

Space Exploration Hazards

How to heal broken bones of astronauts on the moon? IUPUI experts are coming up with the answer.

Date: September 12, 2008

Duration: 2:09

Transcript

[S. Warden] A lot of people think that it's not possible to really break a bone in space because there's no gravity and therefore, no forces acting on the skeleton. But it's actually as equal or even more possible to break a bone when you're up on a long space mission; one, because you're losing bone mass as you're in a hypogravity or low gravity situation so your skeleton starts getting resorbed and therefore, it's less strong - it's not as strong and it breaks more easily. And that's the plan, to send astronauts back to the lunar surface, and with that they're trying to be proactive and prevent some of the consequences of long term space flight of losing bone mass and increased fracture risks. They have turned to IUPUI in collaboration with the Cleveland Clinic to look at potential treatments for bone fractures in astronauts. We know that when somebody is in space and they suffer a fracture, that their bones don't heal normally. So NASA wants to be proactive and try and look at interventions to try and cause fractures to heal in an astronaut who is in space. And you can imagine if somebody is on the lunar surface and they suffer a fracture, there's not really much that the astronaut or the team can do to try and get that astronaut back to an emergency room. So NASA wanted to develop interventions to try and cause these fractures to heal and prevent the consequences of the injury to the astronaut and also to the team as a whole. Some of the interventions that are kind of being looked at are pharmaceutical interventions, so our collaborators at Cleveland Clinic are going to look at some novel drugs that are thought to enhance fractures to heal, and IUPUI and the Department of Physical Therapy are going to look at physical interventions such as low-intensity pulsed ultrasound therapy. We've been looking at such ultrasound therapy for its treatment of fracture healing in non-astronauts, and we believe that it's going to stimulate fracture healing in astronauts as well.