



**PRACTITIONER-TO-PATIENT
FASTING GUIDE:**
*Principles and Modalities**

prolon® PROFESSIONAL

*The information provided in this Practitioner-to-Patient Fasting Guide is meant to facilitate a discussion between the patient and healthcare practitioner, and is not intended to provide medical advice, or to be used to self-treat. It also does not ensure any specific outcome from any type of fasting program.

WHAT IS FASTING?

Fasting is an adaptive response to food deprivation.

Although we may think of fasting as a detrimental response to a lack of food intake (think starvation), it's actually a supportive response that helps us to remain alive when there is sparse to no food available. There were times during the hunter/gatherer periods where we did not eat food - maybe there weren't edible plants around us or there was no wildlife to catch. During these periods, we needed a way to survive and optimize our chances of finding food. This evolutionary pressure forced the body to develop a response that conserves energy and triggers stress-resistant cellular pathways that clean up worn-out intracellular debris, and a whole host of other benefits.

Fasting is a challenge, and the body engages stress responses to ensure survival.

When in a fasting state, the body will shift from using external fuel from the foods we eat to burning internal fuel from fat, glycogen and other stored energy. Fasting allows us to use this glycogen and tap into our energetically dense fat reserves to keep us alive until we can find food. This switch from external to internal fuel reserves has many other benefits beyond simply survival that research is beginning to uncover, and different types of fasting can activate these benefits to varying degrees. These benefits include things like weight loss, fat reduction, and metabolic effects which we will discuss below.

Types of Fasting Diets

It's no surprise that the term "fasting" has topped the charts among Google's most searched topics this past year. As word continues to spread about its ability to help individuals achieve a variety of health benefits, more people are getting on board and riding the fasting wave toward a healthier way of life.

The most common benefits associated with the practice of fasting include, weight loss and fat reduction, and the ability to maintain healthy levels of metabolic markers such as blood glucose, inflammatory markers, blood pressure, and cholesterol.

And while there is an overwhelming consensus of fasting's effectiveness to achieve these health benefits, there are different types of fasts from which to choose. Finding the right one for you depends on your specific goals, lifestyle, level of health, body chemistry and any special physical needs.

When it comes to fasting diets/programs, there is no "one-size-fits-all" approach. Currently, there are numerous types that are being used by countless people throughout the world to achieve their unique health and wellness goals.

Here's a closer look at some of the more popular types of fasts, along with some of their known benefits.

Intermittent Fasting (IF)

Intermittent fasting (IF) is a habit, practiced by various cultures, that has become an increasingly popular research topic for weight loss, longevity, and overall health - and rightly so. IF is not a "diet", as there is not a requirement to reduce the quantity of food consumed and it does not dictate which foods to eat. There are as many ways to practice IF as there are reasons to do it. Almost anyone can benefit from a form of intermittent fasting regardless of age, weight, or gender.

Human health thrives with strategic cycles of eating and fasting.

While there are a variety of fasting methods within the IF category, they all share the same primary focus. Instead of calling for specific foods to consume or avoid, intermittent fasting offers an approach that alternates between intervals of eating and fasting. During an intermittent fast, a person will fast for a period of time during the day or week and then return to their normal (preferably healthy) diet for the non-fasting portion of the day or week.

What It Is

Intermittent fasting is a strategy that combines periods of eating with periods of fasting into a regular schedule. These eating or fasting "windows", as they're called, help your body to burn fat for fuel while initiating the intracellular (meaning within the cell) clean-up and recycling process known as autophagy. Water, coffee, tea, and other non-caloric beverages are typically allowed (and recommended) during these fasts.

Since most people aren't capable of eating during sleep, everybody practices intermittent fasting to some extent. The shortest window of IF begins with a 12-hour fasting window and can be as long as 20 hours or more. Any fasting of less than 2 days is considered intermittent fasting. *(You'll find out more about each type in just a bit!)*

Though intermittent fasting is recommended for weight loss and positive changes to your body, it is not a diet – no macronutrients (carbs, proteins, fats) are counted, no foods are 'legal' or 'illegal', and the IF lifestyle is intended to be long term.

Benefits

With new intermittent fasting benefits being discovered regularly, it's surprising that we were ever recommended to eat 3-5 meals a day. Some of the early findings suggested in research and by ordinary people who practice IF include:

- Fat loss
- Less bloating
- Better digestion
- Less hunger
- Less inflammation
- Reduction in type-2 diabetes symptoms
- Clearer complexion and improved skin
- A better relationship with food
- Mental clarity

Risks

Though intermittent fasting does have risks, they're mostly limited to people who are unwell, undernourished, or who have eating disorders. (Remember, we all practice some level of intermittent fasting every time we sleep or go without food!). Always be sure to double check with your healthcare provider for specific and personal advice prior to starting any new lifestyle modification! In general, though, you need to consider the following:

- Pregnant women aren't advised to practice intermittent fasting because of potential pregnancy complications.
- Headaches are a very slight but common issue at first.
- Electrolyte imbalances can happen if you go too long without enough minerals – which could lead to dizziness, heart palpitations, and feeling weak. *(Physicians and dietitians recommend taking a multi-mineral tablet and/or adding salt to water during*

longer fasts, which may not be needed for IF since they are short!)

