

THE ULTIMATE HEALTHY FASTING GUIDE

Think fasting isn't for you?
Prepare to change how you
look at food, hunger and
health with this in-depth,
ultimate guide to healthy
fasting.

By Dr. John Limansky, MD
Chief Medical Officer,
Heads Up

**The most natural,
powerful way to
lose weight, heal
your body, and
feel fantastic—
FAST.**

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Hello,

I'm John Limansky MD, a board-certified physician of internal medicine and Chief Medical Officer at Heads Up. As both a hospital and private clinician, I see an average of 30 patients per day.

I quickly realized something rather striking when I began my practice; the majority of patients come to me with conditions that are entirely preventable with good lifestyle habits. Inadequate nutrition, for example, is a major contributing factor of diseases like diabetes, obesity, and heart disease.

When counseling my patients on nutrition, I often recommend fasting as a way to lose weight and reverse the insulin resistance that precedes diabetes. Almost without fail, they look at me aghast! "You want me to starve myself?!"

This is a common and persistent misconception about fasting. Restricting your food intake is so foreign a concept to us today that we actually equate it with starvation, or with serious eating disorders like anorexia nervosa.

As you'll discover, starvation and fasting are very different. Starvation deprives you of nutrition and breaks down your body. Fasting, on the other hand, is a perfectly natural, controlled state that is not just beneficial, but essential for good health.

We were all raised on the idea that hunger should be avoided at all costs, so I'm aware that this might seem like a bold statement to make! I understand, but the truth about fasting will completely change the way you look at eating and hunger.

I turned my own health around with fasting, and I've helped hundreds of patients to do the same. In this guide, I'm going to help you too. I'll break down the science of fasting, talk you through the countless health benefits, and show you exactly how to fast safely and effectively for maximum results.

I hope that you find this guide helpful and as always, I encourage you to get in touch if you'd like to discuss fasting in more detail.

Best of luck on your journey,

Dr. Limansky, MD

Chief Medical Officer, Heads Up

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WHAT IS FASTING?

Fasting is the practice of restricting your food intake for set periods of time.

Fasting is often confused with starvation, but there's a key difference. Starvation is the complete, extended absence of energy intake and nutrition, and of course it has serious health implications.

Fasting, on the other hand, involves redistributing your energy intake so that you have longer periods of 'rest' from eating than you normally would. Unlike starvation, you're still maintaining adequate nutrition during your eating periods.

The practice of fasting goes back thousands and thousands of years. Many religions, ancient and modern, have used fasting as a means of purification, penance, or spiritual enlightenment. The ancient Greeks believed it offered physical cleansing and renewal, while some primitive cultures swore by pre-war fasts to strengthen the body and the mind.

Today, fasting isn't looked upon quite so favorably, and yet its incredible health benefits have never been clearer. Contrary to misconceptions, fasting is now proven to be a powerful tool for reversing the damage of poor nutrition (think obesity and insulin resistance) and preventing lifestyle diseases like diabetes and heart disease.

To understand the power of fasting, let's first take a look at how it works...

HOW FASTING WORKS



Many people find the idea of fasting rather intimidating, but what they don't realize is that we actually fast every single day to some degree. When you're asleep, you're fasting,

hence the name

'breakfast', or 'break fast'. In between meals, you're fasting. In fact, whenever you're not eating, you're fasting. Here's how it works...

At any given time, your body exists in one of two natural states — fed or fasting. The purpose of the fed state is to store energy, while the purpose of the fasting state is to burn energy.

The Fed State

When you eat, the energy from your food is broken down into glucose. When your pancreas detects elevated levels of glucose in the blood, it releases insulin.

Insulin helps your body's cells take in and use glucose for energy. You typically take in more energy than you need, so when the cells have enough, insulin signals to the liver to store the excess glucose as glycogen for future use.

There's only so much space in the liver, so any further excess glucose is turned to fat and deposited around the body.

