

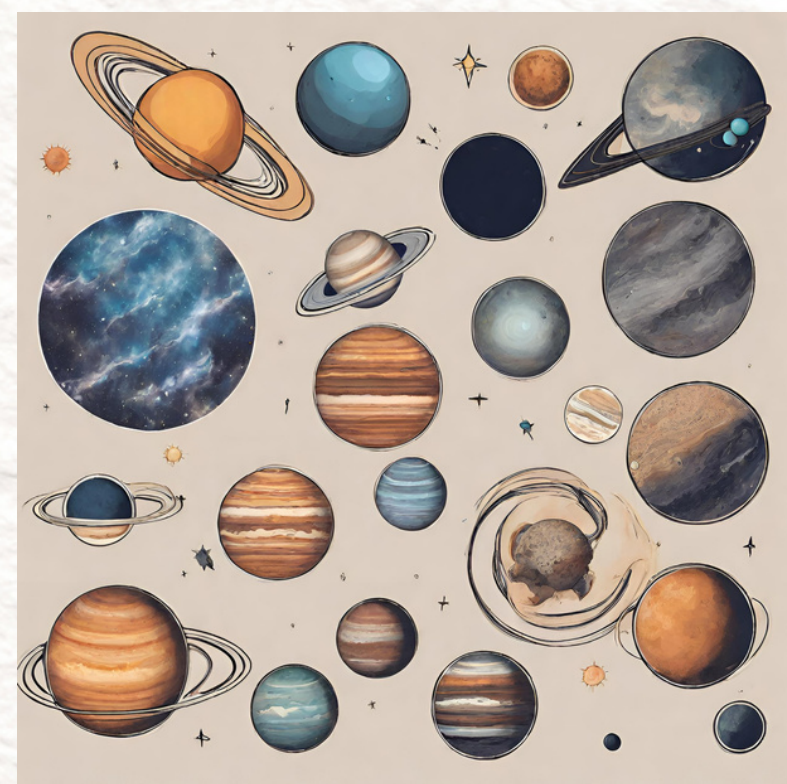
Logbook

BY: ZARINA AND
RESHMIKA

HOW ASTRONAUTS

MAINTAIN THEIR HEALTH

IN SPACE





DECEMBER 26, 2023

How do astronauts sleep?

In order for astronauts to get a goodnight's rest in space they have a whole procedure to make that happen. They sleep inside a sleep pod so they need to get inside that and inside the sleep pod which has their work stuff and a sleeping bag attached to the spacecraft wall. They get inside the sleeping bag, zip themselves up and try to relax. The astronauts sleep inside a pod to prevent flying around while sleeping. It is easy for them to relax because there is little to no gravity in space and because of that astronauts don't need anything to support their body parts. They can relax every muscle in their body without anything supporting them. This feature also allows them to change their position to their liking.

SOURCES

- 
- <https://www.youtube.com/watch?v=baKwIPkx3Ak>
 - <https://www.youtube.com/watch?v=UyFYgeE32f0>
 - <https://www.sheex.com/community/betw>
 - <https://iss.jaxa.jp/kids/en/life/05.html#:~:tex>
 - <https://www.youtube.com/watch?v=yNgMzNN23kE>




DECEMBER 28, 2023

How do astronauts adapt to the space environment while sleeping?

In space there is no such thing as night and day. There is no such thing as setting an alarm clock and getting up for your morning brew and strawberry waffles. That doesn't exist in space. In order to fall asleep astronauts have to adjust the lighting to help them fall asleep and wake up. Adjusting lighting features helps the space environment become more sleep-wake friendly. They also get learn on how to adjust to the space environment in training by knowing on what factors like what they eat, how they workout, and more can affect their sleep in a good or bad way. Lots of other thing like sleep therapy and pills can help them fall asleep easily. Pills can have an ingredient that help astronauts fall asleep and therapy can give tips on how to fall asleep easier.