- Hunger is an imminent risk in fasting. But don't worry – it doesn't last! Studies report less overall hunger when participants adhere to an IF practice.

Types of Intermittent Fasts

Time-Restricted Eating (TRE):

The most popular form of intermittent fasting now being practiced is time-restricted eating which emphasizes the timing of your meals. During this type of fast, eating is limited to a certain number of hours each day. Rather than focus on calories and foods, TRE puts limits on the amount of time spent eating. Someone following a TRE program will only eat during a specific window of time each day. By shortening the number of hours you eat during each 24-hour cycle, you're likely to consume less food and thus take in fewer calories while giving your body extra time to focus on functions turned off during times of digestion. Because TRE focuses on when you eat as opposed to what you eat, it can be paired with other food-specific diets for enhanced results.

Types of Time-Restricted Eating:

• 12:12 Diet:

Also frequently referred to as Circadian 12:12, for this fasting approach, individuals have a 12-hour window in which to eat their meals each day. Of the two types of TRE schedules mentioned here, we suggest the 12:12 version, which follows a Circadian rhythm and is both safer and easier to perform. This method is advocated by fasting researchers such as Prof. Valter Longo and Satchin Panda.

The 12:12 Diet is also a common practice of many centenarians (individuals living up to 100). Circadian Rhythm or Day and Night rhythm is an imprinted clock in our organs and systems and respecting it by not eating during the night mirrors this internal clock. The discovery of the Circadian clock in our organs and systems is so important that the scientists who described it were awarded the Nobel Prize in Medicine in 2017. Circadian TRE balances periods of food intake with periods of no food intake so that the body spends the calories it ingests rather than being in frequent periods of calorie intake and storage in the form of

fat, which could result in weight gain. For example, you might observe this version of fasting by not eating between from 8pm to 8am, which could help you maintain a healthy body weight.

• 16:8 Diet:

Another popular TRE schedule, the 16:8 fast means that you fast for 16 hours and you restrict your eating period to 8 hours. Most observers of this type of fasting do it by skipping breakfast.

This method of fasting became prevalent as a means to push the body further to lose weight. The challenge is that for 16 hours, there is no new nourishment for the brain and other organs and the body needs to rely on its own reserves to feed them. At this point in time, and awaiting further conclusive data, this type of fasting might be more suitable for better management of weight where the benefits of losing weight quickly could be more important than the potential challenges of an extra 4 hours (12-16hour) of no food ingestion, which may include risks to cardiovascular and gall bladder health.

• OMAD (One meal a day):

OMAD means you're eating only one meal for the whole day. Also known as 'The Warrior Diet', OMAD is practiced as a long-term habit and typically requires a work-up period of 16:8s, 20:4s, and 24-hour fasts.

Other Intermittent Fasts (IFs)

• The 5:2 Diet:

The 5:2 Diet is a type of intermittent fast that focuses on fasting during specific days of the week. For this approach, individuals will eliminate or severely restrict their calories for two (non-consecutive) days of the week and then resume their normal diet for the other five days.

• Alternate Day Fast (ADF):

Alternate Day Fasting is another way to do intermittent fasting. The basic premise here is to fast on one day and eat what you want the next day, repeating the cycle throughout the week. Some modified ADF approaches allow you to consume up to 500 calories (for women) or 600 calories (for men) on your fasting days.

While all these types of intermittent fasts have been

shown to be effective for weight loss and fat burning, insulin resistance reduction, and the reduction of inflammation among certain populations, they fall short when it comes to the health and longevity benefits achieved through cellular cleansing and renewal that are derived from longer fasts (extending for three to seven consecutive days).

Prolonged Fasting (PF):

A prolonged fasting diet is basically fasting for an extended period; usually anywhere from three to seven consecutive days. Due to its extended duration, PF goes well beyond just weight loss and fat reduction to promote biological fasting and a process known as autophagy (the clean-up of aging, damaged, and worn out intracellular components). These cellular cleansing and renewing effects can only be attained through a prolonged fast, which is why many are willing to subject themselves to the challenges that can come with this fasting method.

Benefits of Prolonged Fasting

As mentioned above, the benefits of prolonged fasting include those of Intermittent Fasting, but also extend to biological processes that may promote cellular rejuvenation. These benefits include:

- Increased fat loss
- Initiation of autophagy (intracellular clean-up and recycling)
- A better relationship with food
- Mental clarity
- Improved energy levels
- Fewer cravings

Multiple cycles of the 5-day Fasting Mimicking Diet have demonstrated:

- Support for healthy aging, including maintaining healthy levels of IGF-1
- Maintenance of lean body mass
- Maintenance of healthy systolic blood pressure
- Support for cardiovascular health as part of a healthy lifestyle

Risks

Prolonged fasting shares many of the same risks as intermittent fasting, but these are generally mild and tolerated for most people. Typical complaints include fatigue, headache, dizziness, and difficulty concentrating during the fasting period.

