

# How to Fast: A quick guide to fasting

the COMPLETE guide to FASTING by Jason Fung, MD

Fasting has been part of human society for thousands of years and there are benefits to it for those dealing with certain health issues—in particular, obesity and type 2 diabetes—in today's world of constant food abundance.

## What is *Intermittent Fasting*?

The term Intermittent Fasting simply means that periods of fasting occur regularly between periods of normal eating. How long each period of fasting lasts, and how long the period of normal eating lasts, can vary widely. There are many different fasting regimens but no best one. They all work to different degrees for different people.

Fasts can range from 12 hours to 3 months or more. You can fast once a week or once a month. Shorter fasts are generally done more frequently, even daily, while longer fasts—24 to 36 hours is the most common duration—are usually done two to three times per week. Prolonged fasting may range from one week to one month. Shorter fasts (less than 24 hours) are generally used for weight loss whereas longer fasts (more than 24 hours) are helpful in also treating type 2 diabetes, fatty liver and other metabolic diseases. You can always switch from one fasting regimen to the other. The first few fasting periods are always difficult.

## What happens when we eat?

When we eat, we ingest more food energy that we can immediately use. This triggers the release of *insulin*, a hormone involved in storing the extra energy not used. Insulin has 2 functions. First, it allows the body to start using food energy. Second, insulin helps store the extra energy as either glycogen in the liver (short term but limited storage) or as fat (long-term unlimited storage).

## ...and when we fast?

When we fast, *insulin* levels drop signaling the body to start burning stored energy. Glycogen, the energy stored in the liver, is the most accessible energy source providing energy for 24 hours or so. After that, the body starts to break down the stored body fat for energy.

We are either storing fat or burning fat. If eating and fasting are balanced, there is no net weight gain. However, if we spend more hours of the day storing energy (because we are eating) then over time we will gain weight. When we fast, the most consistent hormonal effect is the decrease in *insulin* levels.

## Why should I try intermittent fasting?

**because it may help you reach your weight loss goal.** Although we all now know that not all calories are created equal, caloric restriction plays a central role in weight loss. When you fast, you are also making it easier to restrict your total caloric intake over the course of the week, which can lead to consistent weight loss and maintenance.

**because it improves digestion and decreases bloating.** Since digestive issues and bloating tend to be caused by over eating or eating unhealthy foods, intermittent fasting can help relieve these issues. You'll be drinking more water which aids in digestion

**because it promotes insulin sensitivity and increased growth hormone.** These are two key hormones for weight loss and muscle gain.

**because it is good for your brain.** Fasting has anti-aging benefits and can counteract conditions such as Alzheimer's, Parkinson's and dementia.

**because it simplifies your life.** Rather than having to prepare, pack, eat and time your meals every 2-3 hours, you simply skip a meal or two and only worry about eating food in your eating window. It's one less decision you have to make every day. You can enjoy a larger portioned meal and STILL eat fewer calories on average. Rather than having to spend money on three to six meals a day, you only need to prepare two. **You save time and money.**

## Fasting is not for everyone

Fasting is NOT recommended for pregnant or nursing women, children under the age of 18, and anyone who is malnourished or underweight. And if you are taking medications, particularly for diabetes, you should check with your doctor first.

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## Fasting Regimens

Fasting is more about WHEN you eat versus WHAT you eat. There are three basic regimens: time-restricted feeding, alternate-day fasting and extended fasting. Pick a schedule that fits your lifestyle. Plus, you can always switch from one to another.

### Time Restricted Feeding

Time-restricted feeding refers to short daily fasts. You are still eating daily which minimizes the risk of malnutrition. It is easier to fit in shorter fasts to your work schedule and family life.

#### *Short Daily Fasting Regimens*

##### **12-Hour Fast**

In the past, a daily twelve hour fasting period was considered a normal eating pattern. You would eat three meals a day from 7am to 7pm and then fast from 7pm to 7am. This was fairly standard until the 1970's (and there was much less obesity back then). With the advent of the USDA Dietary Guidelines promoting a low-fat, high carbohydrate diet. Diets high in refined carbohydrates stimulate **constant high levels of insulin**, which makes people gain weight and become obese. **This is a great place to start.** Pick a 12-hour window and limit your meals between this time period.

