Fasting Basics

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What I want to do here is to provide a simple introduction to fasting. So much information is available on the web, much of it contradictory and often confusing. My goal is to put some of that information into some type of context so as to make you able to discern what is what.

What is fasting?

Fasting has many forms, all of which restrict food for shorter or longer periods of time. Sometimes the food restriction is complete, as in no food intake at all. Sometimes it is restricted as to amount- not exactly fasting, but considered to be a variant because the effects can be similar to full-on fasting. Sometimes fasting simply means to keep your food intake in a specific period of time each day. And sometimes food is restricted as to type, as in eating only one of the food groups, usually fat.

Fasting has been a part of medicine at least since the time of Hippocrates. It is a part of most all of the world's religious traditions. And, until recently, at least in the developed world, has been a fact of life because of food scarcity. Humans and animals - all life forms really - have a way to adapt to a lack of food resources. This is something that our bodies know how to do, though it will likely take some coaxing to have it be anywhere close to normal and comfortable.

Why would you want to fast?

Several very good reasons to fast are to improve body composition, clear carb dependency, lose weight and improve insulin resistance. These factors are typically part of the same issue. When we develop insulin resistance and high insulin levels because of a high carb diet or from too much fructose causing liver problems, the easiest and fastest way to clear this up is with fasting coupled with a lower carb diet.

Another very good reason is that fasting promotes a kind of deep cellular housecleaning called autophagy. With autophagy, defective cells, broken down fats and proteins, non-functioning mitochondria and the like are cleared from the body. With autophagy, these cellular components are broken down and recycled. The problem is that autophagy is inhibited when we eat, especially in a high insulin environment. Autophagy happens daily at a lesser level with an overnight fast, but really kicks in on the second or third day of a full or even a partial fast. Another process related to autophagy called apoptosis, where defective cells are induced to die, is also kicked into gear by fasting.

Autophagy is very important in all manner of health conditions. Several studies have shown it to be very helpful in a variety of autoimmune conditions. It may be useful as an adjunctive treatment in cancer. If you think of chronic diseases as being a failure of proper tissue repair and maintenance, then fasting may be useful because it triggers repair and maintenance. It even has a tendency to activate stem cells, leading to tissue regeneration.

How is fasting different than calorie restriction?

Calorie restriction simply means to cut back on how many calories we take in each day. This is the most common recommendation people are given when they need to lose weight. Cutting calories without altering the *timing* of when we eat or the *composition* of what we eat is a recipe for a slowed metabolism, loss of muscle and bone mass, preoccupation with food, loss of libido, and problems with mood, usually depression and withdrawal.

The body needs approximately 2000 calories daily just to keep the lights on. That is, we need this much food energy just to run basic metabolism. When we cut back below 2000 calories, either we have to access our body energy reserves, or we have to slow our metabolic rate. The problem is that to be able to access fat stores, the most abundant source of stored energy in most people, our insulin levels must be low. Insulin is often chronically elevated in a higher carb diet. It is often quite elevated when we need to lose some weight because of insulin resistance. Insulin is also elevated in the presence of certain amino acids, a breakdown product of protein metabolism.

When metabolism is slowed, it does not just automatically come back up to speed when we increase our calories to above 2000. If you have been eating a low calorie diet for some time, metabolism is sluggish. This is why people who have dieted chronically on a low calorie diet will gain the weight right back when they start to eat normally again, even if the amount of food eaten is under 2000 calories a day. If fact, after calorie restriction for an extended time, eating the same amount of food as you used to eat will likely cause you to regain the weight lost originally and then some, because metabolism has slowed another increment.

Inadvertant calorie restriction is pretty common when people change to a low carb diet. With low carb diets, fat must be increased to get enough calories in to keep the metabolic rate up. With fat phobia and with a general lack of knowledge of how to eat a higher fat diet, this problem becomes much more likely. Please see my Macronutrients and Health paper for more information on this issue.

What are the types of fasting and what are the potential benefits of each?

The first type of fasting that I would like to discuss is what has been called ***time restricted eating***. With this type of fasting, we are actually going back to what used to be the norm for many people. We have breakfast, lunch and dinner. No snacks, and very little food after dinner. This way of eating gives your body ample opportunity to have periods during the day where no food is coming in. Our bodies have to figure out where to get supplemental energy from between meals, especially between dinner and breakfast.

This way of eating is the antithesis of eating frequent small meals, which basically trains your body to never have to figure out where to get energy from between meals. This is morning till night eating.

This type of eating can be varied. The ***16:8 plan*** has you eating all of your food in a more or less 8 hour stretch. On either side of that time, nothing caloric comes in. Just water, tea, coffee, or water with a bit of lemon are taken in. Some people do an ***18:6 plan***.

This type of fasting works well as a day to day way of eating. The only caveat is that in the eating time period you will need to get enough calories to “keep the lights on”, that is, more than 2000 calories.

