

# Food in space

Was essen und trinken Astronauten im All? Das wollte **RITA FORBES** auch wissen und hat sich dafür ausführlich mit einer Ernährungsexpertin der NASA unterhalten. medium

Liquid food in 1969: astronauts on America's *Apollo 9* mission have a meal as they work



At this moment, astronauts 350 kilometers above the earth may be enjoying a chicken dinner followed by a delicious chocolate pudding. If you thought eating in space was all about powders and pills, think again. Astronauts on the International Space Station (ISS) can choose from almost 300 different foods and drinks.

The ISS, which is the largest space station ever built, has been visited by nearly 200 people from 15 different countries since going into orbit in 1998. It has capacity for six crew members, who normally stay on board — and require provisions — for about six months.

Food scientist Vickie Kloeris manages the ISS food system from NASA's Johnson Space Center in Houston, Texas. *Spotlight* asked her about modern space food.

**Spotlight:** What do astronauts eat these days?

**NASA:** In the earliest space programs, they had to squeeze pureed food from tubes into their mouths. Things have changed a lot since then. Many of the products we develop start out as commercial frozen foods. We have chicken, beef, and pork entrées, rice and potatoes, and a wide variety of vegetables and fruits. We cook them just like you would at home, and then either freeze-dry or thermo-stabilize them. We also buy cookies, crackers, candies, and nuts straight off the shelf and repackage them.

**Spotlight:** What would you say is the most popular food?

**NASA:** Our shrimp cocktail, which is freeze-dried shrimp and a powdered tomato sauce with horseradish. A lot of our crew members report that they really like spicy food when they're on orbit. We've also developed four or five desserts that can be eaten warm, like chocolate or bread pudding. It's a nice psychological boost to have a warm dessert.

**Spotlight:** What kind of drinks are available?

**NASA:** All of the drinks are in powdered form. The astronauts can add water to make lemonade, tropical punch, grape drink, orange juice, or instant coffee and teas. They don't have Coke, because you cannot have a carbonated beverage in microgravity. The carbonation would separate out from the drink, unless you had it under pressure.

**Spotlight:** How do the astronauts prepare food in space?

**NASA:** They just add water to the freeze-dried products and then warm them up. The Russian side of the space station has a dining table with slots built into it that are sized to fit the Russian cans of food. The slots are like little conduction heaters: you put a can into a slot, and it warms

Just heat it — then eat it: Russians at the Mir space station in the 1980s enjoy a real meal



Fotos: NASA (4); AP Photo; Corbis



it up. The U.S. food is in pouches that are too big to fit into the slots. So we've had to develop a portable food warmer for the space station. It's like a metal suitcase with a hot plate in the center. Astronauts put the pouches in it, and 20 minutes later, their food is warm.

**Spotlight:** Do humans need special nutrition in space?

**NASA:** We still don't know all the answers to that question. One big focus right now is reducing sodium. Eating too much salt has adverse health effects on earth, and it's even more of a problem for astronauts. They start losing bone mass as soon as they get into microgravity. A high-sodium diet makes that worse.

**Spotlight:** Are there any food stories from space that stand out in your mind?

**NASA:** A few years ago, a crew member went to the space station on a shuttle. She and the crew were there for months without fresh food before the *Progress*, the Russian resupply vehicle, went up. She said that all the crew could talk about was the fresh food that might be on the *Progress*. They were craving it. She told us she even had dreams about what might be on board the *Progress* before it docked. That shows you how psychologically important food is on those long stays.

**Spotlight:** What do astronauts want when they get back?

**NASA:** Pizza or a big, fat, juicy hamburger and a beer — or a nice salad bar. Even after just two weeks in space, a lot of them really crave the texture of fresh produce, because that has been lacking in their diet on orbit.

<b>adverse</b> [æd'vɜ:s]	ungünstig, schlecht
<b>beverage</b> ['bevərɪdʒ]	Getränk
<b>candy</b> ['kændi]	Süßigkeit
<b>carbonated</b> ['kɑ:rbəneɪtəd]	mit Kohlensäure versetzt
<b>conduction heater</b> [kən'dʌkʃən ,hi:tər]	Heizaggregat
<b>crave</b> [kreɪv]	lechzen nach
<b>diet</b> ['daɪet]	Ernährung
<b>entrée</b> ['ɑ:ntreɪ]	Hauptgericht
<b>fresh produce</b> [ˌfref 'prɔʊdʊ:s]	Frischwaren
<b>horseradish</b> ['hɔ:rs,rædɪʃ]	Meerrettich
<b>hot plate</b> ['hɔ:t pleɪt]	Heizplatte

<b>microgravity</b> [ˌmaɪkroʊ'grævəti]	Schwerelosigkeit (im All)
<b>nutrition</b> [nu'triʃən]	Ernährung
<b>pouch</b> [paʊtʃ]	Beutel
<b>psychological boost</b> [ˌsaɪkə,lɔ:dʒɪkəl 'bu:st]	seelischer Auftrieb
<b>slot</b> [slɔ:t]	Spalt, Vertiefung
<b>sodium</b> ['səʊdiəm]	Natrium
<b>squeeze</b> [skwi:z]	ausdrücken
<b>texture</b> ['tekstʃər]	Beschaffenheit, Konsistenz
<b>thermostabilize</b> [ˌθɜ:mou'steɪbəlaɪz]	Lebensmittel durch Hitze und Druck haltbar machen

## Unsere Auswahl für Sprachliebhaber.



## Entdecken Sie Ihre Leidenschaft für Sprachen.

- + Deutsch *perfekt* – Einfach Deutsch lernen
- + *Spotlight* – Das Magazin in Englisch
- + *Écoute* – Das Sprachmagazin für Frankreichliebhaber
- + *Business Spotlight* – Englisch für den beruflichen Erfolg
- + *ECOS* – Die Welt auf Spanisch
- + *Spot on* – Das Sprachmagazin in "Easy English"
- + *ADESSO* – Die schönsten Seiten auf Italienisch