

Communicable Diseases:

Lesson 1

Chapter 13

Communicable Diseases

What Are Communicable Diseases?

Germs and Disease

A disease such as the common cold is a communicable disease.



disease Any condition that interferes with the normal or proper functioning of the body or mind



communicable disease A disease that can be spread to a person from another person, an animal, or an object

Communicable Diseases

What Are Communicable Diseases?

Germ and Disease

Communicable diseases are spread by germs.



germs Organisms that are so small they can only be seen through a microscope

Pathogens are harmful germs.



pathogens Germs that cause disease

What Are Communicable Diseases?

Germ and Disease

When the body cannot fight off an infection, a disease develops.



infection A condition that happens when pathogens enter the body, multiply, and cause harm


What Are Communicable Diseases?

Kinds of Pathogens



viruses The smallest and simplest pathogens

Viruses are usually made of genetic material and protein.

Pathogens	Diseases
<p>Viruses</p> 	<p>Colds, chicken pox, influenza, measles, mononucleosis, mumps, hepatitis, herpes, HIV, yellow fever, polio, rabies, viral pneumonia</p>

Communicable Diseases

What Are Communicable Diseases?

Kinds of Pathogens

Bacteria exist in every environment on earth.



bacteria Simple one-celled organisms

- Most kinds of bacteria are not only harmless, but actually helpful.
- Helpful bacteria live in your digestive system and help break down food.
- Other bacteria live on your skin and prevent harmful bacteria from infecting you.

Bacteria



Pinkeye, whooping cough, strep throat, tuberculosis, Lyme disease, most foodborne illnesses, diphtheria, bacterial pneumonia, cholera

What Are Communicable Diseases?

Kinds of Pathogens

Examples of fungi include molds, yeast, and mushrooms.



fungi Organisms that are more complex than bacteria but cannot make their own food

Fungi thrive in warm, moist environments.

Fungi



Athlete's foot, ringworm

What Are Communicable Diseases?

Kinds of Pathogens

Many protozoa are harmless, but some can cause disease.



protozoa One-celled organisms that are more complex than bacteria

One type of protozoa causes malaria, which is transferred to people through mosquito bites.

