

		
<b>Mars, here we come ...</b>		
NAME: Sara Deschepper	NAME: Lore Claerhout	
NAME: Leentje Clement	NAME: Xenia Cordonier, Bente Dossche	
SCHOOL / CLASS: De bron 3WETb	MARKS: /...	
<b>EXPERIMENT: BIOLOGY – circulation of the blood and the optical nerve</b>		

**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)	32.5 cm	34.5 cm	
Periphery ankles (cm)	24.3 cm	25.5 cm	

## CONCLUSION

Watch the following clips:

<https://www.youtube.com/watch?v=MTqL00D9Gew>

<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?

Because of the gravity in space blood goes to the legs so there's less blood in your head. Because of that you see flashes of light cause by cosmic rays.

## REFLECTION

Did you expect this answer?

No, we didn't know much about it

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

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