

Unit 1: Infectious Diseases

Introduction

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Learning Objectives

Upon completion of this unit, you will:

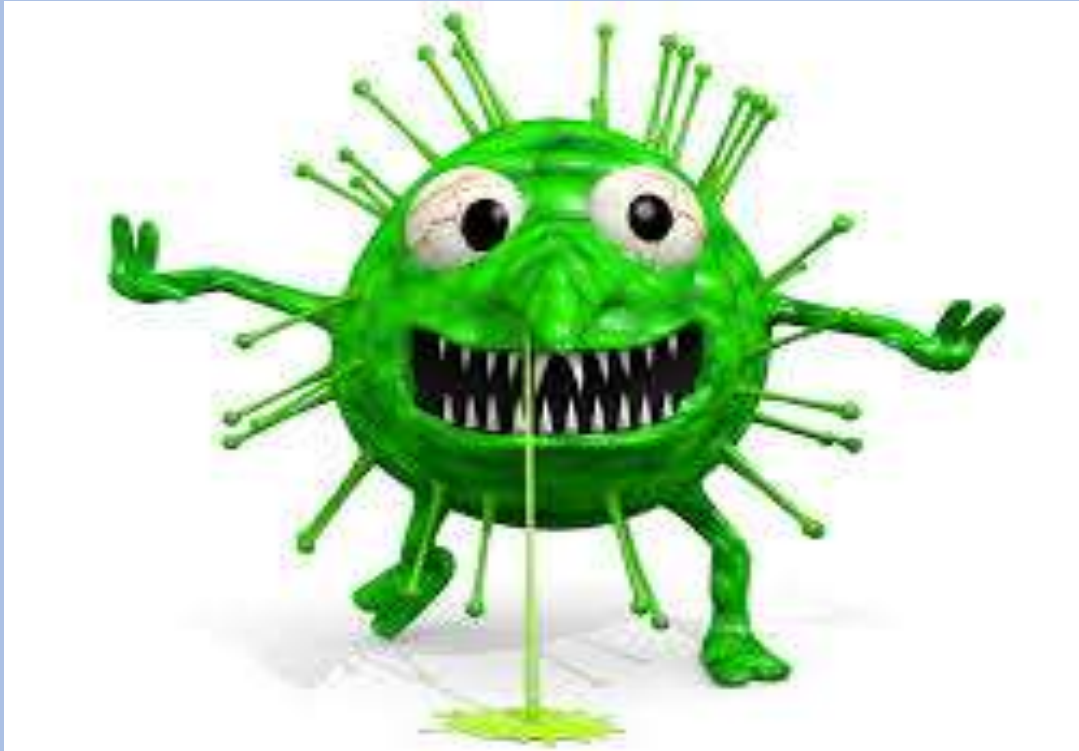
- ❖ Understand more about how the flu is transmitted
- ❖ Understand more about how to protect yourself and others from the common cold
- ❖ Understand more about how someone with the flu can spread it to others
- ❖ Understand how to protect yourself and others from infectious diseases

What causes infectious diseases?



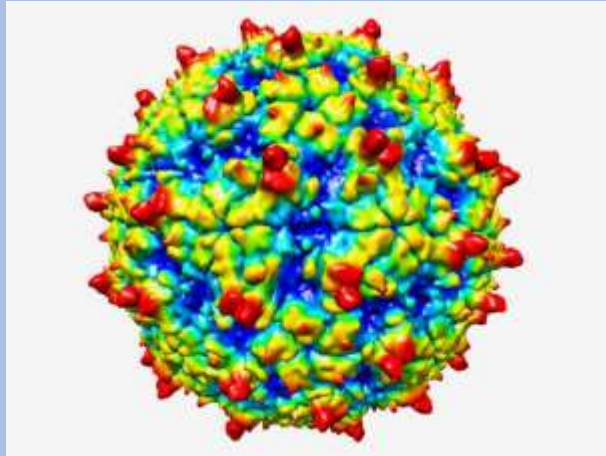
- Infectious diseases are caused by organisms such as viruses, bacteria, fungi, or parasites.

What are viruses and how do they attack us?

