

Males have adapted to battle with competing sperm

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In the context of sexual reproduction, natural selection is generally thought of as a pre-copulation mechanism. We are drawn to features of the human body that tell us our partner is healthy and will provide us a fighting opportunity to carry on our genetic lineage. But a new article appearing in the February issue of *Current Directions in Psychological Science* suggests that the human male has evolved mechanisms to pass on his genes during post-copulation as well, a phenomenon dubbed "sperm competition."

In their article, Todd Shackelford and Aaron Getz at Florida Atlantic University describe sperm competition as "the inevitable consequence of males competing for fertilizations."

For a monogamous species, sperm competition may seem unlikely. But according to the authors, extra pair copulations (i.e. affairs) appear to be a significant part of our ancestral history and could, evolutionarily speaking, spell disaster. Ultimately, a male whose female partner engages in extra-pair copulation is at risk of unwittingly investing his resources into a genetically unrelated offspring.

Competition may also affect sperm count, say the authors. When men spend more time away from their partners (time that their partners could have spent with other males), the number of sperm in their ejaculate increases upon their next copulation. In one study, the authors note, simulated phalluses that most closely resembled the human penis removed an ejaculate-like substance from an artificial vagina. This could

potentially signify that that the penis developed its shape to act as an anatomical squeegee.

But sperm competition does not solely take place in the realm of our biological makeup. According to the authors, many sexual behaviors such as deep copulatory thrusting may function to remove rival sperm. Accordingly, sexual partners report that men thrust more deeply and quickly into the vagina following allegations of infidelity. The same periods of separation that increase sperm number in male ejaculates may also help to explain the increasingly lustful feelings human males develop after long periods of time apart from their mate. That is, the human male may want to copulate as soon as possible as insurance against possible extra-pair copulation.

As sperm competition comes to light as yet another facet of sexual adaptation, it raises the question of how many other ways have humans evolved in a world dictated by "survival of the fittest?"

"Sexual conflict between males and females," Shackelford and Goetz describe, "produces a coevolutionary arms race between the sexes, in which an advantage gained by one sex selects for counteradaptations in the other sex." Thus future research may move beyond male adaptations and, for example, attempt to identify mechanisms in which females increase retention of sperm inseminated by men with the most favorable genes.

Source: Association for Psychological Science

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