



# Causes of Human Disease: Transmitting and Fighting Infection

*Learn how pathogens cause infectious diseases, how these diseases are transmitted and how our immune systems respond to infection.*

If your students are completing the whole of this course online and are not participating in the teacher-led lessons based on it, then they can complete useful and engaging activities based on the content covered. You can choose for your students to complete individual tasks by themselves or encourage group work. Though you may have your own ideas about what your students can do with the course content, we've made things easy for you by suggesting some activities that you can submit to your students below. Instructions for the students can be found later in this document.

## Individual student tasks taken from the course

**Reflection:** Students write a 500 word reflection on what they learned from the course, including anything they might do differently now as a result of their learning, and anything additional they found out from their own reading around the topic. They will submit this reflection as a written essay, podcast or video.

**Activity:** Students complete the 'What causes infectious disease' exercise from Step 1.3, writing down and submitting their answers.

**Research task:** Students research antibiotic resistance and record their findings. They can start by using the [WHO article](#) identified in Step 1.13.

Write a brief response to the following question:

- Why is antibiotic resistance a challenge to health?

Submit research findings and question responses to the teacher.

## Group tasks based on the course

**Research task:** Put students into groups and ask them to watch the video in Step 2.2 (How does our innate immune system respond to infection?) and the video in Step 2.5 (How does our adaptive immune system respond to infection?). Groups then research both topics and present their findings via a poster, presentation, quiz or any other media/method they wish. Their work should include information on each immune system and how it responds to and fights infection, and answer the following question:

- What are the key differences between the adaptive immune response and the innate immune response to a thorn puncturing someone's hand?

**Discussion task:** Groups roleplay or discuss the following scenario:

Imagine that you are a doctor and someone arrives in your surgery requesting antibiotics, yet their symptoms are most probably viral.

- What do you do?

- What would you say to this patient having made your decision?

**Collaborative task:** Groups produce an informative poster on bacteria and viruses, including the main features and examples of the diseases they can cause. This can be done in various ways, using media and drawing diagrams and images where possible.

Groups should watch the video in Step 1.4 'What's the difference between bacteria and viruses?' to inform their posters.

## Additional support

You can use the [How to use FutureLearn guide](#) with your students to get them started. There is also a school-facing [Guide to safeguarding and security on FutureLearn](#) if you need it.

## Test

You can use the test questions listed in the student instructions below as a short assessment to enable your students to demonstrate what they have learned on the course. The assessment has 15 marks in total.

The questions have been designed to be flexible and open. The questions indicate which steps the answers can be found on. The marks available reflect the likely length and complexity of the answer expected, and how many points they are likely to make. For example, a 5-mark question might reflect a longer, more complex question, or one where they have asked to describe or explain a number of elements. Depending on the level and ability of your students, you can decide how you wish to award the marks so they are appropriate for your class.

Each question suggests which steps the students may wish to return to answer the questions. **You can decide if you want to include this information when you share the assessment with your students.**

# Student instructions

## Reflection

Write a 500 word reflection of what you have learned from the course. It should include anything you might do differently now because of what you learned, and anything additional you found out in your reading around the topic. Submit this reflection to your teacher as a written essay, podcast or video.

## Activity

Complete the 'What causes infectious disease' exercise from Step 1.3. Write down and submit your answers.

## Research task

Research antibiotic resistance and record your findings. Start by using the [WHO article](#) identified in Step 1.13.

Write a brief response to the following question:

- Why is antibiotic resistance a challenge to health?

Submit your research findings and question responses to your teacher.

## Group discussion

In your group, roleplay or discuss the following scenario:

Imagine that you are a doctor and someone arrives in your surgery requesting antibiotics, yet their symptoms are most probably viral.

- What do you do?
- What would you say to this patient having made your decision?

## Group research task

In your group, watch the video in Step 2.2 (How does our innate immune system respond to infection?) and the video in Step 2.5 (How does our adaptive immune system respond to infection?). Conduct research on both topics and present your group's findings via a poster, presentation, quiz or any other media/method you wish. Your work should include information on each immune system and how it responds to and fights infection, and answer the following question:

- What are the key differences between the adaptive immune response and the innate immune response to a thorn puncturing someone's hand?

Provide a brief summary of how your team worked together– who contributed to which parts and how you reviewed each other's work.

## Group collaborative task

As a group, produce an informative poster on bacteria and viruses, including the main features and examples of the diseases they can cause. This can be done in various ways, using media and drawing diagrams and images where possible.

Watch the video in Step 1.4 'What's the difference between bacteria and viruses?' to inform your posters.

## Test

Complete the assessment questions below to demonstrate your understanding of the course. You can refer back to the course to find the answers or more detail as you need to. You should not however share your answers with other students.

Your answers should be written in full sentences and be appropriately detailed. Make sure you read the questions carefully before starting to answer. Each question shows how many marks are available – use this to guide how much detail or how many points you need to include.

[The questions also indicate where you can start to look to find the answer. You can also include information from other steps if that is relevant.]

1. Identify three different types of bacteria and the infections they cause. (6 marks) [Step 1.3 and 1.4]
2. Explain four ways that infection can be transmitted. (4 marks) [Step 1.8]
3. Why is antibiotic resistance a challenge to health? (2 marks) [Step 1.11]
4. Explain some of the differences between the innate immune system and the adaptive immune system. (3 marks) [Steps 2.2-2.5]