

## Testosterone Treatment up to 5 Years in Elderly, Hypogonadal Men has Profound Favourable Effects on Body Weight and Waist Circumference

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

**Methods:** Open-label, single-center, cumulative, prospective registry study of 255 men (aged 38 – 83 years, mean  $60.6 \pm 8.0$  years), with testosterone levels between 1.7 – 3.51 ng/mL (mean:  $2.87 \pm 0.4$ ). Cut-off point for testosterone treatment was serum testosterone  $\leq 3.5$  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 from  $106.22 \pm 16.93$  (minimum: 70, maximum: 139) to  $90.07 \pm 9.51$  (min 74, 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  $107.24 \pm 9.14$  (min 86, max 129) to  $98.46 \pm 7.39$  (min 84, max 117) ( $p < 0.0001$  vs baseline and vs the previous year over 5 years). Body mass index (BMI,  $m/kg^2$ ) declined from  $33.93 \pm 5.54$  (min 21.91, max 46.51) to  $29.17 \pm 3.09$  (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  $\geq 94$  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.