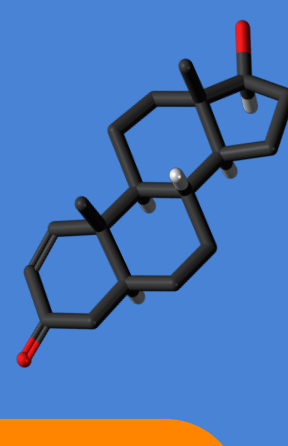


Testosterone



Myths, Facts, and More

What Are The Real Impacts ?

Max Reed

1

Myth

High Testosterone Levels Are Only Natural For Men

Testosterone is naturally found in both Men and Women



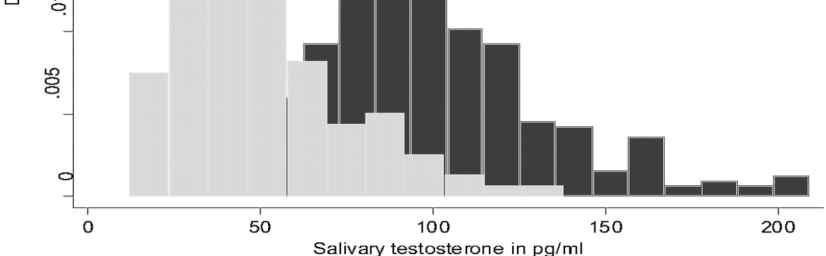
It Impacts ...¹

Men:

- Muscle Size/Strength
- Sperm Production
- Sex Drive

Women:

- Ovarian Function
- Bone Strength
- Sexual Behavior



There is an **overlapping** range of natural testosterone levels for Men and Women

Fact

Testosterone is an Important Hormone for Both Men and Women

Women Can Naturally Have High Testosterone Levels, Sometimes Even More Than Men

2

Myth

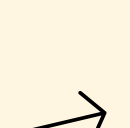
Testosterone Equals Aggression



³ Sapolsky Study

#1

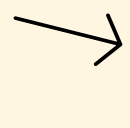
Castrate an Individual



Remove the Testicles

#2

Alter Testosterone Levels

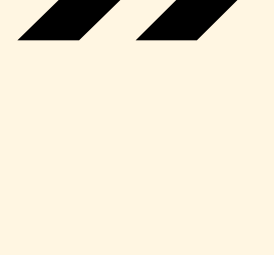


20%
2 X

Results

Conclusion

The Same Level of Aggression Returned for Testosterone levels at 20% and Double the natural levels



Individual differences in Testosterone levels do not predict differences in aggressive behavior

Important Notes

0 Testosterone - Aggression ↓

4x Testosterone - Aggression ↑

"It's not causing aggression, it's exaggerating the preexisting pattern of it" - Sapolsky

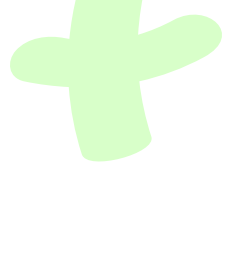
Fact

The Brain Can't Distinguish Between a Certain Range of Testosterone. Thus, it Cannot be Attributed to Changes in Aggression

3

Testosterone Will Make You More Competitive

Jordan-Young & Karkazis Study⁴

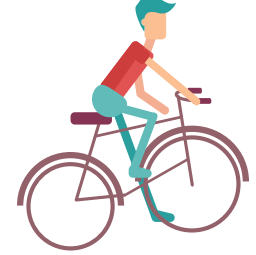


Testosterone Links



Strength + Power

Testosterone Links



Endurance

Nuckols Study⁵

Details

Trained 7 weeks without steroids

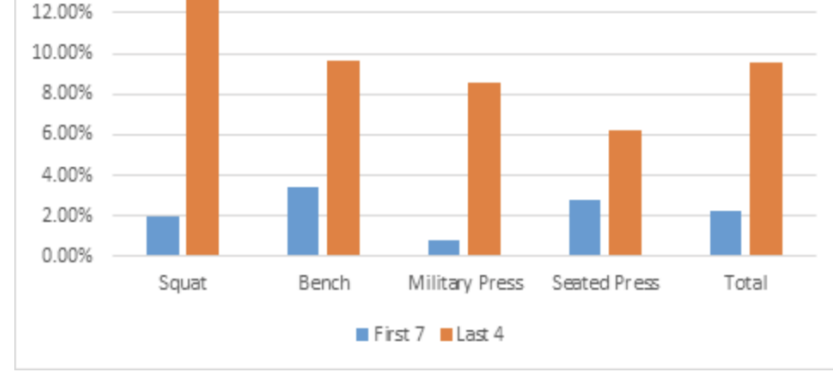
Trained 4 weeks being told they were on steroids (actually placebo)



Results

Combined total of **22 Pounds**

Combined total of **100 Pounds**



Conclusion:

The **placebo effect** clearly increases your strength gains from training when you simply think you are on steroids

Fact

Context and Specificity are Important in Understanding the Effects of Testosterone on Performance

Psychology Plays a Major Role in the Strength Gains Often Attributed to Steroids Such as Testosterone

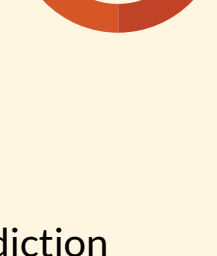
4

Myth

Testosterone Will Not Have Any Side Effects



Testosterone **Should Not** be Used to Enhance Athletic Performance



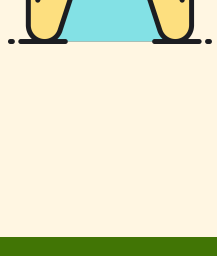
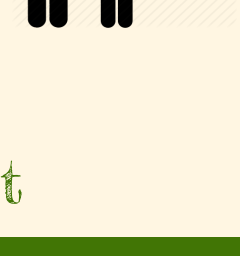
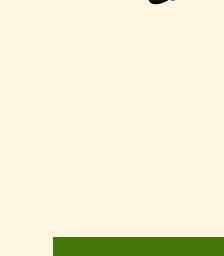
Possible Side Effects⁶

Seizure

Mood Changes

Infertility

Addiction



Fact

The Use of Testosterone Can Lead to a Variety of Dangerous Health Problems

CONCLUSION

While Testosterone can be linked to increased athletic performances in certain cases, the relationship between the two is much more complicated

- Testosterone is an important hormone that has overlapping natural levels in men and women
- It can exaggerate already present levels of aggression, but not cause it
- Context, specificity, and psychological consideration are key to identifying Testosterone's real impacts on athletic performance
- Testosterone is no joke, there are many severe side effects that can accompany it

SOURCES

¹ <https://www.health.harvard.edu/drugs-and-medications/testosterone--what-it-does-and-doesnt-do>

² Sapienza, Paola, Luigi Zingales, and Dario Maestriperi. "Gender differences in financial risk aversion and career choices are affected by testosterone." Proceedings of the National Academy of Sciences 106.36 (2009): 15268-15273.

³ Sapolsky, Robert M. The trouble with testosterone: And other essays on the biology of the human predicament. Simon and Schuster, 1998.

⁴ Jordan-Young, Rebecca M., and Katrina Karkazis. Testosterone. Harvard University Press, 2019.

⁵ <https://www.strongerbyscience.com/the-science-of-steroids/>

⁶ <https://www.uofmhealth.org/health-library/d00558a1>