

Small, Small World

1. Who allowed us to discover microscopic organisms in pond water and saliva?

Antoni von Leeuwenhoek

2. When were bacteria first discovered?

~350 years ago

3. When were viruses first discovered?

~100 years ago

4. Compare the amount of bacteria found in air with the quantity of bacteria found in soil.

used to think less, now we know it's same

5. What is a bacteriophage? Draw a typical bacteriophage. How many of these viruses are inside you right now?

virus that attacks bacteria

trillions!



6. In the article, Nathan Wolfe states: "Take a breath and you sample the world." What does he mean by this?

viruses, bacteria travel world-wide through air

7. What do bacteria have to do with snowflakes?

nucleus of snowflake = bacteria
(water crystallizes on bacteria)

8. Name 5 locations of the human body that make up the human micro biome.

skins

gums

teeth

genital tract

intestinal tract

9. List 6 ways bacteria benefit our bodies.

1- digestion

2- absorb nutrients

3- make vitamins

4- " proteins (anti-inflammatory)

5- train immune system to fight infections

6- moisturize skin (prevent cracks + infections)

* remember; also exposed to more harmful bacteria on human skin when born

10. Do you believe babies born by caesarean section might have more problems digesting milk than babies that are born naturally? Explain why or why not.

yes, lactobacillates in vagina passed on to baby during natural childbirth. help digest milk. C-section babies have fewer of these bacteria

11. Antibiotics defend us from harmful bacteria. Explain why it is not always a good idea to use them.

→ don't only "attack" bacteria you want them to
 ex. 10-40% have gut microbiota disturbed
 • Helicobacter pylori # ↓
 • ↑ asthma

12. How are the microorganisms in our bodies like an ecosystem?

- dynamic environment
 - interactions between all bacterial/viral spp.

13. Give the scientific names of 3 harmful and 3 beneficial bacteria found in or on our bodies.

harmful
Staphylococcus aureus (usually benign)
Acinetobacter
Propionibacterium acnes * also good though/ growth the fungi

beneficial
Helicobacter pylori
 cyanobacteria
Lactobacillates acidophiles
Streptococcus salivarius (mouth)
Corynebacterium simulaus (elbow)

14. Which part of our body hosts the most microorganisms? How many different species of bacteria can be found there?

large intestine
 33 627!

15. "You'll never be healthy until you eat a spoonful of dirt." Do you agree with this statement?

- much bacteria in dirt → "good" bacteria that will help us destroy the "bad"

- we're too clean now
 → killing good bact. too (ex. anti-bacterial cleaning agents)

may be less resistant

Bacteroides thetaotaomicron
Neisseria lactamica
Staphylococcus epidermidis