

## **INTERMITTENT FASTING**

When “Intermittent Fasting” first became a health food rage several years ago, the term meant fasting for one day (at least 32 hours) each week. When doctors inquired about the technique, here is the response we gave that put the procedure in perspective as regards Nutri-Spec concepts ...

Intermittent fasting can be handled easily by some people, and not by others:

Some people can maintain blood and brain sugar during a 32-hour fast, and some cannot.

Some people can easily transition into ketosis, and some cannot.

Some people can fast without over-stimulating the catecholamine Sympathetic Stress response, and some cannot.

Some people can fast without excess corticosteroid production and protein catabolism, and some cannot.

Your patients’ NUTRI-SPEC Imbalances give you a pretty good clue as to whether they can or cannot handle a 32-hour fast --- but ...

Who wants to fast, anyway? The only people who benefit from fasting one day a week are those who overeat the other 6 days. Those who follow Eat Well – Be Well --- with low glycemic index meals, adequate protein and fat evenly divided among 2 or 3 meals, and who do not stimulate excess insulin production by eating between meals --- will live quite happily-ever-after, as their metabolic factory runs with perfect efficiency and perfect timing 7 days a week.

----- But ...

In more recent years, the term “Intermittent Fasting” has been altered to mean eating one or two meals daily, seven days a week. What silliness. Eating one or two meals daily is not “fasting” --- intermittent or otherwise --- it is simply eating one or two meals daily. The definition of the word fasting means providing zero calories for long enough that the body goes into a prolonged (at least 16 hours) post-absorptive state. It takes that long for all catabolic and autophagy processes to fully activate. Such a post-absorptive catabolic state will only be activated when a person eats two meals if the overnight fast is adequate.

The key benefit from Intermittent Fasting is full activation of autophagy. Routinely fasting for 14 hours from the last bite of the last meal to the first bite of the first meal the next day achieves the required prolonged post-absorptive state. The longer that post-absorptive state is maintained, the more intense

the autophagy achieved. There are two ways to maximally activate autophagy --- a prolonged post-absorptive state, and high-intensity exercise.

Why is maximizing autophagy so critical? ----- Autophagy is a fundamental molecular pathway for the preservation of cellular homeostasis. It can be thought of as cellular renovation. It is the selective removal of toxins, degraded proteins, and broken-down organelles. These waste products are removed by a lysosome-dependent regulated mechanism. The term “autophagy” is actually short for auto-phagocytosis --- as the wastes are digested within the lysosome.

The purpose of autophagy is not simply elimination of waste materials, but instead, autophagy serves as a dynamic recycling system --- producing new building blocks as well as energy for cellular renovation and homeostasis. ----- Deficient activation of autophagy contributes to both Exogenous IMFLAM-AGING, and Endogenous INFLAM-AGING. Over time, impaired autophagy is shown to contribute to a broad array of diseases --- from neurodegenerative pathology such as Parkinson's Disease, to inflammatory disorders such as Crohn's Disease, and cancer.

Eating a meal or even a snack swings all metabolic processes from the post-absorptive state into an absorptive state. Insulin is released by the pancreas, and the liver activates food absorption and distribution, while throughout the body, cells switch on anabolic processes. Autophagy becomes a very low metabolic priority.

It is important to note that autophagy works in conjunction with another cell-protective and homeostasis-maintaining process --- apoptosis. Apoptosis is physiological/programmed cell death. All cell types have pre-programmed lifespans. As protein production declines in efficiency, and genetic material starts to break down, the cell is designed to self-destruct. Cells that are delayed in apoptosis tend to produce dysfunctional proteins, and they tend to mutate. So, autophagy not only does the daily “house cleaning” for individual cells, it preserves metabolic efficiency and homeostatic relationship with other cells.

There are many medications that impair autophagy. There are also many early stage patho-physiologies that impair autophagy in a vicious cycle --- such that the aberrant physiology limits autophagy, and the deficiency of autophagy reinforces the patho-physiology. mTOR, a primary driver of Endogenous IMFLAM-AGING, is one of the major dysregulators of autophagy. That is why after age 23, and particularly beginning at age 33, maximizing autophagy through a daily fast of at least 12-14 hours, plus regular high-intensity exercise, plus supplementation with Rejuvenator, becomes essential. Autophagy is one of our major defenses against the preprogrammed biological clocks that activate mTOR driving the Endogenous IMFLAM-AGING that determines lifespan.

Intermittent fasting also benefits digestive processes. Keep in mind that a perfectly healthy 23-year-old requires four hours for a complete meal to even fully leave the stomach. Then, the last remnants of the meal to leave the stomach traverse the small intestine, where absorption of nutrients occurs. It requires at least six hours for the absorptive state to end and the post-absorptive state to begin. --- Sometime between ages 33-43 the digestive process slows down, and now 5 hours or more are required for a meal to even leave the stomach. For many individuals, with aging, the process of stomach emptying becomes quite prolonged --- and can even last 10 hours or more (which, as you probably know from reading Nutri-Spec articles, is the main cause of GERD --- putting food into a stomach that is not emptied from the last feeding).

So, on a two meal daily plan, many people never come close to getting into a post-absorptive catabolic state. And some never even achieve it on a one meal per day plan if the stomach is very sluggish in emptying.

Are there any benefits to eating only one or two meals daily?

There is absolutely no problem with patients eating only 2 meals daily. As long as the meals are substantial, and as long as there is no snacking between meals. (It is eating too frequently, not too infrequently, that gives people problems associated with insulin resistance and with gastrointestinal dysfunction.)

But, there is also a problem with those on a 2 meal per day regimen delaying the first meal until 2 to 4 p.m. Since at least 5 hours is required between meals, that means the second meal of the day may not begin until as late as 9 p.m. That is too late for many people. The 2 to 4 p.m. first meal is also a problem in the cases where it results in low blood sugar and/or low body temperature. The metabolic rate may begin to slow and remain chronically low --- the last thing we want for patients, since we want to pump up their Vital Reserves. --- So no, the 2 to 4 p.m. first of 2 meal times does not “support the Sympathetic nervous system”, as some Alternative Medicine gurus claim.

Whether a person is eating 2 or 3 meals daily, the essential rule is that for those on a 3 meal daily plan, at least 1/3 of the day's meat, fish, poultry, eggs and cheese must be consumed at the first meal, and for those on a 2 meal daily plan, at least 50% of the day's meat, fish, poultry, eggs and cheese must be consumed at the first meal.

The once daily eating plan is fine for anyone who can maintain glycemic control on that regimen. --- That plan neatly sidesteps insulin resistance and all the pathologies (diabetes, cancer and cardiovascular disease in particular) whose incidence is increased by frequent eating. Meat, fish, poultry, eggs and cheese

as sources of protein, along with abstaining from fast sugars, allows many people to handle that eating plan quite well.

Maintaining glycemic control on a once daily eating plan is the limiting factor. The problem is that there comes a point when food restriction becomes a stress on the body. Two things happen. The body enters a catabolic state, which in some people can radically increase the aging process. Second, the metabolic rate slows as a defensive measure against what the body perceives as famine. How long each individual can go without eating and not experience negative health consequences depends on the glycemic control issue and often can be monitored by body temperature and heart rate. If a person is unable to maintain body temperature, and particularly if a low body temperature is accompanied by a very slow heart rate, the fast has gone too far.