The Fasting State

When you're not eating, that process is reversed. As your blood glucose levels fall, your pancreas stops receiving the signal to produce insulin.

To power your body, you now need to turn to your energy stores. The easiest to access is glycogen, which is released



by your liver and broken down into glucose.

You have enough glycogen to last you 24-36 hours. When this runs out, your body turns to its fat stores. This is how you lose weight; your body literally burns away the fat.

Achieving Balance

You are biologically designed to achieve balance between these two states. If you're constantly in a fed state, then you'll always have an excess of blood

glucose and full glycogen stores, leading to increased fat storage. If you're always in a fasting state, then you'll run out of both fat and glycogen stores.

That's where the confusion between fasting and starvation comes from. Starvation is what happens when your food intake is restricted for such an

extended period that you run out of all energy stores and your body starts breaking down tissue like muscle to survive.

Fasting, on the other hand, is a temporary state that lets you burn through those energy stores, leaving room for more when you return to the fed state. It's a perfectly natural and healthy cycle of energy intake, usage, and replenishment, as opposed to the dangerous one-way process of starvation.

The Western Influence

Now you know that not only can your body cope with fasting, but your body actually needs to fast in order to stay healthy. Unfortunately, modern Western life has completely derailed this natural process.

In prehistoric times, food was scarce and hard to obtain, meaning we wouldn't be able to eat for days at a time. We evolved to store energy as a way to get us through these times of famine. It didn't matter that we had an excess of energy when we did eat because it would all be burned off during the fasting period.

Today, we have access to a constant supply of food. Our streets are packed with stores, restaurants, markets, and fast food joints, catering to our every craving 24 hours a day. We never, ever experience hunger, and nor are we encouraged to.

Being hungry is considered unnatural, unhealthy, and unacceptable. Some of the most popular diets out there are built entirely around ensuring we never feel so much as a rumble in our stomachs. We're encouraged to punctuate our three daily meals with snacks or break them down into many smaller meals and spread them throughout the day in order to 'keep us going'.

What does this mean for your health?

THE CONSEQUENCES OF NEVER BEING HUNGRY

Thanks to the constant availability of food, we have lost the ability to tolerate hunger.



We live almost permanently in the fed state, never experiencing the extended fasting state necessary for good health. This leads to...

Weight Gain & Obesity

When we eat, we take in much more energy than we need at that moment. Ideally, this excess energy would replenish the glycogen stores in the liver after a period of

fasting, which would then sustain you for the next fasting period.

However, if you keep your energy topped up by eating meals and snacks all day, as most people do, those glycogen stores will never be depleted. That excess energy has to go somewhere, so if your glycogen stores are full, it'll be stored as fat.

That's why, if you never fast, even occasional overeating can lead to weight gain. If you eat an energy-dense diet full of carbs, this can quickly lead to obesity. And if your glycogen stores are never depleted, your body will never need to burn fat for energy, so losing the weight you've gained will be incredibly difficult.

Insulin Resistance & Diabetes

If you're constantly in the fed state, your blood glucose — and consequently your insulin levels — will remain elevated. Insulin helps the body's cells to take in and use glucose for energy, but constant exposure can make them less sensitive to insulin's

signals. This is known as insulin resistance.

Because the cells aren't being supplied with energy, the pancreas assumes that more insulin is needed. As it releases more and more, it creates a vicious cycle that further increases insulin resistance. Eventually the pancreas becomes exhausted by the demand. The organ's beta cells cease to produce insulin, and type 2 diabetes is the result.

Cellular Destruction

Glycation is a process whereby glucose molecules attach to proteins in the body, causing them to lose their natural flexibility and become stiff and misshapen. The resulting compounds are known as advanced glycation end products, or AGEs.

Glycation is natural and unavoidable, but it's a process you want to keep to a minimum. AGEs cause the skin to wrinkle and sag with age, and they're responsible for health conditions like cataracts, hardening of the arteries,



joint stiffness, kidney disease, and even Alzheimer's.