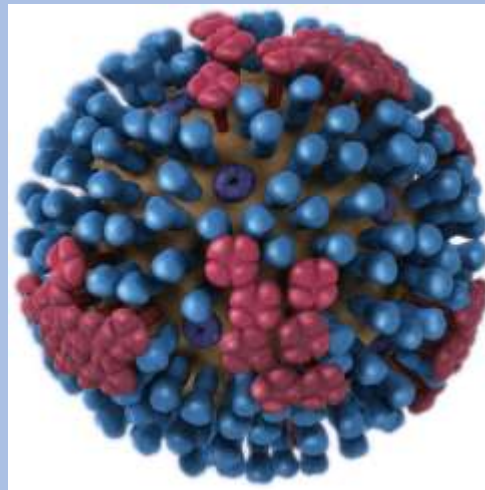


- Viruses are very small.
- They act like hijackers.
- A virus invades a cell and then uses the cell to make more viruses.
- The cell eventually dies.
- When the cell dies it releases many viruses that attack other cells.

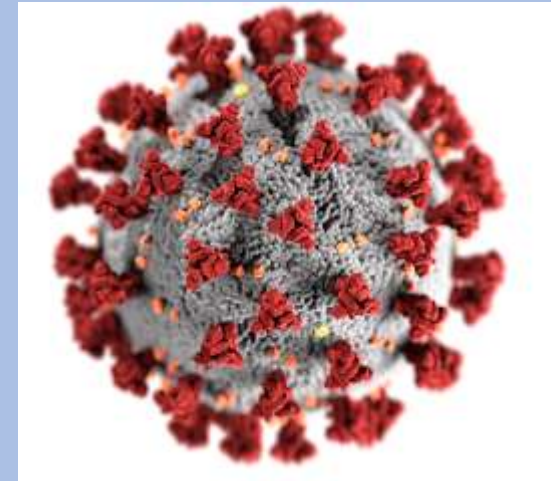
What can viruses do?



The rhinovirus can cause the common cold.
Other viruses can also cause the common cold.



Influenza viruses can cause the flu.



The SARS-CoV-2 virus can cause COVID-19 disease.

How are infectious diseases spread?



Image Source: <https://physicsworld.com/a/speed-of-spreading-epidemics-is-predicted-using-analytical-technique/>

- Many infectious diseases can be passed from person to person.
- Insects or animals can transmit some infectious diseases.
- Some infectious diseases can be spread through contaminated food or water.

What are some examples of infectious diseases?



Image Source: <https://www.picpedia.org/highway-signs/i/infectious-disease.html>

- Common cold
- Influenza (flu)
- COVID-19
- Chickenpox
- HIV/AIDS

Have you ever had the common cold?



Image Source: <https://www.wect.com/2018/11/21/local-ministry-offering-free-health-screenings-flu-shots-with-thanksgiving-meals/>

- Most healthy adults can expect to have two or three colds each year.
- The common cold is caused by many different viruses.
- Common colds are viral infections of the nose and throat.

What are the symptoms of the common cold?



- Runny or stuffy nose
- Sore throat
- Cough
- Sneezing

Continued: *What are the symptoms of the common cold?*



- Congestion
- Slight body aches or a mild headache
- Low-grade fever
- Generally feeling unwell

What causes a cold to spread?



The viruses that cause colds -

- Can spread from person to person
- Can spread from infected people to others through the air
- Can live on your hands
- Can also live on doorknobs and eating utensils, glasses, and cups

How do you protect yourself and others from the common cold?



- Wash your hands frequently.
- Use soap and water.
- Avoid touching your eyes, nose, and mouth with unwashed hands.
- Avoid touching, hugging, or kissing people who have a cold.
- Avoid sharing eating utensils with people who have a cold.

What is the flu?

Is it flu?

Symptom	Cold	Flu (Influenza)
	Symptoms are generally mild	Symptoms often come on quickly
Fever	Rare	Usual, high fever (102°F/39°C to 104°F/40°C) sudden onset, lasts 3-4 days
Headache	Rare	Usual, can be severe
General aches and pains	Sometimes, mild	Usual, often severe
Tired and weak	Sometimes, mild	Usual, may last 2-3 weeks or more
Extreme fatigue	Unusual	Usual, early onset
Runny, stuffy nose	Common	Common
Sneezing	Common	Sometimes
Sore throat	Common	Common
Chest discomfort, coughing	Sometimes, mild to moderate	Usual, can be severe
Nausea/vomiting/diarrhea	Not usually	Sometimes
Complications	Can lead to sinus congestion or earache	Can lead to pneumonia and respiratory failure; Can worsen a current chronic respiratory condition; Can be life-threatening

- The flu is a respiratory illness.
- It affects the nose, throat, and sometimes the lungs.
- It is caused by a virus.
- It can cause mild to severe illness.
- Sometimes it causes death.

