

Men Can Be So Hormonal

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Opinion



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June 24, 2017

“Does being over 40 make you feel like half the man you used to be?”

Ads like that have led to a surge in the number of men seeking to boost their [testosterone](#). The Food and Drug Administration reports that prescriptions for testosterone supplements have [risen](#) to 2.3 million from 1.3 million in just four years.

There is such a condition as “low-T,” or [hypogonadism](#), which can cause fatigue and diminished sex drive, and it becomes more common as men age. But according to a [study](#) published in JAMA Internal Medicine, half of the men taking prescription testosterone don’t have a deficiency. Many are just tired and want a lift. But they may not be doing themselves any favors. It turns out that the supplement isn’t entirely harmless: Neuroscientists are uncovering

evidence suggesting that when men take testosterone, they make more impulsive — and often faulty — decisions.

Researchers have shown for years that men tend to [be more confident](#) about their intelligence and judgments than women, believing that solutions they've generated are better than they actually are. This hubris could be tied to testosterone levels, and new research by Gideon Nave, a cognitive neuroscientist at the University of Pennsylvania, along with Amos Nadler at Western University in Ontario, reveals that high testosterone can make it harder to see the flaws in one's reasoning.

How might heightened testosterone lead to overconfidence? One possible explanation lies in the orbitofrontal cortex, a region just behind the eyes that's essential for self-evaluation, decision making and impulse control. The neuroscientists Pranjal Mehta at the University of Oregon and Jennifer Beer at the University of Texas, Austin, have found that people with higher levels of testosterone have [less activity](#) in their orbitofrontal cortex. Studies show that when that part of the brain is less active, people tend to be [overconfident](#) in their reasoning abilities. It's as though the orbitofrontal cortex is your internal editor, speaking up when there's a potential problem with your work. Boost your testosterone and your editor goes reassuringly (but misleadingly) silent.

[In a classic study](#) conducted at the University of Wisconsin, college students taking final exams rated their confidence about each answer on a five-point scale, "one for a pure guess" and "five for very certain." Men and women both gave themselves high scores when they answered correctly. But what happened when they'd answered incorrectly? Women tended to be appropriately hesitant, but men weren't. Most checked "Certain" or "Very certain" when they were wrong, projecting as much confidence for their bad answers as for their good ones.

Men are also more likely to overestimate how well they'll perform compared with their peers. [Researchers](#) at Kiel University in Germany and at Oxford gave a group of adults a test that assesses judgment and reasoning called the Cognitive Reflection Test, or C.R.T.

To see what the C.R.T. looks like, try answering this question: A bat and a ball cost \$1.10 in total. The bat costs \$1.00 more than the ball. How much does the ball cost?

If you're like most people, your first thought is that the ball costs 10 cents. But that is incorrect. If the ball costs \$0.10, and the bat costs \$1.00 more (or \$1.10), then the total would be \$1.20. So the ball costs 5 cents and the bat costs \$1.05.

If you got this wrong, you're not alone. Even at Ivy League schools such as Harvard and Princeton, [less than 30 percent](#) of students answer all the questions correctly. This is how the clever questions are designed. There's an immediate, obvious answer that feels right but is actually wrong.

In the Kiel University study, both genders thought they'd scored higher on the test than they actually had. When asked to predict how others would fare, however, women expected other women to earn comparably high scores, but men thought they'd significantly outperform other men.

People don't like to believe that they're average. But compared with women, men tend to think they're much better than average.

If you feel your judgment is right, are you interested in how others see the problem? Probably not. Nicholas D. Wright, a neuroscientist at the University of Birmingham in Britain, studies how fluctuations in testosterone shape one's willingness to collaborate. Most testosterone researchers study men, for obvious reasons, but Dr. Wright and his team focus on women. They asked women to perform a challenging [perceptual task](#): detecting where a fuzzy pattern had appeared on a busy computer screen. When women took oral testosterone, they were more likely to ignore the input of others, compared with women in the placebo condition. Amped up on testosterone, they relied more heavily on their own judgment, even when they were wrong.

The findings of the latest study, which have been presented at conferences and will be published in *Psychological*

Science in January, offer more reasons to worry about testosterone supplements.

[Dr. Nave and Dr. Nadler's team](#) asked 243 men in Southern California to slather gel onto their shoulders, arms and chest. Half of the men rubbed in a testosterone gel, and the rest rubbed in a placebo. Once the gel dried, they put on their shirts and went about their day.

Four and a half hours later, enough time for their testosterone levels to peak and stabilize, the men returned to the lab. They sat down at a computer and took several tests — a math test, a mood questionnaire and the C.R.T.

For the men with extra testosterone, their moods hadn't changed much, but their ability to analyze carefully had. They were, on average, 35 percent more likely to make the intuitive mistake on the bat and ball question. They were also rushed in their bad judgment and gave incorrect answers faster than the men with normal testosterone levels, while taking longer to generate correct answers.

Some will shrug and say that making a mistake on a sneaky word problem isn't a concern in daily life, but researchers are discovering that these reasoning errors could affect financial markets. A team of neuroeconomists, led by Dr. Nadler, along with Paul J. Zak at Claremont Graduate University, [gave 140 male traders](#) either testosterone gel or a placebo. The next day, the traders came back into the lab and participated in an asset trading simulation.

The results are disturbing. Men with boosted testosterone significantly overpriced assets compared with men who got the placebo, and they were slower to incorporate data about falling values into their trading decisions. In other words, they created a trading bubble that was slow to pop. (Fortunately, Dr. Nadler didn't have these men participate in a real stock market, out of concern for what a single dose of this drug could do.)

History has long labeled women as unreliable and hysterical because of their hormones. Maybe now it's time to start saying, "He's just being hormonal."

The research has its limitations. On average, men in these studies were in their early 20s, and a surge in testosterone might not impair older men's reasoning in quite the same way. And of course this research doesn't prove that all men are bad decision makers because of their testosterone or that they're worse decision makers than women. Confidence can spur a person to action, to take risks. But we should all be more aware of when confidence tips into overconfidence, and testosterone supplements could encourage that. Ironically, these supplements might make someone feel bold enough to lead but probably reduce his ability to lead well.

The television ads promise youth and vigor, but they've left out the catch: Testosterone enhancement doesn't just make you feel like an invincible 18-year-old. It makes you think like one, too.