

Infographic: Separating hype from reality on the benefits of intermittent fasting

Scientists are further detailing both the underlying metabolic dynamics and interesting physiological phenomena aside from weight loss as they study less-extreme permutations of fasting in animal models and in humans. Data have recently emerged from research on several forms of so-called intermittent-fasting regimens.

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As the body of scientific literature around fasting has grown, results have been cherry-picked and molded into fad diets that promise weight loss, increased energy, better sleep, and a variety of other benefits to human adherents—some with more evidential backing than others. As books of dubious scientific merit extolling the virtues of fasting fill the shelves, serious researchers continue to probe the genetic, immunologic, and metabolic dynamics that occur in fasting animals to separate hype from reality.

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[R]esults from studies in both animal models and humans point to distinct benefits of withholding food in one temporal pattern or another. In recent years, scientists have learned that fasting might trigger not only weight loss and life-span extension—benefits that have long been linked to caloric restriction—but also boost the performance of the brain, the immune system, and organs central to metabolism, such as the liver and pancreas.



LIVER

Fasting and time-restricted feeding increases insulin sensitivity, decreases insulin resistance, and lowers blood glucose levels. With prolonged periods of fasting, the liver's glycogen stores become depleted, and visceral fat is tapped as an energy source, which releases ketones that can be metabolized by neurons and muscle cells.



IMMUNE SYSTEM

Periodic fasting reprograms T-cell populations, tamping down autoimmunity and rescuing immunosenescence. A lack of incoming calories appears to prune away autoimmune T cells, and with refeeding, hematopoietic stem cells are activated to replace T cells, lymphocytes, and other white blood cells. Several fasting studies have also pointed to a decrease in inflammatory cytokines.



HEART

Because triglycerides become mobilized for energy in the absence of incoming dietary calories, blood lipid levels tend to go down in a fasting body. Researchers have also seen decreases in blood pressure in fasting animals. In some animal studies of fasting, investigators have recorded decreases in cholesterol.



BRAIN

Intermittent fasting has improved memory, learning, and neurogenesis in rodents, and has been shown to repair some neurons in mouse models of ischemic stroke.



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CANCER

By making tumor cells more susceptible to chemotherapeutic agents while protecting healthy cells from the treatment's toxicity, intermittent fasting is showing promise in slowing the progression of breast cancers and melanoma in mice.

Read full, original post: [Running on Empty](#)