If your blood glucose is consistently high, this can lead to increased glycation and an excess of harmful AGEs. This means you'll age much faster, and your risk of serious health complications will increase. Since glycation is irreversible, prevention is key.

Stress

Cortisol, also known as the stress hormone, is part of the body's natural fight-or-flight response. When we're under threat, cortisol blocks insulin and allows glucose to be diverted

to the muscles for quick action. It also causes us to crave energy-rich foods high in fat and carbs.

Unfortunately, the brain doesn't distinguish between a genuine threat or a stressful situation. Since most of us are exposed to regular stress, this means our glucose levels are consistently high, our insulin function is impaired, and we're constantly craving high-energy foods. This can eventually lead to insulin resistance, diabetes, weight gain, and obesity.

Research has found that the cortisol response is dependent on the presence of glucose in the body. Participants in several studies experienced an





increased cortisol response to a stressful situation after being given glucose.

That means that if you're constantly in the fed state, with consistently elevated glucose levels, you're much more likely to experience the negative health effects of stress.

THE POWER OF FASTING

The health benefits of fasting are hugely underestimated, and you don't even have to

fast for long to experience them.

We'll discuss both short-term and long-term fasting in detail later on, but first we'll explore some of the many, many benefits fasting offers.

Weight Management

Fasting is a powerful tool for both weight maintenance and weight loss. It helps you to maintain a healthy weight by giving your body a chance to burn the energy from your food, rather than storing it as glycogen or fat.

Longer-term fasting encourages weight loss by helping your body to burn through those glycogen stores and move on to burning your fat stores. In either case, when you return to 'regular'

eating patterns, you'll replenish your glycogen stores rather than your fat stores.

Insulin Sensitivity

Fasting gives your cells a much-needed break from insulin so that they

can 'rediscover' their sensitivity, overcome insulin resistance, and use glucose effectively. This alleviates blood sugar crashes and sugar cravings, relieves the strain on your pancreas, and significantly reduces your

risk of developing type 2 diabetes. Of course, this also has a positive impact on your weight.

Metabolic Increase

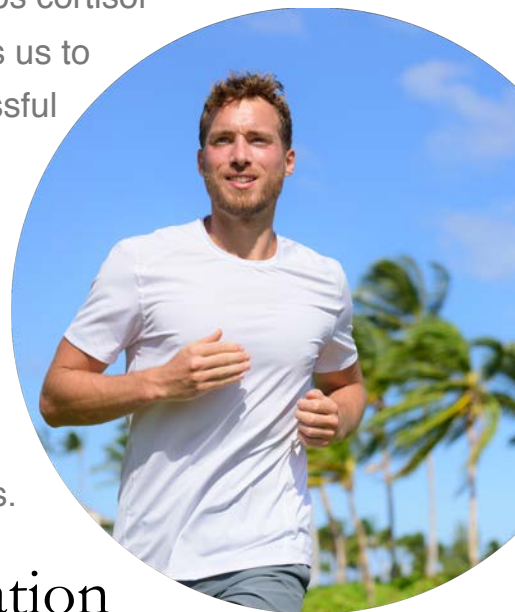
We've long been told that going without food will bring your metabolism — and your weight loss efforts — grinding to a halt. This has now been proven to be incorrect, with fasting actually increasing your metabolism by up to **18%**.



This is thanks to a stress hormone called norepinephrine, levels of which increase during fasting. One of norepinephrine's jobs is to release fatty acids from the fat cells. An increase in this hormone makes it much easier and quicker for your body to use up its fat stores, which translates to improved metabolism and enhanced weight loss.

Stress Management

Remember the research that suggested that your cortisol response depends on having glucose in the blood? In those same studies, participants who fasted and drank water had a much lower cortisol response than their peers who drank glucose solution. This indicates that fasting keeps cortisol levels low, helps us to respond to stressful situations in a much healthier manner, and protects us from the harmful effects of chronic stress.



Inflammation

Inflammation is a normal immune response to pain, injury, or disease.

