

Astronaut Studies Leg Muscles' Strength in Space

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Astronaut John Phillips conducted his second run with an experiment on board the International Space Station investigating the differences between use of the body's lower extremities on Earth and in space. The Marshall Center's payload operations team coordinates U.S. science activities on the Space Station.

Expedition 11 NASA Science Officer John Phillips put on his customized Lycra cycling tights this week for his second session of the Foot/Ground Reaction Forces during Spaceflight, or FOOT experiment. FOOT investigates the differences between use of the body's lower extremities on Earth and in space, as well as changes in the musculoskeletal system during spaceflight.

Phillips wore the instrumented Lower Extremity Monitoring Suit, or LEMS, which measured his joint angles, muscle activity and forces on the feet during a typical day on the Space Station. FOOT could help explain the reasons for bone and muscle loss during spaceflight and aid in the design of exercise countermeasures. This experiment also has significance for understanding, preventing and treating osteoporosis on Earth.

Focused human physiological and biological Space Station research on astronaut health and the development of countermeasures to protect crews from the space environment will allow for long duration missions to explore beyond low Earth orbit.

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