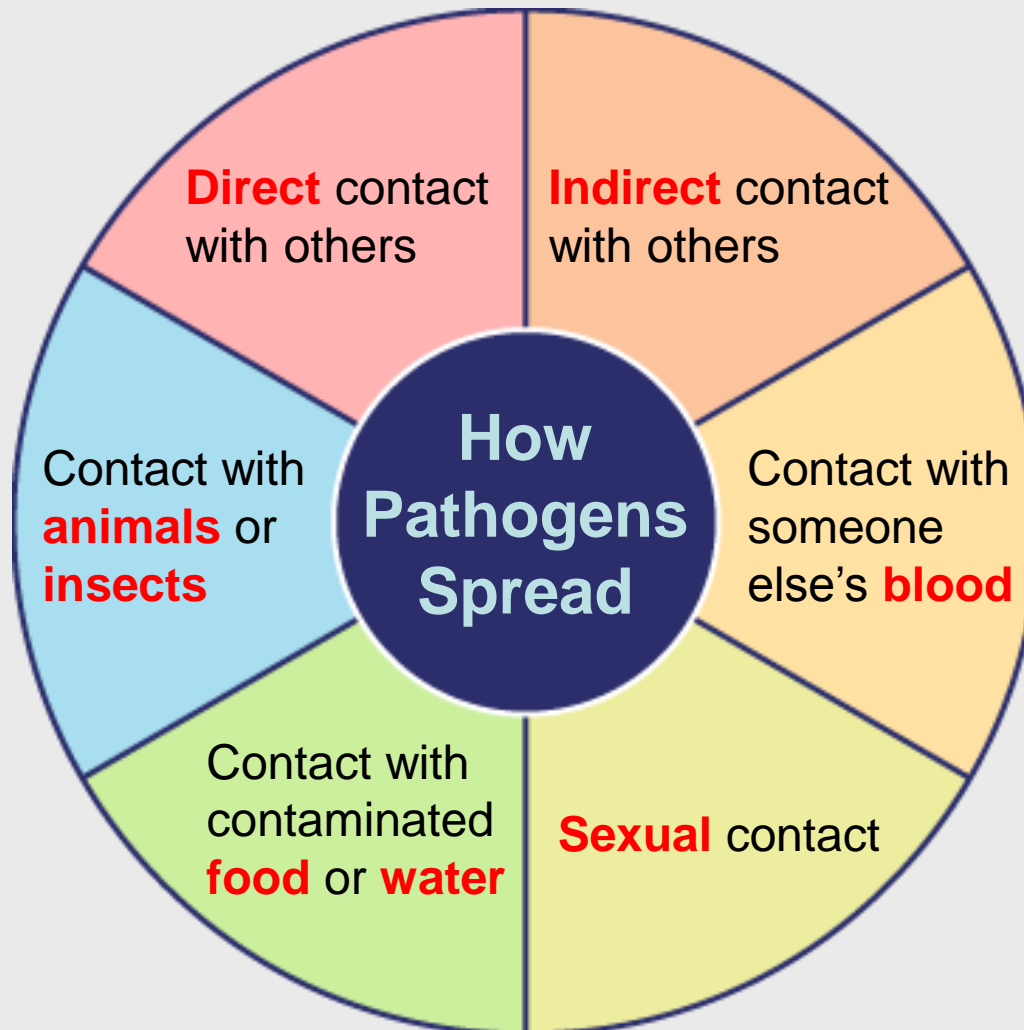
Protozoa



Amoebic dysentery, malaria, trichomoniasis

Communicable Diseases

What Are Communicable Diseases?



Communicable Diseases

What Are Communicable Diseases?



Mosquitoes can infect humans with West Nile Virus. Controlling mosquito populations is one way to help control the spread of West Nile Virus.

Communicable Disease:

Lesson 2

The Immune System

Communicable Diseases

What Are Communicable Diseases?

Keeping Pathogens Out

The Body's Five Major Barriers to Block Pathogens

Tears

Saliva

Skin

**Mucous
Membranes**

Stomach Acid

What Are Communicable Diseases?

Keeping Pathogens Out

Your immune system goes to work when a pathogen gets past one of the five barriers.



immune system A combination of body defenses made up of cells, tissues, and organs that fight pathogens in the body

The immune system has two responses: the nonspecific response and the specific response.

What Are Communicable Diseases?

The Immune System's Nonspecific Response

Inflammation is an example of a nonspecific immune response.



inflammation The body's response to injury or disease, resulting in a condition of swelling, pain, heat, and redness

What Are Communicable Diseases?

The Immune System's Nonspecific Response

- A fever is another nonspecific immune response.
- When your body temperature rises, it's harder for pathogens to reproduce.

What Are Communicable Diseases?

The Immune System's Specific Response

- A specific response **attacks** a particular pathogen and its poisons.
- Your immune system can also recognize pathogens it has dealt with before.

Communicable Diseases

What Are Communicable Diseases?

Antigens and Antibodies

All three types of lymphocytes are activated when the body recognizes a part of a pathogen known as antigens.



antigens Substances that send the immune system into action

Communicable Diseases

What Are Communicable Diseases?

Antigens and Antibodies

Cells produce specific antibodies to fight a particular type of antigen.



antibodies Specific proteins that attach to antigens, keeping them from harming the body

Communicable Diseases

What Are Communicable Diseases?

Immunity

Healthy mothers pass immunity to their babies during pregnancy and through breastfeeding.



immunity The ability to resist the pathogens that cause a particular disease

Your body also builds immunity when it responds to pathogens and when you get certain diseases.

What Are Communicable Diseases?

Immunity

A vaccine helps the body prepare memory cells for specific diseases without making the body sick.



vaccine A preparation of dead or weakened pathogens that is introduced into the body to cause an immune response

Your immune system creates memory cells in response to the vaccine.

