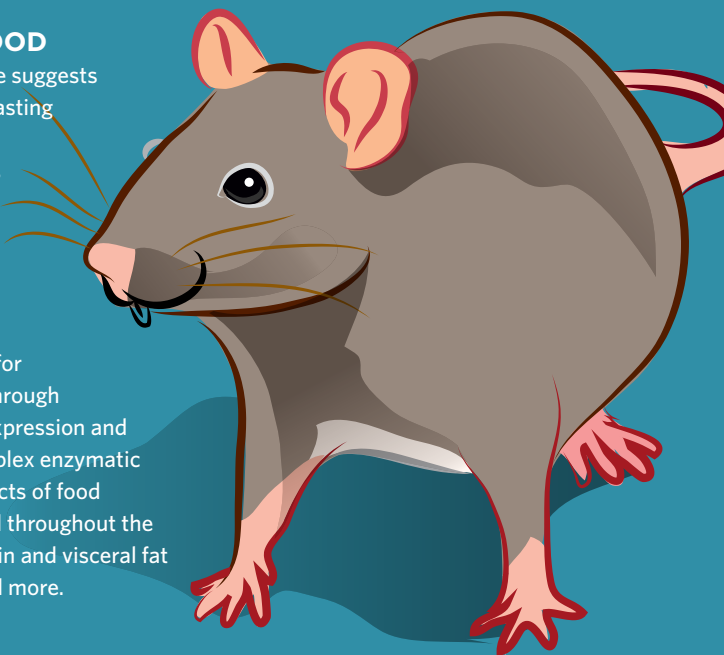


A BODY WITHOUT FOOD

Mounting evidence suggests that intermittent fasting causes significant changes to various organs and tissue types. The fasting signal likely starts in the liver, the body's central command for metabolism. But through changes in gene expression and alterations in complex enzymatic pathways, the effects of food deprivation spread throughout the body, from the brain and visceral fat to the muscles and more.



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.



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.