As part of this response, your immune system releases inflammatory chemicals such as cytokines and C-reactive proteins. When the healing process is over, these chemicals are naturally cleared up.

In some people, the immune response malfunctions and ends up permanently 'switched on'. This might be in reaction to a condition like chronic pain, or a behavior like sleep deprivation. In any case, the hyperactivity leads to a constant flood of these immune chemicals.

We're not designed to cope with this sustained exposure to inflammatory chemicals.

Eventually, they lead to conditions like heart disease, stroke, cancer, diabetes, and autoimmune disorders.

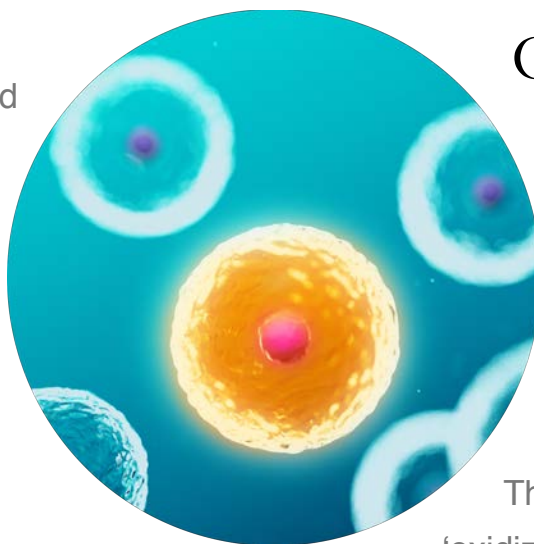
Fasting helps by inhibiting the immune response and blocking the release of inflammatory chemicals.

Immune Regeneration

When you fast, your body saves energy by recycling old or damaged white

blood cells. This drop in white blood cells flips a 'regenerative switch' in the body, which stimulates the production of new stem cells. These stem cells then go on to develop into new, healthy immune cells.

What this means is that by fasting, you're not only encouraging your body to clean up inefficient cells, but you're regenerating a brand new immune system. This increases your ability to fight illness and can even help to protect you against diseases like cancer.



Oxidative Stress Reduction

When your cells produce energy, they also create by-products called free radicals, or reactive oxygen species.

These unstable molecules 'oxidize' your cells, but they can be neutralized by antioxidants.

If you're not producing or eating enough antioxidants to neutralize the free radicals, the imbalance causes oxidative stress. This can affect the structure and genetic material of the cells, causing a chain reaction of

damage and destruction throughout your body.

Fasting fights this by encouraging your body to copy genes that limit the production of free radicals, while boosting your natural ability to produce antioxidants. This can protect you from premature aging, inflammation, and chronic disease.

Cellular Health

Fasting keeps blood glucose levels low, which means there are fewer glucose molecules available to bond with proteins. This means fewer advanced glycation end products (AGEs), the compounds that wreak havoc in the body and cause premature ageing, vascular disorders, joint pain, and Alzheimer's.



Heart Health

The four major risk factors of heart disease are high blood pressure, high LDL cholesterol, excess weight, and diabetes. Fasting is shown to reduce blood

pressure and harmful LDL cholesterol, and it also helps to maintain a healthy weight and reduce the risk of diabetes.

By reducing inflammation and glycation, as discussed earlier, fasting also reduces your risk of heart disease by protecting your vascular system from damage.

Brain Health

If reduced inflammation, oxidative stress, and blood sugar are good for the body, you can bet they're great for the brain! As you know, you can achieve these benefits with fasting, but that's not all.



Fasting stimulates the growth of new neurons and increases production of a hormone called brain- derived neurotrophic factor (BDNF). Altogether, this helps to protect against depression, improve brain function and memory, slow cognitive decline, and reduce the risk of neurological disorders like Alzheimer's.

Cancer Protection

Cancer is characterized by the rapid and uncontrollable growth of cells. Although further studies are needed to confirm this, fasting is believed to help prevent cancer by depriving cancerous cells of the essential hormones they need to grow. Insulin Growth Factor, or IGF-1, is one such hormone, which goes into decline as soon as you stop eating.