Communicable Disease:

Lesson 3

Common Communicable Diseases

What Are Communicable Diseases?

Contagious Period

Every contagious disease has a contagious period.



contagious period The length of time that a particular disease can be spread from person to person

Often, the contagious period includes a length of time before the infected person begins to show symptoms.

Communicable Diseases

What Are Communicable Diseases?

Colds

- Colds are spread by both **direct** and **indirect** contact.
- Your doctor cannot give you a vaccine for the common cold because there are hundreds of viruses.

Communicable Diseases

What Are Communicable Diseases?

The Flu

Influenza symptoms usually affect you more quickly and more seriously than cold symptoms do.



influenza A communicable disease characterized by fever, chills, fatigue, headache, muscle aches, and respiratory symptoms

The flu can be spread through both direct and indirect contact.

What Are Communicable Diseases?

The Flu

- Scientists are able to make **vaccines** for the flu by figuring out which strains will spread fastest during the next flu season.
- Scientists worry that new strains of the flu virus, such as the avian flu, could be deadly to large numbers of people.

Communicable Diseases

What Are Communicable Diseases?

Chicken Pox, Measles, and Mumps

Chicken Pox

- Contagious about a week before symptoms appear
- Symptoms include a **rash**, **fever**, aching **muscles**
- Rash (small bumps) may appear inside mouth and throat
- Bumps develop into blisters
- Disease is no longer contagious when the blisters dry up

Communicable Diseases

What Are Communicable Diseases?

Chicken Pox, Measles, and Mumps

Measles

- Contagious a few days before symptoms appear
- Symptoms include a **rash**, **fever**, and head and **body** aches
- Worldwide, over 1 million children die each year from measles
- About 90 percent of the children in the United States are vaccinated against measles

Communicable Diseases

What Are Communicable Diseases?

Chicken Pox, Measles, and Mumps

Mumps

- Contagious about a week before symptoms appear
- Symptoms include a **fever**, **headache**, and swollen **salivary** glands
- Over 90 percent of children in the United States are vaccinated against mumps

What Are Communicable Diseases?

Other Communicable Diseases

Mononucleosis is often called “mono” and “the kissing disease.”



mononucleosis A viral disease characterized by a severe sore throat and swelling of the lymph glands in the neck and around the throat area

Mono is spread when a person comes in contact with the saliva of an infected person.

Communicable Diseases

What Are Communicable Diseases?

Other Communicable Diseases

There are **three** common strains of hepatitis.



hepatitis A viral disease characterized by an inflammation of the liver and yellowing of the skin and the whites of the eyes

Other symptoms include weakness, fatigue, loss of appetite, fever, headaches, and sore throat.

Communicable Diseases

What Are Communicable Diseases?

Other Communicable Diseases

Hepatitis A

- Common in areas with poor sanitation
- Spreads when **infected** human wastes contaminate **food** or **water** or through open wounds
- There are **vaccines** available

Hepatitis B and C

- Permanently damages the **liver**
- Can lead to cirrhosis and liver cancer
- Spread through contact with contaminated **blood** or other **body** fluids, sharing **needles**, or sexual contact

- There are **vaccines** for hepatitis A and B.
- There are medications that can help treat hepatitis C.

What Are Communicable Diseases?

Other Communicable Diseases

Tuberculosis (TB) is spread through the air.



tuberculosis A bacterial disease that usually affects the lungs

Symptoms of TB include cough, fatigue, night sweats, fever, and weight loss.

What Are Communicable Diseases?

Other Communicable Diseases

Pneumonia can be spread through direct or indirect contact with an infected person.



pneumonia A serious inflammation of the lungs

Symptoms of pneumonia include fever, cough, chills, and difficulty breathing.

What Are Communicable Diseases?

Strep Throat

Strep throat can be spread through direct or indirect contact with an infected person.



strep throat A sore throat caused by streptococcal bacteria

Symptoms of strep throat include a red and painful throat, fever, swollen lymph nodes in the neck, headache, nausea, and vomiting.

What Are Communicable Diseases?

