

		
<h2>Mars, here we come ...</h2>		
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EXPERIMENT: BIOLOGY – muscles		

RESEARCH QUESTION

When astronauts arrive back on earth they have trouble standing up and walking. Why?

HYPOTHESIS (Indicate the correct answer.)

During their stay in space astronauts have to use their muscles *less/more* cause there's is *less/more* gravity. This causes atrophy of the muscles. When they arrive back on earth the amount of muscle is so small they can't stand up or walk very well.

OPERATION OF THE EXPERIMENT

- Measure your mass standing up straight on a scale.
- Put the scale vertical against the wall. Lie down on your back with your feet against the scale. Push your legs against the scale. What's your mass now?
- Describe the difference (you feel) in your legs standing up or lying down.

THE RESULTS / OBSERVATIONS

- a) 50 kg
- b) 5 kg
- c) He can't apply enough force on the scale when he is lying down.

CONCLUSION

Watch the following clips:

http://www.slate.com/blogs/bad_astronomy/2014/06/08/back_to_earth_how_as_tronauts_get_back_from_the_space_station.html
<https://www.youtube.com/watch?v=rYnV5P4OuTE>

Combine this information with the results of the experiment.

When astronauts arrive back on earth they have troubles standing up and walking. Why?

The astronaut collapse because there is almost no gravity in space. Their muscles/body have become accustomed to space. Therefore it feels like they are being pushed into the ground on earth, so they can't walk. During their stay in space astronauts have to use their muscles less cause there's is less gravity. This causes atrophy of the muscles. When they arrive back on earth the amount of muscle is so small they can't stand up or walk very well. After a while, they can walk again...

REFLECTION

Did you expect this answer?

Yes, because the habituation of gravity on another planet has an influence on the muscles.

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

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