

Big Questions: Do astronauts get space sick when they travel to the ISS?

By Kevin Orrman-Rossiter, The Conversation, adapted by Newsela staff on 01.03.18

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Image 1: Flight Engineer Peggy Whitson suits up for a spacewalk. Vomiting inside a spacesuit during a spacewalk could be fatal for astronauts. Photo from: NASA.

Question: Do astronauts get space sick when they travel from Earth to the International Space Station?

Answer: If you get the opportunity to fly in space, just slap on an anti-nausea skin patch and go for it! Space sickness discomfort is real but if it happens to you, it will be short and you will remember the space voyage experience forever.

Yes, astronauts can get space sick traveling to the International Space Station. It is less likely traveling in the cramped Russian Soyuz spacecraft used to transport astronauts there now, than the old Space Shuttle that was used until 2011. The ability to move around in the Space Shuttle increased the chance of space sickness happening. Space sickness affects up to half of the astronauts during their first few days on the space station.

The idea of an astronaut barfing into their space helmet sounds funny, or embarrassing, at first. However, as astronaut Mike Mullane has said in his biography, it could be fatal — particularly if the astronaut was spacewalking. The vomit could smear the inside of the helmet, blinding the astronaut. And because it could not be removed, it could be inhaled or clog their oxygen circulation system.

What causes space sickness?

As you probably know, gravity is lower inside the International Space Station. Gravity is the force that pulls us down to the ground. The low gravity in space allows astronauts to float around. This looks very fun, but it can help cause space sickness.

Space sickness is nausea and disorientation felt by many astronauts. NASA uses the term “space adaptation syndrome” instead of space sickness. It more closely describes the problem because it is an issue of the astronaut struggling to adapt to weightlessness in space. The cause of space sickness is still not fully understood.



Recent experiments show that space sickness is related to our inner ear. Two separate parts of the inner ear respond to rotation and sudden changes in direction. If you shake or move your head very quickly, you can get dizzy. Some people may even feel sick. However, this normally passes very quickly.

This normal response is upset under low gravity. Your inner ear thinks you are constantly moving. It takes some time to adapt to the new condition of weightlessness. It is made worse if you move your head while your body is still adapting. This is why previous astronauts traveling in the larger Space Shuttle were prone to space sickness more than the current astronauts traveling in the cramped Soyuz spacecraft. In a confined space, the astronauts were less likely to move their heads around very much.

Space sickness was not talked about in the early space missions. The original Mercury and Gemini spacecraft were, like the current Soyuz, cramped. It wasn't until the Apollo and later missions that space sickness became of concern to NASA.

In 1983 the first detailed study was carried out aboard a Space Shuttle flight (STS-7). The study was done by astronaut-doctor Norm Thagard. His and all later studies were hampered by the astronauts themselves. None of them wanted to admit to being space sick. They were worried that mission control might remove them from space walking opportunities, or even worse, that they might not get included on later space missions.

Quiz

- 1 Which sentence from the article shows the astronauts' MAIN problem?
- (A) As you probably know, gravity is lower inside the International Space Station.
 - (B) The low gravity in space allows astronauts to float around.
 - (C) Space sickness is nausea and disorientation felt by many astronauts.
 - (D) If you shake or move your head very quickly, you can get dizzy.
- 2 Which selection from the article supports the idea that being weightless causes space sickness?
- (A) Space sickness discomfort is real but if it happens to you, it will be short and you will remember the space voyage experience forever.
 - (B) It is less likely traveling in the cramped Russian Soyuz spacecraft used to transport astronauts there now, than the old Space Shuttle that was used until 2011.
 - (C) The low gravity in space allows astronauts to float around. This looks very fun, but it can help cause space sickness.
 - (D) Space sickness was not talked about in the early space missions.
- 3 How is Dr. Norm Thagard introduced in the article?
- (A) with a description of the space sickness he experienced while spacewalking
 - (B) with a description of his study on space sickness
 - (C) with an explanation of the dangers of space sickness that he mentioned in his biography
 - (D) with an explanation of how he discovered the cause of space sickness
- 4 What is the MOST likely reason the author included the information about the old Space Shuttle?
- (A) to show how uncomfortable being cramped in the spacecraft was compared to spacecrafts today
 - (B) to show astronauts did not understand space sickness as much then as they do today
 - (C) to describe how Russians were able to fix space sickness using a specific type of spacecraft
 - (D) to describe the difference between how the spacecrafts were made in the past compared to now