

Hormone levels higher for soccer fans watching a game, but not upon win

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Soccer fans' testosterone and cortisol levels go up when watching a game, but don't further increase after a victory, according to a study published Apr. 18 in the open access *journal PLoS ONE*.

The study was conducted with 50 Spanish soccer fans watching the finals between Spain and the Netherlands in the 2010 World Cup. The researchers, led by Leander van der Meij of the University of Valencia in Spain and VU University Amsterdam in the Netherlands, measured testosterone and [cortisol levels](#) for fans of different ages, genders, and degree of interest in the game. They found that the increase in testosterone was independent of all these factors, but the increase in cortisol level was more pronounced for dedicated, young, male fans.

The authors write that the testosterone effect is in agreement with the "challenge hypothesis," as [testosterone levels](#) increased to prepare for the game, and the cortisol effect is consistent with the "social self-preservation theory," as higher [cortisol secretion](#) among young and greater soccer fans suggests that they perceived a particularly strong threat to their own social esteem if their team didn't win.

More information: van der Meij L, Almela M, Hidalgo V, Villada C, IJzerman H, et al. (2012) Testosterone and Cortisol Release among Spanish Soccer Fans Watching the 2010 World Cup Final. *PLoS ONE* 7(4): e34814.
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