

New study on neurodevelopmental effects of prenatal exposure to paracetamol

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Paracetamol (acetaminophen) is the most commonly used medicine in pregnancy, yet there are very few studies that have investigated the possible long-term consequences for the child. A new study from the Norwegian Institute of Public Health suggests that long-term use of paracetamol during pregnancy may increase the risk of adverse effects on child development.

The study uses data from the Norwegian Mother and Child Cohort Study to investigate the effect of [paracetamol](#) during pregnancy on psychomotor development, behaviour and temperament at 3 years of age. Almost 3000 sibling pairs were included in the study.

The study is a collaboration between the University of Oslo, the Norwegian Institute of Public Health and the Hospital for Sick Children in Toronto, Canada, and was published in the *International Journal of Epidemiology* on October 25, 2013.

Results

By comparing children who were exposed to paracetamol during pregnancy with unexposed siblings of the same sex, researchers could control for a variety of genetic and environmental factors, in addition to other important factors such as infections, fever, use of other medications, alcohol intake and smoking.

- The study shows that children who had been exposed to paracetamol for more than 28 days of pregnancy had poorer gross motor skills, poor communication skills and more behavioural problems compared with unexposed siblings.
- The same trend was seen with paracetamol taken for less than 28 days, but this was weaker.
- To investigate whether the underlying illness could be the cause of the effect on the children, and not paracetamol itself, the researchers examined a different type of analgesic with another type of mechanism of action (ibuprofen). The researchers did not find any similar long-term effects after use of ibuprofen.

Need for more research

"The results strengthen our concern that long-term use of paracetamol during pregnancy may have an adverse effect on [child development](#), but that occasional use for short periods is probably not harmful to the foetus. Importantly, we cannot assume that there is a causal relationship between maternal use of paracetamol during pregnancy and [adverse](#)

[effects](#) in [children](#) from an epidemiological study. Since this is the only study to show this, there is a need for further research to confirm or refute these results," says Professor Hedvig Nordeng.

Nordeng is a professor at the School of Pharmacy, University of Oslo, and is also affiliated as a researcher at the Division of Mental Health, Norwegian Institute of Public Health.

"The findings support the advice of medical authorities; the first choice for pain is paracetamol, but one should be restrictive with all medicine use in pregnancy," says Nordeng.

The Norwegian Medicines Agency advises pregnant women about the medicines they should use during pregnancy.

The Norwegian Directorate of Health is responsible for the national guidelines for antenatal care in Norway, which includes the use of medicines in pregnancy.

About the Norwegian Mother and Child Cohort Study

The Norwegian Mother and Child Cohort Study at the Norwegian Institute of Public Health began recruiting [pregnant women](#) in 1999. The fathers were also invited. In 2008, the goal was reached - over 100,000 pregnancies were included. Biological samples and questionnaire data have been collected since week 17 of [pregnancy](#) which makes the study unique. The purpose of this study is to find causes of diseases.

More information: Brandlistuen RE, Ystrom E, Nulman I, Koren G, Nordeng H. (2013) Prenatal paracetamol Exposure and Child Neurodevelopment: A sibling-controlled cohort study. *International Journal of Epidemiology*

Provided by Norwegian Institute of Public Health

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