Looking for the Founatain of Youth? Cut your calories, research suggests

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Want to slow the signs of aging and live longer? New Saint Louis University research suggests cutting back on calories could be a promising strategy.

Calorie restriction has long been shown to slow the aging process in rats and mice. While scientists do not know how calorie restriction affects the aging process in rodents, one popular hypothesis is that it slows aging by decreasing a thyroid hormone, triiodothyronine (T3), which then slows metabolism and tissue aging.

A new study in the June 2008 issue of *Rejuvenation Research*, found that calorie restriction – cutting approximately 300 to 500 calories per day – had a similar biological effect in humans and, therefore, may slow the aging process.

"Over recent years, there has been a huge amount of debate about whether calorie restriction slows the aging process in humans," said Edward Weiss, Ph.D., associate professor of nutrition and dietetics at Saint Louis University's Doisy College of Health Sciences and lead author of the study.

"Our research provides evidence that calorie restriction does work in humans like it has been shown to work in animals. The next step is to determine if this in fact slows age-related tissue deterioration. The only way to be certain, though, is to do a long-term study."

In the current study, Weiss wanted to know if calorie reduction would lower T3 levels in humans. To determine if the lowered levels of T3 were a result of calorie restriction and not decreases in fat mass in general, Weiss also recruited volunteers to lose weight through exercise.

Study volunteers included sedentary, non-smoking, 50- to 60- year-old men and post-menopausal women with average or slightly above average body man index values. They were in otherwise good health and did not have cardiovascular disease, diabetes, lung disease, uncontrolled hypertension and evidence of malignancy.

Volunteers were randomly assigned to one of three groups – a calorie-restriction group, an exercise group or a control group – and followed for one year. Volunteers in the calorie restriction group lost weight by reducing their daily calorie intake by 300 to 500 calories per day. Volunteers in the exercise group maintained their regular diet and exercised regularly.

Volunteers in both the calorie-restriction and exercise groups experienced similar changes of body fat mass. However, only volunteers in the calorie restriction group also experienced lower levels of the thyroid hormone.

Although a long-term study is still needed to determine if reducing T3 levels through calorie restriction does indeed slow the aging process, Weiss says cutting back on calories is a good idea.

"There is plenty of evidence the calorie restriction can reduce your risks for many common diseases including cancer, diabetes and heart disease," Weiss said. "And you may live to be substantially older."

When cutting calories, Weiss warns that it is imperative to maintain a healthy diet by eating nutrient-rich foods. Cutting 300 to 500 calories

per day is equivalent to skipping dessert or substituting a turkey sandwich instead of a Big Mac and fries.

"Anorexia nervosa is a condition that is associated with calorie restriction that is far too severe and is accompanied by inadequate intakes of many nutrients. Consequently, it results in premature disease and even death, rather than improvements in health and a slowing of aging."

Because it also slows metabolism, Weiss warns that calorie-restricted weight loss could make people more prone to weight gain over time. On the other hand, people who lose weight through exercise are not as likely to gain weight back if they quit exercising. The key to maintaining a healthy weight, Weiss says, is keeping a consistent diet and exercising regularly.

Source: Saint Louis University