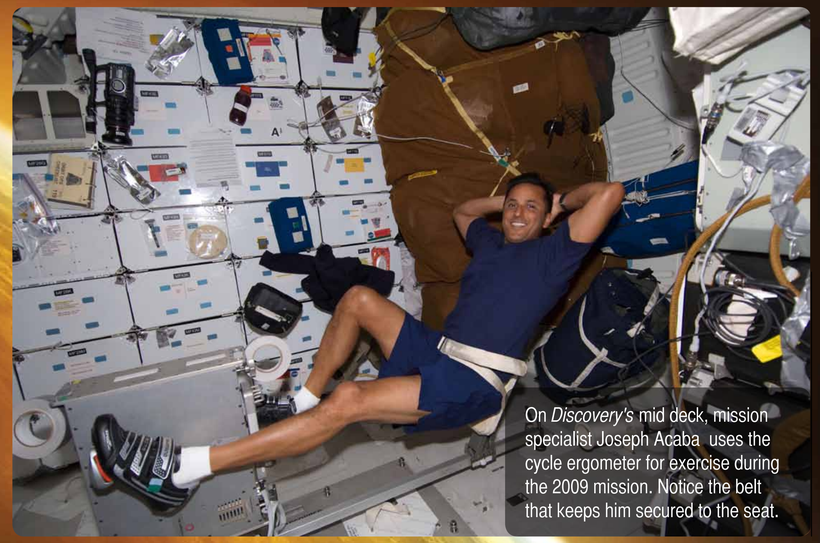
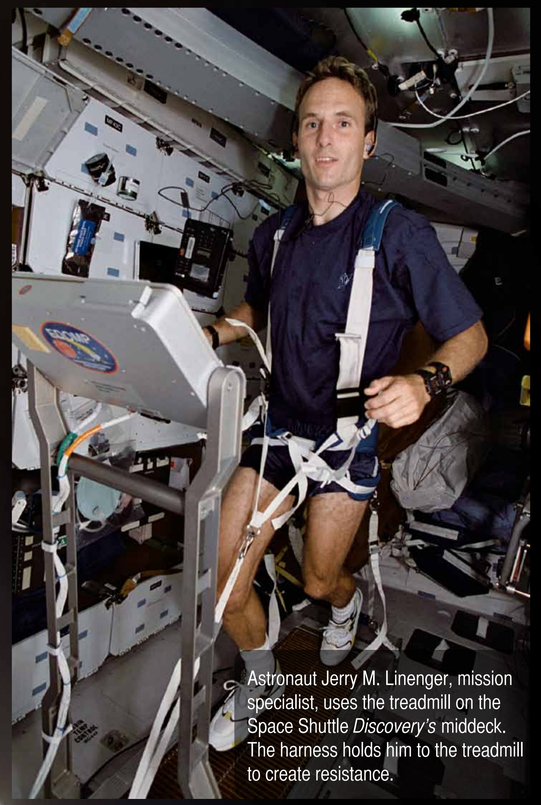
Staying Fit in Space



On *Discovery's* mid deck, mission specialist Joseph Acaba uses the cycle ergometer for exercise during the 2009 mission. Notice the belt that keeps him secured to the seat.

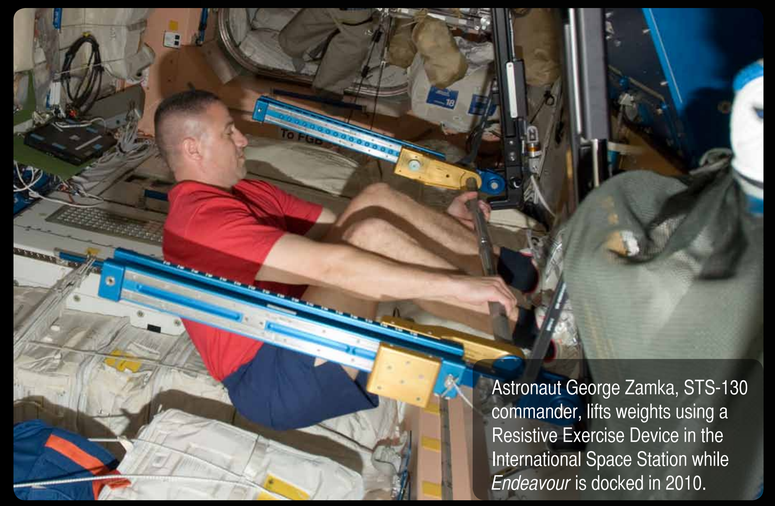


Astronaut Jerry M. Linenger, mission specialist, uses the treadmill on the Space Shuttle *Discovery's* middeck. The harness holds him to the treadmill to create resistance.

Why is it important to exercise in space?

Exercising in space is an essential part of an astronaut's daily routine. During space missions, astronauts are living in a microgravity environment, in constant freefall.

Their bodies do not have to work against the normal force of gravity. The effects of microgravity result in a loss of bone and muscle mass. Astronauts exercise in space to prevent the deterioration of their bones and muscles by putting stress on them.



Astronaut George Zamka, STS-130 commander, lifts weights using a Resistive Exercise Device in the International Space Station while *Endeavour* is docked in 2010.

The Space Shuttle Gym

Three types of exercise equipment are used in space. Each one works a different group of muscles so the astronauts can stay conditioned during space flight.

Cycle Ergometer: A stationary bicycle where astronauts can work their leg and heart muscles.

Treadmill: The treadmill allows astronauts to walk or run in space, but they must be harnessed to it to have resistance on the moving surface.

Resistive Exercise Device (RED): This total body gym gives astronauts the ability to lift weights in space using resistive bands and pulleys. This equipment is especially important on the International Space Station where astronauts are in space for several months and need at least an hour of resistance training a day to maintain muscle and bone mass.

This banner was designed by George Washington University graduate student Amanda Rush for a course in exhibition design.