

# Testosterone to prevent type 2 diabetes in men - promising, but no quick fix

*Mirage News*

A national Australian study led by the University of Adelaide has shown that testosterone may play a role in decreasing the risk of type 2 diabetes in men, after two years of treatment.

The results of the study – the world’s largest – were presented today at the Annual Scientific Meeting of the American Diabetes Society.

“Type 2 diabetes is one of the world’s biggest health burdens and is especially prevalent in older men. Our study has shown that the development of type 2 diabetes among men at high risk can be prevented, and newly diagnosed diabetes can be reversed” says the study’s leader, Professor Gary Wittert, Director of the Freemasons Foundation Centre for Men’s Health at the University of Adelaide.

The T4DM (Testosterone for the prevention of Diabetes Mellitus) study, the largest study of testosterone treatment ever conducted anywhere in the world, enrolled more than 1000 men aged between 50 and 74 years old who were overweight or obese.

“I want to emphasize that this is not a signal to rush for the script pad. The best and safest way to prevent or reverse type 2 diabetes is through healthy eating, along with regular strength training and aerobic activity,” Professor Gary Wittert, Director of the Freemasons Foundation Centre for Men’s Health at the University of Adelaide

Study participants were split into two groups, receiving injections every three months with either testosterone or a placebo. All men were given access to the WW (formerly known as Weight Watchers) lifestyle program. On average over the 2 years about 30% of the men in each treatment group attended WW meetings, and 70% achieved the recommended amount of exercise.

After two years of treatment, 87 out of 413 (21%) men in placebo group had type 2 diabetes (based on an oral glucose tolerance test) compared with 55 out of 443 (12%) men in the testosterone group.

“The proportion of men with diabetes at two years in the testosterone treatment group was significantly lower than in the placebo group,” Professor Wittert says. “Importantly, the men who were most engaged in the WW healthy lifestyle program lost the most body weight.”

Researchers also found that:

- fasting blood sugar was, on average, lower than it was at the start of the study for both groups, but the decrease was greater in the testosterone group
- both groups of men lost, on average, around 4kg of weight but men on testosterone gained muscle mass while losing fat
- men on testosterone also gained small improvements in sexual function

- the most common adverse effect was an increase in red blood cells potentially leading to sludgy blood and clots. This affected 106 (22%) of men being treated with testosterone

Professor Wittert says the results of the study are promising, addressing an important concern. However, he cautions against testosterone treatment being viewed as a “quick fix” against type 2 diabetes.

“We do not know either the durability of effect or long-term safety of testosterone for preventing type 2 diabetes. Treatment with testosterone might be an option for some men, but all men need a thorough physical and mental health assessment, and support to adopt and maintain a healthy lifestyle,” Professor Wittert says.

“I want to emphasize that this is not a signal to rush for the script pad. The best and safest way to prevent or reverse type 2 diabetes is through healthy eating, along with regular strength training and aerobic activity.”

The T4DM Study was funded through a National Health and Medical Research Council (NHMRC) grant with additional support from Bayer AG, WW (formerly Weight Watchers), the Freemasons Foundation Centre for Men’s Health at the University of Adelaide, and Eli Lilly.

The study was conducted in association with The Queen Elizabeth Hospital, Melbourne University and the Austin Repatriation Hospital, University of Sydney and Concord Hospital, University of Western Australia, Fiona Stanley Hospital and the Keogh Institute, and University of Queensland and the Princess Alexandra Hospital, Monash University and the Hudson Institute, and Canberra University. The study was co-ordinated by the NHMRC Clinical Trial Centre, University of Sydney.