

## Why do animals have such different lifespans?

**Task 1** Before watching the lecture match the English names of animals with their Polish equivalents.

|                         |                 |
|-------------------------|-----------------|
| vole –                  | małż            |
| fly-                    | rekin           |
| tortoise-               | gąbka szklana   |
| shark-                  | muchy           |
| worm <i>C.elegans</i> - | kret            |
| clam -                  | nornica         |
| bowhead whale-          | nicień          |
| glass sponge-           | żółw            |
| mole -                  | wal grenlandzki |

**Task 2** Watch the TED-Ed lecture *Why do animals have such different lifespans?* by Joao Pedro de Magalhaes and choose the right answer a,b,c or d.

<https://www.youtube.com/watch?v=7m8QISPP7t0>

1. What is the longest-lived mammal?
  - a. Elephant
  - b. Galapagos tortoise
  - c. Bowhead whale
  - d. Human being
2. Which of the following factors is not thought to contribute to ageing?
  - a. Faster tissue regeneration
  - b. Cell death
  - c. Older cells not working well
  - d. Slower tissue regeneration
3. How long have Arctic glass sponges been estimated to live?
  - a. Less than 10,000 years
  - b. More than 100,000 years
  - c. About 1,000 years
  - d. More than 10,000 years
4. Which of the following has the shortest lifespan?
  - a. Mouse
  - b. Elephant
  - c. Fly
  - d. Vole

5. Which of the following factors is thought to contribute to the short lifespan of roundworm?
  - a. Most cells unable to divide
  - b. Improved DNA repair
  - c. Susceptibility to infections
  - d. Highly dividing cells
  
6. What do the differences in animal longevity depend on?
  - a. Body size
  - b. Habitat
  - c. Genetic mechanisms
  - d. All of the above
  
7. What has happened to the human lifespan since 1900s?
  - a. It has declined
  - b. It has increased
  - c. It has stayed the same
  - d. It has fluctuated

**Task 3** In the film you hear the following phrases. Match the words from the two columns to translate them.

stopniowo degenerować, zamieszkujący oceany, kształtować długowieczność, mechanizm obrony, wykonywać funkcje, przewidywana długość życia, odeprzeć atak drapieżników, narażony na atak drapieżników, mniejsze istoty, proces starzenia, tempo metabolizmu

|           |            |
|-----------|------------|
| gradually | creatures  |
| prone to  | dwelling   |
| life      | longevity  |
| defense   | process    |
| metabolic | functions  |
| shape     | expectancy |
| fend off  | predators  |
| ocean-    | predators  |
| smaller   | degenerate |
| ageing    | mechanism  |
| perform   | rate       |

**Task 4** Read the following text on apoptosis and choose the right word for the context.

planned , neighbours, away, nucleus, self, outside, infection, liquid, releasing, toes

Apoptosis is carefully [1\_\_\_\_\_] and it is often called programmed cell death. During apoptosis, the cell shrinks and pulls away from its [2\_\_\_\_\_]. Then, the surface of the cell appears to boil, with fragments breaking [3\_\_\_\_\_] and escaping like bubbles from a

pot of boiling water. The DNA in the [4 \_\_\_\_\_] condenses and breaks into regular-sized fragments, and soon the nucleus itself, followed by the entire cell, disintegrates.

Cells are equipped with the instructions and instruments necessary for their own [5 \_\_\_\_\_] - destruction. They keep these tools carefully tucked away, until some signal—either from within or [6 \_\_\_\_\_] the cell—triggers their release. This initiates a cascade of carefully coordinated events that culminate in the efficient, pain-free excision of unneeded cells.

There is another kind of cell death, called necrosis, that is unplanned. Necrosis can result from a sudden traumatic injury, [7 \_\_\_\_\_], or exposure to a toxic chemical. During necrosis, the cell's outer membrane loses its ability to control the flow of [8 \_\_\_\_\_] into and out of the cell. The cell swells up and eventually bursts, [9 \_\_\_\_\_] its contents into the surrounding tissue. The immune cells then move in and mop up the mess, but the chemicals the cells use cause the area to become inflamed and sensitive. Think of the redness and pain in your finger after you accidentally touch a hot stove.

Many different kinds of injuries can cause cells to die via necrosis. It's what happens to heart cells during a heart attack, to cells in severely frostbitten fingers and [10 \_\_\_\_\_], and to lung cells during pneumonia.