Image Source:

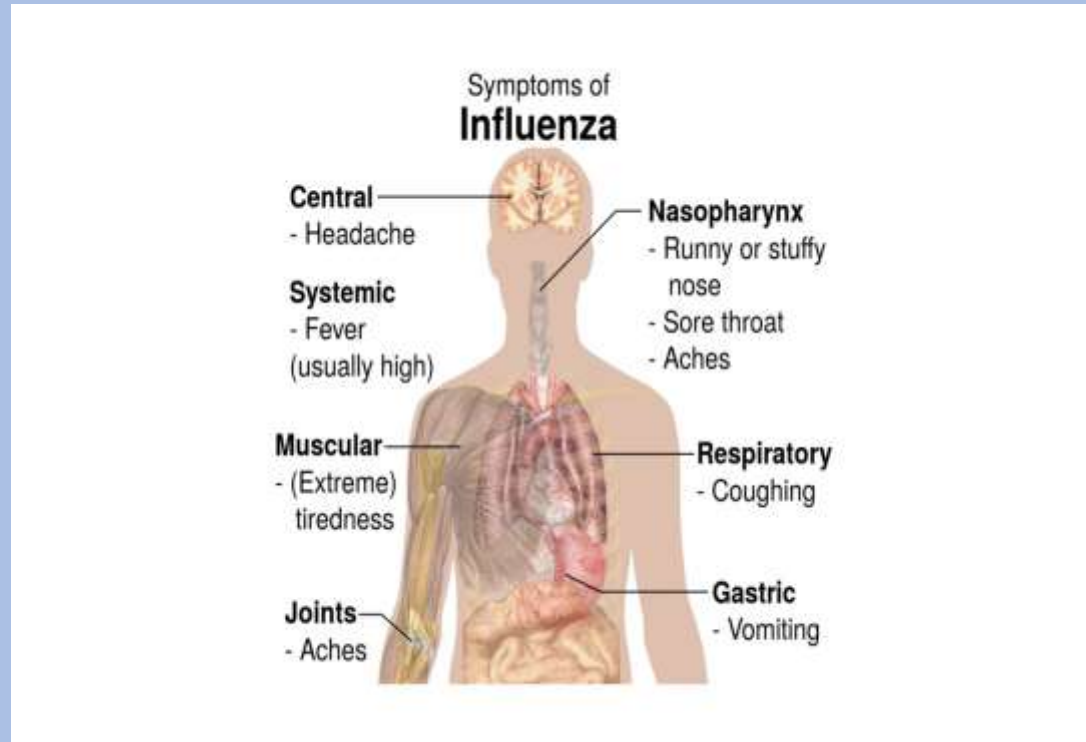
<https://wix.com/2021/09/08/area-hospitals-prepare-for-a-return-of-the-flu/>

What are some differences between a cold and the flu?

SIGNS AND SYMPTOMS	COLD	FLU
Symptom onset	Gradual	Abrupt
Fever	Rare	Usual
Aches	Slight	Usual
Chills	Uncommon	Fairly common
Fatigue, weakness	Sometimes	Usual
Sneezing	Common	Sometimes
Chest discomfort, cough	Mild to moderate	Common
Stuffy nose	Common	Sometimes
Sore throat	Common	Sometimes
Headache	Rare	Common

- Cold symptoms are usually milder than the flu.
- The flu usually starts quickly than the cold.
- The flu may cause fevers above 101F.
- Colds rarely produce fevers above 101F.