There has also been an increase in eating opportunities. In efforts to combat the hunger associated with a low fat, high carb regimen people are now eating three meals and three snacks daily, and insulin levels are kept perpetually high. Daily 12-hour fasting offers a period of very low insulin levels during the day. This prevents the development of insulin resistance, making the 12-hour fast a powerful preventative upon against obesity. The combination of whole foods, lower-carbohydrate diets, less added sugars, and a daily 12-hour fast was enough to prevent most Americans in the 1950's and 60's from developing obesity. Although a daily 12-hour fast may be a great preventive strategy, it may not be powerful enough to reverse weight gain.

##### **16-Hour Fast: *Time Restricted Feeding***

This regimen incorporates a sixteen-hour period of fasting into your daily meal schedule and an 8-hour eating window. Popular regimens are eating all meals between 10am and 6pm (or 11am to 7pm). Most people simply skip the morning meal each day. But how many meals you eat within that eight-hour window is your choice. Some people eat 3 meals while others may eat 2 meals during that time-period. A major advantage of the 16-hour fast is that it is fairly simple to incorporate into everyday life.

The daily sixteen-hour fast certainly has more power than the daily twelve-hour fast but it should be combined with a low-carbohydrate diet for best effect. Weight loss on this regimen tends to be slow but steady.

##### **20-Hour Fast: *The Warrior Diet***

In this regimen, all meals are eaten during a four-hour window. This results in a twenty-hour fasting period each day. Overall, the diet proposes that you should focus on your instincts regarding eating. Don't worry about types of calories or which foods have more or less nutrients. Eat like warriors in ancient times: they ate what they hunted at night and had little to eat during the day. You should fast in a controlled manner and exercise without eating much food before. The goal is to eat primarily during 1 meal per day, at night.

### Timing of Meals

There has been a difference between eating during the day and eating at night. In a study of overweight women, those who ate a large breakfast versus those who ate a large dinner, lost more weight despite eating the same number of calories. Those that ate a large dinner had an overall greater rise in insulin levels. Since weight gain is driven by insulin, a larger insulin response in the evening translated into more weight gain. This response is linked to circadian rhythms. Almost all of our hormones are secreted in a circadian rhythm pattern. These rhythms also govern insulin—which affects weight gain—and ghrelin—which controls hunger—leading to practical implications for eating patterns and weight loss.

### Longer Periods of Fasting

Longer periods of fasting will reap greater weight loss and other health benefits however should not be attempted by those with diabetes or on chronic medications without the guidance of their physician. Plus don't start with these regimens but you can work up to them over time by skipping breakfast one day or dinner another day simply because you are not hungry or don't have time. You will find that not only are you okay, but you might even feel better.

## **24-Hour Fasts**

A twenty-four fast would involve fasting from dinner to dinner or from breakfast to breakfast. With this regimen you do not actually go a full day without eating. Effectively you will eat a single meal for that day.

## **5:2 Diet**

This approach also known as the Fast Diet incorporates periods of low caloric intake alternating with “normal” eating days. For two days of the week, the total caloric intake for the day is kept low enough to trigger many of the same hormonal benefits as obtained from fasting. For women, the caloric intake would be restricted to simply 500 calories per day for either two consecutive days or spaced apart. The 500 calories (600 for men) can be consumed in a single meal or spread into multiple meals throughout the day. This may be “easier” for those who found fasting difficult. The 5:2 diet can be followed indefinitely even after weight goals are achieved in order to maintain the weight.

## **Alternate Day Fasting**

With this approach you would fast every other day, as the name suggests. As above, 500-600 calories are permitted on each fasting day. And although people tend to overeat on their “normal” day, the average of the two days is still typically less than one normal day of eating. This is slightly more intense than the 5:2 regimen. This can also be followed until you reach your weight loss goal and then the number of fasting days reduced to maintain your ideal weight.

## **36-Hour Fasts**

To achieve a 36-hour fast, you would not eat for one entire day. If you finish dinner by 7 pm on day 1, your fast starts immediately afterwards. You would then skip all meals on day 2 and not eat again until breakfast at 7 am on day 3. This regimen can be repeated 3 times a week until your weight loss goal is achieved. Longer fasting durations are very powerful for both weight loss and improvement of medical conditions such as diabetes. (Please check with your doctor first).

