Effects of Long-Term Treatment with Testosterone Undecanoate Injections in Hypogonadal Men on Waist Circumference, Body Weight and BMI

Introduction & Objectives
Testosterone has been consistently shown to increase lean mass and decrease fat mass. However, long-term data on body weight and waist circumference are lacking. In this study, we aim to research long-term and sustainable effects on obesity parameters (BMI, weight, and waist circumference).

Materials & Methods
Longitudinal observational registry studies of 850 hypogonadal men with testosterone levels ≤ 12.1 nmol/L from three centers in Germany. All patients received parenteral testosterone undecanoate 1,000 mg for up to 60 months.

Results

<table>
<thead>
<tr>
<th>Cohort A (Haidar: 255 men, mean age: 60.6 years)</th>
<th>Cohort B (Yassin: 261 men, mean age: 58 years)</th>
<th>Cohort C (Zitzmann: 334 men, mean age: 42 years)</th>
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<tbody>
<tr>
<td>Waist Circumference decreased from 107.24 ± 9.14 to 98.46 ± 7.39 cm (p &lt;0.0001). Body weight decreased from 106.22 ± 16.93 to 90.07 ± 9.51 kg (p &lt;0.0001). Body mass index (BMI) decreased from 33.93 ± 5.54 to 29.17 ± 3.09 kg/m² (p &lt;0.0001).</td>
<td>Waist Circumference decreased from 107.68 ± 10.02 to 97.36 ± 7.56 cm (p &lt;0.0001). Body weight decreased from 100.15 ± 14 to 92.46 ± 10.17 kg (p &lt;0.0001). Body mass index (BMI) decreased from 31.75 ± 4.42 to 29.32 ± 2.94 kg/m² (p &lt;0.0001).</td>
<td>Waist Circumference decreased from 114.0 ± 10.5 to 94.1 ± 8.7 cm (p &lt;0.0001). Body weight decreased from 103.0 ± 16.3 to 81.1 ± 12.6 kg (p &lt;0.0001). Body mass index (BMI) decreased from 31.8 ± 2.4 to 25.4 ± 3.2 kg/m² (p &lt;0.0001).</td>
</tr>
</tbody>
</table>

Conclusion
Reduction in three obesity parameters observed in these 3 cohorts exceeds any results of weight loss studies using lifestyle interventions, with and without drugs reported in the literature. Testosterone may be a useful tool to facilitate reduction in obesity in hypogonadal men.