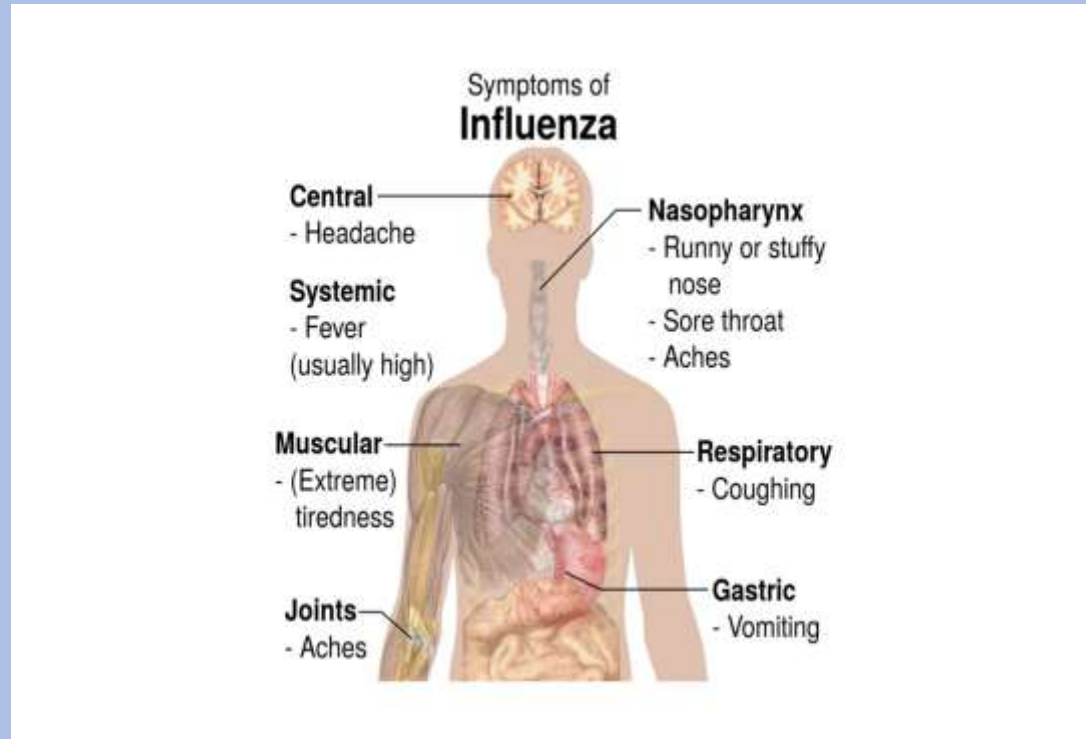
What are some symptoms of the flu (influenza)?



Symptoms can begin about 2 days after the virus enters the body.

- Fast onset of symptoms
- Fever and chills
- Cough
- Body aches and pains

Continued: *What are some symptoms of the flu (influenza)?*



- Weakness and fatigue
- Headaches
- Symptoms may last 7-14 days
- Some people may develop dangerous complications such as pneumonia

How is the flu transmitted?



- Most experts think that flu viruses spread mainly by droplets made when people with flu cough, sneeze or talk.
- People with the flu can spread it to others up to 6 feet away.

Image Source: <https://wtop.com/health-fitness/2019/12/feeling-sick-how-to-keep-your-germs-from-spreading-during-cold-and-flu-season/>

When can someone with the flu infect others?

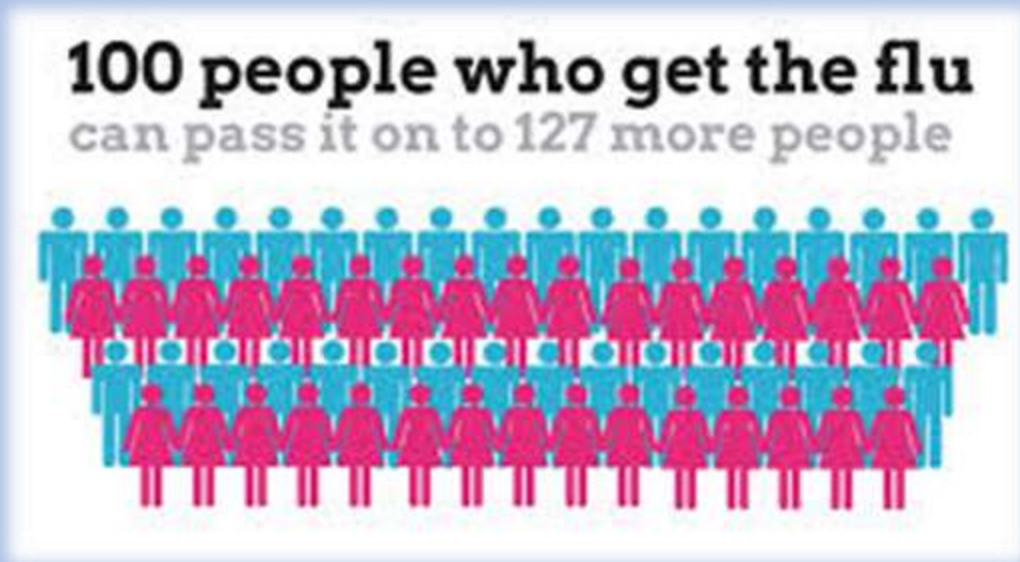


Image Source: <https://www.youtube.com/watch?v=jLKPdjFbu1A>

- Most healthy adults may be able to infect others beginning 1 day **before** symptoms develop and up to 5 to 7 days **after** becoming sick.

