

 VRIJE ASO.SCHOOL	 eTwinning	
<h2>See you in space</h2>		
NAME: Winter Clinckemaillie	NAME: Tine Declerck	
NAME: Daan Demaecker	NAME: Manu De Grootte	
SCHOOL / CLASS: 3 WETa/b	MARKS: /...	
<h3>EXPERIMENT: BIOLOGY – skeleton</h3>		

RESEARCH QUESTION

Astronauts are more likely to develop osteoporosis than others. Why?

HYPOTHESIS (Indicate the correct answer.)

The bones adapt to the amount of weight they have to carry. In space, because of the lack of gravity, the weight they have to carry is negligible. The bone mass *increases* (=toenemen)/**decreases** (=afnemen). This is called osteoporosis.

Astronauts lose an average of more than 1% bone mass per month spent in space.

When astronauts arrive back on earth it takes a while for the bones to recuperate. During that time the bones are *less*/**more** likely to break. Sometimes the loss of bone mass is irreversible.

OPERATION OF THE EXPERIMENT

- 1 Two chicken legs, one "normal" and one macerated overnight in diluted hydrochloric acid.
Try to break both.
- 2 Two equal pieces of cardboard, one "normal" and one perforated with tiny holes.
Try to rip both.

THE RESULTS / OBSERVATIONS

Experiment 1

The bone in acid breaks faster than the bone that wasn't in acid.

Experiment 2

The perforated cardboard is easier to rip than the normal cardboard.

CONCLUSION

Watch the following clips:

<https://www.youtube.com/watch?v=nHbj7kgYoVk>
<https://www.youtube.com/watch?v=NMZDhJiKw3k>

Combine this information with the results of the experiment.

Astronauts are more likely to develop osteoporosis than others. Why?

The bone mass decreases more in space than on earth. The lack of gravity makes that the weight that the astronauts have to convey is inconsequential. If you are in space and you come back from space, the bones have to change again so the bones are more flexible.

REFLECTION

Did you expect this answer?

Yes, we did.

Compare your results with the results in the other school. Did you make the same conclusion?

Yes, we did.