

Division of Endocrinology, Department of Medicine, Harbor-UCLA Medical Center and Los Angeles Biomedical Research Institute, Torrance, CA, USA.

Obesity is an important risk factor for many common diseases including cardiovascular disease (CVD), type 2 diabetes, cancer and erectile dysfunction (ED). Adipose tissues produce a number of adipokines and cytokines, which affect endothelial and metabolic function resulting in insulin resistance and the metabolic syndrome (risks factors for CVD). Both ED and metabolic syndrome improve with a reduction in body mass index (BMI). The relationships among obesity, metabolic syndrome, ED, sex hormone-binding globulin (SHBG) and serum total and free testosterone levels are complex and often confusing to the physician. It is known that BMI is inversely proportional to serum total testosterone concentrations; low serum SHBG levels in obesity contribute to the low serum total testosterone. Recent studies show that BMI is also inversely proportional to free testosterone concentration. The characteristic low serum testosterone concentrations observed in obese men are also present in men with the metabolic syndrome and type 2 diabetes mellitus. A small proportion of men with ED have hypogonadism; however, the proportion increases if these men are obese with manifestations of the metabolic syndrome or type 2 diabetes mellitus. ED is a common symptom in patients with type 2 diabetes who also have low testosterone levels. This review describes the relationships between low serum testosterone concentrations and ED in obese patients and those with metabolic syndrome and type 2 diabetes mellitus.

Written by:

Diaz-Arjonilla M, Schwarcz M, Swerdloff RS, Wang C.