

Can We Fast Our Way To Healthy Eating?



By *Chuck Dinerstein, MD, MBA* — August 27, 2019



Courtesy of Jean Fortunet [1]

Many of us overeat, as reflected in rising BMIs. It is a problem quickly solved theoretically by calorie reduction, although in practice it is a tougher problem. While most physicians recommend merely reducing your daily calorie intake, there is a growing body of evidence, especially in other creatures, that various forms of intermittent fasting are helpful. These intermittent fasts consist of eating for x number of hours, not eating for y hours and then repeating. (While eating for an hour, not eating for 3, is a form of fasting, it doesn't count.) We are looking for the hours of not eating to be significantly higher than those of eating.

A study in *Cell Metabolism* looks at the effects of a 36 hour fast, followed by 12 hours of eating as much as you wanted. They studied 30 individuals who followed this regimen for more than six months, comparing them to 60 healthy adults acting as controls. The control group was subsequently randomized, and half participated in the alternate-day fasting, ADF, for four weeks to provide information on short-term metabolic changes. All groups were described as comparable, and compliance with the ADF was high. There were no differences in physical activity between any of these groups, so we are looking, as best we can, primarily at the effects of diet.

Short-term effects

- ADF resulted in a 37% reduction in caloric intake. (There was an incidental much smaller 8% reduction in the randomized control group)
- This resulted in 3.5 kg loss of body weight, more fat than muscle resulting in a lower BMI, reduction in truncal fat, and an improved fat-to-lean ratio.
- There was enhanced utilization of fat stores (lipolysis) and the use of amino acids by the liver to create glucose (gluconeogenesis). These metabolic changes, in turn, resulted in altered regulation of genes involved in fat and protein metabolism as well as energetics and stress

responses.

- There was no change in bone mass
- There was a decrease in circulating triiodothyronine, a thyroid hormone. It is essential to note this as the reported reductions in heart rate, systolic and diastolic blood pressure and contractility of the heart, as measured by the velocity of blood flow, all markers of more efficient cardiac work, can all be related to this one hormonal change rather than a constellation of separate changes.
- There were no changes in the usual blood biomarkers like lipids
- There were no adverse consequences

Long-term effects

- The caloric reduction was not as high, but still significant, at 28%
- The impact on cardiac function as well as the continued decline in circulating triiodothyronine was again present
- There was no change in bone mass
- There were reductions in total cholesterol as well as LDL (the bad cholesterol) and VLDLs.

The study raises more questions than it answers. There appear to be no detrimental effects on this form of intermittent fasting for periods of six months or less. But the literature on caloric restriction suggests that harmful impacts on bone density and immune function occur later, after a year. There are improvements in many biomarkers, but biomarkers remain proxies for health, and the authors cannot report any improved health outcomes. [1] They acknowledge that other variations on fasting produce similar results. I will leave them with the last words,

“Although many studies, including this one, have provided promising clinical data for ADF and similar interventions, motivating a broader part of the population to conduct periods of intermittent fasting to improve body composition and cardiovascular health might be difficult. Periods of elevated hunger feelings on the fasting days, societies with constant, convenient access to nutrients, and eating patterns strongly intertwined with social structures might represent significant obstacles.”

[1] In a bit of a stretch, they suggest that the short-term alterations of ADF resulted in a 1.5% reduction in the 10-year risk of a cardiovascular event as measured by the Framingham Risk Score.

Source: Alternate Day Fasting Improves Physiologic and Molecular Markers of Aging in Healthy, Non-obese Humans Cell Metabolism DOI: 10.1016/j.cmet.2019.07.016

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