

Y10 Biology (F) Infectious Diseases



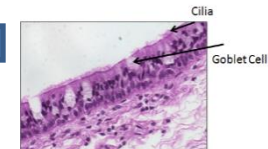
How are diseases spread?

- Microbes can be passed from person to person through physical contact.
- Some can move through the air or water.
- Some, like Malaria, can be transferred by insects.



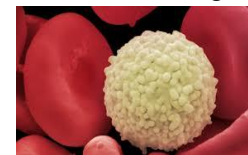
How do viruses and bacteria damage us?

- Viruses enter our cells and reproduce quickly, damaging our cells.
- Bacteria also reproduce quickly and make toxins that damage tissues and make us feel ill.



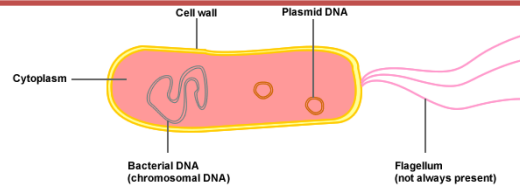
How does the body prevent disease?

- Your skin, nose, trachea, bronchi and stomach can all help prevent disease.
- Mucus and ciliated cells can trap pathogens.



How do white blood cells stop pathogens?

1. They can engulf and ingest pathogens in phagocytosis.
2. They can produce antibodies.
3. They can produce antitoxins.



How is disease caused?

- Microbes like bacteria, fungi, protists and viruses can cause disease.
- They can be spread and infect others.
- The infection can cause symptoms like sneezing.

START

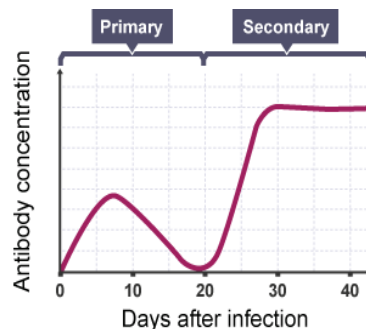


Key words:

1. **Pathogen:** A microorganism that can cause disease.
2. **Microorganism:** A living thing too small to see with only your eyes.
3. **Symptom:** Effects on your body from a pathogen.
4. **Communicable:** Diseases can be passed on to other people
5. **Antibiotic:** A type of drug that can kill bacteria.
6. **White Blood Cell:** A type of cell in the immune system.
7. **Vaccine:** An inactive or dead version of a pathogen used to prevent disease.
8. **Painkiller:** A type of drug used to reduce symptoms of disease.

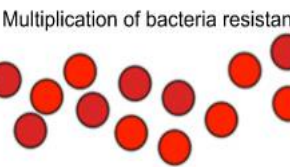
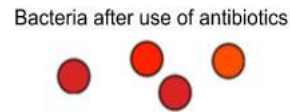
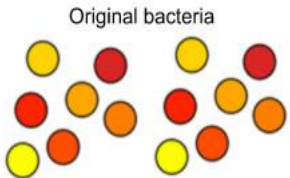
How do vaccines work?

- Vaccines prevent illness, but can't cure it.
- A dead or inactive version of a pathogen is injected into a person.
- This makes white blood cells make antibodies to fight the infection.
- If the real pathogen enters the body, white blood cells remember how to fight it and do so quickly.



Where do we get drugs from?

- Most drugs today are made in the lab.
- Some are found naturally in plants and fungi.
- New drugs need to be tested to make sure they are safe, the right dose, and that they work effectively.



How do antibiotics work?

1. They can kill bacteria in our bodies.
2. They can't kill viruses as they live inside our cells where antibiotics can't reach.
3. Some bacteria are becoming resistant to some antibiotics- they don't kill them any more!

Types of Disease

- 1) Give one way that pathogens can be spread.
- 2) How can bacteria make us feel ill?
- 3) What are the symptoms of gonorrhoea?
- 4) What type of disease is measles?
- 5) Why does tobacco mosaic virus affect photosynthesis?
- 6) What are the vectors for malaria?

Fighting Disease

- 7) What does the stomach produce that can kill pathogens?
- 8) Give three ways that white blood cells can defend against pathogens.
- 9) Give one pro and one con of vaccination.
- 10) Why is it difficult to develop drugs that kill viruses?
- 11) Which plant does the painkiller aspirin come from?
- 12) Give two things that drugs are tested on in preclinical testing.

