

2013

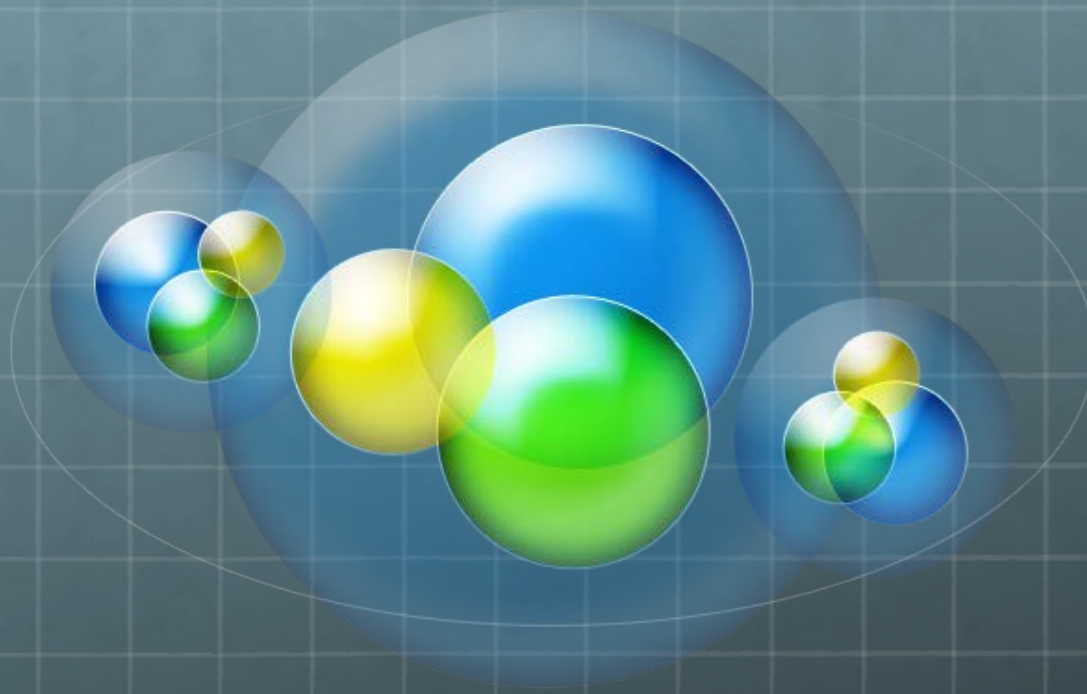
Testosterone Use and Effects

Brandon Mills
Parkland College

Recommended Citation

Mills, Brandon, "Testosterone Use and Effects" (2013). *Natural Sciences Poster Sessions*. 48.
<https://spark.parkland.edu/nsps/48>

Open access to this Presentation is brought to you by Parkland College's institutional repository, [SPARK: Scholarship at Parkland](#). For more information, please contact spark@parkland.edu.



Testosterone Use and Effects

By: Brandon Mills

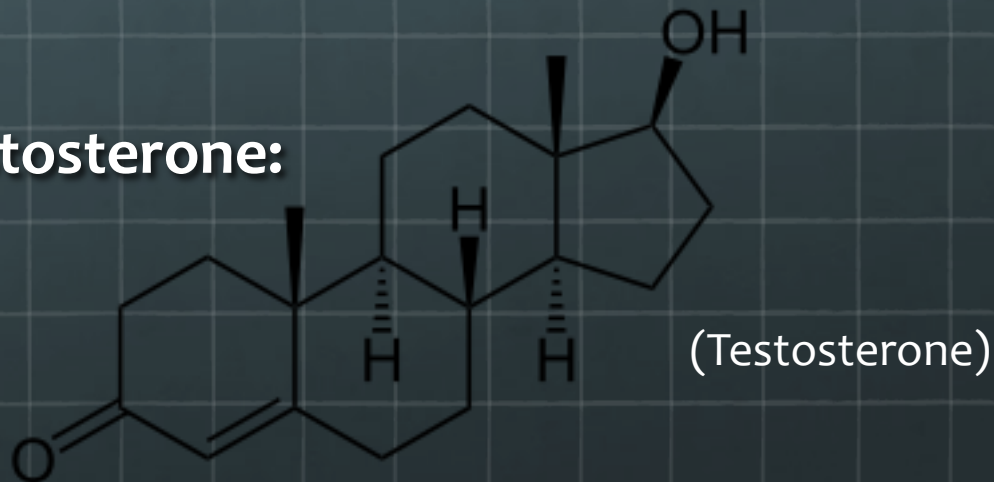
10/4/13

Chemistry 101 Special Project

Chemistry of testosterone

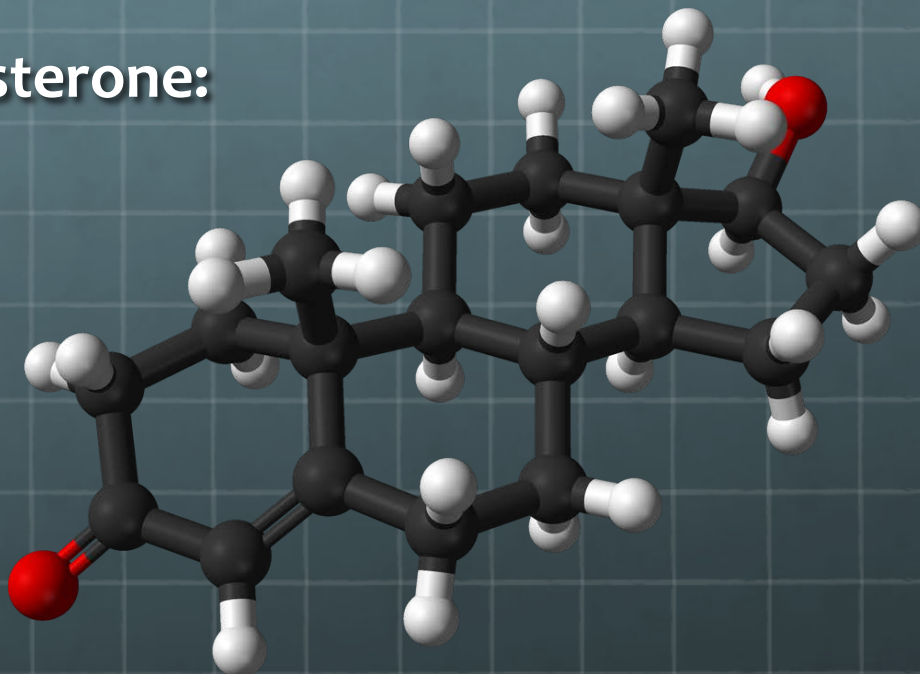
- 🌐 Chemical formula: $C_{19}H_{28}O_2$
- 🌐 Bodybuilding.com explains: “Testosterone is a 19-carbon steroid hormone produced primarily by the Leydig cells of the testes (in men).” It goes on to explain that testosterone is made up of 3 hexane rings and one pentane ring (All About Testosterone).

- 🌐 Structure of testosterone:



Chemistry of testosterone (cont.)

🌐 3-D model of testosterone:



🌐 Red=oxygen, white=hydrogen, black=carbon


(Testosterone)

What is testosterone?



- 🌐 **Definition:** A steroid hormone that is the most potent naturally occurring androgen and that regulates the development of the male reproductive system and male secondary sex characteristics. Testosterone is produced mainly in the testes and is also used as a drug in the treatment of certain medical disorders (*Dictionary.com*).
- 🌐 Testosterone is mainly found in the testicle of male but is also secreted in small amounts by the adrenal glands. It is the main male sex hormone. It is key in the production of male reproductive organs. It is also essential in promoting muscle, bone mass, and hair growth in men. It is also a key in well-being and the overall health of males (*All About Testosterone*).

Testosterone Uses

Treat hypogonadism




-  This condition is found in males. Their bodies do not create enough natural testosterone.

Weight lifters

-  Testosterone increases protein synthesis. This means that the testosterone that goes into your blood stream will attach to the proteins that many weight lifters put in their bodies. This helps the proteins synthesize which in turn increases muscle mass (All About Testosterone). This means weight lifters can take testosterone boosters to create a higher level in their body.
-  Testosterone helps to prevent muscle breakdown during workouts (All About Testosterone). This means the people who work out more can get more out of their workouts with testosterone in their bodies.

Testosterone Uses (cont.)

Other medical conditions

-  Testosterone is often used to prevent osteoporosis. Testosterone is essential in promoting bone mass and thus a great preventer of this disease (Testosterone (Transdermal Route)).
-  Testosterone is commonly used to help hair production in males as it is one of the fundamental developers of hair in the male body (Testosterone (Transdermal Route)).
-  Testosterone can also be used to treat patients with weak muscles in their body. As stated before, testosterone helps synthesize proteins in the body, which will in turn build muscle. The right amount of testosterone in your body can build weakened muscles to live a healthier life (All About Testosterone).






Side effects

- 🌐 Along with all great things in life with benefits, there are also down sides of testosterone
 - 🌐 Testosterone use and therapy has been directly linked to cardiovascular disease.
 - 🌐 Lin expressed in her research that many people who were using testosterone experienced cardiac disorders, cardiovascular complaints, cardiovascular events, vascular disorders, and other descriptions of cardio illnesses (Lin 2).
- 🌐 **Statistics:**
 - 🌐 Out of around 472 trials given to men with low T, 27 of them reported to have had cardiovascular problems. Of these 27, more than 180 problems all together were reported. Although this is only around 5% of the men who were given the testosterone, Lin still believes that from her research there is a direct correlation between testosterone use and cardiovascular disease (Lin 4-9)

Conclusion

- 🌐 “Appropriately prescribed testosterone is undoubtedly beneficial. However, caution needs to be exercised to ensure that the associated health benefits of testosterone therapy outweigh the potential increased risk of cardiovascular related events, particularly in older men where cardiovascular disease is common” (Lin 9).
- 🌐 Testosterone can have a great effect on your overall health and wellness in life, but one should also use caution when using testosterone as it can lead to things like cardiovascular disease.
- 🌐 Testosterone is essential to every male. Prescribed testosterone can be used to treat low T, but also other medical conditions in males.
- 🌐 Testosterone can be used by weight lifters to gain muscle and strength, but should be used cautiously.

Works Cited

-  Lin, Xu, et al. "Testosterone Therapy And Cardiovascular Events Among Men: A Systematic Review And Meta-Analysis Of Placebo-Controlled Randomized Trials." *BMC Medicine* 11.1 (2013): 1-12. Academic Search Complete. Web. 1 Nov. 2013.
-  "Testosterone (Transdermal Route)." Testosterone Transdermal Advanced Patient Information. N.p., n.d. Web. 02 Nov. 2013.
-  *Dictionary.com*. Dictionary.com, n.d. Web. 29 Oct. 2013.
-  "All About Testosterone." *Bodybuilding.com*. N.p., n.d. Web. 03 Nov. 2013.
-  "Testosterone." Wikipedia. Wikimedia Foundation, 31 Oct. 2013. Web. 01 Nov. 2013.