All cells, even cancer cells, are fueled by sugar. As you know, fasting helps to keep blood sugar low and stable. This suggests that fasting can help prevent tumor growth by starving the cancerous cells of fuel.

Intermittent Fasting

The idea of fasting for days or weeks at a time can be intimidating for many people. If you're one of them, I have good news! Research shows you don't have to fast for very long to start experiencing the incredible benefits.

Cycling between periods of 'regular' eating and short fasts is known as intermittent fasting. The fasting periods can last anywhere from 12 to 36 hours, with the regular eating periods typically

lasting longer. This feels more manageable and achievable, which means that you're much more likely to stick it out and enjoy the results.

People report that, while they expect to eat more in their 'normal' eating periods to make up for their temporary abstinence, the opposite actually happens. Their cravings decrease, they become much more mindful about eating, and they find that the urge to overcompensate with extra food simply isn't there. They also find intermittent fasting to be a helpful stepping stone to longer fasts.

There are many ways to structure an intermittent fast; you might choose to fast for an extended portion of each day, only on specific days of the week, or even on alternate days. As long as you're giving your body an extended break from food, you'll see the benefits.

Let's explore some of the more popular intermittent fasting techniques...

The 5:2 Diet

The 5:2 Diet is an intermittent fasting



pattern that involves eating ‘normally’ for five days of the week, and then fasting for two days. Those two days

can be consecutive, or they can be spaced out throughout the week.

On your two fasting days, you stick to 25% of your normal calorie consumption (500-600 calories).

I recommend breaking this calorie allowance down into two small meals, eaten within a six-hour window.

On your fasting day, you can eat anything you like within your calorie allowance.

However, choosing protein- and fiber-rich whole foods and drinking lots of water will help to keep hunger at bay, making it much easier to get through the day.

In theory, you can also eat whatever you like — and however much you like — on your ‘normal’ days. Again, though, I’d advise that you eat whole foods and avoid overeating, as this will limit the benefits you’ll gain from your fasting days.

The 5:2 ratio is a guide that many people find manageable, but you can switch this up to suit your own needs. If you feel that you could fast for three days, then go ahead! If you’ve reached your weight loss goals and you want to maintain your weight, or if you simply feel like two days is too much, you can just fast for one day. As long as you’re fully committed to your fasting days, you’ll still enjoy the benefits.



24 HR Fasting

Some people choose to do regular full 24-hour fasts.

This is similar to the 5:2 diet, except that you don’t have a calorie allowance

on your fasting days. You

can drink water, tea, or coffee, but you can’t consume any food.

Like the 5:2 diet, you can do a 24-hour fast as often as you feel you’re able.

You can refrain from eating during a full calendar day, or you can eat lunch, for example, and then eat nothing until lunch the next day. However you choose to do it, this 24-hour window is great for accelerating weight loss and resetting your insulin levels.

Alternate Day Fasting

As the name suggests, alternate day fasting involves fasting every other day.

You can refrain from food altogether on your fasting days and consume only liquids like water, tea and coffee, or you can do a modified fast with restricted calories, as in the 5:2 diet.

On your regular eating days, you can eat whatever you like, although my advice about making healthy choices still stands!

Alternate day fasting is great for weight loss, especially harmful

belly fat. You give your body ample time to burn through its energy stores and start using up your fat stores, without triggering the natural ‘alarm system’ that encourages your body to conserve energy and hoard fat.

This fasting method also gives your body regular, extended breaks from insulin, which helps to reverse insulin resistance and re-establish sensitivity in your cells. As well as reducing your risk of type 2 diabetes, this helps your cells to use energy more efficiently. That’s

why, contrary to expectations, many people find that fasting makes them *less* hungry and gives them *more* energy.

