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Gastric bypass surgery may benefit muscle strength more than previously thought

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Gastric bypass surgery improves relative muscle strength and physical performance in people with obesity, according to a study published in the Endocrine Society's *Journal of Clinical Endocrinology & Metabolism*.

Bariatric surgery helps people who have severe obesity to lose a lot of weight and improve their health. Gastric bypass is one of the most common types of bariatric surgeries. It's a procedure that reduces the size of the stomach, causes hormonal changes, and can lower the amount of nutrients that are absorbed from food. The digestive tract is rerouted, bypassing most of the stomach and part of the small intestine. The procedure can improve or eliminate related conditions such as diabetes.

"Our research found while Roux-en-Y bariatric surgery patients are likely to see the maximum amount of strength they can exert decline as they lose weight, they actually see an increase in their relative strength—a measure of strength relative to their size," said the study's first author, Diana Alba, M.D., of the University of California, San Francisco (UCSF) in San Francisco, Calif. "Our participants' physical performance also improved following surgery. The findings suggest that postoperative loss of muscle mass and absolute strength may not be a meaningful problem."

In the prospective cohort study, researchers examined the body composition, handgrip strength, physical activity and physical performance of 47 obese adults before and six and 12 months after gastric bypass surgery. They found that dramatic weight loss causes a

decline in a person's lean mass and absolute grip strength after surgery. However, relative muscle strength, walking speed and other measures of physical function improved meaningfully in these patients.

"Having good muscle strength and physical function is essential to helping people carry out their day-to-day lives," Alba said.

Other authors of the study include: Lucy Wu, Kathleen Mulligan, Thomas Lang, Jonathan T. Carter, Stanley J. Rogers, and Andrew M. Posselt of UCSF; Peggy M. Cawthon of UCSF and the California Pacific Medical Center in San Francisco, Calif.; Sheena Patel of the California Pacific Medical Center; Nicole J. King of the San Francisco Veterans Affairs Health Care System in San Francisco, Calif.; and Lygia Stewart, Dolores M. Shoback, and Anne L. Schafer of UCSF and the San Francisco Veterans Affairs Medical Center.

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The study, "Changes in Lean Mass, Absolute and Relative Muscle Strength, and Physical Performance After Gastric Bypass Surgery," will be published online, ahead of print.

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