However, there are several types of individuals who should not fast. As always, be sure to double-check with your healthcare provider to ensure that a prolonged fast is both safe and advisable for you. People who should not fast include:

- Those with a diagnosis of or are on a prescription for diabetes (type 1 or type 2), cancer, or congestive heart failure, or who have a history of fainting (syncope), unless they have the approval and are under the supervision of a healthcare provider
- Anyone who has a fever, cough, diarrhea, signs of an active infection, or are at risk for a repetitive infection
- Anyone who is underweight, pregnant, or breastfeeding
- Anyone under 18 years of age or over the age of 70, unless they have approval and are under the supervision of a healthcare provider
- Anyone with significant dietary restrictions

Types of Prolonged Fasts

• Water-Only Fast:

The only thing consumed for the duration of this fast is water. While research suggests that it is an effective approach for some people to lose weight and help lower elevated blood pressure, this type of prolonged fast is difficult for most to complete. The drawbacks can be significant, and in some cases can even pose serious health risks. Intense hunger, stress from lack of food, hypotension and dehydration, dizziness, and loss of lean body mass are some of the potential negative effects a prolonged, water-only fast can elicit.

Water-only fasting beyond a few days should only be conducted under the recommendation and direct supervision of a healthcare professional. Fasting clinics that adopt prolonged (more than 10 days) water fasting under doctors' supervision have reported health benefits in many patients. However, data on long term safety of these longer fasting periods is still lacking.

• The Fasting Mimicking Diet* (FMD*):

For those seeking to get many of the biological effects of a prolonged fast, but are unwilling or hesitant to forgo all food for an extended period of time, the clinically-tested, FMD offers an alternative. Fasting Mimicking Diet allows someone to fast while still consuming food - it has been carefully designed with specific micro- and macronutrients that can deliver

nutrition without activating the body's food-recognizing sensors, also known as Nutrient-Sensing Pathways (NSPs). By keeping these sensors below a certain threshold, FMD is able to keep the cells in a stress-resistant fasting state, triggering intracellular clean-up and rejuvenation. In other words, FMD allows someone to eat during a fast but the cells don't recognize it, and stay in a fasting state. Over 20 years of research went into the development of FMD, along with more than \$36 million in research grants from institutions such as the National Institutes of Health, The National Institute on Aging, The National Cancer Institute, Pink Ribbon, and the European Union.

Safer and easier to complete than the water-only fast, the FMD allows for the consumption of specific foods and drinks in a kit containing five days of meals. Since you are nourishing your body while it is operating in fasting mode, it has been clinically tested that multiple cycles of the 5-day, once-a-month FMD enable you to maintain lean body mass, which could normally be lost during a prolonged water-only fast. Visceral fat reduction is also an advantage clinically tested for multiple cycles of FMD. Additional benefits include a quick start to weight loss, improved ability to manage food cravings and establish healthier eating habits, and enhanced cellular rejuvenation from within.

Many clinical trials are taking place in humans to determine the safety and efficacy of FMD in various health states. However, FMD currently is not indicated to diagnose, prevent, treat, or cure a disease condition, and has not been evaluated by the FDA.

Who Should Fast

When performed correctly, fasting can offer a host of health benefits. Those looking to lose weight, reduce fat, increase energy, sharpen focus, establish healthier eating habits, maintain healthy metabolic markers, and/or support healthy aging should consider a fasting program that will enable them to achieve their specific goals.

Before getting started with any type of fasting regimen, you should consult with your healthcare provider, and take extra precautions if you have any existing health conditions. It is also recommended that during a fast, you listen closely to your body and know that you have the option to end a fast if you have any health concerns.

TYPES OF FASTING QUICK REFERENCE:

Time-Restricted Eating (TRE):

- Form of intermittent fasting that focuses on a window of time each day when meals can be consumed
- Common types of TRE: the 12:12 Diet and the 16:8 Diet
- Advantages: Short duration makes it easy to complete. Can continue eating same types and amounts of food.
- Beneficial health effects may include: Lose weight, reduce cholesterol, control blood glucose levels

Intermittent Fasting (IF):

- There are a variety of ways to perform intermittent fasting (IF). All call for splitting the day or week into fasting and eating intervals.
- Types of intermittent fasts (other than TRE): The 5:2 Diet, and the Alternate Day Fast
- Advantages: Don't have to alter diet quality or quantity. Various types to choose from depending on your goals and lifestyle.
- Beneficial health effects may include: Weight and body fat loss, blood sugar management, lower cholesterol and blood pressure

Prolonged Fasting (PF):

- Focuses on extending the fasting period beyond two days to promote cellular cleansing and renewal.
- Type of PF: The Fasting Mimicking Diet (FMD) - 5 consecutive days
- Advantages: Safer and easier to complete than water-only fast. Allows for food to minimize cravings and hunger pangs. Meals come portioned and pre-packaged for added convenience.
- Beneficial health effects may include: Weight loss from fat while maintaining lean body mass*, reduce waist circumference, promote healthier eating habits, and enhance intracellular cleanup and rejuvenation only achieved through a prolonged fast such as the FMD.

*Requires multiple consecutive cycles of FMD



