

# Young people whose pregnant mothers smoked at heightened risk of antisocial behavior

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Teens and young adults whose mothers smoked while pregnant with them may be at heightened risk of antisocial behavior, as assessed by their own reports and criminal record checks, finds research published online in the *Journal of Epidemiology & Community Health*.

The findings were independent of other factors often linked to [smoking](#) in pregnancy, prompting the researchers to suggest that smoking while pregnant may have a small to moderate causal effect on the risk of [antisocial behaviour](#) in the offspring.

Various studies have found a link between smoking during pregnancy and antisocial [behaviour](#) in the offspring, but it is still not clear whether this association is causal or influenced by genetic and environmental factors.

To try and get a better handle on this, the researchers used a particular statistical approach known as between-within decomposition, that can tease out any differences between families and within the same family.

They used it to look at the association between smoking during pregnancy and various indicators of teen and young adult antisocial behaviours.

The study participants included the offspring of women taking part in

the Boston and Providence centres of the Collaborative Perinatal Project (CPP) between 1959 and 1966.

The CPP looked at factors before and around birth that might influence the mental, neurological, and physical capabilities of that child.

Detailed social and medical information, including questions about how often and how much they smoked, were obtained when the mums enrolled in the study, and throughout their pregnancy.

Court records were searched for offences committed when the 3443 children of the Providence mothers were 18 and 33.

And 1684 adults from 1248 families in Boston and Providence were formally interviewed when they were 39, on average, about their behaviour as a teen and as an adult.

This behaviour was then graded using recognised diagnostic criteria for conduct disorder (juveniles) and antisocial personality disorder ([adults](#)).

The mothers of over half (59%) of these interviewees had smoked while pregnant with them, and in just over a third of cases, their mothers had smoked at least one pack of cigarettes a day.

Smoking an extra pack of cigarettes a day was associated with 30% greater odds of her child exhibiting three or more symptoms of conduct disorder as a juvenile and a more than tripling in the odds of three or more symptoms of [antisocial personality disorder](#) as an adult.

And it was linked to a more than doubling in the odds of her child having a record of non-violent offences as a juvenile and of committing a violent offence as an adult.

These findings suggest that the heightened risk of antisocial behaviour is independent of other factors that are often present among women who smoke during pregnancy, such as a history of mental illness and low educational attainment/income, say the researchers.

They conclude that the consistent patterns they found "may be directly attributable to smoking exposure," but go on to say "that any potential causal effect of [[maternal smoking](#) during pregnancy on offspring [antisocial behaviour] is most likely small to moderate in magnitude."

The researchers highlight some caveats, including that they didn't take account of potentially influential factors such as the mothers' alcohol consumption and cannabis use.

Nevertheless, they emphasise: "Many important risk factors for [antisocial behaviour] are not modifiable (eg sex, family history), but maternal smoking in pregnancy is potentially modifiable, and remains prevalent among particular subgroups of women, including teenage mothers and [mothers](#) with less than a [high school education](#)."

"So although maternal smoking in [pregnancy](#) may result in only slight to moderate increases in an offspring's risk of antisocial behaviour, removing this exposure may have substantial impacts at the population level."

**More information:** Maternal smoking during pregnancy and offspring antisocial behaviour: findings from a longitudinal investigation of discordant siblings, *Journal of Epidemiology & Community Health*, [DOI: 10.1136/jech-2016-208511](#)

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