

Intermittent Fasting

Intermittent fasting is an eating plan that switches between fasting and eating on a regular schedule. Research shows that intermittent fasting is a way to manage your weight and prevent, or even reverse some forms of disease. But how do you do it? And is it safe?

What is Intermittent Fasting?

Many diets focus on *what* to eat, but intermittent fasting is all about *when* you eat.

With intermittent fasting, you only eat during a specific time. Fasting for a certain number of hours each day or eating just one meal a couple days a week, can help your body burn fat. And scientific evidence points to some health benefits, as well.

Johns Hopkins neuroscientist Mark Madson has studied intermittent fasting for 25 years. He says that our bodies have evolved to be able to go without food for many hours, or even several days or longer. In prehistoric times, before humans learned to farm, they were hunters and gatherers who evolved to survive and thrive for long periods without eating. They had to: It took a lot of time and energy to hunt game and gather nuts and berries.



Even 50 years ago, it was easier to maintain a healthy weight. Johns Hopkins dietitian Christie Williams, M.S., R.D.N., explains: “There were no computers, and TV shows turned off at 11 p.m.; people stopped eating because they went to bed. Portions were much smaller. More people worked and played outside and, in general, got more exercise.”

Nowadays, TV, the internet and other entertainment are available 24/7. We stay awake for longer hours to catch our favorite shows, play games and chat online. We’re sitting and snacking all day and most of the night.”

Extra calories and less activity can mean a higher risk of obesity, type 2 diabetes, heart disease and other illnesses. Scientific studies are showing that intermittent fasting may help reverse these trends.

How Does Intermittent Fasting Work?

There are several different ways to do intermittent fasting, but they are all based on choosing regular time periods to eat and fast. For instance, you might try eating only during an eight-hour period each day and fast for the remainder. Or you might choose to eat only one meal a day two days a week. There are many different intermittent fasting schedules.

Mattson says that after hours without food, the body exhausts its sugar stores and starts burning fat. He refers to this as *metabolic switching*.

“Intermittent fasting contrasts with the normal eating pattern for most Americans, who eat throughout their waking hours,” Mattson says. “If someone is eating three meals a day, plus snacks, and they’re not exercising, then every time they eat, they’re running on those calories and not burning their fat stores.”

Intermittent fasting works by prolonging the period when your body has burned through the calories consumed during your last meal and begins burning fat.

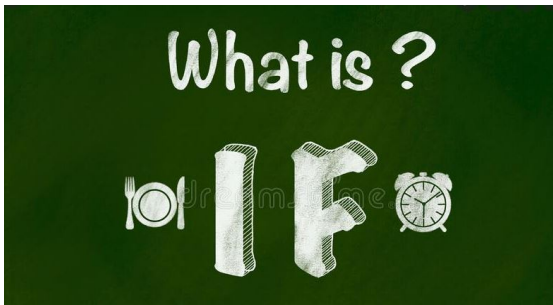
Intermittent Fasting Plans



It’s important to check with your doctor or a health care professional knowledgeable about clinical nutrition before starting intermittent fasting. Once you get his or her go-ahead, the actual practice is simple. You can pick a daily approach, which restricts daily eating to one six to eight-hour period each day. For instance, you may choose to try 16/8 fasting: eating for eight hours and fasting for 16. Williams is a fan of the daily regimen: She says most

people find it easy to stick with this pattern over the long term. Another, known as the 5:2 approach, involves eating regularly five days a week. For the other two days, you limit yourself to one 500–600 calorie meal. An example would be if you chose to eat normally on every day of the week except Mondays and Thursdays, which would be your one-meal days.

Longer periods without food, such as 24, 36, 48 and 72-hour fasting periods, are not necessarily better for you and may be dangerous. Going too long without eating might encourage your body to start storing more fat in response to starvation. There are several different ways of doing intermittent fasting all of which involve splitting the day or week into eating and fasting periods.



During the fasting periods, you eat either very little or nothing at all.

These are the most popular methods:

- **The 16/8 method:** Also, called the Leangains protocol, it involves skipping breakfast and restricting your daily eating period to 8 hours, such as 1–9 p.m.

Then you fast for 16 hours in between.

- **Eat-Stop-Eat:** This involves fasting for 24 hours, once or twice a week, for example by not eating from dinner one day until dinner the next day.
- **The 5:2 diet:** With this method, you consume only 500–600 calories on two nonconsecutive days of the week, but eat normally the other 5 days.

By reducing your calorie intake, these methods should cause weight loss if you don't compensate by eating much more during the eating periods. Many people find the 16/8 method to be the simplest, most sustainable and easiest to stick to. It's also the most popular.

Research shows that it can take two to four weeks before the body becomes accustomed to intermittent fasting. You might feel hungry or cranky while you're getting used to the new routine. But, he observes, research subjects who make it through the adjustment period tend to stick with the plan, because they notice they feel better.

What can I eat while intermittent fasting?

During the times when you're not eating, water and zero-calorie beverages such as black coffee and tea are permitted.

And during your eating periods, "eating normally" does not mean going crazy. You're not likely to lose weight or get healthier if you pack your feeding times with high-calorie junk food, super-

sized fried items and treats. But what Williams likes about intermittent fasting is that it allows for a range of different foods to be eaten and enjoyed. “We want people to be mindful and take pleasure in eating good, nutritious food,” she says. She adds that eating with others and sharing the mealtime experience adds satisfaction and supports good health.



