

Age at which women experience their first period is linked to their sons' age at puberty

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The age at which young women experience their first menstrual bleeding is linked to the age at which their sons start puberty, according to the largest study to investigate this association in both sons and daughters.

The research, which is published today in *Human Reproduction*, one of

the world's leading reproductive medicine journals, looked at 15,822 children and found that the earlier women had their first period, the earlier their sons started [puberty](#), and the later they had their first period, the later their sons started puberty.

The same association was found for [daughters](#) but, whereas, it has been known for some time that [mothers'](#) age at puberty is associated with their daughters', much less was known about the link with their sons' age at puberty. The authors of the study say their results are consistent with other research that suggests that there is an overlap in the genes that influence the timing of puberty in both sons and daughters.

The researchers, based at Aarhus University, Denmark, studied a group of children who were part of the Danish National Birth Cohort and who were born between 2000 and 2003. They followed them up to October 2016 and during this time they interviewed the mothers twice during pregnancy and asked them to fill in a questionnaire when the children were seven. The mothers were asked about their age when they had their first menstrual bleed. From the age of 11 years, the children completed questionnaires every six [months](#) that included questions on puberty.

One of the study authors, Dr. Nis Brix, said: "We found that mothers who reported having their first menstrual bleed earlier than their peers had sons with signs of puberty starting earlier than their peers. The largest difference was when hair started growing in the armpits, which started, on average, approximately two and a half months earlier; their voices broke nearly two months earlier, acne started to develop nearly two months earlier and their first ejaculation of semen was nearly one and a half months earlier. If their mothers started puberty later than their peers, then the sons experienced first ejaculation, growth of armpit hair and acne development later than their peers."

Similar results were seen in daughters. The largest difference was seen in

breast development, which started up to six months earlier in girls whose mothers had experienced earlier periods than their peers, or up to four months later in girls whose mothers had started puberty later than their peers.

"The relationship between first menstrual bleeding in mothers and the first [menstrual bleeding](#) in their daughters has been reported in several studies. The novelty of our study was to include other markers of pubertal development in daughters, such as different stages of breast development and pubic hair development and to study sons; the relationship in sons has only been sparsely investigated," said Dr. Brix.

The timing of puberty has become earlier over the past century, probably explained by better health and living standards. However, a younger age at puberty has been linked to increased risk of diseases in later adult life, such as breast and testicular cancer, diabetes and cardiovascular disease.

Dr. Brix concluded: "Whenever a clinician meets a patient with delayed or early onset of puberty, the clinician obtains a family history on whether or not other family members also had either delayed or [early puberty](#). Thus, the relationship between the mother's pubertal age and the son's pubertal age has been taken as common knowledge, but our data from a large national birth cohort confirm the relationship. Put differently: 'We already knew it, but now we have the results to confirm it'."

A limitation of the study is that it relied on mothers reporting information to the researchers. Another limitation is that it relied on children reporting their puberty information by themselves, but a recent validation study by the authors showed that the children were able to report their current pubertal status with moderate accuracy, which the authors believe is acceptable for a large-scale study like this.

More information: S Sørensen et al, Maternal age at menarche and pubertal development in sons and daughters: a Nationwide Cohort Study, *Human Reproduction* (2018). [DOI: 10.1093/humrep/dey287](https://doi.org/10.1093/humrep/dey287)

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