MEALTIME ON THE ISS

Food packets and other items are attached to surfaces so they don't float away.

Many astronauts report having a dulled sense of taste in space, so they often use hot sauce to boost flavor!

There are many experiments running on the ISS, including the growing of fresh food in space.

Astronauts recycle and reuse as much as possible to minimize waste on the ISS.

Astronauts use the ISS galley table to share meals and gather together.

The shape of this "space cup" makes it possible to drink without a straw in microgravity.

Scientists are inventing new tools to make it easier to prepare food in space. They're also working on how to make eating more enjoyable!

Watch out for crumbs!

Crumbs from crunchy snacks, like chips, could get stuck in the air filters or equipment.

Seasonings must stick!

Salt and pepper come in a gel form that clings onto food in the microgravity environment of the ISS.

PREPARING FOOD ON THE ISS

No ovens or stoves on the ISS!

Instead, astronauts heat their food by adding hot water, which comes from a machine called a water dispenser.

Meal packets attach to the Rehydration Station on the water dispenser. It adds water to the food inside to heat or rehydrate it (or both!).

The packet tip attaches to the nozzle here.

This machine provides astronauts with their drinking water, too! The ISS recycles 90% of the water onboard.

NASA RESOURCES

nasa.gov/content/space-food-systems

ABOUT THE ZINE

This zine was written and created by the MIT Media Lab Public Library Innovation Exchange (PLIX) and Maggie Coblentz (Media Lab Space Exploration Initiative).

Learn more at:
plix.media.mit.edu

v1.0.0

SPACE FOOD

A **PLIX** Zine

Welcome to Space!

If you lived on a spacecraft, what would you eat? Where would your food come from? How would you cook it? What would your kitchen look like?

The ISS (International Space Station) is where astronauts from all over the world live together in space.

Astronauts aboard the ISS cook and eat food in very different ways than we do here on Earth.

GETTING FOOD INTO OUTER SPACE

When astronauts travel to the ISS they have to bring food with them from Earth. Most space food is freeze-dried and vacuum-sealed into packets. Removing water and air makes these packets lightweight and small.

Earth noodles

Space noodles

These packets also have a long shelf life and they do not need refrigeration.

* * *

They are great for transporting into outer space and are easily stored on the ISS!

Considerations for Dining in Space

Microgravity affects **the way fluids behave**, so you can't pour or drink easily in space.

Space environments **alter human physiology**, dulling astronauts' sense of taste.

Food **cannot produce crumbs**, which can stray into air filtration systems and damage costly equipment.

Standard kitchen equipment used to **store and heat food** (like ovens & freezers) aren't available due to storage and power (electricity) constraints.

Because it is so costly to ship cargo into space, foods must have a **very long shelf-life**.

Weightlessness affects the ability to **combine ingredients**, so even salting a meal is impossible!

There **isn't much room for storage** on-board the ISS, so meals are often vacuum-sealed, freeze-dried, and flat-packed to take up less space.

Processes that require microbial activity, like **fermentation**, are impossible on the ISS because the microorganisms required aren't permitted.

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PLIX Space Food *v0.01*