

Human eggs prefer some men's sperm over others, research shows

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Human eggs use chemical signals to attract sperm. New research from Stockholm University and Manchester University NHS Foundation Trust shows that eggs use these chemical signals to choose sperm. Different

women's eggs attract different men's sperm—and not necessarily their partner's.

Humans spend a lot of time and energy choosing their partner. A new study by researchers from Stockholm University and Manchester University NHS Foundation Trust (MFT) shows that choosing your partner continues even after sex—[human eggs](#) can "choose" sperm.

"Human [eggs](#) release chemicals called chemoattractants that attract sperm to unfertilized eggs. We wanted to know if eggs use these [chemical signals](#) to pick which sperm they attract," said John Fitzpatrick, an Associate Professor at Stockholm University.

The researchers examined how sperm respond to follicular fluid, which surrounds eggs and contains sperm chemoattractants. The researchers wanted to find out if follicular fluids from different females attracted sperm from some males more than others.



Dr John Fitzpatrick, Wallenberg Academy Fellow, Department of Zoology, Stockholm University. Credit: Magnus Bergström/Knut and Alice Wallenberg Foundation

Microscopic mate choice

"Follicular fluid from one female was better at attracting sperm from one male, while [follicular fluid](#) from another female was better at attracting sperm from a different male," said Professor Fitzpatrick.

"This shows that interactions between human eggs and sperm depend on the specific identity of the women and men involved."

The egg does not always agree with the women's choice of partner. The

researchers found that eggs did not always attract more sperm from their partner compared to sperm from another male.

Is this egg or sperm choice? Professor Fitzpatrick explained that sperm have only one job—to fertilize eggs—so it doesn't make sense for them to be choosy. Eggs on the other hand can benefit by picking high quality or genetically compatible sperm.

"The idea that eggs are choosing sperm is really novel in human fertility," said Professor Daniel Brison, the scientific director of the Department of Reproductive Medicine at Saint Marys' Hospital, which is part of MFT, and the senior author of this study.

The University of Manchester Honorary Professor added: "Research on the way eggs and [sperm](#) interact will advance fertility treatments and may eventually help us understand some of the currently 'unexplained' causes of infertility in couples."

"I'd like to thank every person who took part in this study and contributed to these findings, which may benefit couples struggling with infertility in future."

The article "Chemical signals from eggs facilitate [cryptic female choice](#) in humans" is published in the scientific journal *Proceedings of the Royal Society B*.

More information: Chemical signals from eggs facilitates cryptic female choice in humans, *Proceedings of the Royal Society B*, rspb.royalsocietypublishing.org/doi/10.1098/rspb.2020.0805

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