Study Ties Surgical Weight Loss To Reduced Aging

Researchers have identified a connection between surgical weight loss and the aging biomarker, the telomere, a DNA sequence found on the end of chromosomes. According to a study presented at The Obesity Society (TOS) Annual Meeting at ObesityWeek℠ 2013 [1], "Does Gastric Bypass Influence Aging?" weight loss following bariatric surgery was associated with increased telomere length indicating decreased aging. The most significant changes in telomere length occurred in patients with higher levels of CRP (a marker of inflammation) and LDL cholesterol at baseline. Telomere lengthening was also correlated with weight loss and increases in HDL cholesterol.

"This unique study demonstrates that surgically induced weight loss is able to reverse a marker of aging, telomere length," said study author John Morton, MD, of Stanford University. "Past research has shown a tie between telomere length following weight loss through diet and exercise, but not through bariatric surgery."

"Telomeres protect chromosomes and the genetic information they contain," continued Dr. Morton. "Shortening is associated with age-related diseases such as heart disease, type 2 diabetes, and Alzheimer's disease, as well as reduced lifespan. It is also linked to increased adiposity, higher BMI, and visceral fat accumulation."

The study included 51 bariatric surgery patients (77 percent female, averaging 48.6 years old) with a mean baseline BMI of 44.3 kg/m^2. One year after surgery, patients showed a 71 percent decrease in excess body weight, as well as reductions in CRP and fasting insulin. Changes in mean telomere length were not significantly different from baseline. However, significant increases in telomere length were observed in individuals with high baseline CRP or LDL cholesterol levels ($p<0.05$). Additionally, weight loss and HDL cholesterol were positively correlated with telomere length in patients with high baseline CRP ($p = 0.0498$ and $p = 0.0176$).

"Telomere erosion is known to be a marker of cellular longevity; however, little is known about the direct effects of telomere lengthening on health outcomes," said Bruce Wolfe, MD, TOS Advocacy Committee Member and Professor of Surgery and Co-Director of Bariatric Surgery, Oregon Health and Science University. "Results like these are an important addition to our understanding of the role of telomeres in aging and disease, as well as the long-term benefits of bariatric surgery."

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