

Careers from A to Z: Penny the Physiologist

WHQ IS PENNY?

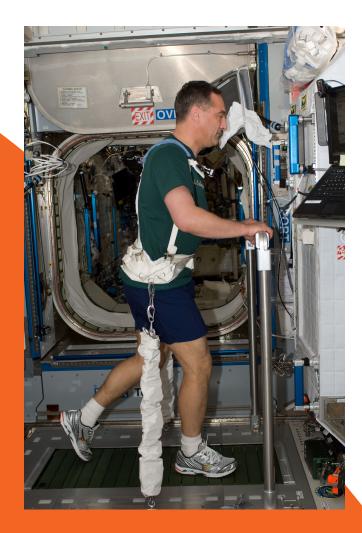


Penny is a **physiologist**. A physiologist studies the human body. They study how our bodies respond to different things. Do you ever eat certain foods when you are sick to help you feel better? Or take medicine if you have a fever? Physiologists study why and how our bodies interact with foods and medicine. Penny is a physiologist that focuses on how astronauts' bodies might change while they are in space.

Penny is in charge of observing astronauts' bones and muscles. Since there is no gravity in space, bones and muscles weaken because astronauts are not putting their weight on them.

WHAT IS COLBERT?

Colbert is the name of a special treadmill that can be used in space! A treadmill in space? But why do astronauts need to exercise in space? Physiologists recommend that astronauts exercise in space to keep their muscles strong. It's very important for astronauts to exercise to keep their bones and heart healthy too! Exercising in space will also help the astronauts transition back to Earth where there's gravity.



Astronauts' Daily Schedule

Physiologists work closely with astronauts while they are in space. Since the human body behaves differently in space, physiologists study what astronauts need to stay healthy. Here's a look inside an astronaut's day!

6:00 AM: Crew wakes up, eats breakfast, and goes on social media (yes, they even have Facebook in space!).

7:30 AM: Daily planning: Astronauts talk with scientists on Earth and determine what jobs need to be completed in space.

8:00 AM: Morning work time: Maintenance (cleaning inside and outside the space station, checking space suits, and fixing anything needing repairs) and daily operations (checking and recording changes inside and outside the station, or working with satellites).

11:00 PM: Exercise on Colbert.

12:00 PM: Eat lunch.

1:00 PM: Afternoon work time: Experiments (space walks, testing how things work in space) and exercise (each person must exercise at least two hours a day). **6:30 PM:** Daily review: Astronauts record their health, exercise, and food in a journal. Physiologists and doctors use this information for research.

7:00 PM: Dinner and free time to watch movies and video chat with family members back on Earth.

9:30 PM: Crew's bedtime.





IT'S YOUR TURN!

Physiologists create exercise plans to keep people healthy. It's your turn to come up with a list of exercises that astronauts can do while they are on the space station. Keep in mind that astronauts float because there is no gravity, so you will need to come up with a way they can still do the exercises. Also, remember that astronauts do not have a lot of room, so the exercises can't take up a lot of space.

Below, create a list of exercises for each area of the body listed. Then, explain how they can perform the exercise while in space.

ARMS (EXAMPLES: PUSH UPS, HAND WEIGHTS) EXERCISE:

HOW IT CAN BE PERFORMED IN SPACE:

LEGS:

EXERCISE:

HOW IT CAN BE PERFORMED IN SPACE:

BA(K:

EXERCISE:

HOW IT CAN BE PERFORMED IN SPACE:

HEART:

EXERCISE:

HOW IT CAN BE PERFORMED IN SPACE:

STOMACH/ABS:

EXERCISE:

HOW IT CAN BE PERFORMED IN SPACE: