

# Testosterone - The Aggressive Hormone?

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## Summary

1. Rats are more aggressive when exposed to testosterone prenatally
2. Rats will bite and attack more
3. When you castrate male rats the aggression is reduced
4. Castrated males lose social dominance (Albert et al., 1986)
5. There is also a link between testosterone and aggression in primates (Higley et al., 1966)

## Testosterone and Criminal Males (Dabbs et al., 1995)

1. Aim: Is testosterone related to the type of violent crimes males commit?
2. Method: Measured testosterone in the saliva of 692 male prisoners
  - a. Looked at the criminal records of the prisoners for violent and non-violent crimes
3. Results: Found that testosterone levels predicted violent crimes like homicide and rape
4. Conclusion: Testosterone levels may affect the types of violent crimes criminals commit
5. Evaluation: What about testosterone and violent crimes in females?
  - a. What about effects of environment like upbringing by parents?
  - b. There is a confounding variable of motivation for committing crimes: senseless violence or acts of vengeance. It is arguably more horrific if someone goes around murdering for fun rather than to right a wrong they feel was done to them
  - c. This study had a huge sample size which is a strength
  - d. It is a correlational study and therefore cannot imply causation

## Testosterone and Criminal Females (Dabbs and Hargrove, 1997)

1. Aim: Is testosterone related to the type of violent crimes females commit and their behavior in prison?
2. Method: Measured testosterone in the saliva of 87 female prisoners
  - a. Looked at the criminal records of the prisoners for violent and non-violent crimes
  - b. Added an extra category of defensive violent which they defined as females being violent towards a perpetrator had abused them in the past
3. Results: Found that testosterone levels predicted violent crimes
  - a. Found that testosterone levels were related to their aggressive behavior in prison
4. Conclusion: Testosterone levels may affect the violent behavior in and out of prison
5. Evaluation: Considering females is a strength
  - a. What about effects of environment like upbringing by parents?
  - b. They fixed the confounding variable of motivation for committing crimes by adding the defensive violence category
  - c. Why didn't they use this category for the men in the 1995 study? Possible gender bias

## Testosterone and Wrestlers (Fry et al., 2011)

1. Aim: Do testosterone levels change when you win a wrestling match?
2. Method: Measure blood testosterone of 12 collegiate wrestlers before and after their match

3. Results: Testosterone increased for both winners and losers but the winners had higher increases than the losers
4. Conclusion: Suggests that winning increases your testosterone more so than losing does
5. Evaluation: Is the testosterone related to how aggressive they were? Or is the testosterone only related to winning the match?
  - a. What about females? Only male wrestlers were used
  - b. This study supports the challenge hypothesis of testosterone which is explained later

### **Testosterone and Chess Players (Mazur et al., 1992)**

1. Aim: Do testosterone levels change when you win a chess match?
2. Method: Measure testosterone in chess players
3. Results: Chess players who won had higher testosterone than players who lost
4. Conclusion: Chess is non-violent yet testosterone increased which suggests testosterone may be related to winning and gaining social status rather than just being more aggressive
5. Evaluation: What about other non-violent games in other cultures?

### **Testosterone and Fairness (Eisenegger et al., 2010)**

1. Folk hypothesis of testosterone is that it is linked to aggression
2. Aim: Can testosterone lead to fair behavior? Does the belief in the folk hypothesis affect behavior?
3. Method: Human females received either testosterone or a placebo
  - a. They played an ultimatum game where participants had to choose how to divide money
  - b. The proposer could be fair or unfair (the dependent variable)
4. Results: Females who received testosterone made fair offers
  - a. Females who received placebo made unfair offers
  - b. Females who believed they received testosterone made unfair offers
  - c. Females who believed they received placebo made fair offers
5. Conclusion: There is a social and biological factor at play in terms of testosterone and fairness
  - a. The biological factor of receiving testosterone increases fairness
  - b. The social factor of believing the folk hypothesis of testosterone affects fairness

### **Testosterone Overall Evaluation**

Testosterone has been linked to aggressive behavior in both animals and humans

1. Problem of causality in testosterone and aggression studies
  - a. Does having high testosterone cause you to be violent or does being violent raise your testosterone levels?
2. The recent evidence favors a social status function of testosterone related to winning and losing rather than purely aggression