

Weight Loss in Middle-Aged Hypogonadal Men on Long-Term Treatment with Testosterone Undecanoate Injections

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Introduction: Obesity is associated with reduced testosterone, and low testosterone induces weight gain. This study analysed the effects of normalization of serum testosterone in mainly elderly, hypogonadal men.

Methods: Open-label, single-center, cumulative, prospective registry study of 255 men (aged 38 – 83 years, mean 60.6 ± 8.0 years), with testosterone levels between 1.7 – 3.5 ng/mL (mean: 2.87 ± 0.4). Cut-off point for testosterone treatment was serum testosterone ≤ 3.5 ng/mL. 215 men were studied for at least 2 years, 182 for 3 years, 148 for 4 and 116 for at least 5 years. They received parenteral testosterone undecanoate 1000 mg/12 weeks after an initial interval of 6 weeks.

Results: After 5 years the following changes were observed: weight (kg) decreased by 16.15 kg from 106.22 ± 16.93 (minimum: 70, maximum: 139) to 90.07 ± 9.51 (min 74.00, max 115). The statistical significance was $p<0.0001$ vs baseline and vs the previous year over 5 years indicating a continuous weight loss over the full observation period. Waist circumference (cm) declined from 107.24 ± 9.14 (min 86, max 129) to 98.46 ± 7.39 (min 84, max 117) ($p<0.0001$ vs baseline and vs the previous year over 5 years). Body mass index (BMI, m/kg²) declined from 33.93 ± 5.54 (min 21.91, max 46.51) to 29.17 ± 3.09 (min 22.7; max 36.71) ($p<0.0001$ vs baseline and vs the previous year over 5 years). The mean per cent weight loss after 1 year was $4.12 \pm 3.48\%$, after 2 years $7.47 \pm 5.01\%$, after 3 years $9.01 \pm 6.5\%$, after 4 years $11.26 \pm 6.76\%$ and after 5 years $13.21 \pm 7.24\%$. At baseline, 96% of men had a waist circumference of ≥ 94 cm. This proportion decreased to 71% after 5 years.

Conclusions: Raising serum testosterone to normal produced loss of body weight, waist circumference and BMI. These improvements were progressive over the full 5 years of the study.