

# NIH News in Health

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**Inside News:** 3 Hospital Safety Tips 4 Boost Veggie Eating 4 Get Active Safely 4 Drug Use Disorder Treatment

## To Fast or Not to Fast Does When You Eat Matter?

What you eat matters. Many studies have shown that the types of food you eat affect your health. But what about the timing? Scientists are just beginning to understand that when you eat may also make a difference.

Throughout history, people have experienced periods when food was either scarce or completely lacking, says Dr. Valter Longo, an NIH-funded longevity researcher at the University of Southern California. “So, they were forced to fast,” he says.

But current technology—like refrigeration, transportation, and electric lighting—have made food more readily available.

“This has shifted our eating patterns,” explains Dr. Vicki Catenacci, a nutrition researcher at the University of Colorado. “People now eat, on average, throughout a 14-hour period each day.”



Studies suggest that this constant food intake may lead to health problems. Researchers have started looking at whether fasting can have potential benefits for some people.

**Going Without Food** • Fasting diets mainly focus on the timing of when you can eat. There are many different fasting diets, sometimes called “intermittent fasting.”

In time-restricted feeding, you eat every day but only during a limited number of hours. So, you may only eat between a six- to eight-hour window each day. For example, you might eat breakfast and lunch, but skip dinner. In alternate-day fasting, you eat every other day and no or few calories on the days in between. Another type restricts calories during the week but not on weekends.

But scientists don’t know much about what happens to your body

when you fast. Most research has been done in cells and animals in the lab. That work has provided early clues as to how periods without food might affect the body.

In some animals, certain fasting diets seem to protect against diabetes, heart disease, and **cognitive** decline. Fasting has even slowed the aging process and protected against cancer in some experiments.

“In mice, we’ve seen that one of the effects of fasting is to kill damaged cells, and then turn on **stem cells**,” explains Longo. Damaged cells can speed up aging and lead to cancer if they’re not destroyed. When stem cells are turned on, new healthy cells can replace the damaged cells.

Now, studies are starting to look at what happens in people, too. Early results have found that some types of fasting may have positive effects on aspects of health like blood sugar control, blood pressure, and **inflammation**. But fasting can also cause weight loss. So researchers are studying whether the beneficial changes seen in the body are side effects of the weight loss or the fasting process itself.

*continued on page 2*

### Definitions

#### Cognitive

Related to the ability to think, learn, and remember.

#### Stem cells

Immature cells that have the potential to develop into many different cell types in the body.

#### Inflammation

Heat, swelling, and redness caused by the body’s protective response to injury or infection.

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*continued from page 1*

**Body Changes** • For many people, the main reason to try fasting is to lose weight. Currently, most people try to lose weight by restricting how many calories they eat each day.

“That doesn’t work for everyone,” Catenacci explains. “It takes a lot of focus. It takes a lot of math, and a lot of willpower.”

One of Catenacci’s studies showed that, over a two-month period, adults who were overweight or obese were equally likely to lose about 15 pounds when they either completely fasted every other day or restricted their calories every day.

“For some people, restricting calories every day may be the best approach. For others, it might be easier to not have to count calories every day and use an intermittent fasting strategy for weight loss,” says Catenacci. “The best diet for any given person is the one that they can adhere to. I don’t think weight loss is a one size fits all approach.”

Now her research team is running a similar study to compare how much weight participants lose with fasting versus calorie restriction, but over a one-year period. They’re also testing whether adding a small

meal on fasting days will make it easier to stick to as a longer-term weight loss strategy.

But are the benefits from fasting all due to weight loss or is there something more to it? “There’s a lot of debate about whether the benefits of intermittent fasting are due to the extended fasting period itself,” says Dr. Courtney Peterson, an NIH-funded nutrition researcher at the University of Alabama.

To understand this better, Peterson did a study in pre-diabetic men. It was designed so the volunteers would not lose weight. The men ate an early time-restricted feeding diet for five weeks. They could eat only between 8 am to 2 pm. They then fasted for the next 18 hours. Next, they ate the same amount of food but only during a 12-hour period per day for five weeks. None of the men lost weight.

