

Effects of long-term treatment with testosterone undecanoate injections in 850 hypogonadal men on waist circumference, body weight and BMI

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Introduction: Testosterone has been consistently shown to increase lean mass and decrease fat mass. While the current literature suggests that testosterone treatment in hypogonadal men decreases waist circumference, there seems to be no effect on total body weight. There are only four studies on testosterone treatment with a duration of three years. Long-term data on effects on body weight and waist circumference are lacking.

Methods: Observational registry studies of 850 men with testosterone levels ≤ 12.1 nmol/L from three German centers (two urological, one andrological). Patients received testosterone undecanoate injections for up to 60 months with a few patients treated for up to 15 years.

Results:

In cohort A (255 men, mean age: 60.6 years; Haider), waist circumference decreased from 107.24 ± 9.14 to 98.46 ± 7.39 cm ($p < 0.0001$). Body weight decreased from 106.22 ± 16.93 to 90.07 ± 9.51 kg ($p < 0.0001$), BMI from 33.93 ± 5.54 to 29.17 ± 3.09 kg/m² ($p < 0.0001$).

In cohort B (261 men, mean age: 58 years; Yassin), waist circumference decreased from 107.68 ± 10.02 to 97.36 ± 7.56 cm ($p < 0.0001$). Body weight decreased from 100.15 ± 14 to 92.46 ± 10.17 kg ($p < 0.0001$), BMI from 31.75 ± 4.42 to 29.32 ± 2.94 kg/m² ($p < 0.0001$).

In cohort C (334 men, mean age: 42 years; Zitzmann), waist circumference decreased from 114.0 ± 10.5 to 94.1 ± 8.7 cm ($p < 0.0001$). Body weight decreased from 103.0 ± 16.3 to 79.1 ± 12.6 kg ($p < 0.0001$), BMI from 31.8 ± 5.2 to 24.4 ± 3.2 kg/m² ($p < 0.0001$).

Conclusions: The unexpected and unintended weight loss observed in our cohorts exceeds results of weight loss reported studies using lifestyle interventions with and without drugs. Testosterone may be a useful tool to facilitate weight loss in hypogonadal men.