Smoking in Pregnancy and Child ADHD.


doi: 10.1542/peds.2016-2509. [Epub ahead of print]

Abstract

BACKGROUND AND OBJECTIVE:
There is a well-documented association between maternal smoking during pregnancy and offspring attention-deficit/hyperactivity disorder (ADHD). The degree to which this reflects causal intrauterine effects or is due to unmeasured confounding is not clear. We sought to compare the association between maternal smoking during pregnancy and offspring ADHD with the associations with paternal smoking, grandmother's smoking when pregnant with mother, and maternal smoking in previous pregnancies. Each of these exposures is expected to be influenced by much of the same confounding factors as maternal smoking during pregnancy, but cannot have direct intrauterine effects. A sibling control design was also used.

METHODS:
The current study used data from the Norwegian Mother and Child Cohort Study (n > 100 000 children). Mothers and fathers reported on smoking during pregnancy, and mothers reported on smoking in previous pregnancies and their mother’s smoking when pregnant with them. Mothers reported on child ADHD symptoms at 5 years of age. Information about child ADHD diagnosis was obtained from the Norwegian Patient Registry.

RESULTS:
Maternal smoking during pregnancy was not more strongly associated with offspring ADHD diagnosis than was paternal smoking, grandmother's smoking when pregnant with mother, or maternal smoking during previous pregnancies. Sibling control analyses showed no association between maternal smoking in pregnancy and child ADHD symptoms among siblings discordant for maternal smoking.

CONCLUSIONS:
These results suggest that the association between maternal smoking during pregnancy and offspring ADHD is not due to causal intrauterine effects, but reflects unmeasured confounding.