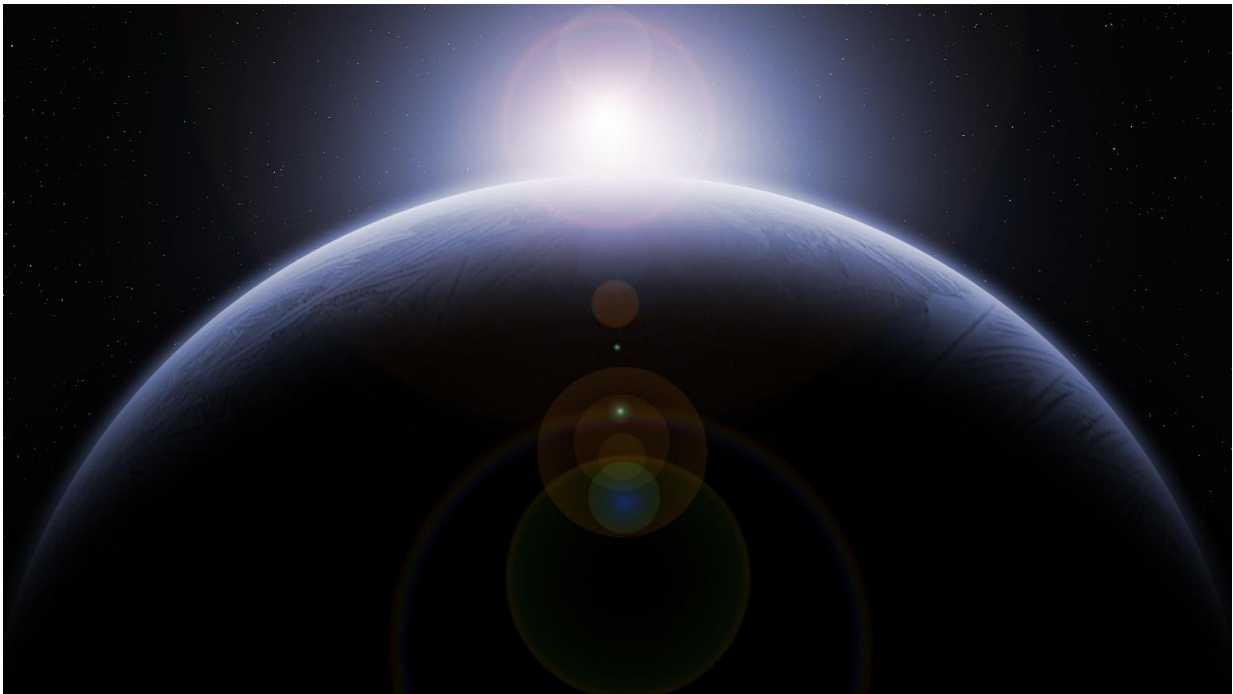


# Space research helps patients on Earth with low blood pressure condition

July 19 2019

---



Credit: CC0 Public Domain

Ever stand up too quickly and see stars? Fainting from low blood pressure can be dangerous for astronauts as well as for patients. With the 50th anniversary of the Apollo 11 moon landing approaching, UT Southwestern Medical Center researchers are publishing heart-related space research that helps us to understand the problem of low blood pressure.

The study, now in *Circulation*, is the first to examine this condition—called orthostatic intolerance—during daily activities when the astronauts returned home. The researchers found that [exercise regimens](#) during [space flight](#), followed by saline injections after landing, were sufficient to prevent the condition from occurring.

Cardiologist Dr. Benjamin Levine led the study and has worked in [space research](#) for three decades. Dr. Levine is a Professor of Internal Medicine at UT Southwestern and Director of the Institute for Exercise and Environmental Medicine, a collaboration between UT Southwestern and Texas Health Presbyterian Hospital Dallas.

"Doing an hour or more of daily exercise was sufficient to prevent loss of heart muscle, and when it was combined with receiving hydration on their return, the condition was prevented entirely," said Dr. Levine. "We expected to see up to two-thirds of the [space](#) crew faint. Instead, no one fainted."

The researchers used an unusual tool, a small blood pressure cuff on each astronaut's finger, to measure blood pressure and every heartbeat. These measurements were taken during multiple 24-hour periods before, during, and after six months of spaceflight. Twelve astronauts were involved, eight men and four women.

A similar condition is also diagnosed in patients as Postural Orthostatic Tachycardia Syndrome (POTS), which is predominantly found in women. The dizziness that it causes is life-changing and can be debilitating. Dr. Levine helped one Dallas patient return to a normal life:

This treatment is just one of the ways medicine, heart research, and space travel have connected throughout Dr. Levine's work. The successful [moon landing](#) in 1969 was an early influence on his career.

"Like most kids in the 1960s, everyone gathered around to watch the broadcast in black and white. For a kid interested in science, this was the pinnacle of life," said Dr. Levine. "The [space program](#) always had a strong pull for me. I liked to think about the limits of human capacity and what could be."

That early interest led Dr. Levine into space research within the field of cardiology, and he began working with the space shuttle program in 1991.

"We put a catheter in an astronaut's heart—it was former UT Southwestern faculty member Dr. Drew Gaffney—and sent him into space. It was probably the most expensive right-heart catheterization ever," Dr. Levine reminisced. "Much of our early research was devoted to understanding why astronauts faint when they return from space. Now, we can prevent it from happening."

Provided by UT Southwestern Medical Center

Citation: Space research helps patients on Earth with low blood pressure condition (2019, July 19) retrieved 27 April 2024 from <https://phys.org/news/2019-07-space-patients-earth-blood-pressure.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.