stage:
7 - 9 days
Joint pain, sore throat,
fever, headache, weakness
muscle soreness



2nd Stage:
10th day
Vomiting blood, diarrhea,
high fever, extreme
fatigue



3rd Stage:
11th day
Brain damage, bleeding from
nose, mouth, anus



4th Stage:
12th day
Coma, organ failure, shock,
massive internal bleeding, death

Ebola disease

Ebola Virus

Ebola



Ebola is a rare and deadly disease caused by infection with an Ebola virus. Sporadic outbreaks have occurred in some African countries since 1976.

Signs and Symptoms of Ebola



The signs and symptoms of Ebola can appear 2 to 21 days after exposure. The average time is 8 to 10 days. Symptoms of Ebola develop over several days and become progressively more severe.

- **People with Ebola cannot spread the virus until symptoms appear.**

How Ebola Germs are Spread



Ebola can only be spread by direct contact with blood or body fluids from

- A person who is sick or who has died of Ebola.
- Objects like needles that have been in contact with the blood or body fluids of a person sick with Ebola.

Ebola cannot spread in the air or by water or food.

How do you get the Ebola virus?

Direct contact with

- 1 Body fluids of a person who is sick with or has died from Ebola.** (blood, vomit, urine, feces, sweat, semen, spit, other fluids)
- 2 Objects contaminated with the virus** (needles, medical equipment)
- 3 Infected fruit bats or primates** (apes and monkeys)

Who Gets Ebola?



People most at risk of getting Ebola are

- People with a travel history to countries with widespread transmission or exposure to a person with Ebola.
- Healthcare providers taking care of patients with Ebola.
- Friends and family who have had unprotected direct contact with blood or body fluids of a person sick with Ebola.



- **Fever**
- **Severe headache**
- **Muscle pain**
- **Feeling very tired (fatigue)**
- **Vomiting and diarrhea develop after 3–6 days**
- **Weakness (can be severe)**
- **Stomach pain**
- **Unexplained bleeding or bruising**

Zoonotic disease

- Risk factors:
 - ill patients
 - Animal ownership and contact
 - Activities in close contact with animals
- Appropriate pet species for appropriate individuals
- Animals as sentinels of disease



Reverse zoonosis

Diseases that do not normally occur in dogs and cats but can be passed from infected people to their pets, which can make them very sick.

- e.g. Tuberculosis, MRSA, Flu



Prevention

- Standard precautions
- Vaccinate pets
- Provide protection against external parasites like fleas and ticks
- Periodic physical examination for pets
- Test and treat internal parasite