The 16:8 Method

Intermittent fasting can be as easy as simply skipping breakfast. We’ve been

conditioned by the food industry

to believe that breakfast is the most important meal of the day, and that to miss it is to play fast and loose with our health.

Not true! Breakfast is no more important than any other meal, and skipping it is absolutely fine for most people.



So let’s say you go to sleep at 10pm and wake up at 6am. That’s eight hours of fasting in the bag already. If you have dinner at 8pm and then don’t eat again until lunchtime the next day, you’ve just extended your fast to 16 hours, while minimizing the time you might spend hungry or thinking about food.

It can be difficult to get out of the habit of eating breakfast, but after the initial hurdle most people find this the most natural and simple way to fast. And if you really struggle, you can fill up on

coffee or tea to get you through those first few hours.

During your eight-hour eating window, you can eat whatever you like. However — and you may be noticing a pattern by now! — I recommend a diet of whole foods high in protein and fiber.

Long-term Fasting

Long-term fasting describes any fast that lasts longer than three days and is not broken up by a period of eating.

While long-term fasts tend to be more difficult than intermittent fasting, the benefits increase significantly the longer you abstain from food.

For example, after around 36 hours, your body has burned through its energy stores entirely. You're relying exclusively on your fat stores to survive, supercharging your weight loss and burning through up to **half a pound of real body fat per day**.

And remember how your immune system starts to regenerate when you fast? This process really picks up speed around the 72-hour mark, after which

you effectively create an entirely new immune system!

In other words, every benefit of intermittent fasting is enhanced by longer-term fasts. However, while they're perfectly safe for most people, they can be intense and physically demanding.

For best results, I recommend a program of regular intermittent fasting, interspersed with longer-term fasts once every few months. If you find the idea overwhelming, you can always start with intermittent fasts and build up your tolerance.

Let's explore some of the most popular long-term fasting methods...

Water Fasting

Water fasting is the simplest and perhaps most effective long-term fast, involving completely abstaining from food and drinking nothing but water for three to five days.

It's a good idea to prepare your body for such a fast by reducing your food intake in the days leading up to your fast, and then gradually re-introducing food in the days after. You should also supplement



your water fast with electrolytes to ensure healthy muscle and organ function. We'll talk about this in more detail on page 18.

Bone Broth Fasting

Bone broth is a liquid in which animal bones, and sometimes vegetables, have been simmered. While it's

traditionally been used as a base for other dishes, we're increasingly seeing the benefits of drinking this nutritious, delicious broth by itself.

Bone broth is rich in collagen, amino acids, and trace minerals

essential for good health. It's said to boost the immune system, promote gut health, relieve the symptoms of irritable bowel syndrome, and promote healthier joints and skin, among many other benefits.

A bone broth fast involves drinking only bone broth and water for a minimum of three to five days, and you can typically have as much as you like during your fast. Many people find it a much more

satisfying and manageable alternative to a plain water fast, and the broth is cheap and easy to make in large quantities ahead of time.

Exogenous Ketone Fasting

When your body has finished burning through its glycogen stores and starts to burn fat, it produces an acid by-product called ketones. When you reach this stage, you're in a state known as ketosis, and your body can use ketones for energy.

Exogenous ketones are ketones taken in supplement form, rather than those produced by the body. When you're just beginning a longer fast, these supplements can boost the levels of ketones in your body until you can produce enough of your own, easing the negative side effects like hunger, headaches, and lethargy.

On a ketone fast, you should consume nothing but ketones, water, and electrolytes. Take your ketone supplements three times a day for the first two days, and then twice a day for the next two days. At this point, you should be producing enough ketones by





yourself, so you can stop taking supplements on day five.

TIPS FOR FASTING SAFELY

As wonderful as fasting is, it should be done with care.

The following guidelines will help you to fast safely and effectively, but as with any health endeavor, you should always seek medical advice before you begin.

Who Shouldn't Fast?

