CONCEPT: CHARACTERISTICS OF INFECTIOUS DISEASE

●_____: condition (not of physical injury) where normal structure & function of a host is damaged/impaired.

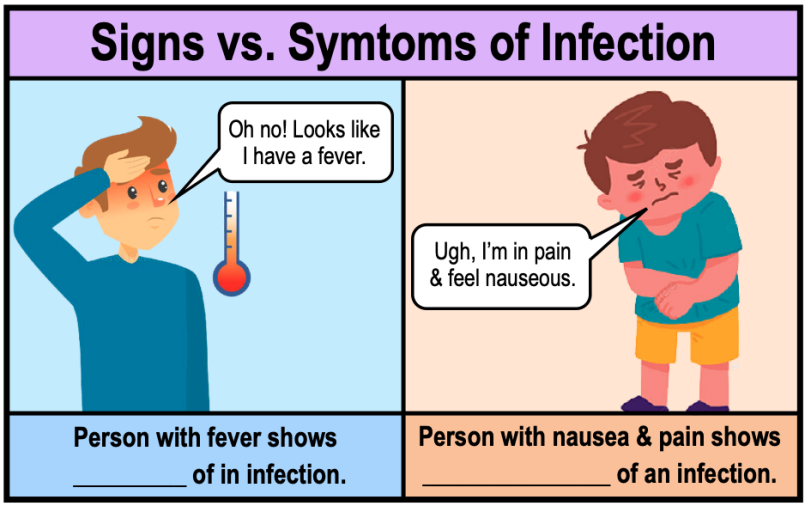
□ **Infection:** *colonization* & *replication* of a pathogen in a host.

●**Infectious Disease:** a spreadable disease caused by an *infection* that results in a patient showing *signs* & *symptoms*.

□ **Signs:** *objective* evidence of infection that can be directly *observed*/_____ (*rash, swelling*, *fever*).

□ **Symptoms:** *subjective* evidence of infection that can _____ be directly observed/measured (*pain*, *nausea*).

●**Asymptomatic Disease:** disease caused by an *infection* that results in a patient showing _____ signs or symptoms.



Communicable vs. Noncommunicable Diseases

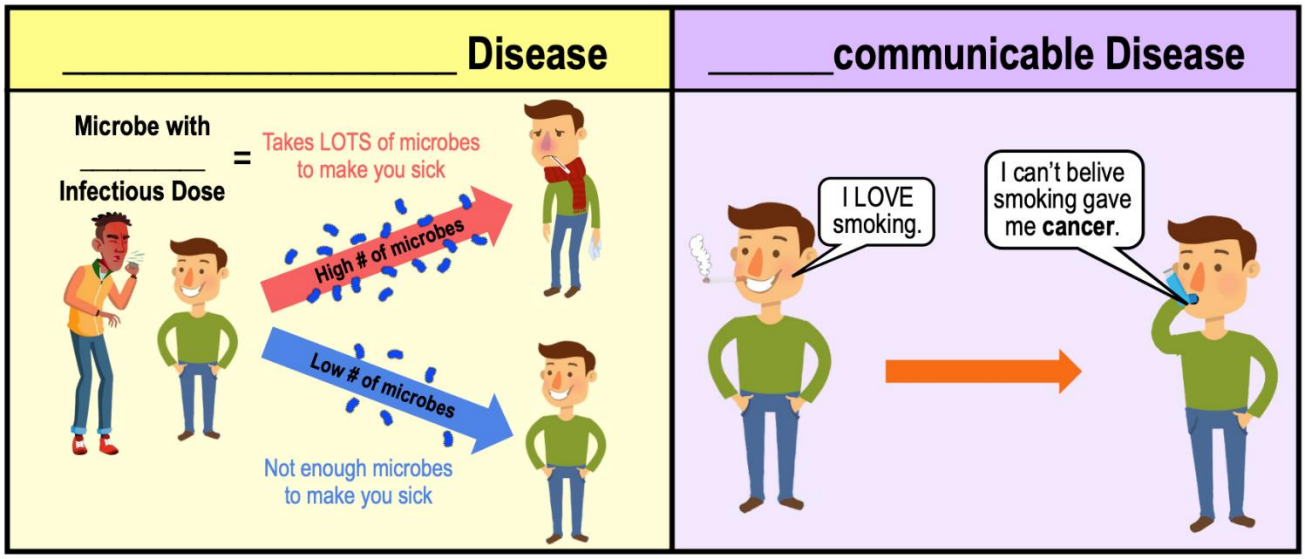
●Some diseases can spread from one person to another while others can not.