Discussion: Have you ever- ?

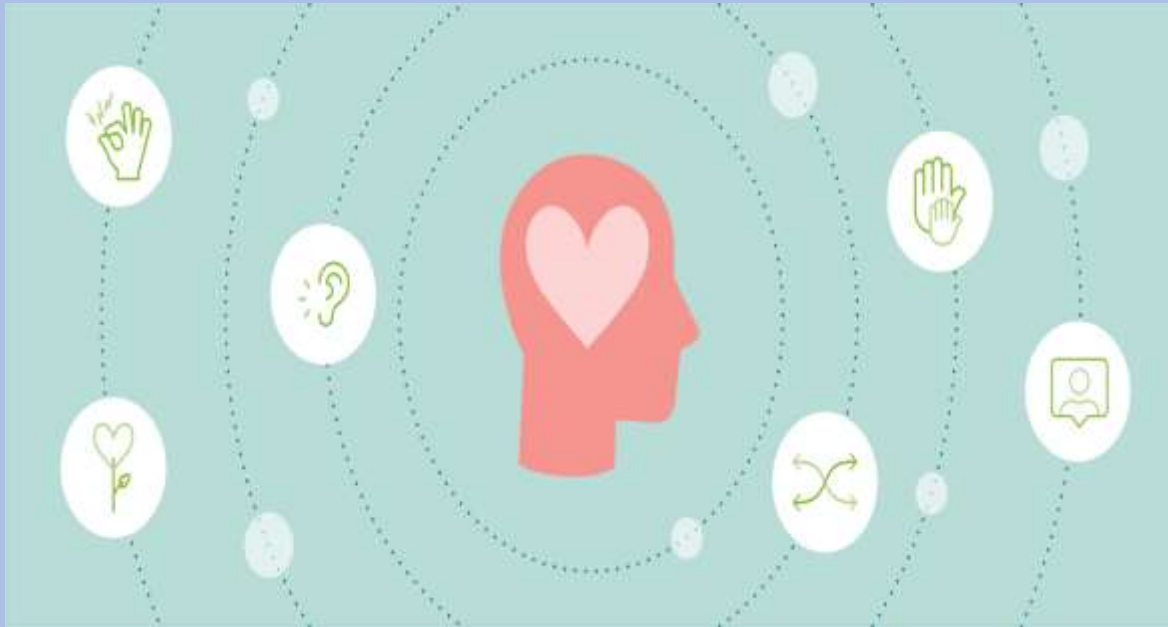


Image Source: <https://www.duarte.com/presentation-skills-resources/important-communicate-empathy-authority-times-crisis/>

- Do you know someone who had an infectious disease?
- When was the last time you had a cold?
- Do you know someone who had the flu? What were the symptoms?
- What about Pneumonia?
- Did you or the other person go to the doctor?

Just for Fun:
Test your knowledge of the Flu



Image Source: <https://schoolhouseteachers.com/uncategorized/test-your-knowledge-home/>

Question number 1



Washing your hands frequently is one way to protect yourself against a **cold**?

True

False

Answer to #1 - True

Because the viruses can live on your hands, washing your hands with soap and water for at least 20 seconds provides some protection against a cold.

Question number 2



Image Source: <https://www.nih.gov/news-events/nih-research-matters/vaccines-prevented-140000-covid-19-deaths-us>

2. People should be vaccinated against the flu every year.

True

False

Answer to #2 - True

CDC recommends a yearly vaccination.

- New flu vaccines are made each year.
- They are often updated to fight against the three or four different influenza viruses that will be most common.

Question number 3



Washing your hands is the best thing you can do to protect against the **flu**.

True

False

Answer to question #3: False

CDC recommends a flu vaccine as the first and most important step in protecting against the flu. However, preventive actions like covering your mouth when you cough and washing your hands often are important everyday steps that can help stop the spread of germs.

Question number 4



The flu is typically spread through coughs and/or sneezes.

- True
- False

Answer to question #4 - True

The flu virus is mainly spread through droplets from coughs and sneezes.



Image Source: <https://first10em.com/aerosols-droplets-and-airborne-spread/>

Question number 5



Image Source: <https://depositphotos.com/16276145/stock-photo-sick-woman-with-thermometer-flu.html>

The flu is not a serious illness.

True

False

Answer to question #5 - False



- The flu is a serious contagious disease that causes illness.
- It causes hospitalizations and deaths every year in the United States.

Image Source: <https://abcnews.go.com/Health/1300-people-died-flu-year/story?id=67754182>