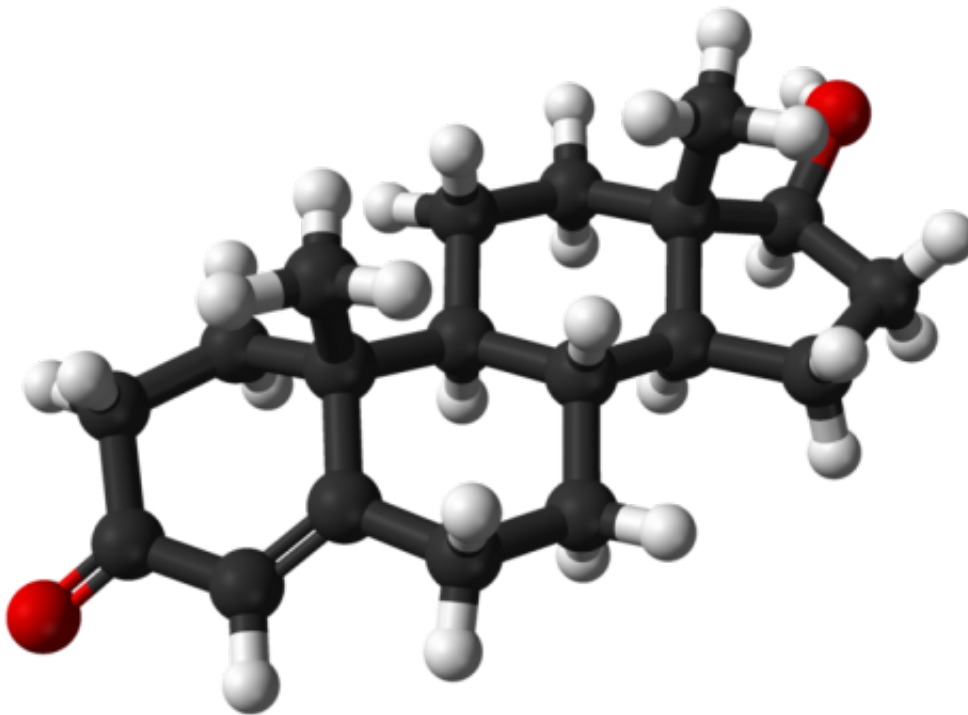


Testosterone levels improve in overweight, obese men after 12-week exercise program

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Ball-and-stick model of the testosterone molecule, $C_{19}H_{28}O_2$, as found in the crystal structure of testosterone monohydrate. Credit: Ben Mills/Wikipedia

Twelve weeks of aerobic exercise significantly boosted testosterone levels in overweight and obese men, with the greatest increases seen among vigorous exercisers, according to research presented today at the Integrative Biology of Exercise 7 meeting in Phoenix.

Researchers from Tsukuba University and Ryutsu Keizai University in Japan previously found that a combination of diet and exercise was effective in increasing the testosterone in this population. For this study, however, they looked specifically at the effect of regular [aerobic exercise](#) on testosterone levels.

"Testosterone is a [male sex hormone](#), and low circulating testosterone levels lead to various health disorders in men. Obesity, one of the biggest problems in the world, results in reduction in circulating testosterone levels in men," the research team wrote. Fatigue, decreased sex drive and decreases in muscle and bone mass are some of the common symptoms of low testosterone in men.

The research team compared 16 normal weight men to 28 overweight/[obese men](#). None of the men were regular exercisers. At baseline, the overweight/obese men had significantly lower total, free and bioavailable testosterone level than normal weight men. All of the study volunteers completed a 12-week aerobic exercise plan that entailed 40–60 minutes of walking or jogging on one to three days per week. Testosterone levels were also recorded at the end of the study.

While their testosterone was still at lower levels than the normal weight men at baseline, overweight and obese men saw a significant increase in all measured testosterone levels. This effect was particularly evident among the men who exercised vigorously. However, the exercise intervention had no significant effect on testosterone levels in the normal weight men.

Normal Weight Men		
	Pre-Exercise Intervention	Post-Exercise Intervention
Total Testosterone	21.2 ± 1.3 nmol/l	21.1 ± 1.3 nmol/l
Free Testosterone	0.47 ± 0.04 nmol/l	0.48 ± 0.05 nmol/l
Bioavailable Testosterone	11.65 ± 0.76 nmol/l	11.88 ± 1.11 nmol/l
Overweight/Obese Men		
	Pre-Exercise Intervention	Post-Exercise Intervention
Total Testosterone	15.4 ± 1.0 nmol/l	18.1 ± 1.1 nmol/l
Free Testosterone	0.33 ± 0.02 nmol/l	0.40 ± 0.02 nmol/l
Bioavailable Testosterone	8.07 ± 0.53 nmol/l	9.63 ± 0.55 nmol/l

Body weight also significantly decreased following the exercise intervention in the overweight/obese cohort. "I think decrease in body mass is one of the factors for increasing serum testosterone levels," said Hiroshi Kumagai, lead researcher on the study. "However, the degree of weight loss is small, and we found that the increase in vigorous physical activity was independently associated with the increase in serum testosterone levels. So, it seems the increase in physical activity, especially [vigorous physical activity](#), is the main factor for increasing serum [testosterone levels](#)."

Provided by American Physiological Society

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