

		
VRIJE ASO.SCHOOL	<h2>See you in space</h2>	
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SCHOOL / CLASS: 3WETc	MARKS:        /...	
<h3><b>EXPERIMENT: BIOLOGY – circulation of the blood and the optical nerve</b></h3>		

#### **RESEARCH QUESTION**

Why do astronauts often see flashes of light during their time in space?

#### **HYPOTHESIS** (Indicate the correct answer.)

In space, because of the lack of gravity, there's a fluid shift in the body. The blood and the other fluids in the body are spread *less/more* equally. On earth, thanks to gravity, there's *less/more* blood in our legs.

Because in space there's *less/more* blood in the head, there's a pressure on the optical nerve. This causes impulses that go straight to the brain.

#### **OPERATION OF THE EXPERIMENT**

Measure the periphery of your neck and ankles while you are standing up straight.

Do the same while you are lying down.

If possible you can measure the periphery while standing upside down on your hands. Be careful☺

## THE RESULTS / OBSERVATIONS

	Standing up	Lying down	Upside down (if possible)
Periphery neck (cm)	32	34	38
Periphery ankles (cm)	23	22	21

## CONCLUSION

Watch the following clips:

<https://www.youtube.com/watch?v=MTgLO0D9Gew>

<https://www.youtube.com/watch?v=Lur4W5ZSqj8>

Combine this information with the results of the experiment.

Why do astronauts often see flashes of light during their time in space?

You see light flashes because in space there a lot of pressure on the optical nerve caused by the extra fluets in the head. Therefore the eye is flatter.the flashes are from cosmic rays that can be seen as stars, but not every astronaut is sensitive for that.

## REFLECTION

Did you expect this answer?

Yes, on earth the blood runs up and down because of gravity, ut in space there is no gravity so that causes problems.

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

The French people did not answer.(sorry)

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