THE EFFECTS OF SPACE EXPLORATION ON THE HUMAN BODY

Microgravity in space causes bone mineral density loss, with astronauts losing 1 – 2% of it for every month that they are in space.

Due to the weightless environment, muscles no longer have to support the body's weight or movement, and they start to shrink with the tissue getting re-absorbed. Long-term missions can cause astronauts to lose up to 50% of their muscle mass!

Without gravity, the vertebra in the spine start to relax and expand, causing it to stretch and get longer. This technically makes the astronaut grow taller, potentially with a 3% increase upon their Earth-height!

Microgravity messes with balance and motor coordination controlled by the vestibular and sensorimotor systems, so once they are back home, astronauts may be unsteady on their feet, disorientated or suffer from motion sickness – potentially lasting for months!

Without the Earth’s atmosphere surrounding them, astronauts are exposed to space radiation. From UV rays causing skin burn, to cosmic rays mutating DNA or damaging brain cells, the full, long-term effects of this unseen energy may not be fully realised yet.

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