Williams, like most nutrition experts, regards the Mediterranean diet as a good blueprint of what to eat, whether you’re trying intermittent fasting or not. You can hardly go wrong when you pick complex, unrefined carbohydrates such as whole grains, leafy greens, healthy fats and lean protein.

Intermittent Fasting Benefits

Research shows that the intermittent fasting periods do more than burn fat. Mattson explains, “When changes occur with this metabolic switch, it affects the body and brain.”

One study published in the *New England Journal of Medicine* revealed data about a range of health benefits associated with the practice. These include a longer life, a leaner body and a sharper mind.

“Many things happen during intermittent fasting that can protect organs against chronic diseases like type 2 diabetes, heart disease, age-related neurodegenerative disorders, even inflammatory bowel disease and many cancers,” he says.

Here are some intermittent fasting benefits research has revealed so far:

- **Thinking and memory.** Studies discovered that intermittent fasting boosts working memory in animals and verbal memory in adult humans.
 - **Heart health.** Intermittent fasting improved blood pressure and resting heart rates as well as other heart-related measurements.
 - **Physical performance.** Young men who fasted for 16 hours showed fat loss while maintaining muscle mass. Mice who were fed on alternate days showed better endurance in running.
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- **Diabetes and obesity.** In animal studies, intermittent fasting prevented obesity. And in six brief studies, obese adult humans lost weight through intermittent fasting.
- **Cancer:** Animal studies suggest that intermittent fasting may prevent cancer.
- **Inflammation.** Some studies show reductions in markers of inflammation, a key driver of many chronic diseases
- **Tissue health.** In animals, intermittent fasting reduced tissue damage in surgery and improved results.

Keep in mind that research is still in its early stages. Many of the studies were small, short-term or conducted in animals. Many questions have yet to be answered in higher quality human studies.

How It Affects Your Cells and Hormones

When you fast, several things happen in your body on the cellular and molecular level. For example, your body adjusts hormone levels to make stored body fat more accessible. Your cells also initiate important repair processes and change the expression of genes.

Here are some changes that occur in your body when you fast:

- **Human Growth Hormone (HGH):** The levels of growth hormone skyrocket, increasing as much as 5-fold. This has benefits for fat loss and muscle gain, to name a few.
- **Insulin:** Insulin sensitivity improves and levels of insulin drop dramatically. Lower insulin levels make stored body fat more accessible.
- **Cellular repair:** When fasted, your cells initiate cellular repair processes. This includes autophagy, where cells digest and remove old and dysfunctional proteins that build up inside cells.
- **Gene expression:** There are changes in the function of genes related to longevity and protection against disease.

These changes in hormone levels, cell function and gene expression are responsible for the health benefits of intermittent fasting.



Is Intermittent Fasting Safe?

Some people try intermittent fasting for weight management, and others use the method to address chronic conditions such as irritable bowel syndrome, high cholesterol or arthritis. But intermittent fasting isn't for everyone.

Before you try intermittent fasting (or any diet), you should check in with you're a health care provider knowledgeable in clinical/functional nutrition first. Some people should steer clear of trying intermittent fasting:

- Children and teens under age 18.
- Women who are pregnant or breastfeeding.
- People with diabetes or blood sugar problems.
- Those with a history of eating disorders.

People not in these categories who can do intermittent fasting safely can continue the regimen indefinitely. It can be a lifestyle change and one with benefits.

Keep in mind that intermittent fasting may have different effects on different people. Talk to your health care provider knowledgeable in clinical/functional nutrition if you start experiencing unusual anxiety, headaches, nausea or other symptoms after you start intermittent fasting.



Frequently Asked Questions

Here are answers to the most common questions about intermittent fasting.

Can I Drink Liquids During the Fast?

Yes. Water, coffee, tea and other non-caloric beverages are fine. Do not add sugar to your coffee. Small amounts of milk or cream may be okay. Coffee can be particularly beneficial during a fast, as it can blunt hunger.

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Isn't It Unhealthy to Skip Breakfast?

No. The problem is that most stereotypical breakfast skippers have unhealthy lifestyles. If you make sure to eat healthy food for the rest of the day, then the practice is perfectly healthy.

Can I Take Supplements While Fasting?

Yes. However, keep in mind that some supplements like fat-soluble vitamins may work better when taken with meals.

Can I Work out While Fasted?

Yes, fasted workouts are fine. Some people recommend taking branched-chain amino acids (BCAAs) before a fasted workout.

Will Fasting Cause Muscle Loss?

All weight loss methods can cause muscle loss, which is why it's important to lift weights and keep your protein intake high. One study showed that intermittent fasting causes less muscle loss than regular calorie restriction.

Will Fasting Slow Down My Metabolism?

No. Studies show that short-term fasts boost metabolism. However, longer fasts of 3 or more days can suppress metabolism.

Should Kids Fast?

Allowing your child to fast is probably a bad idea.

Diet Name	Short Description	How it Works
Low Carb	Eat fewer carbs and more foods rich in protein and fats	By creating a caloric deficit
Ketogenic	Eat almost no carbs, some protein and mostly fats	By creating a caloric deficit
Low Fat	Avoid foods high in fats and eat mostly protein and carbs	By creating a caloric deficit
Intermittent Fasting	Restrict your eating period to only a few hours every day	By creating a caloric deficit
Weight Watchers	Points based system to help with portion control	By creating a caloric deficit
Paleo	Eat only minimally-processed "paleolithic" foods	By creating a caloric deficit