

Testosterone supplementation and body composition: results from a meta-analysis of randomized controlled trials.

Giovanni Corona¹, Vito A Giagulli², Elisa Maseroli³, Linda Vignozzi³, Antonio Aversa⁴, Michael Zitzmann⁵, Farid Saad⁶, Edoardo Mannucci⁷ and Mario Maggi³

¹Endocrinology Unit, Medical Department, Azienda UsI Bologna Maggiore-Bellaria Hospital, Bologna, Italy, ²Unit of Metabolic Diseases and Endocrinology, Conversano, Italy; ³Andrology and Sexual Medicine Unit, Department of Experimental and Clinical Biomedical Sciences, University of Florence, Florence, Italy; ⁴Department of Experimental Medicine, Sapienza University of Rome, Rome, Italy; ⁵Centre for Reproductive Medicine and Andrology Muenster, Germany; ⁶Bayer Pharma, Global Medical Affairs Andrology, Berlin, Germany and Gulf Medical University School of Medicine, Ajman, United Arab Emirates; ⁷Diabetes Agency, Careggi Hospital, Florence, Italy

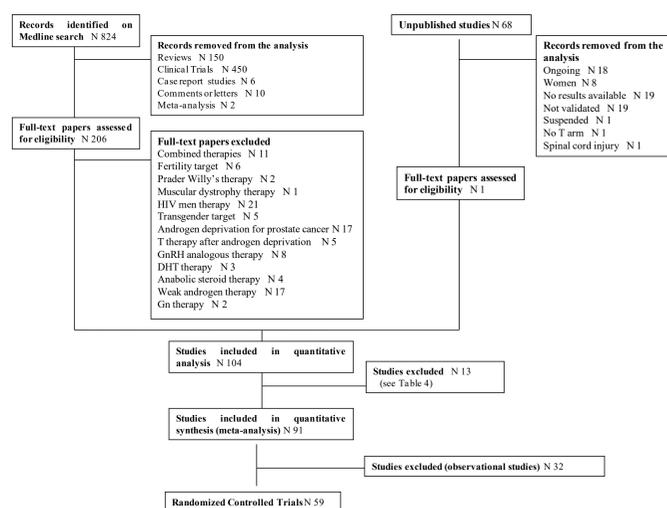
Objective. The role of testosterone (T) in regulating body composition is conflicting. The aim of present study is to meta-analyze the effects of T supplementation (TS) on body composition and metabolic outcomes

Methods. All randomized controlled trials (RCTs) comparing the effect of TS on different endpoints were considered.

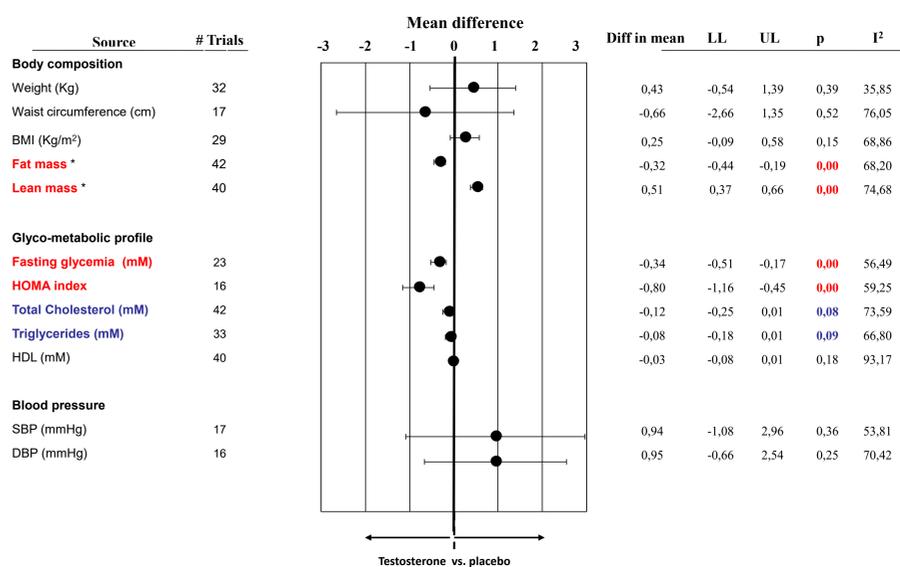
Results

Overall, 59 trials were included in the study enrolling 3029 and 2049 patients in TS and control groups, respectively. Mean trial duration was 8.7 months. The mean age, baseline T and body mass index of enrolled patients were 62.0 years, 11.6 nmoles/L and 28.6 kg/m² respectively.

Trial flow diagram



Weighted mean differences (with 95%CI) of different parameters at end point



End-point testosterone level modification adjusted relationship between TS-induced glycol-metabolic improvement and body composition changes

	Lean mass		Fat mass	
	Adj r	p	Adj r	p
HOMA index	0.82	0.001	-0.02	0.43
Fastingglycaemia	0.48	0.001	-0.05	0.27

Conclusions. Our data suggest that TS is able to improve body composition and glycometabolic profile particularly in younger subjects and in those with metabolic disturbances. Specifically designed studies are urgently needed to confirm this point.

