Intermittent Fasting: Benefits Beyond Calorie Restriction

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In our face-paced, fast food culture, many of us skip meals until we get that low blood sugar emergency signal to run to the vending machine or refrigerator and grab something fast – usually a refined carbohydrate food like pasta, bread, cake or candy. Since these foods turn to sugar for energy relatively quickly in our bodies, they alleviate our lightheadedness, hunger pangs and moodiness. However, the energy gained from these foods is not lasting and we find ourselves at the refrigerator in another 2 hours. This pattern of eating (referred to as the insulin roller-coaster) results in weight gain, increased visceral fat (the apple shaped person) and a higher risk of diabetes, heart attacks and strokes. Obesity and cardio-metabolic disease are the major health epidemics in our society today. The nutritional strategy we have been recommending to help control this insulin roller coaster is to avoid or reduce the highly refined carbohydrates (high glycemic foods) and eat six small healthy meals per day (~ every 2 hours) starting with breakfast no more than 1 hour after waking up. These meals/snacks should consist of a balance of whole food sourced protein, beneficial fats, and complex carbohydrates. If you are currently a patient of mine or have been in the past, you have no doubt heard me recite this recipe (Small Frequent Meals) for health and longevity. It replaced the dietary doctrine of calorie restriction (CR) that many people found difficult. Food labels have been un-interpretable to all but dieticians and counting calories did not consider the nutrient quality of the foods. So we said, eat high quality, nutrient dense foods in a pattern that will prevent blood sugar swings and forget about counting the calories. And this works great for some people but it takes pre-planning and the ability to access and eat food frequently. Another nutritional strategy for better health is emerging. It has been around for millennia but researchers are just beginning to validate it's effectiveness. It is called Intermittent Fasting (IF).

Voluntarily fasting (abstaining entirely or limiting food for a period of time) may seem crazy but we are evolutionarily adapted to intermittently going without food. It is only in very recent history that our genes and our cells have been exposed to food intake daily and around the clock. As a ritual, voluntary fasting has been practiced throughout history in most of the great religions. Fasting became popularized as an "alternative" therapy in the 19th century. Edward Dewey MD of the University of Michigan wrote The No-Breakfast Plan and the Fasting-Cure (1900). There were others (some were scam doctors) advocating therapeutic fasting. Pioneers or profiteers, these practitioners did have some successes with their patients. Our renewed interest in the health benefits of therapeutic fasting appears sparked by the spectacular results of caloric restriction (CR) in animals. Research has shown that lifespan is lengthened up to 50% and near perfect health is achieved in a broad range of species when their calorie intake is reduced by 30 – 40%. Some primates experienced the overall health benefits but not lifespan extension. Translating this kind of calorie restriction to a public health policy would surely lower our enormous health care budget but would be impossible for most people to achieve. Can these impressive animal findings be reproduced in humans using a more practical intervention? Intermittent Fasting (IF) research has shown that there is a path to better health apart from counting calories, six small meals a day, or drastic calorie restriction. While many researchers are cautious about this relatively young field, there is quite a bit of enthusiasm.

The health effects of fasting occur when your body shifts from burning sugars and carbohydrates to burning fat as its primary fuel. It takes 8 - 12 hours for your body to use up its short term savings account of available energy (sugars packaged in muscle and liver called glycogen storage). After this time your body has to shift into using stored fats (ketones) for fuel. But just as your body gets ready to do that, the alarm rings, you wake up and eat breakfast. Most of us keep adding food around the clock and our bodies never have to burn fat. For Intermittent Fasting to be an effective health strategy, the length of the fast must be at least 16 hours. Results of the research on IF have shown these biochemical changes:

- Lower IGF-1 (elevated levels of Insulin-like Growth Factor are associated with accelerated aging)
- Lower Insulin (elevated levels are associated with diabetes and inflammation)
- More balanced ghrelin and leptin levels (the hunger and satiety hormones)
- Lower Blood Pressure (elevated blood pressure is associated with cardiovascular and other diseases)
- Lower LDL cholesterol (elevated levels are associated with heart disease)
- Lower Triglycerides (elevated levels are associated with heart disease and diabetes)
- Lower CRP (elevated C-Reactive Protein is associated with inflammation)
- Higher HGH (Human Growth Hormone supports using fats for energy)
- Higher BDNF (Brain DerivedNeurotropicFactor helps generate new brain cells, is involved in learning and memory and protects the cells from changes associated with Alzheimer's and Parkinson's diseases)

Multiple studies have shown that IF is at least as effective as CR for weight loss and type 2 diabetes risk reduction in the overweight and obese. Dr. Mark Mattson from the National Institute of Aging seems excited by the potential of this lifestyle intervention in saying that fasting might reduce the risk of developing cancer, guard against diabetes and heart disease, help control asthma and stave off Parkinson's and dementia. Some researchers believe the positive effects seen in fasting studies are only the result of overall caloric restriction. However others are convinced that Intermittent Fasting brings about biochemical and physiological changes not seen in daily dieting.

So how do you sign up?? First of all there is no single "Intermittent Fasting" Eating Plan – researchers have studied multiple models. They caution that the popularized plans are not right for everyone (not recommended for pregnant women or people with diabetes on medications). They do not know what to recommend regarding how many days per week to fast or how often to undergo an episodic fasting. While animal research appears positive, long term human trials are lacking. Some studies have shown that 10 – 20 % of the participants drop out because it is too difficult. There is a plethora of blogs and books available but common sense must prevail. If you are still interested, here's my advice: Avoid extremes, don't binge on feed days (it's counter-productive), and start slow and ease into it. Start with postponing breakfast by 1 hour and increase by 1 hour weekly until you are on the 12 Hour Daily Fasting Plan. Then you can work your way into the 16:8 or the 5:2 Plan. Alternate Day Fasting (ADF) may be too difficult for many. The first 3 – 4 days in any of these plans may be enough to make you give it up. During these days, as your body is transitioning from burning sugars to burning fats, you may feel uncomfortable and experience strange feelings. But many state that after the "break-in" period, they feel great. Some women may experience a disruption in their cycles, problems with fertility, or insomnia. (Bodies designed to feed a fetus are designed to protect and rebel against fasting.) A more gradual transition to the plan may help. Anyone prone to an eating disorder, older individuals, and those with medical conditions should discuss this eating plan with their healthcare providers before experimenting.

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Integrative and Holistic Health and Wellness

Popular Intermittent Fasting Plans

- Note: Normal recommended daily intake is 2,000 calories for women; 2,500 for men.

12 Hour Daily Fasting:

- Fast for 12 hours daily (usually after dinner until next day's breakfast)
- Water, black coffee, or tea are allowed during the fast

5:2 Eating Plan:

- Eat normally for 5 days then cut calories on two non-consecutive days
- On each of 2 weekly "fast" days: have 600 calories in a single meal or split into 2 meals
- On the 5 non-fast days: eat whatever one wants (be smart here)

16:8 Eating Plan:

- Eat only within an 8 hour window everyday (eg, between 11am and 7pm)
- Fast for 16 hours per day (water, black coffee, or tea are allowed during the fast)

Weekly Intermittent Fasting:

- Fast for 24 hours once per week
- Water, black coffee, or tea are allowed during the fast

Alternate Day Fasting:

- Restricted-calorie fasts every other day.
- Fast day (75% less calories) alternates with a feed day

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