## **What about hunger?**

The biggest fear about fasting is HUNGER.

Hunger comes in waves. We typically feel hunger “pangs” about four hours after our last meal but it is NOT simply a physiologic response to not eating. It is more of a hormonal response. Due to circadian rhythms most people are not hungry first thing in the morning even though they have not eaten in 12-14 hours. Whereas hunger tends to be very high at dinner time even though we ate lunch 6 hours ago. Hunger is partly a learned phenomenon. Certain stimuli can make us hungry such the smell and sizzling sound of a steak.

Hunger is a *learned* response. If we always eat breakfast at 7 am or a snack at 4 pm, we will then be hungry each day because it is time to eat. Using intermittent fasting and randomly skip meals or vary the time at which we eat each day, we can break the “habit” of eating at set times. So instead of eating because it is time, we allow our body to tell us when to eat because *we are hungry*. Sometimes we are just too busy to eat lunch and the hunger just passes. To break the association of eating and any other stimuli (such as time or the smell of food), try to avoid mindless eating. Eat only at the table, not in front of the computer or TV. No eating in the car or on the couch. No eating at a ball game, movie or lecture hall. Thus, food becomes associated only with the kitchen table.

Going cold turkey can be difficult. It is often best to replace a bad habit with a better habit. Instead of having that bowl of ice cream on the couch in front of the TV after dinner, replace it with drinking a cup of herbal tea or seltzer water. This way you won't feel like you are missing something. And over time you will not be hungry at that time! Try to avoid artificial sweeteners as these can still increase your insulin and thus a hunger response.

Fasting helps to break all the conditional stimuli related to hunger and thus will reduce, rather than enhance, hunger. Hunger is a state of the mind, not a state of the stomach.

## **Intermittent Fasting and a Ketogenic Diet**

Fasting works best when we incorporate it with a ketogenic style diet. This high (healthy) fat, moderate (quality) protein, low (unprocessed) carbohydrate way of eating, naturally keeps our insulin lower. And remember elevated insulin levels make us hungry, make us crave AND make us bigger!

Starting a ketogenic diet can be overwhelming whether you are simply trying to lose weight, or looking treat or prevent cancer, diabetes, heart disease or a slew of other medical conditions. You may have heard that keto is a low carb plan and the thought of eliminating carbs makes you anxious or perhaps even unwilling to try keto. Let's start with what you can have on a ketogenic diet.

## What to eat on a ketogenic style diet

A standard ketogenic diet is 75% (healthy) fats, 20% (quality) proteins, and 5% (unprocessed) carbohydrates. The best approach is to eliminate processed sugary foods and make an effort to add healthy fats such as oily fish, olive oil, avocado, nuts and seeds. Remember, most diets are effective when directly compared because they exclude refined sugars, refined oils and all processed foods!

### Vegetables

Choose non-starchy vegetables especially organic foods. Look up the *Dirty Dozen* and *Clean Fifteen* for advice on how to choose organic produce

arugula	Kale
asparagus	leaf vegetables (including endive and chicory)
bamboo shoots	leafy greens (including parsley and spinach)
broccoli	radishes and daikon
Brussels sprouts	rutabagas
cabbage	sauté greens
cauliflower	summer squash
celery	turnips
cucumber	zucchini

This next group of vegetables have a higher amount of carbohydrate content and may be best to avoid initially. After you are keto-adapted, you can add back in limited amounts

artichoke	green beans
beets	mushrooms
bell peppers	onion
carrots, raw	pepper, hot varieties
eggplant	tomato
fennel	winter squash, including acorn and butternut
garlic	

### Fruits

To reach ketosis, you will need to limit your intake of fruits and berries due to their sugar content. Choose low-sugar berries and fruit and combine them with fats to lower their impact on blood glucose and insulin. Portion size is critical. Fruit sugars will raise blood glucose and insulin levels.

blackberries, ¼ cup	apple, a few thin slices
blueberries, 1/8 cup	cherries, a few
raspberries, ¼ cup	grapefruit, a few sections
strawberries, ¼ cup	pear, a few thin slices

