

Acetaminophen use in pregnancy may be linked to ADHD

Children whose mothers took acetaminophen were more likely to develop ADHD -- but that does not prove one caused the other, experts say.

Acetaminophen, the most common drug taken by pregnant women, may be linked to attention deficit hyperactivity disorder (ADHD) in children, according to a large but preliminary new study from Denmark.

The study, published Monday in *JAMA Pediatrics*, found the disorder was more likely to develop in children whose mothers took the medication while pregnant.

Experts say the study does not prove a cause-and-effect relationship and more study is needed. It is likely to prompt concerns among women who have been told that the medication – found in Tylenol and many other pain and fever remedies – is safe during pregnancy.

The study is a reminder that "anything we do in pregnancy we should not do lightly," says one study author, Beate Ritz, an epidemiologist at the University of California-Los Angeles. She worked with researchers from the University of Aarhus in Denmark and other institutions.

The researchers looked for a link between acetaminophen and ADHD because they believe the medication might work as a hormone disruptor capable of affecting fetal brain development, Ritz says.

The study included more than 64,000 Danish children born from 1996 to 2002. The mothers of those children were called twice during pregnancy and once six months after birth and asked about painkiller use.

Thanks to thorough health records available in Denmark, the researchers were able to track children in three ways: through questionnaires on development parents completed when children were 7 years old; through diagnoses of "hyperkinetic disorder"; and through prescriptions for ADHD medications such as Ritalin.

Children whose mothers took acetaminophen were:

- 13% more likely to show ADHD-like behaviors, such as hyperactivity and conduct problems.
- 37% more likely to be diagnosed with hyperkinetic disorder, which is the equivalent of "high end" ADHD, Ritz says.

- 29% more likely to get ADHD medications.

The associations held up even when researchers considered mothers' mental health histories and additional factors – including fevers, infections and inflammation – that might have led women to take acetaminophen in the first place. The associations grew stronger the more weeks mothers reported taking acetaminophen, Ritz says. She says one flaw of the study is that researchers don't know how many pills women took.

Researchers cannot rule out that some unreported condition more common among women who took a lot of acetaminophen – for example, a genetic tendency to be highly sensitive to pain – might be the real link to ADHD, she says.

The study "should be interpreted cautiously and should not change practice," says an accompanying editorial written by psychiatric researcher Miriam Cooper and colleagues at Cardiff University in the United Kingdom. But the findings "underline the importance of not taking a drug's safety during pregnancy for granted," they wrote.

Though the study is well done, "it's a big jump to go from an association to a cause-and-effect relationship," says Jeff Chapa, director of maternal fetal medicine at Cleveland Clinic.

Chapa, who was not involved in the research, says it's important that worried pregnant women not use ibuprofen and other non-steroidal anti-inflammatory drugs (NSAIDs) as substitutes for acetaminophen. NSAIDs can disrupt fetal development and cause other problems, he says.

Pregnant women with a fever should still take acetaminophen to reduce it, he says, because fevers might affect fetal development. But there's good reason to be conservative about using it for aches and pains when a warm bath, a massage or some stretching might provide relief, he says. When women find themselves using acetaminophen repeatedly, he says, they should consult their obstetricians.

"We really should start looking at non-pharmacological ways to deal with pain," Chapa says.

About 56% of women in the Danish study used acetaminophen during pregnancy. Usage is similar in the USA.

About 11% of U.S. children ages 4 to 17 had been diagnosed with ADHD as of 2011, according the federal Centers for Disease Control and Prevention.