Space Research
HEALTH ☆ BENEFITS

Keeping Fit Aboard The International Space Station

(NAPSA)—Besides eating, sleeping and performing mission work, what do astronauts aboard the International Space Station spend the most time doing? If you said exercise, you're in good shape.

Astronauts exercise, on average, 2 hours a day, 7 days a week, while they're on a mission. The reason? Space travel has a detrimental effect on the human body and its systems. No longer challenged to resist the pull of gravity, the heart and other muscles gradually become weaker. Similarly, as the limbs no longer have to bear the skeletal weight they do on Earth, there is bone loss similar to osteoporosis.

Good old-fashioned exercise helps reduce some of the physiological deficiencies associated with space flight. Astronaut have an individualized exercise plan that helps him/her maintain aerobic capacity, bone density and muscle mass as much as possible.

"Exercise is the number one health-maintaining procedure done in space," says Dr. Don Hagan, exercise lead for the Human Adaptation and Countermeasures Office, and director of the exercise physiology program at Johnson Space Center. "No other activity except eating and sleeping is given that much priority."

In space, astronauts work on three primary pieces of exercise equipment, each with a different purpose:

• Cycle Ergometer: A stationary bicycle, ideal for measuring overall fitness because it's easy to monitor heart rate and workload performed.

• Treadmill: Walking is the single-most important method of keeping bones and muscles healthy, says Hagan. "That is a leading cause of weakness in elderly people on Earth. They often become very sedentary and, not coincidentally, they also develop fragile bones and weak muscles."

Astronauts exercise while in space to simulate the effects of Earth's gravity on their bodies.

• Resistance Exercise Device (RED): Looks and functions much like certain home weightlifting machines. Astronauts pull and twist stretchy, rubber band-like cords attached to pulleys that create resistance for a total body workout.

Ultimately, by studying how exercise affects astronauts in space, scientists may be able to determine how we may counteract some of the physiological effects of aging and disease. To learn more about the activities aboard the International Space Station, visit http://spaceflight.nasa.gov.