The longer fasting period alone made a difference. “The early time-restricted diet improved their blood sugar control,” Peterson says. “And we found a blood pressure lowering effect equivalent to what you see with a blood pressure medication.”

These findings suggest that an extended fast or the timing of when you eat—even when it doesn’t affect your weight—can bring health benefits for some people.

**Should You Fast?** • Fasting may bring health benefits, but Longo cautions that there’s still a lot we don’t know. For some, fasting may cause problems. For example, studies have found that people who regularly fast more than 16 or 18 hours a day have a higher risk of gallstones. They’re also more likely to need surgery to remove the gallbladder.

Eating for 12 hours and then fasting for 12 hours is likely safe for most people, Longo explains. “That pattern of eating is very common among people who have record



## Wise Choices

### Before You Try Fasting

Fasting may bring health benefits, but not eating can be dangerous for some people. Talk with your health care provider first, especially if you:

- Are under the age of 25.
- Are pregnant or breastfeeding.
- Take insulin or other medications to control diabetes.
- Have been prescribed any medication that must be taken with food.
- Have a seizure disorder.
- Work the night shift.
- Operate heavy machinery at your job.

lifespans,” he says. “It seems to match both science and tradition.”

Longo and his team are also looking at fasting-mimicking diets, which they hope will be safer and easier to follow than completely fasting. They designed a five-day, monthly fasting-mimicking diet that allows some food, but is low in calories. They tested the diet for three months in a recent study. Those who stayed on the diet lost weight and showed decreases in age-related disease risk factors.

But he and other experts caution against people trying fasting diets that are not based on research. If you’re considering fasting, talk with your health care provider first. People with certain health conditions or who are taking certain medications should not try fasting at all (see the Wise Choices box).

Even if you fast sometimes, you still need to make healthy food choices overall, Peterson explains. “It looks like when you eat matters a lot, but what you eat probably matters more.” ■

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## Web Links

For more about fasting, see “Links” in the online article: [newsinhealth.nih.gov/2019/12/fast-or-not-fast](http://newsinhealth.nih.gov/2019/12/fast-or-not-fast)

# Staying in the Hospital?

## Safety Tips for Your Visit

Having a health problem can be scary. Add in a visit to the hospital, and it can become overwhelming. But there are things you can do to make your stay safer and more comfortable.

Hospitals are busy places. Different people may come in and out of your room. You might have many tests. And while you wait for answers, there can be harmful germs lurking around. These things can raise the chance for medical errors and infections.

Being engaged and asking the right questions can help lower the risks that come with a hospital stay, says Laura Lee, who oversees patient safety at the NIH Clinical Center, the nation's largest research hospital.

Lee suggests you bring along someone you trust. Having someone with you can be a big help in making decisions and navigating your stay. It can be a friend or family member.



### Wise Choices

#### Stay Safe in the Hospital

- Bring a friend or family member with you to serve as an advocate.
- Know the members of your care team. Learn who's overseeing your care.
- Make sure your care providers and visitors wash their hands or use hand sanitizer.
- Know the signs and symptoms of infection.
- Ask your health care team questions and voice any concerns.
- Protect yourself by getting vaccinated against flu.
- Keep a written record about tests, medications, and the providers who visit you to help prevent mistakes.

If you don't have someone with you, a trusted member of your care team can be your advocate too. They can help explain things if you need more information. Some hospitals may have special patient advocates you can ask for as well.

Next, figure out who's in charge of your care. Ask your care team: "Who is the captain of my ship?" Lee says. You'll want to find out who is responsible for leading the team and resolving issues if something goes wrong. This person can help ensure that your needs are met.

Infections are a major concern during a hospital stay. The good news is that hand washing is a simple way to prevent the spread of germs.

It's important that everyone coming into your room practice good hand hygiene. This includes you, your visitors, and the hospital staff caring for you. Don't be afraid to ask: "Did you wash your hands?" if you didn't see them do it.

It's also important to talk honestly with your medical team. "Be an open communicator and partner with your health care team," says Capt. Antoinette Jones, the NIH Clinical Center patient representative. "You have to be willing to speak up for yourself."

