mystery science

Grades K-5
Mini-Lesson: “Do astronauts ever feel motion sick in space”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Danni! One of my favorite things is exploring the ocean. And while I love being in the water, being on the water in a boat is tough for me. Rocking on the waves gives me a sick dizzy feeling. My heart beats faster, my body gets cold and sweaty, and my stomach feels like a knot. It's a feeling people call being seasick or motion sick. Someone named Bruno is curious if other explorers get a similar feeling. Let's give Bruno a call now.

[Video Call]

- Hi, Danni.
- Hi, Bruno.
- I have a question for you. Do astronauts ever get motion sick in space?
- Great question.

If you've felt carsick before or seasick or roller coaster sick, you know how crummy it is to feel motion sick. We've explored why people get motion sick in another mini lesson if you curious to know more. So, if people can feel motion sick traveling in cars and boats and roller coasters, what about traveling in space? Floating in space looks like so much fun, but it does take time to get used to. Astronauts practice for this as best they can, like in this special pool, but actually being in space is a totally unique sensation. And at first, some astronauts feel strange. Their

hearts beat faster. Their hands get cold and sweaty, and they feel dizzy and weak Some even get sick to their stomachs. Sound familiar? It's like an extreme space version of being carsick. In fact, back in the 1970s, as more astronauts went into space, it became clear that motion sickness was a big problem. Feeling sick makes it hard to focus on important jobs, like staying safe in space. Before I go on, I'm curious. What do you think astronauts could do to feel less sick in space? What helps you if you feel motion sick? Now would be a good time to pause the video and discuss.

VIDEO 2

Some things you might do on Earth for motion sickness would be really tricky in space. I mean, you just can't open a window and get some fresh air. And space motion sickness is not like the flu or other sicknesses you can catch from germs. In fact, we're not totally sure what causes it. One idea is the sick feeling comes from a mix up between your mind and your body. Imagine being an astronaut. You feel your body floating, even though the space station doesn't seem to be moving. And if you turn, now, up is down. Your mind isn't sure what's right. Some scientists study the ways our mind and body work together. Including Dr. Patricia Cowings. When she heard about the astronauts' space sickness problem, she had an idea. Dr. Cowings had studied ways that people can use their minds to help their bodies feel more calm. They're kind of like exercises, but instead of working your muscles, you work your mind. Here's a version you can try. Focus on your heartbeat. And in your mind think my heartbeat is calm. Imagine that your heart is beating slower. Now you probably won't notice a change right away, but some people who practice this exercise again and again find that their heart does start to beat more calmly. Those calm thoughts can be powerful. Dr. Cowings thought exercises like this one could help astronauts handle motion sickness. That way, when their hearts raced, and their hands got cold

and sweaty and their stomachs flipped, astronauts could use their minds to help calm their bodies and feel better faster. So, Dr. Patricia Cowings shared her ideas with scientists at the space program. And soon, she was leading a team to test those ideas with a new training for astronauts. To train, astronauts went through experiences that made them feel motion sick, like spinning around and around in this striped room, then they used the thinking exercises to calm their body's reactions. And see this white shirt? Dr. Cowings and her team designed it. The wires connect to machines that measure things like how fast an astronaut's heart is beating. That way astronauts can see how their body changes as they do the thinking exercises. They can even wear it in space. Although training was going well, Dr. Cowings faced challenges. When she started at the space program, most of the scientists leading teams were older white men. A young black woman being in charge was new, and some people doubted Dr. Cowings. But she knew she could lead the team. She was confident their work could help astronauts succeed in space, and that's what she's done for more than forty years. Dr. Patricia Cowings is still making history with the space program today, and she doesn't just help astronauts. She's adapted her training for other situations where people need help with motion sickness like flying jet planes. So in summary, many astronauts do feel motion sick in space, at least at first. By using the training program developed by Dr. Patricia Cowings, it can help them manage that sick, dizzy sensation. When I feel seasick, I take medicines that help. I also do thinking exercises like the astronauts I focus my mind on things like my heartbeat and my breathing and it really works. Those calm thoughts help my body calm down. And it doesn't just help with motion sickness. Have you ever noticed how when you feel nervous or mad or upset your body reacts? Like maybe your heart beats faster. Your face feels hot and your stomach feels like a knot. When big emotions make your body feel tense, you can do what astronauts do too. By

focusing your mind on calm deep breaths, you can help the rest of your body feel calmer too.

Give it a try. That's all for this week's question. Thanks, Bruno, for asking it.