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## Intermittent fasting

Research suggests that fasting triggers a variety of health-promoting hormonal and metabolic changes [1]. Intermittent Fasting - quantified as consuming anything between 0 and 800 calories in a day - has been shown to reduce:

Growth factor hormone (linked with cancer and diabetes)

"Bad" LDL cholesterol

Harmful bacteria (that thrive on fast release sugars)

Inflammation levels

Overall, it also helps lessen damage from free radicals

While it's long been known that restricting calories in certain animals can increase their lifespan by as much as 50 percent, more recent research suggests that sudden and intermittent calorie restriction (as happens to most wild animals naturally from time to time) appears to provide the same health benefits as constant calorie restriction or low GI.[1] This is good news, as it may be easier to do for some people who cannot commit to a health-restricted diet even for a short time.

*In one study[2], reported in the International Journal of Obesity (2012), a group of obese and overweight women was put on a diet of 1,500 calories a day while another group was put on a very low 500-calorie diet for two days, then 2,000 calories a day for the rest of the week. Both groups were eating a (not very healthy) Mediterranean-style diet. Researchers found that both lost about the same amount of weight and both saw a similar drop in biomarkers that increase the risk of cancer.*

*Importantly, those in the fasting group had a bigger improvement in sensitivity to insulin.*

*Improved insulin sensitivity means better control of blood sugar levels.*

For some, 'fasting' does not mean abstaining from ALL food, but rather a dramatic reduction of calorie intake. We should of course continue to drink water when fasting.

Some of the mechanisms largely responsible for weight loss and diabetic control when fasting are also the ones responsible for the benefits to our brain. Research suggests that calorie restriction can protect brain cells and make them more resilient against stress. This protective effect is in part due to fasting's effect on leptin and ghrelin; two hormones involved in appetite regulation. These hormones are also involved in the process of renewing brain cells - especially in the hippocampus - when

*we are not overweight*

. [2]

The hippocampus is the area of the brain where most of our memory functions are located, and

there's a strong relationship between the size of our hippocampus and memory performance. *If we start putting on excess weight, levels of ghrelin drop and brain cell replacement slows. The effect is particularly damaging in our 40s and 50s, for reasons that aren't clear yet. Obesity at that age is a marker for cognitive problems later.' The good news is that this brain-cell damage can be reversed by the two-day fasting regime in rats. A human trial is starting soon, and there is reason to think it should work.*

*Fasting every other day had a striking effect on people with asthma. After eight weeks they had lost eight percent of their body weight, but they also benefited from the ability of calorie restriction to reduce inflammation. Tests showed that levels of inflammation markers had dropped by 90 per cent. As levels came down, their breathing became much easier.[3]*

There is one important caveat, however. Research showed that symptoms returned about two weeks after quitting the intermittent fasting, so it may need a lifestyle commitment, not a temporary fix. Some can handle intermittent fasting long-term whereas others might find it too challenging. Still, it's an option to consider if we're having health issues or weight problems. Fasting also has the surprising benefit of helping reconstruct our muscles when combined with exercise. This is due to an ingenious preservation mechanism that protects active muscle from wasting itself. In a nutshell, if we don't have sufficient fuel in our system when we exercise, our body will break down other tissues *but not the active muscle*, i.e. the muscle being exercised. One important factor when it comes to calorie restriction is *which type* of calories to restrict. From a biological standpoint, the important part is not really how many calories you eat per day; it's about getting the right nutrients. It's important to realize that all calories are NOT created equal, and will not have identical effects your weight or health. Even cardboard and sawdust contain calories! The value to us of calories depends on the types of food (nutrients) they're attached to.

In industrial places, six of the top 10 sources of calories are carbohydrates from sugars and cereal products (processed grains), and this is a major reason why so many people are overweight. They're simply eating far too many fast release sugars.

Corn, wheat and rice are grasses. Ruminants (animals designed to live on fast release sugars) need several stomachs to ferment and digest their cereal diet; we only have one; and it's not designed for fermentation. Even soft starchy grains like sweetcorn come out of the human body looking much the same as when they went in; and the amount of white fat created by fast-processing grasses is large.

So it's very important to restrict high GI *carbs* when doing a calorie restrictive diet. Our body cannot use fast release sugars for optimal health, but it does require protein and fats.

When we cut out the sugars and carbs it is wise to replace them with high quality non-processed fats, such as organic grass-fed raw butter, eggs, coconut oil, avocados, and almonds. There's very compelling evidence showing that calories from *fat* are far more beneficial for our health than calories from carbohydrates. And it's already been well established that stearic acid (found in cocoa and animal fat) has no effect on our cholesterol levels at all, and gets converted in our liver into the monounsaturated fat called oleic acid. The other two, palmitic and lauric acid,

*do*

*raise*

*total*

cholesterol. However, since they raise &quot;good&quot; cholesterol as much or more than

"bad" cholesterol, we're still actually *lowering*

our risk of heart disease. And there are additional benefits.

Lauric acid (as from coconut oil) has shown to boost thyroid hormone activity along with the body's metabolic rate. This is obviously a huge advantage to those interested in weight loss or those who suffer from underactive thyroid.

Cutting down on our cereal products, grains and sugars, replacing them with high quality fats and skipping some meals, especially before exercise, seem to be a powerful combination to help us take control of our weight, but a lifestyle that naturally expects some 'low food days' is far easier to maintain than a strict timed regime.

### References:

**1 Professor Mark Mattson, head of neuroscience at the U.S. National Institute On Ageing**

**2 Dr Michelle Harvie, a dietitian at Manchester University UK who led the research.**

**3 Dr Susan Jebb, head of diet and population health at the UK Medical Research Council**