In ***partial fasts*** or what has been termed ***fasting mimicking*** diet, you have a period of time, typically about 5 days, where you eat a calorie restricted diet. The variant introduced by Victor

Longo has you eating under 1100 calories on the first day, and then about 700 calories for the next 4 days. The calories mostly come from vegetables and fat. This is largely a vegan diet. Because there are fewer carbohydrates and no animal protein, insulin is stimulated only minimally if at all. This way of fasting can work very well.

In between, Longo recommends his version of a Mediterranean diet, which is mostly a combination of fish and vegan foods. This part, I cannot recommend. It perpetuates the myth that saturated fat is bad for you - a perspective that has been repeatedly disproven. The day-to-day diet recommendation could work well if a very wide variety of seafoods were eaten, including fish roe and sea vegetables, as well as plenty of olive oil.

Longo has a company that he started that provides the food for the 5-day fasts. Many doctors have recommended these food packs to help people get started. They are very expensive.

For a do-it-yourself version of this diet you can look online for ideas for recipes.

Another variant of the ***partial fast*** or ***fasting mimicking diet*** was popularized by Michael Mosely, MD in his book titled The Fast Diet. In this way of eating, on five days a week, you eat normally. On two days a week, you limit your calories to 500 per day for women and 600 per day for men. This works very well for some people. Again, it has the effect of lowering insulin which allows the body to access fat stores more readily.

Yet another variant is what has been termed a ***fat fast***. Here you take in plenty of fat on the days you are doing the partial fast, perhaps by drinking bulletproof coffee or tea for the day or days. A somewhat similar variant, a ***broth fast*** has you drinking chicken broth during your fast. For some people these adaptations make the fasting process much easier. The broth has minimal protein, so it only minimally stimulate insulin, and it provides some fat. These variants might work well if you are having a difficult time accessing your body fat for fuel.

The main effect of these diets, especially if coupled with sensible lower carb eating on the days where food is taken in more normally, is that insulin levels drop. The drop in insulin has a remarkably positive effect on blood sugar balance, blood pressure, cholesterol levels, weight loss, levels of inflammation in the body, and more. The main issue you might run into is that if your metabolism is slowed, this might not shake you out of that state. If you couple days of fasting with a low calorie diet in between, your metabolism will not necessarily come back up to speed.

I am going to call the next variant ***complete fasting*** for the sake of differentiation from partial fasts or fasting mimicking diets. With this variant, as its name implies, you don't eat anything caloric at all. What you take in is water, perhaps with a bit of lemon, tea, and coffee. A typical plan for a 24-hour fast would be to eat dinner on the first day, then wait until dinner the next day. Or wait until breakfast or lunch or dinner the following day for a 36, 40, or 48 hour fast. Fasting for more days is also an option.

Fasting beyond 24 hours will require some preparation and some guidance, especially for those on any kind of medication for blood pressure or blood sugar. Blood sugar and blood pressure can drop very very quickly with a complete fast. *Do not do this without guidance.*

One of the main proponents of this type of fasting is Jason Fung, MD, author of The Complete Guide To Fasting and several other books. Dr. Fung is a nephrologist - a kidney disease specialist. He got tired of taking care of his diabetic kidney disease patients as they slowly had their kidneys destroyed by diabetes. He initially worked with very low carb, ketogenic diets. These diets worked well for his diabetic patients, but for most of them it was not sustainable. Dr. Fung's perspective, which I really appreciate, is that food is often celebration, often

associated with connection and community, as well as nourishment of self. The day-to-day food restrictions are often isolating, and the sense of deprivation can become a dominant theme.

After awhile he started to explore fasting as a way to decrease insulin levels. While this may seem to foster the same issues noted above, it was different in that fasting is seen as something that you fit into your life rather than fitting your life in around your fasting. So, you pick your times to fast rather than being rigid about it. In between fasts, you eat more sensibly-avoiding snacks, eating a real food, lower carb / higher fat / moderate protein diet, while keeping your food intake to shorter periods of time during the day.

For many of his diabetic patients, he found that he could get them off most all of their medications through a fasting protocol, often as quickly as six weeks in. A typical fasting protocol for patients with type 2 diabetes is every other day 24-hour fasts. This is a lot of fasting, but it works well.

All of the fasting protocols will decrease insulin and insulin resistance overall, but this type of fasting especially boosts autophagy, apoptosis, and stem cell activation. Fasting mimicking diets will do this as well, though perhaps not as strongly.

With all variants of fasting, it is very important to eat adequate fiber when you do eat. This will help keep your gut bacteria happy and healthy, and by extension, you happy and healthy. Vegetables, whole grains, and beans provide fiber. Additional fiber can be taken in the form of psyllium, acacia, and inulin powders, perhaps mixed with some oat bran or sunflower lecithin.

Concluding thoughts

Fasting is preprogrammed into our genetics. From lack of use it takes some effort to wake up the cellular systems that need to be active to fast easily and well.

Fasting may jump start metabolism that is stuck in the slow lane. When you fast, insulin levels drop, making the whole world of stored fat available as fuel. Instead of the body feeling like it is starving, as in day-to-day calorie restriction, it senses an abundance of fuel. The brain wakes up. Metabolism improves. Times are good.

Be gentle with yourself here. Try some variants and see what works for you. Do it with a friend. Above all, play and have fun with it.