If you have a pre-existing illness, or you're taking medication, you should consult with your physician before, during, and after your fast. You should avoid fasting altogether if you fall into any of the following groups:

- Pregnant or breastfeeding moms.
- Children and young teenagers.
- People with active infections or diseases.
- People with a history of eating disorders.

Before Your Fast

Depending on your current eating habits, energy needs, or health status, it might not be feasible to simply stop

eating abruptly. You might find yourself experiencing symptoms like blood sugar crashes, or you may simply find the hunger too intense. In this case, and especially for longer fasts, ease yourself into fasting by reducing your food intake in the days beforehand, or trying shorter fasts first.

During Your Fast

Electrolytes are essential for healthy muscle and organ function, and they're particularly important for the heart. Fasting can throw your electrolytes out of balance, so I strongly recommend taking an electrolyte supplement before, during, and after, regardless of how long you plan to fast for.

It's normal to feel a little weak, nauseous, or dizzy as you get used to a lower energy intake.

While it's technically ok to exercise on a fast, you risk causing yourself an injury if you're feeling unstable. In this case, it's best to rest, avoid strenuous activity,

and of course, don't drive or operate heavy machinery.

A little discomfort is common at first, but if you're in doubt about your ability to continue, break your fast with a small, gentle meal and build up gradually from there. If you experience fainting, vomiting, a racing heartbeat, lasting stomach pain, or any other alarming symptoms, seek medical advice immediately.

Tracking Your Fast

Like most healthy diet plans, it's helpful to find a tool that allows you to easily track your fast, no matter which fasting style you choose. Although there are many fasting apps on the market today, find one that integrates into your other health apps and/or devices, and that captures, logs and displays additional health

information so you know exactly how the fast is affecting other key aspects of your health, including weight loss, body fat, sleep and more.



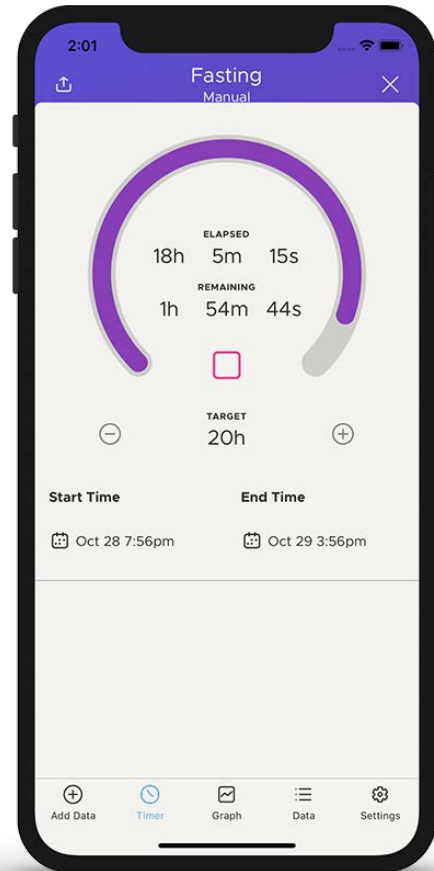
The Heads Up app lets you track your fasting sessions and monitor your vital signs.

After Your Fast

If you fast for longer periods of time (three days or more), it's important to reintroduce food carefully. If the return to regular eating isn't handled correctly, you can experience a condition called re-feeding syndrome, a life-threatening imbalance of electrolytes, insulin, and/or fluids.

After your fast, start with broths, soups, and other light foods like fruit and soft cooked vegetables. Don't be tempted to jump right back in and feast on foods like meat, fish, or dairy, as these can be a little too heavy for your post-fast body. You might also want to hold off on alcohol and caffeine for a few days, too.

Ready to lose weight and heal your body with the power of fasting?



Dr. Limansky is the Chief Medical Officer for Heads Up. He recommends the Heads Up app so you can carefully monitor your blood sugar, ketone levels, heart rate, sleep and other vital signs for safe, healthy and effective fasting.

To begin a free trial of Heads Up, visit [headsuphealth.com](https://www.headsuphealth.com).

www.headsuphealth.com