

## All About Staying Healthy in Space

- ✦ A major health risk for astronauts in space is the exposure to high-energy radiation – radiation that can damage human tissue, cells, and even DNA. In space, there is no atmosphere to protect astronauts from UV radiation – or from dangerous X-rays, gamma-rays, and cosmic-rays.
- ✦ Space suits and the Space Station have special shielding that helps to protect astronauts from harmful radiation. On the station, sensors inside the crew areas monitor radiation levels. NASA is researching new ways to protect astronauts.
- ✦ Because we don't need as much muscle to do stuff in microgravity (everything is weightless), our body does not work as hard to maintain our muscles and they get weaker. Astronauts have to exercise almost 2 hours a day on special exercise equipment to make their muscles work and stay healthy for their return to Earth.
- ✦ Even on Earth, with gravity pulling against us as we move around, we need to exercise to maintain healthy and strong muscles. If you stay in bed for a long time – a month or more – when you finally get out, your muscles will be very weak and you will tire quickly. So stay active!
- ✦ Healthy bones need exercise, too! The physical stress of exercises like walking and jogging helps to maintain our bones.
- ✦ Most of our bone growth occurs until we are about 18-20 – so drink lots of milk, eat stuff with calcium, and get lots of physical activity! If you don't build healthy bones by the time you are 15-20, you won't be able to make it up later in life.
- ✦ On Earth, humans over 50 lose about 10% of their bone mass over a period of 10 years.
- ✦ Astronauts lose approximately 1 to 2% of their bone mass for *each month* they are in space. This means *they lose 10% of their bone mass in less than a year*.
- ✦ In microgravity, fluids naturally "float" upward into our face and head, causing them to swell. This gives astronauts 'puffy face syndrome'.
- ✦ Astronauts need to stay clean! Astronauts take sponge baths daily, using two washcloths, one for washing and one for rinsing, and use rinseless shampoo to wash their hair.
- ✦ Even though they do not want to because there is so much to do in space, astronauts need to get plenty of rest so that they stay alert and sharp! Astronauts strap themselves into sleeping bags and get their 8 hours of sleep a night!