□ **Communicable (_____ or Infectious) Diseases:** *infectious* disease that spreads between hosts.

□ **Infectious _____:** the specific *number* of microbes required to establish an *infection* in a host.

□ **Noncommunicable Diseases:** *non-infectious* disease that does _____ spread between hosts (ex. cancer).

□ Arise from genetic, physiological, lifestyle, and environmental factors.



CONCEPT: CHARACTERISTICS OF INFECTIOUS DISEASE

PRACTICE: Which of the following would be considered a sign of a disease or infection?

a) Headache.
b) Pain.
c) Nausea.
d) Fever of 39°C (102°F).
e) Lack of appetite.
f) All of the following can be signs of disease or infection.

PRACTICE: Diseases or infections that can be transmitted from one individual to another are categorized as what types of diseases?

a) Symptomatic.
b) Clinical.
c) Communicable.
d) Noncommunicable.
e) Latent.

PRACTICE: Which of the following illnesses is an example of a noncommunicable disease?

a) Infection with a respiratory virus like the flu or Covid-19.
b) Food poisoning due to bacterial toxins found in canned food.
c) Skin infection and blood infection acquired from a dog bite.
d) Infection caused by an accidental puncture by a contaminated needle.

PRACTICE: Determine if the diseases below are communicable or noncommunicable diseases.

A. Communicable Disease.
B. Noncommunicable Disease.

_____ 1) Lung Cancer.
_____ 2) Measles.
_____ 3) HIV.
_____ 4) Stroke.
_____ 5) Diabetes.
_____ 6) Covid-19.

PRACTICE: Pathogens that are very virulent are more likely to cause disease than pathogens that are less virulent (Virulence: the ability of a pathogen to cause and infection/disease). The infectious dose for Virus X is must lower than the infectious dose of Virus Y. Which virus is more virulent?

a) Virus X.
b) Virus Y.

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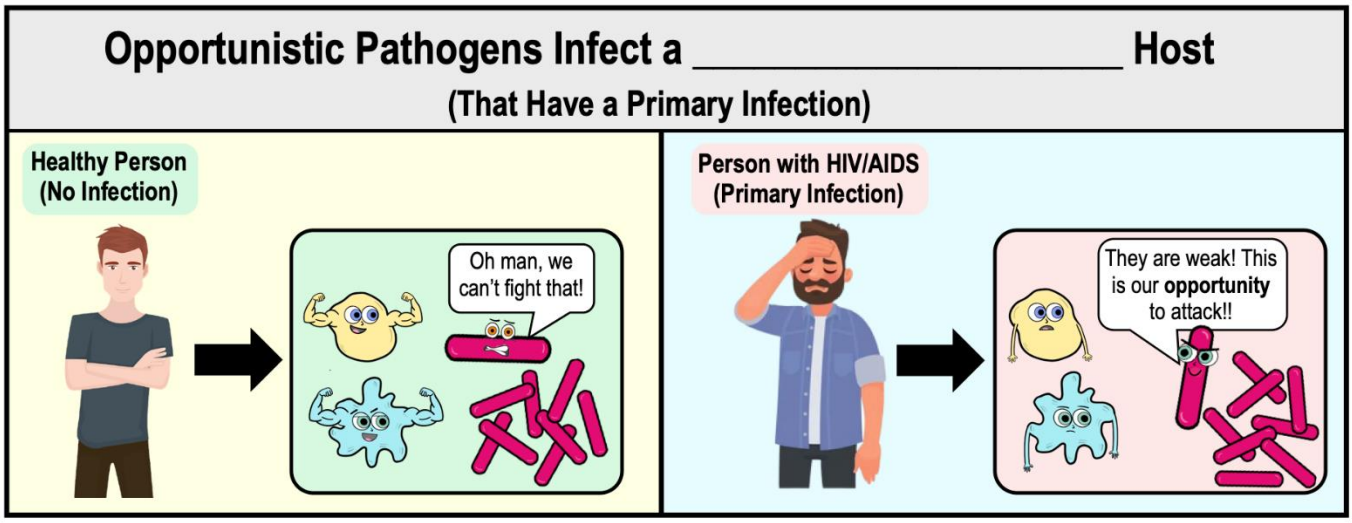
Primary vs. Secondary Infections

●An infected person may be susceptible to a *second* infection from damage done to their body by the *first* infection.