### Proteins

Whenever possible, choose high quality organic sources from pasture-raised or grass-fed animals. They have a healthier fat profile than animals that are fed grains plus they have less toxins in their fat. Use the app *Seafood Watch* to help you choose sustainable seafood at restaurants and grocery stores. Organic sources of protein will be more expensive so watch the portions.

beef	poultry
eggs	protein powders (preferably non-dairy)
lamb	seafood (wild caught, tinned fish, shellfish)
pork (including bacon and sausage)	wild-game meats

## Dairy

Buy the highest quality dairy from pasture-raised animals on organic farms. Milk is not keto-friendly because it is high in lactose (milk sugar). Other dairy products can be classified as high fat or high protein. *High fat* dairy (cream, butter) contains estrogen metabolites (may be a problem for people with hormone sensitive cancers). *High protein* dairy (cheese, yogurt) can stimulate insulin production.

Dairy may have special issues for some people and may be best to eliminate. If you are lactose intolerant, you lack the enzyme necessary to break down lactose sugar. High-fat dairy such as butter and cream contain very little lactose. Or if you an allergy to the casein protein found in dairy, this may cause an inflammatory response.

Limit dairy intake and choose products from animals that are **pasture-raised**.

butter and ghee (clarified butter)	heavy whipping cream, organic
full-fat cream cheese	sour cream
hard cheese (cheddar, parmesan)	

## Nuts and Seeds

Nuts and seeds are a great source of healthy fats. But it is easy to overeat them. Some nuts contain some carbohydrates and protein as well as high levels of pro-inflammatory omega-6 fatty acids. Stick to this list of keto-friendly nuts and seeds and use sparingly more like a condiment.

almonds (including butter, milk, flour)	pecans
Brazil nuts (2-3 per day)	walnuts
coconut meat, unsweetened	chia seeds
hazelnuts	flaxseeds
macadamias	hemp hearts

## Avocados and Olives

Although considered fruits, these two foods are of special mention as they are high in healthy monounsaturated fats with little or no carbohydrate or protein. Of note, if you are allergic or sensitive to latex, you may have a cross-reaction with avocados.

## Fats and Oils

Keto diets are very high in fat, so quality, composition, and balance are important. Look for cold-pressed organic varieties and avoid all heat-extracted and refined (solvent-treated) oils. Never use soybean or vegetable oils—they are high in omega-6 and (unless they are non-GMO) have been exposed to glyphosate (Roundup). When using oils for sautéing, keep the heat and cooking times as low as possible.

animal fats (including lard and tallow)	mayonnaise, organic or homemade
avocado or macadamia oil	omega-3 fish oils
butter or ghee (grass-fed)	omega-3 oil from flax, chia or hemp
buttery spreads such as Melt or Earth Balance	olive oil (extra virgin)
coconut, MCT or caprylic (C8) oil	salad dressings, organic with healthy oils

## Sweeteners

It is best to lower your “sweet thermostat”. Dulling your desire for sweets helps you make better food choices, as you less likely to choose poor-quality, low nutritive foods that are “sugar-free”. If you must use a sweetener, stick to erythritol (a non-fermentable sugar alcohol) or stevia (a natural plant sweetener).

## Spices, Flavorings, and Seasonings

These items add variety and interest to your meals. Some also have health benefits as anti-inflammatories or aid in maintaining blood glucose control. Be careful with commercial spice mixes. They often have added sugars, starches, and flow agents, so read the ingredient labels carefully. Avoid any seasoning that lists monosodium glutamate (MSG) or any type of hydrolyzed vegetable or soy protein.

basil, black pepper, cayenne pepper, chili pepper, chives, cilantro, coriander seeds, oregano, cinnamon, cloves, cumin seeds, dill, ginger, mustard, nutmeg, paprika, parsley, peppermint, rosemary, sage, thyme, turmeric curry, garlic powder and onion powder lemon juice	pure extracts, such as vanilla, orange oil, peppermint traditional condiments vinegar (distilled or apple cider is best; no balsamic or malt), unsweetened cocoa powder salt
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## Beverages