SOURCES

- <https://www.space.com/35293-how-astronauts-sleep-in-space.html>
 - <https://www.sleepcycle.com/sleep-science/sleeping-in-space>
 - <https://www.nasa.gov/missions/station/seven-ways-astron>
 - <https://www.cnn.com/2023/05/12/health/sleeping-i>
- 



DECEMBER 28, 2023

How long do astronauts sleep?

An astronaut's amount of sleep can vary from time to time. On average they sleep for 6–8 hours. But usually it varies since astronauts have a very disturbed sleep schedule. Their sleep is very disturbed because of the space environment. The space station revolves around earth 16 times in one day which messes up with an astronaut's body clock because they can't keep up with the time for sleeping and time for waking up. This happens because on space there is no 24 hour day and 12 hour night schedule in space like on earth. There can be other factors like long working hours, not eating properly, jetlag from space travel and more.

SOURCES

- <https://iss.jaxa.jp/kids/en/life/05.html#:~:>
 - <https://www.sleepcycle.com/sleep-science/sleep>
 - https://www.youtube.com/watch?v=xg_3Vyuywqg
- 

JANUARY 1, 2024

How do astronauts workout?

Since there is little no gravity in space astronauts tend to lose a lot of weight because they are considered weightless. In space, if you don't maintain your muscles your bones will start to dissolve away. To prevent that astronauts have to work out. For them to work out they have their very own space gym built inside the space station. Inside the space gym, they have 3 pieces of equipment for them to exercise and they are a stationary bicycle, treadmill, and ARED which uses suction for the astronauts to exercise. Since there is no gravity up in space each exercise equipment has something to hold the astronauts to the equipment so they dont fly away. Like for the stationary bicycle you attach a waist belt (like the seatbelts in airplanes) and clips on the shoes to hold them to the bicycle. How the astronauts run the treadmill is a bit easier, they have a harness with a bungee cinched down to the treadmill and this kind of rope holds them on the treadmill. The ARED machine has clips to the shoes so the astronauts don't fly away. So most of the exercise equipment have shoe clips or waist belts to hold the astronauts in place. Without these the exercise equipment would be weightless



THIS IS AN ARED
MACHINE

SOURCES

- <https://iss.jaxa.jp/kids/en/life/06.html#:~:text=>
- https://www.youtube.com/watch?v=YL_7SATI
- <https://www.youtube.com/watch?v=K4bUTb3Z>
- <https://www.asc-csa.gc.ca/eng/astronauts/livin>



JANUARY 2, 2024

How long do astronauts work out?

Astronauts work out for about 2.5 hours in space. 1 hour of the time spent working out is spent on the treadmill so when the astronauts come back to earth they remember how to walk. They work out for this time because in space there is no gravity so their bones start to dissolve and their muscles become weaker so to prevent that from happening they need to work out for atleast 2 hours everyday. However on earth gravity pulls us down to the surface which prevents our strenght from fading but in space the lack of gravity causes our strenght to fade much easier. For example on earth there is gravity, so when we sit down and get up we exert a bit of force on our muscles to help us do the action and the force exerted helps us keep our strength. In space the is no gravity so your muscles are barely even used and since they are barely even used they start to fade so astronauts have to work out to prevent that from happening. If they didn't work out when they come back to earth they wouldn't be able to stand because their muscles weakened badly.

SOURCES

- <https://spacecenter.org/solving-space-running-in>
- <https://www.asc-csa.gc.ca/eng/astronauts/living-i>
- <https://www.theverge.com/2017/8/29/16217348/na>

JANUARY 3, 2024

What do astronauts eat?

Astronauts eat many of the same foods as we do on Earth here. However, food is very dehydrated in space. It is dehydrated because when certain foods is already hydrated then it may cause more weight loss for the astronauts. But they also eat the foods that people on earth eat but before they eat they have to rehydrate the food and possibly heat it. They do this because in space if food isn't handled correctly then it could result in health problems in orbit.

SOURCES

- <https://www.wonderopolis.org/wonder/what-do>
- <https://www.rmg.co.uk/stories/topics/what-do->
- <https://www.nasa.gov/wp-content/uploads/2015/>
- <https://www.nasa.gov/stem-content/dehydrating>





JANUARY 4, 2024

How do astronauts eat?

