

Men's testosterone levels predict competitiveness

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After a man loses a challenge, whether or not he is willing to get back into the game depends on changes in his testosterone levels, according to new research at The University of Texas at Austin.

Robert Josephs and Pranjal Mehta, psychology researchers, examined why some men back down after losing a competition, while others choose to challenge their opponent again. Their research suggests the answer lies in what happens to a man's testosterone levels after the competition.

Josephs and Mehta studied more than 60 men who competed against each other in pairs. The researchers measured participants' testosterone levels and charged the men to complete the task of tracing through a pattern of numbers. After the competition, the researchers measured the men's testosterone levels and asked whether each would like to compete again.

Among the men who lost the competition, 70 percent of those whose testosterone levels increased chose to compete again. But, 80 percent of those whose levels decreased declined to compete again.

The researchers were surprised to find changes in testosterone levels did not predict who would want to compete again among the men who won the competition. The researchers speculate winners may not be interested in facing the same opponent because the re-match might result in a loss.

The psychology researchers also wanted to reveal the basis for the participants' changes in their testosterone levels. Surprisingly, winning or losing the competition had no effect on the men's testosterone levels. Rather, participants' pre-competition stress levels, as measured by cortisol, were powerful predictors of post-competition testosterone change, especially among losers. Previous research suggests people who have high levels of the stress hormone cortisol also have chronically high levels of stress and anxiety. The stress of losing may depress the release of catecholamines, chemical compounds such as dopamine and norepinephrine (nonadrenaline), which can cause a drop in testosterone.

The results from the psychology researchers' study, "Testosterone Change After Losing Predicts the Decision to Compete Again," will be published in the December issue of *Hormones and Behavior*.

The research validates the scientific assumption that changes in post-competition testosterone levels have consequences on human behavior.

"The study suggests our social behavior may, in part, be driven by changes in our hormone levels," Mehta said. "When testosterone levels increase, we seem to become more dominant and driven to gain status. But, when testosterone levels drop, we seem to become more submissive."

The researchers said a similar study should be conducted in women to determine whether the same pattern emerges. Although there is far less research on testosterone and social behavior in women, the researchers explain higher levels of testosterone in women may be associated with assertive, aggressive and dominant behaviors.

Source: University of Texas at Austin

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