

High Acetaminophen Level in Men May Delay Pregnancy

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Time to pregnancy (TTP) was longer in couples in which the men had high concentrations of acetaminophen in the urine than it was among couples in which the men had low concentrations of the commonly used pain reliever, according to a report published online July 13 in *Human Reproduction*.

Exposure to acetaminophen may come from the environment, as well as in the form of a pill. Paraaminophenol is a breakdown product of both acetaminophen and aniline, which is used in the manufacture of certain pesticides, rubber products, dyes, and polyurethane foam, and is present in some cosmetics, food, and clothing. **Epidemiological and animal studies suggest acetaminophen may be an endocrine disruptor.**

Melissa Smarr, a postdoctoral fellow from the Division of Intramural Population Health Research at the Eunice Kennedy Shriver National Institute of Child Health and Human Development at the National Institutes of Health, Bethesda, Maryland, and colleagues examined possible association of urinary acetaminophen concentration in men and TTP among their partners. The researchers examined acetaminophen and paraaminophenol concentrations in the single urine sample given at the onset of participation in the Longitudinal Investigation of Fertility and the Environment (LIFE) study.

This prospective cohort study includes 501 couples living in Michigan or Texas who attempted pregnancy between 2005 and 2009. The researchers followed couples for up to a year. Pregnancy occurred for 347 (69%) of the 501 couples during the study period. High concentration of acetaminophen in women was not associated with longer TTP, but in men there was a modest association. Urinary concentration was higher for women than men (median, 26.6 vs 13.2 ng/mL, respectively; $P < .0001$). Couples in which the men had concentration of the drug exceeding 73.5 ng/mL were 35% less likely to become pregnant than couples in which the men had less than 5.4 ng/mL acetaminophen. Results were adjusted for age, body mass index, urinary creatinine, hypothyroidism, hypertension, preconception smoking status, race/ethnicity, and household income. The analysis used fecundability odds ratios (FORs), in which estimates lower than 1.0 indicate longer TTP and "diminished fecundity." The highest quartile of drug concentration for men was associated with longer TTP (FOR, 0.67; 95% confidence interval, 0.47–0.95), which remained after adjustment for female urinary acetaminophen concentration and male hypothyroidism and hypertension (FOR, 0.65; 95% confidence interval, 0.45–0.94).

The couples becoming pregnant had the lowest urinary concentrations of acetaminophen, and those not becoming pregnant had the lowest concentrations of the metabolite. The researchers urge caution in interpreting the findings, which "await corroboration using research that incorporates serial collection of urinary [acetaminophen] and detailed information on medicinal and environmental exposures in the context of couple fecundity." Limitations of the study include use of only one urine measurement and the several hour half-life of acetaminophen, as well as lack of information on indications for taking acetaminophen.

This research was supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development. The researchers have disclosed no relevant financial relationships. *Hum Reprod*. Published online July 13, 2016. Abstract High Acetaminophen Level in Men May Delay Pregnancy Ricki Lewis, PhD 7/21/2016 www.medscape.com/viewarticle/866369_print http://www.medscape.com/viewarticle/866369_print 2/2 For more news, join us on Facebook and Twitter Medscape Medical News © 2016 WebMD, LLC Send comments and news tips to news@medscape.net. Cite this article: High Acetaminophen Level in Men May Delay Pregnancy. Medscape. Jul 20, 2016.