Water is best. Avoid beverages with artificial sweeteners. Addicted to caffeine? Best to cut back before you start. Cut back to 1 cup in the morning or eliminate it entirely. Caffeine might raise blood sugar levels in some people and can contribute to dehydration

water clear broth sparkling water, seltzer, or club soda limited amounts of stevia-sweetened drinks	decaf coffee or black tea herbal tea unsweetened almond or flax milk unsweetened boxed coconut milk
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## Planning your keto meals

### Breakfast

Pick your favorite protein: eggs, uncured bacon, sausage, cheese, smoked salmon, protein shake  
What fats and oils will work with this meal: butter, coconut oil, cream  
Add some veggies: spinach, zucchini

*Example:* Egg Breakfast—2 eggs with a strip of bacon (add butter to the beaten raw eggs) and a serving of vegetables sautéed in olive oil

### Lunch

Start with 2-3 cups of salad greens with ½ an avocado  
Add your protein: chicken, tuna, sardines  
Serve with olive oil, salad dressing or mayonnaise

*Example:* Chicken Caesar Salad—3 cups of salad greens with ½ avocado and portion of cooked meat or poultry. Serve with olive oil and vinegar dressing

### Dinner

Pick your protein: beef, salmon, chicken  
Select veggies: broccoli, Brussels sprouts, asparagus  
Choose a fat or oil: butter, olive oil, mayonnaise

*Example:* Fish Dinner—baked or poached fish with a vegetable such as broccoli or asparagus sautéed in olive oil.

### Snacks

Choose high-fat snacks and ONLY when you need them between meals i.e. nuts, seeds, cheese, “fat bombs”. Fat bombs are snacks containing high fat ingredients that satisfy hunger and cravings.

## Top 5 Tips for Eating with Awareness

Taking time for the eating experience can help us reduce cravings, control portion sizes, and enhance our interconnectedness with the flow of people, animals, and nature that contributed to the food on our plate. Here are some tips to enhance your eating experience to make it deeper and more healing:

1. **Eat in a setting where you feel relaxed.** If you are eating in the car, in front of a computer doing work, or on the phone, you are not able to give full attention to eating, and, as a result, you may tend to eat more or eat foods that are not healing. If you are feeling emotional and are tending towards eating, see if you can first acknowledge and express your emotions rather than eating them. These practices will all help with the digestive process—helping you get the most out of food.

2. **Eat a palette of colors.** Many people eat a “brown, yellow, and white” diet. Instead of lackluster, bland eating, try to sample all the colors of food, including red, orange, yellow, green, and purple, to ensure that you get enough of the important phytochemicals that have health benefits. ·

- **Red:** Red apples, beets, red cabbage, cherries, cranberries, pink grapefruit, red grapes, red peppers, pomegranates, red potatoes, radishes, raspberries, rhubarb, strawberries, tomatoes, watermelon ·
- **Orange:** Apricots, butternut squash, cantaloupe, carrots, mangoes, nectarines, oranges, papayas, peaches, persimmons, pumpkin, tangerines ·
- **Yellow-Green:** Green apples, artichokes, asparagus, avocados, green beans, broccoli, Brussels sprouts, green cabbage, cucumbers, green grapes, honeydew melon, kiwi, lettuce, lemons, limes, green onions, peas, green pepper, spinach, zucchini ·
- **Blue-Purple:** Purple kale, purple cabbage, purple potatoes, eggplant, purple grapes, blueberries, blackberries, boysenberries, marionberries, raisins, figs, plums

3. **Eat with others.** Eating is a communal event, a social occasion. The act of sharing food with others can be enriching for everyone involved and may help you with focusing on the people than on the amount of food eaten.

4. **Sample a variety of flavors.** When we don’t eat all of the variety of flavors at a meal—salty, sweet, bitter, pungent, and savory—we may come away from the meal feeling like we are “missing something,” and ultimately, food cravings can result. By getting small amounts of all the flavors of food, a practice common in other cultures such as in Asia, we may feel more fulfilled and desire less food after a meal.

5. **Chew thoroughly.** The process of digestion begins in the mouth where enzymes are secreted in saliva to break down food. If we do not properly chew and make our food morsels smaller, we may be subject to indigestion and other digestive problems. The act of eating allows us to be mindful, and in the moment, of our exchange of energy with foods.