

It's the small things in life: The perils and power of microbes

Student activity sheet

Introduction

View the presentation 'The perils and power of microbes' and then answer the following questions and complete the final activity.

Questions

1. What is a microbiome?
2. a) Suggest how the food you eat might affect your microbiome.
b) There are two approaches to increasing the healthy microorganisms in your gut: **probiotics** and **prebiotics** (Figure 1). Find examples of both types of foods and discover how scientists think they work. You could start by looking at <http://www.bbc.co.uk/sn/humanbody/truthaboutfood/healthy/prebiotics.shtml>.



Andrzej Tokarski, bergamont,
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Figure 1 Examples of prebiotic foods: asparagus, leeks and Jerusalem artichokes (left to right).

3. Figure 2 shows a fungal infection of the mucous membranes in the mouth. The organism that causes the infection is often present in healthy people, but anything that changes the microbiome can enable it to multiply. Scientists have evidence that some medicines affect the health of your gut and skin microbiome. Suggest a type of medicine that might have a negative effect on the human microbiome and explain why.



CDC/PHIL

Figure 2 Oral thrush: a fungal infection of the mouth.



4. If the microbiomes of two different species are mixed in some way it can cause problems.
 - a) Explain this observation.
 - b) Give two examples of the spread of disease between species of domestic animals and humans.

Activity

Either: Find out as much as you can about the human microbiome and produce a poster, an article or any other type of resource to enlighten other people about this amazing ecosystem.

Or: Investigate some of the different sources of new antibiotics that scientists are currently investigating and produce a poster, an article or any other type of resource to present your findings.