

Female intuition could be linked to lower exposure to testosterone in women while in womb

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The digital ratio is obtained by dividing the length of the forefinger by the length of the ring finger of the same hand. Credit: University of Granada

So-called "female intuition" could actually have a biological component, related to the lower prenatal exposure to testosterone women receive in

the womb. This would lead them to have a "more intuitive and less reflective" attitude to life than men. These are the results of a study carried out by Spanish researchers from the University of Granada, the Barcelona Pompeu Fabra University and the Middlesex University of London, in an article recently published in the journal *Psychoneuroendocrinology*.

According to previous studies, prenatal exposure to [testosterone](#) affects developments in the brain that determine, to some extent, behavioural trends and tendencies throughout the lives of each individual, including humans. Males receive a higher amount of prenatal testosterone, which, according to scientists, has an influence on that they, for example, take more risks and be more empathic than women.

Intuitive thought can be defined as that which is processed automatically and unconsciously and which, therefore, requires little cognitive effort. On the other extreme is reflexive thought, which takes greater effort and conscious analysis. The former is based on sensations and is more "emotional", while the latter is analytical and more "rational". In certain situations, to "let yourself be led" by intuition will be better than stopping to think. In other situations, the opposite will occur.

Men are less intuitive

The authors of the study wondered whether exposure to testosterone also has an effect on [men](#) being "less intuitive" and "more reflexive" than women, for which they carried out a series of experiments on over 600 students from the University of Granada Faculty of Economics and Business Studies.

For their analyses, the researchers used a prenatal testosterone marker, called "digital ratio". This is obtained by dividing the length of the forefinger by the length of the ring finger of the same hand. "The lower

the ratio, the greater the prenatal testosterone received and, therefore, the more "masculine" the cerebral disposition, regardless of the person's gender. Men, obviously, have a lower average digital ratio than women", as pointed out by Antonio Manuel Espin, lecturer at the Dept. of Economic Theory and History (University of Granada, Spain) and one of the authors of this article.

Cognitive Reflection Test

The participants first responded to a series of questionnaires, among which was the so-called Cognitive Reflection Test (CRT), a test that precisely measures the dichotomy between intuition and reflection. The CRT consists of three simple algebraic questions that, given how they are presented, generate intuitive answers that come automatically but which are incorrect. To get the right answer, the individual has to stop to reflect and realize that the first answer that came into his/her head was incorrect.

Using only three questions, this test has proved to be capable of predicting a whole range of behaviours, some of which are so strange as believing in God or in the supernatural – which relates positively to answering the test intuitively. Espin points out that "what is most important here is that women tend to give more intuitive answers, whilst men respond in a more reflexive way. In other words, in this specific test, which penalizes intuitive thought, men generally do better than women".

Following the tests, the researchers scanned the participants' hands to measure finger length and calculate the digital ratio.

The results were clear. Men responded better to the CRT than women but, among the latter, those that showed a more "masculine" (ie, lower) digital ratio, answered as equally well as the men. "To be more specific,

what we found was an indication that [prenatal exposure](#) to testosterone predisposes people to adopt a more reflexive and less intuitive mindset. Furthermore, this effect seems to be stronger among women".

More information: Bosch-Domènech, A., Brañas-Garza, P., Espín, A.M., Can exposure to prenatal sex hormones (2D:4D) predict cognitive reflection? *Psychoneuroendocrinology* (2014), [dx.doi.org/10.1016/j.psyneuen.2014.01.023](https://doi.org/10.1016/j.psyneuen.2014.01.023)

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