

# In some men, taking testosterone while dieting may help lose fat, not muscle

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In obese middle-aged men, losing weight while dieting normally depletes both fat and muscle. But adding testosterone treatment may help them lose only fat and retain their muscle, new research suggests. The study results will be presented in a poster Saturday, April 2, at ENDO 2016, the annual meeting of the Endocrine Society, in Boston.

Overall, 40 percent of obese men have a low testosterone. Weight loss due to [calorie restriction](#) is associated with increased circulating testosterone, and [testosterone treatment](#) reduces fat. However, researchers don't know whether adding testosterone treatment to calorie restriction reduces fat mass more than calorie restriction alone.

"There is an epidemic of obesity and related functional hypogonadism, yet testosterone treatment remains controversial," said principal investigator Mathis Grossmann, MD, PhD, FRACP, associate professor in the Department of Medicine at the University of Melbourne in Victoria, Australia. "This study shows for the first time that, among obese men with lowered testosterone, testosterone treatment augmented the diet-induced loss of total and visceral fat mass and prevented the diet-induced loss of lean mass."

Dr. Grossman and colleagues conducted a clinical trial of 100 fairly healthy [obese men](#) from the local community between 20 and 70 years of age who had [low testosterone levels](#). Overall, 20 percent of them had diabetes and 10 percent had heart disease.

For the first 10 weeks, all participants were placed on a strict 600 kcal per day very-low calorie diet. They were also encouraged to abstain from alcohol and perform at least 30 minutes a day of moderate exercise. From the 11th through the 56th week, participants in both groups used a weight-maintenance diet based on the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO) Total Wellbeing Diet comprising of normal foods.

Every 10 weeks over the 56-week-long study, 49 men also received injections of 1,000mg of intramuscular testosterone undecanoate, and 51 took placebo.

At the end of 56 weeks, both groups lost roughly 11 kg (24.2 lb). But those in the testosterone group lost almost exclusively fat, while those on placebo lost both lean and fat. The men taking testosterone lost 3 kg (6.6 lb) more body [fat](#) than those on placebo and maintained their muscle mass, while those on placebo lost 3.5 kg (7.7 lb) of muscle mass.

Australia's National Health and Medical Research Council supported the study. Bayer Pharma AG provided testosterone, placebo and financial support but was not directly involved in the study.

Provided by The Endocrine Society

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