

Saad F, Gooren LJ. The role of testosterone in the etiology and treatment of obesity, the metabolic syndrome, and diabetes mellitus type 2.

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Abstract: Obesity has become a major health problem. Testosterone plays a significant role in obesity, glucose homeostasis, and lipid metabolism. The metabolic syndrome is a clustering of risk factors predisposing to diabetes mellitus type 2, atherosclerosis, and cardiovascular morbidity and mortality. The main components of the syndrome are visceral obesity, insulin resistance, glucose intolerance, raised blood pressure and dyslipidemia (elevated triglycerides, low levels of high-density lipoprotein cholesterol), and a proinflammatory and thrombogenic state. Cross-sectional epidemiological studies have reported a direct correlation between plasma testosterone and insulin sensitivity, and low testosterone levels are associated with an increased risk of type 2 diabetes mellitus, dramatically illustrated by androgen deprivation in men with prostate carcinoma. Lower total testosterone and sex hormone-binding globulin (SHBG) predict a higher incidence of the metabolic syndrome. Administration of testosterone to hypogonadal men reverses part of the unfavorable risk profile for the development of diabetes and atherosclerosis