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**Male sex hormone testosterone 'interferes with empathy'**

Giving women a small dose of the male sex hormone testosterone makes them less able to empathise with others, say UK and Dutch researchers.

Their findings, in journal PNAS, add weight to the theory that the hormone is significant in the development of autism.

Sixteen volunteers given testosterone were less able to judge the mood of facial expressions they were shown.

Exposure to the hormone in the womb may be key, it is suggested.

**Environmental factors**

Autism is a disorder which, to varying degrees, affects the ability of children and adults to communicate and interact socially.

While various genes linked to the condition have been found, the precise combination of genetics and other environmental factors which produce autism is still unclear.

The latest study, from the universities of Cambridge and Utrecht, tests the idea that the disorder may be the result of an "extreme male brain", perhaps compromised by exposure to male sex hormones during brain development in the womb.

The rate of autism is much higher among boys than it is among girls.

Women have lower levels of the male sex hormone testosterone than men, and 16 volunteers were given a dose of the hormone to see if this affected one of the key areas linked to autism - the ability to empathise.

In standard tests of "mind-reading", in which subjects look at pictures of faces and try to guess the mood of the person pictured, women tend to do better than men.

However, the testosterone dose caused a significant reduction in this "mind-reading" advantage amongst the women.

The findings also hinted at the significance of testosterone exposure in the womb.

In men and women, the relative length of the index and fourth finger is different - in men, the index finger tends to be shorter than the ring finger, while in women, it is more likely that the fingers are similarly long, or the index finger longer.

These differences are thought to be generated by differing levels of testosterone exposure before birth.

**Caution urged**

However, the women who did worst at the "mind-reading" test after a dose of the male sex hormone were those whose finger lengths were the most "man-like" in the first place.

Professor Jack van Honk, one of the researchers, said: "We are excited by this finding because it suggests testosterone levels prenatally prime later testosterone effects on the mind."

Fellow researcher Professor Simon Baron-Cohen added: "This contributes to our knowledge of how small hormonal differences can have far-reaching effects on the mind."

Professor Uta Frith, an autism researcher at University College London, said the findings needed to be treated with caution.

She said: "The testosterone theory is interesting, but it is still just one of many theories about the origins of autism.

"I hope these results can be reproduced by other research teams, as the number of women involved are quite small."

Richard Mills, from the National Autistic Society, said that the study was "another piece of the jigsaw", but while it increased understanding, it did not provide all the answers.

He said: "This is an important piece of research from a reputable team, but it's not a defining moment, and what concerns us is that there are people who will seek to make capital out of this.

"We have heard of one group in the US who are using the testosterone theory to justify 'treating' children with what is effectively chemical castration, which is plainly wrong."

**DAILY MAIL**

**How testosterone causes men to fail on the feelings front**

By [Daily Mail Reporter](http://www.dailymail.co.uk/home/search.html?s=y&authornamef=Daily+Mail+Reporter)  
**UPDATED:** 08:35, 10 February 2011

When men find it hard to work out what women want, blame their hormones.

For the ability to read other people’s emotions is greatly reduced by testosterone, a study suggests.

Boosting the amount of the male sex chemical in women slows their ability to empathise, researchers from Cambridge and Utrecht universities found.

Tests also showed that those women with longer ring fingers than index fingers –   
caused by high testosterone exposure in the womb – are more likely to be affected.

Females were tested because they have naturally low levels, meaning any effect of raising the amount could be easily spotted.

Cambridge researcher and autism expert Simon Baron-Cohen told the Proceedings of the National Academy of Sciences journal: ‘Small hormonal differences can have far-reaching effects on empathy.’

Dutch researcher Professor Jack van Honk said: ‘We are excited by this finding.’  
The results also add weight to a theory that an overload of testosterone in the womb can raise the odds of autism, he added.