When it's time to eat astronauts go to their space kitchen to find something to eat just like how on earth you go to your home kitchen to find food. Before they dig in they need to rehydrate their food that is freeze-dried from a rehydration station that gives out hot and cold water for hydration. They heat foods in a forced-air convection set at a certain temperature. It takes about 20 minutes- 30 minutes to rehydrate a normal meal because they need to handle the food properly so it is fresh enough to eat. Then they take their food container and attach it to a food tray with fabric fasteners so that way the food package doesn't drift away. They open the food package like normal and eat with the normal cutlery. Now the challenge hits when they open the food tray and start eating. Since space has basically no gravity in space the food tends to float around so they have to try and catch it with their mouth. They do this until they are full.

SOURCES

- <https://science.howstuffworks.com/astronauts-eat-in-space>
- https://www.esa.int/kids/en/learn/Life_in_Space/Living_in_sp
- <https://www.youtube.com/watch?v=sBAQRawMxWg>

JANUARY 5, 2024

How do astronauts do self-care in space?

On earth before you go to bed you open your newly packaged skin care with moisturizer, cleanser, serum's etc ready to make your skin look spotless, then you open your hair care products ready to make your hair smooth and silky. But do astronauts have the same opportunities and access to all those cleansers and serums? Astronaut skin care and hair care is very essential in space because the space weather can dry out your skin especially when you stay in space for a long time. It is kind of like how our skin dries out when you are on an airplane because of the dry environment, space is 2x that. Skin care is very crucial to an astronaut's health and wellbeing. Some astronauts are known to come back to earth with burning, itchy and really dry skin so their skin maintenance is very important to them. Hair care is also very crucial to astronauts like skin care. Hair care is very crucial in space because it provides the nutrients and moisture to keep the astronaut's hair healthy and also so they can overcome the challenges of being in space. A very important part of hygiene is personal grooming and showering but that might vary for astronauts. Astronauts can't take full on showers like we do on earth because water on the space station is very limited and they don't have proper shower products. They use only a bit of water and some no-rinse shampoo and they have to stick with that for the entire 6 months up in space. So in space astronauts have space for only sponge baths. Male astronauts are allowed to shave in space but they only can use limited resources. Female astronauts cannot do the form of waxing that we do on earth because that will be challenging due to lack of gravity. Female astronauts use hair removal cream or razors specially designed for space use.



SOURCES


- <https://www.space.com/cosmology-skincare-astronauts-inter>
- <https://sea.mashable.com/tech/19396/your-next-skin-cream->
- <https://www.asc-csa.gc.ca/eng/astronauts/living-in-space/per>

JANUARY 6, 2024

Can astronauts get medical help in space?

In space, we must take care of ourselves like brushing our teeth or eating healthily and exercising. When traveling in space we create a risk of things such as DNA loss due to radiation exposure, bone loss, or even immune dysfunction. If you are ever in an emergency doctors on the ground can send medical care on what you need. But certain space agencies don't let you go into space right after training because they have to check if you are diagnosed with anything. If you are they will start treating in right away so you can go into space as soon as possible. This is so that way space emergencies are less likely to happen.

SOURCES

- [How Do Astronauts Handle Medical Emergencies in Space?](#)
 - <https://www.youtube.com/watch?v=rd92rx6ljSc>
 - <https://www.youtube.com/watch?v=Ft5pD9EaehM>
 - <https://www.youtube.com/watch?v=AkuLg7W5chw>
 - <https://iss.jaxa.jp/kids/en/life/08.html>
 - <https://now.northropgrumman.com/how-do-astronauts-handle-medical-emergencies-in-space>
 - [How Do Astronauts Eat and Drink in Space?](#)
 - [HOW ASTRONAUTS BRUSH THEIR TEETH & POOP IN SPACE](#)
[#astronaut #nasa #iss #spaceshuttle #spacestation](#)
- 

CONTACT US AT

zarinak4@educbe.ca

reshmika1@educbe.ca



