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CHINA DAILY

香港版
HONG KONG

中國日報

FRIDAY, April 12, 2024

www.chinadailyhk.com HK \$10

Astronauts busy keeping fit in space station

As China works to send more astronauts on long-term missions in space, ensuring their well-being has become a matter of public concern. The cutting-edge devices aboard the Tiangong Space Station have proved to be invaluable tools in maintaining their safety and health in a zero-gravity environment.

The China Manned Space Agency recently unveiled fascinating footage of a crew engaging in rigorous workouts in space to mitigate the physiological impacts of prolonged exposure to microgravity.

The agency said that astronauts in orbit need one to two hours of exercise daily to counteract the effects of microgravity, which include muscle loss, abnormal heart rates and immune system disorders.

The three-module space station has fitness areas stocked with various equipment, including rowing machines, treadmills and resistance devices.

Crew members in orbit were also seen wearing specially designed uniforms equipped with elastic resistance bands that induce muscle tension and counteract the detrimental effects of a weightless environment on muscle.

During spaceflight, medical staff on the ground can monitor their body temperature, blood pressure, heart rate and other physiological indicators in real-time, and they maintain regular communication.

During the Shenzhou XI mission in 2016, China tested its first space-Earth telemedical consultation

system. The orbiting astronauts transmitted their physiological data from the spaceship, allowing doctors on Earth to provide diagnoses and prescriptions.

The space station also features an onboard clinic that provides devices to monitor vital signs. The clinic can also track organ functions and offer emergency first aid and trauma medical supplies, the space agency said.

Available devices include cardiopulmonary resuscitators and ultrasound machines, designed to be more compact to save space.

The real-time data of astronauts is accessible thanks to wearable monitoring equipment. Even if a spacecraft enters the blackout zone — where communication

with the ground is interrupted as it re-enters the Earth's atmosphere at high speeds — the equipment on their suits can store data for future analysis.

The Tiangong Space Station also offers a unique service in space that is not available to astronauts aboard the International Space Station: traditional Chinese medicine treatment. In their latest video update, the Shenzhou XVII astronauts can be seen using a TCM diagnostic instrument to test their health. And in 2022, the Shenzhou XIII crew was spotted receiving acupuncture in zero gravity, garnering millions of views on social media.

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