

Title: Potential application of testosterone replacement therapy as treatment for obesity and type 2 diabetes in men

Name: Julius Fink
Juntendo University Graduate School of Medicine, Department of Metabolsim and Endocrinology, Tokyo JAPAN

Sedentary lifestyle and over-nutrition are the main causes of obesity and type 2 diabetes (T2D). However, the same causes are major triggers of hypogonadism. Many T2D patients show low testosterone levels while hypogonadal men seem to be prone to become diabetic. Testosterone plays a major role in the regulation of muscle mass, adipose tissue, inflammation and insulin sensitivity and is therefore indirectly regulating several metabolic pathways, while T2D is commonly triggered by insulin resistance, increased adipose tissue and inflammation, showing a clear correlation between testosterone levels and T2D. Testosterone replacement therapy (TRT) is widely used in patients with symptoms of hypogonadism, however it is not commonly used as preventive intervention or treatment for T2D patients even though hypogonadal patients share many common symptoms (obesity, insulin insensitivity, increased inflammation, decrease in muscle mass and strength) with T2D patients. Even though TRT is often associated with side effects such as prostatic hypertrophy or cancer, cardiovascular risks due to increase in the number of red blood cells and infertility, several studies have shown that TRT remains a potent intervention improving metabolic functions such as glycated haemoglobin, blood sugar, total cholesterol and visceral fat. The purpose of this review is to discuss the possible benefits and risks of TRT in the prevention and treatment of obesity and T2D and assess the health risks and benefits of common T2D medications and testosterone.

Biography

Julius Fink has completed his PhD from Nippon Sport Science University University and is currently postdoctoral researcher at the Juntendo University Graduate School of Medicine.

Presenting author details

Full name: Julius Fink
Contact number: +81 90 2501 5389
Twitter account:
Linked In account:
Session name/ number:
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