

Testosterone-replacement therapy improves symptoms of metabolic syndrome

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Hormone-replacement therapy significantly improved symptoms of metabolic syndrome associated with testosterone deficiency in men, a new study from Germany finds. The results to be presented at The Endocrine Society's 94th Annual Meeting in Houston.

Metabolic syndrome comprises a cluster of complications that can increase the risk of heart and blood-vessel disease as well as [type 2 diabetes](#). These complications include [excess body weight](#), especially around the waist and torso, and abnormal concentrations of fat in the blood, known as lipids. In particular, patients with [metabolic syndrome](#) have high [blood levels](#) of the so-called bad fats, or triglycerides and low-density lipoproteins, and insufficient amounts of the healthy fats known as high-density lipoproteins. In addition, they often have high blood pressure and sugar, or glucose, levels.

Previous research has linked metabolic syndrome to testosterone deficiency, which can cause decreased muscle and [bone mass](#), depression, low energy, and decreased sex drive and ability. In addition, testosterone deficiency is also associated with the individual symptoms of metabolic syndrome, even when they are present without the other complications.

"When indicated, testosterone treatment is both essential and safe in elderly patients with symptomatic late onset [hypogonadism](#), or testosterone deficiency," said study lead author Aksam A. Yassin, M.D., Ph.D., Ed.D., chairman of the Institute of Urology & Andrology in

Norderstedt-Hamburg, Germany. "Further analysis is needed to confirm if our findings are due to a direct effect of restoring physiologic testosterone levels."

Specifically, investigators found that the prevalence of metabolic syndrome dropped from 56 to 30 percent after 57 months of treatment with testosterone-replacement medication to regulate hormone levels. In addition, triglycerides, and levels of blood sugar and pressure significantly decreased, while the average waist circumference shrank by 11 centimeters.

Beginning in 2004, investigators collected data from 261 patients with late-onset hypogonadism, characterized by both low testosterone levels and sexual dysfunction, at three centers in Germany. Patients received 1,000 milligrams of a long-acting testosterone drug, called undecanoate, on the first day of the study, at week six, and then every three months. At each visit, patients underwent testing of hormone levels, blood-sugar and lipid concentrations, and blood pressure. Average follow-up was four and a quarter years.

"We hypothesized that long-term testosterone improves metabolic syndrome, and found that this intervention improved all three components of obesity, including waist circumference, weight, and body-mass index; diabetes control; poor lipids profile; and blood pressure," Yassin said.

To determine the presence of metabolic syndrome among study participants, investigators used the definition from the International Diabetes Federation. Participants were diagnosed with the syndrome if they displayed central-body obesity combined with two other risk factors. These included elevated triglycerides levels, decreased high-density lipoproteins, [high blood pressure](#), and excessive blood-sugar concentrations.

Provided by The Endocrine Society

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