

High levels of urinary paracetamol may impair male fertility, study suggests

15 July 2016



Pills. Credit: Public Domain

Couples in which the male partner had high levels of paracetamol in his urine took longer to achieve pregnancy than couples in which the male had lower levels of the compound, according to a preliminary study by researchers at the National Institutes of Health.

Paracetamol, also known as acetaminophen, is a non-prescription drug widely used as a [pain reliever](#) and fever reducer. It also is one of the compounds produced when the body breaks down aniline, a chemical used to make rubber, pesticides, and coloring agents used in food, cosmetics and clothing. The study was published online in *Human Reproduction*.

"At this point, our findings need to be corroborated by future research, and there is no cause for

alarm," said Melissa Smarr, Ph.D., the study's first author, a postdoctoral fellow in the Division of Intramural Population Health Research at NIH's Eunice Kennedy Shriver National Institute of Child Health and Human Development.

Dr. Smarr explained that the high levels of [paracetamol](#) in the urine of certain men in the study were unlikely to result only from taking medications and were more consistent with those seen from environmental exposure, either to aniline or paracetamol or a combination of the two. The findings could have implications for the amount of paracetamol exposure that is considered acceptable.

The current finding results from the latest analysis of data from the Longitudinal Investigation of Fertility and the Environment (LIFE) study, established to examine how lifestyle and exposure to environmental chemicals may affect fertility. The LIFE study encompasses fertility data from 501 couples enrolled in four counties in Michigan and 12 counties in Texas from 2005 to 2009.

The women taking part in the study ranged from 18 to 44 years of age, and the men were over 18. Each participant provided a single urine sample upon joining the study, which was analyzed to measure its paracetamol concentration.

Women had a higher average level of paracetamol (26.6 ng/mL) than the men (13.2 ng/mL). A high level of paracetamol for the female partner was not associated with reduced chances for pregnancy. However, couples in which the males had high levels of paracetamol (more than 73.5 ng/ml) were 35 percent less likely to achieve a pregnancy, compared to couples in which the males had low levels (less than 5.4 ng/ml.).

The authors stressed that their findings need to be confirmed by larger studies that can better identify the sources of paracetamol, the duration of time the

participants are exposed, and the amount of the compound to which they are exposed.

More information: Melissa M. Smarr et al.
Urinary paracetamol and time-to-pregnancy,
Human Reproduction (2016). DOI:
[10.1093/humrep/dew172](https://doi.org/10.1093/humrep/dew172)

Provided by National Institutes of Health

APA citation: High levels of urinary paracetamol may impair male fertility, study suggests (2016, July 15) retrieved 6 September 2022 from <https://medicalxpress.com/news/2016-07-high-urinary-paracetamol-impair-male.html>

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