Strep Throat

- Serious problems can develop if strep throat is left untreated.
- If you have a sore throat or a fever, tell a parent or guardian.

Communicable Disease:

Lesson 4

Preventing the Spread of Disease

Communicable Diseases

What Are Communicable Diseases?

Keeping Pathogens from Spreading

Good personal hygiene helps limit the number of pathogens you encounter.



hygiene Cleanliness

Communicable Diseases

What Are Communicable Diseases?

Protecting Yourself from Pathogens

Avoid close contact with people who have a communicable disease.

Never share eating utensils.

Wash yourself thoroughly and often, especially before preparing foods.

Keep your fingers and hands away from your mouth, nose, and eyes.

Communicable Diseases

What Are Communicable Diseases?

Protecting Yourself from Pathogens

Handle and prepare food safely.

Wipe counters thoroughly.

Empty the trash can often.

Keeps pets clean and healthy.

Communicable Diseases

What Are Communicable Diseases?

Protecting Others from Pathogens

If you feel sick, tell a parent or guardian.

If you are ill, stay home from school and other public places.

Cover your mouth and nose when you sneeze or cough.

If a medical professional has told you to take medicine, follow the directions on the label exactly.

Communicable Diseases

What Are Communicable Diseases?

A Healthful Lifestyle

Eat a balanced diet.

Bathe or shower regularly using soap and shampoo.

Avoid all tobacco products, alcohol, and other drugs.

Get 8–9 hours of sleep every day.

Communicable Diseases

What Are Communicable Diseases?

A Healthful Lifestyle

Rest when you are sick.

Ask a parent or guardian to make sure your immunizations are up to date.

Learn to manage stress.

Visit the doctor for regular checkups and follow the advice of your doctor.

Communicable Disease:

Lesson 6

HIV/AIDS

What Are Communicable Diseases?

What Are HIV and AIDS?

HIV (human immunodeficiency virus) attacks and kills T cells.



T-Cells White blood cells that fight disease. Part of Immune System.



HIV (human immunodeficiency virus) The virus that causes **AIDS**



AIDS (acquired immunodeficiency syndrome) A disease that interferes with the body's ability to fight infection

What Are Communicable Diseases?

What Are HIV and AIDS?

- HIV does not kill T cells immediately.
- An infected person can have the virus for years without showing any signs or symptoms.
- Once a person is infected with HIV, the virus begins damaging the person's immune system.

Communicable Diseases

What Are Communicable Diseases?

The Spread of HIV

How HIV Is Spread		
Sexual Intercourse	Contaminated Needles	Other
<ul style="list-style-type: none">• This is most common way that HIV spreads• HIV circulates in the bloodstream and in other bodily fluids	<ul style="list-style-type: none">• A single drop of blood left on a needle can contain enough HIV to infect someone• Contaminated tattoo needles can transmit HIV	<ul style="list-style-type: none">• A pregnant female can transmit HIV to her child during delivery

Communicable Diseases

What Are Communicable Diseases?

The Spread of HIV

How HIV Is **NOT** Spread

Swimming in a pool with an infected person.

Sharing utensils with an infected person.

Breathing the air near an infected person.

Donating blood.

Being bitten by a mosquito that has bitten an infected person.

Hugging or shaking hands with an infected person.

Using the same shower, bathtub, or toilet as an infected person.

Sharing sports equipment with an infected person.

What Are Communicable Diseases?

Fighting AIDS

- ❑ In the United States, more than 14,000 people die every year from AIDS.
- ❑ Every 9.5 minutes someone is infected with HIV.
- ❑ **No cure**
- ❑ New drugs work to slow the progress of the disease by preventing HIV from reproducing.
- ❑ Many of these drugs have serious side effects and are very expensive.

What Are Communicable Diseases?

Abstinence and HIV

- People who inject illegal drugs face the dangers of getting diseases.
- People who engage in sexual activity are exposing themselves to STDs. **Abstinence** can save your life.

The only 100 percent sure way to avoid getting HIV is to **avoid contact** with sources of this virus.