

Boys born to smoking fathers have reduced sperm count

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A small Swedish study suggests that it may be harmful to the foetus if fathers-to-be smoke.

Several studies have confirmed that mum's smoking may harm her baby in utero. For example, baby boys can suffer from reduced sperm quality.

But Swedish researchers believe it's not just the expectant mother who is to blame, but the father.

The researchers conducted a study of 104 young men that suggests dad's smoking habits during pregnancy may also lead to fewer sperm for his son.

The men in the study with fathers who smoked had only about half as many sperm cells, 130 to 230 million in the semen sample, compared to sons with non-smoker dads.

Read More: [More children in Europe have started smoking](#)[5]

Every third dad smoked

This was the case even when the researchers took into account whether the mothers were smoking at a given point during pregnancy. They analysed blood samples from the mothers between 6 and 35 weeks, and on average at 12 weeks into their pregnancy. The blood tests indicated if the mothers had been exposed to nicotine.

An important study limitation is that the researchers do not know if the mothers used nicotine earlier in their pregnancy. This could have impacted their son's sperm quality, but that would not show up in this study.

The sons were between 17 and 20 years old and lived near Malmö, Sweden, when they were recruited to give a semen sample and complete a questionnaire between 2008 and 2010.

The researchers asked the young men if their fathers were smokers. These responses are not as reliable as blood tests.

One third of study participants reported that their father had smoked. And these participants had 41 per cent lower sperm concentration, in addition to 51 per cent lower total sperm count.

The smoking did not affect other measures of sperm quality, such as how well sperm cells swim.

Read More: [Smoking fathers increase asthma-risk in future kids](#)[6]

Sons inherit bad sperm

The researchers are not sure why sons of smoking fathers have poorer sperm quality.

Smoking can damage sperm. But is it possible for the damage to be inherited?

If a father smokes during the mother's pregnancy, it is likely that he has taken a few puffs before conception as well. The Swedish researchers believe smoking fathers may pass on genes that result in reduced sperm quality in boys at the time of conception.

"It's conceivable that the father's gametes mutate at conception and pass on genes that cause poorer sperm quality in the sons," says Jonatan Axelsson, one of the researchers, in a press release from Lund University.

This study was small. However, in a larger study where researchers did not check the mothers' smoking as precisely, they also found a connection between the fathers smoking and sons' sperm quality.

Other studies do not show this connection, so more research is definitely needed before researchers can draw any more definitive conclusions.

[Read the Norwegian version of this article at forskning.no](#)[7]

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[Jonatan Axelsson et al., Association between paternal smoking at the time of pregnancy and the semen quality in sons. PLOS One. 2018. Doi: 10.1371 / journal.pone.0207221.](#) [15]

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