- □ **Primary Infection:** _____ infection caused by a *primary pathogen* (Ex. HIV).
  - □ **Primary Pathogens:** infect _____ (not infected) individuals in a *primary* infection.
- □ **Secondary Infection:** _____ infection caused by *opportunistic pathogens*.
  - □ **Opportunistic Pathogens:** do NOT usually cause disease but take advantage & infect compromised host



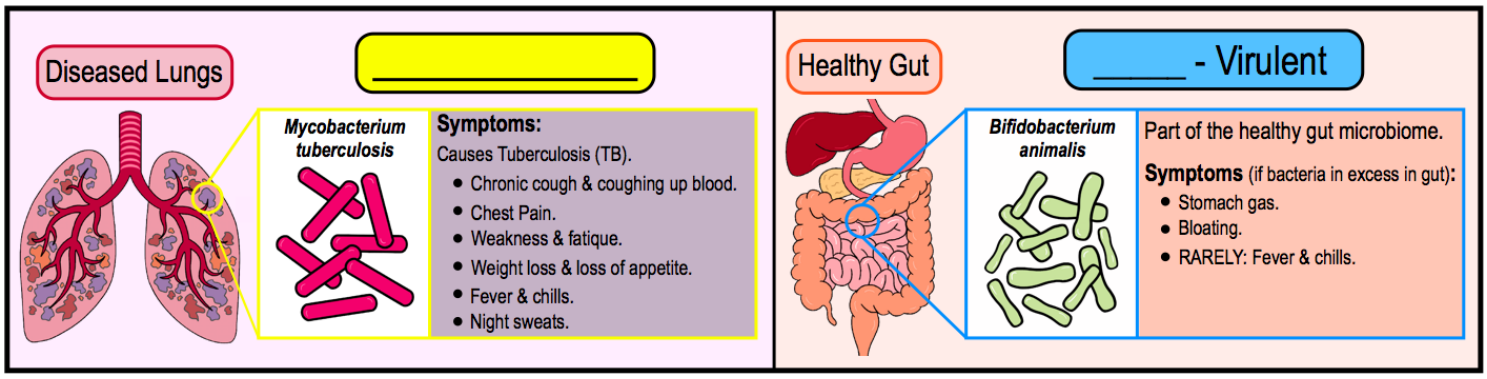
PRACTICE: Opportunistic pathogens are ***least*** likely to infect which of the following groups of people?

a) Cancer patients.
b) Drug addicts.
c) Organ transplant recipients.
d) AIDS patients.
e) High school students.

Virulence

●**Virulence:** the _____ of pathogenicity (disease production) of an organism.

- □ Organisms with *high* pathogenicity (*more* virulent) are _____ likely to cause an infection.
- □ **Virulence** _____**:** traits of an organism that allow it to cause disease (Ex. gene for toxin production).



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PRACTICE: Characteristics of a pathogen that promote pathogenicity are called:

a) Pathogen factors. b) Colonization factors. c) Infectious agents. d) Virulence factors.

PRACTICE: Virulent pathogens are:

a) Less likely to cause disease.
b) More likely to cause disease.
c) Only able to cause disease in weakened hosts.
d) Always cause disease whenever inside a host.

PRACTICE: Which of the following pathogen characteristics may be considered virulence factor(s)?

A) Adhesins (molecules that allow a pathogen to adhere to a host cell).
B) Capsules (protective coatings on the outside of certain bacteria).
C) Endotoxins (damaging molecules created by certain bacteria).
D) Proteases (damaging molecules created by certain bacteria).
E) All of the choices are correct.

PRACTICE: An encapsulated bacterium can be a virulent pathogen because the capsule:

a) Resists phagocytosis.
b) Destroys host tissues.
c) Is composed of endotoxins.
d) The capsule has no effect on the virulence of a bacterium.

PRACTICE: Which of the following is a ***true*** statement?

a) A successful pathogen never kills the host.
b) Throughout disease evolution, the most virulent diseases have spread the fastest.
c) A successful pathogen does not kill the host before it is transmitted.
d) The primary goal of a pathogen is to kill the host.