Don't be shy about asking the same question two or three times. Answers to medical questions can be complicated. You may get different answers from different people caring for you. Keep asking until you feel like you understand completely.

Don't feel like you're wasting your doctor's time by asking questions. "That white coat is not armor that



keeps you from asking questions or asking them to explain. It's just a piece of fabric," Lee says. Speak up if you have concerns. They're there to help you.

Finally, keep a written record of your stay. At the NIH Clinical Center, patients can access many of their medical notes and test results electronically in real time. If your hospital doesn't offer this option, you or your advocate can take careful notes instead. Record information about tests, medications, and the providers that come to visit.

Having this record can help prevent mistakes by allowing you to double-check information. And you can always request to have a complete copy of your electronic health record at any time.

By following these tips, you can take charge of your safety. For more info, see the Wise Choices box. ■



### Web Links

For more about hospital safety, see "Links" in the online article: [newsinhealth.nih.gov/2019/12/staying-hospital](https://newsinhealth.nih.gov/2019/12/staying-hospital)



## Health Capsules

For links to more information, please visit our website and see these stories online.

### Veggie Eating Boosted By Tasty Names

Everyone knows they should eat more vegetables. But only about 10% of Americans eat the recommended number of veggies per day. A recent study found that tasty descriptions can encourage people to make healthier choices.

Researchers tested whether food labels on vegetables served in dining halls affected college students' food choices. They tested three types of labels at five universities across the country: tasty, healthy, or basic.

Tasty labels used words linked to excitement, indulgence, tradition, or

geographic locations. They included names like "Herb n' Honey Balsamic Glazed Turnips" and "Sizzlin' Szechuan Green Beans."

Healthy labels used names like "Healthy Choice Turnips" or "Nutritious Green Beans." Basic labels read "Turnips" or "Green Beans." The dishes were the same every time. Only the labels changed.

Students were more likely to choose the veggies with tasty sounding names. They chose them 14% more than those with basic labels and 29% more than those with

healthy labels. Students even ate 39% more of the "tasty" sounding veggies than the "heathy" veggies.

"This is radically different from our current cultural approach to healthy eating which, by focusing on health to the neglect of taste, inadvertently instills the mindset that healthy eating is tasteless and depriving," says Dr. Alia Crum at Stanford University, who led the study.

Find the researchers' online toolkit to create taste-focused labels at [sparqtools.org/edgyveggies](http://sparqtools.org/edgyveggies). ■

### Safety Tips for Physical Activity

Staying active is key for good health. No matter your age or fitness level, getting more physical activity will help support your body and mind. That's why experts recommend getting at least 150 minutes of moderate physical activity a week.

Staying safe while being active is equally important. You want to avoid getting hurt, which can throw you and your fitness goals off-track. NIH has a series of short articles and videos designed to help you stay safe while being active.

Has it been a long time since you've exercised? Or are you starting a new activity? Begin slowly with low-intensity exercises. Don't overdo it. Remember to warm up before exercising and cool down afterwards.

If you're starting a new strength training exercise, look for expert tips on proper form. Use smooth, steady movements to lift weights into position. Start out with light weights and avoid locking your arms or legs. And don't exercise

the same muscle group two days in a row.

Proper shoes and clothing are important for safety too. Look for shoes with non-skid soles and cushioned arch support. Replace your shoes when they're worn out. The clothes you wear should be comfortable and right for the setting.

For more tips on staying safe while being active, including bike safety, eye protection, and exercising with pain, see: [www.nia.nih.gov/health/exercise-physical-activity](http://www.nia.nih.gov/health/exercise-physical-activity). ■



### Featured Website

Finding Treatment for Drug Use Disorder  
[go.usa.gov/xpZJt](http://go.usa.gov/xpZJt)

If you or a loved one needs treatment for a drug use problem, it can be challenging to know where to start. NIH has step-by-step guides to finding treatment for teens and

adults, as well as guides for friends and family.

Visit the website for more information on treatment options and available resources.

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