

Weight loss after gastric bypass surgery may protect against infection and cancer

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Another health benefit of bariatric weight-loss surgery may be a heightened immune defense against cancer and infections, a new study suggests. The results will be presented at The Endocrine Society's 90th Annual Meeting in San Francisco.

"Obesity is related to a higher rate of infections and some types of cancer," said a study coauthor, Alfredo Halpern, PhD, of the University of São Paulo, Brazil. "Nevertheless, there are only a few published studies evaluating the immune function in severely obese patients and the effect of surgery-induced weight loss on these parameters."

Halpern and his co-workers therefore studied the effect of weight loss on immune function in 28 morbidly obese patients who had traditional "stomach-stapling" (Roux-en-Y) gastric bypass surgery. The 20 women and eight men lost an average of 78.5 pounds 6 months after gastric bypass. This operation permanently reduces the size of the stomach and bypasses part of the intestines, thus restricting food intake and food absorption.

Before and 6 months after the surgery, the researchers evaluated patients' blood samples for natural killer (NK) cells, which play a critical role in controlling infections and cancer. Specifically, they measured the number of NK cells and the cells' capacity to kill infected cells or tumor cells. They also looked at the production of certain cytokines, proteins that are essential to the immune response.

Although the number of NK cells did not increase with surgically induced weight loss, their activity changed, Halpern said. Before surgery, NK cells mounted a weak immune defense, but after surgery their activity increased by nearly 79 percent, representing an improvement in the effective immune response and, possibly, in the ability to fight cancer and infections.

The response of cytokines involved in NK cell activity also changed after weight loss, possibly affording higher protection against infection and cancer, the researchers found. Cytokines analyzed were interferon-gamma and interleukins 2, 12 and 18.

Prior studies have shown that bariatric surgery has many health benefits, including resolution of type 2 diabetes, improved blood pressure and lower risk of premature death. This study shows another possible benefit of the weight loss stemming from bariatric surgery.

"It may help protect against infections and cancer by improving the activity of certain immune cells," Halpern said.

He said the impaired NK cell function evident in extremely obese people may even explain their propensity to develop infections and cancer.

Source: The Endocrine Society

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