

Hypogonadal men completing five years of testosterone treatment progressively lose weight and waist size in a clinically meaningful magnitude

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Introduction: (Abdominal) fat accumulation may cause hypogonadism and vice versa. This study analysed the effects of restoring testosterone in obese hypogonadal men all of whom had completed five years of treatment.

Methods: Cumulative, prospective, registry study of 255 men (mean age: 59.11 ± 6.06 years) with testosterone levels below 12.1 nmol/L. 116 men completed five years of treatment with parenteral testosterone undecanoate 1000 mg/12 weeks following an initial 6-week interval for five years. Their mean age was 58.54 ± 6.63 years (33;69).

Results: After five years, mean weight (kg) decreased from 104.83 ± 16.11 (minimum 70.0, maximum 139.00) to 90.07 ± 9.51 (74.0;115.0). This decrease was statistically significant vs baseline ($p < 0.0001$) and each year compared to the previous year ($p < 0.0001$). Mean change from baseline was 14.76 ± 0.44 kg or $13.21 \pm 0.51\%$. After five years, 94.8% of men had lost any weight, 89.7% had lost ≥ 5 kg, 75.9% ≥ 10 kg, 53.4% ≥ 15 kg, and 31% ≥ 20 kg.

Waist circumference (cm) as a measure of abdominal fat decreased from 107.20 ± 10.02 (86.00;129.00) to 98.46 ± 7.39 (84.00;117.00). The mean change from baseline was 8.74 ± 0.2 cm. BMI decreased from 33.88 ± 5.08 (21.91;43.87) to 29.13 ± 3.09 (22.07;36.71). These changes were also statistically significant vs baseline ($p < 0.0001$) and each year compared to the previous year ($p < 0.0001$).

Fasting glucose decreased from 5.77 ± 1.03 to 5.41 ± 0.13 mmol/L, total cholesterol from 7.55 ± 1.01 to 4.87 ± 0.29 , LDL from 3.89 ± 1.11 to 2.84 ± 0.92 , triglycerides from 3.24 ± 0.63 to 2.16 ± 0.13 mmol/L ($p < 0.0001$ vs. baseline for all). HDL decreased from 1.53 ± 0.74 to 1.36 ± 0.44 mmol/L. Systolic blood pressure decreased from 155.03 ± 16.32 to 137.74 ± 10.92 mmHg, diastolic blood pressure from 93.75 ± 11.76 to 79.61 ± 7.35 mmHg ($p < 0.0001$ for all).

Conclusions: Testosterone treatment for five years in hypogonadal men produced weight loss and improved metabolic profile. Reductions in weight and waist circumference were progressive over the full five years of the study.