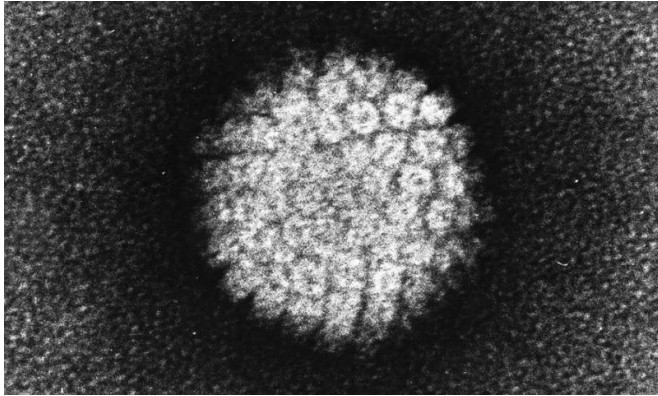


Infection with human papillomavirus linked to higher risk of preterm birth

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Electron micrograph of a negatively stained human papilloma virus (HPV) which occurs in human warts. Credit: public domain

Women carrying human papillomavirus (HPV) run an elevated risk of preterm birth, a University of Gothenburg study shows. A connection can thus be seen between the virus itself and the risk for preterm birth that previously has been observed in pregnant women who have undergone treatment for abnormal cell changes due to HPV.

Women carrying [human papillomavirus](#) (HPV) run an elevated risk of [preterm birth](#), a University of Gothenburg study shows. A connection can thus be seen between the virus itself and the risk for preterm [birth](#) that previously has been observed in [pregnant women](#) who have undergone treatment for abnormal cell changes due to HPV.

A Swedish study now published in the high-ranking journal *PLoS Medicine* comprises data on more than a million births. Accordingly, the researchers have compared very large groups. They emphasize that the findings do not support any assessment of risk levels in individual women of childbearing age.

Johanna Wiik, a Ph.D. student in obstetrics and gynecology at Sahlgrenska Academy, University of Gothenburg, and also a gynecologist and obstetrician at the Department of obstetrics and gynecology at Sahlgrenska University Hospital, is the first author of the study.

"I would like to point out that the increase in risk for preterm birth is small for the individual woman carrying HPV. But our results support that young people should get into the vaccination program against HPV," she says. Vaccination against HPV might not only prevent HPV related cancer but also be beneficial for pregnancy outcome.

Statistically significant increased risk

Treatment for abnormal cervical cell changes due to HPV infection had previously been known to increase risk of preterm birth—defined as birth before 37 weeks' gestation. The present study shows that HPV as such is linked to a raised risk of preterm birth, and of complications for the child.

The study is based on birth particulars registered in the Swedish Medical Birth Register, which have been merged with the country's National Quality Registry for Cervical Cancer Prevention and the Swedish Cancer Register. Altogether, 1,044,023 births between 1999 and 2016 were included. Of the women concerned, 23,185 had previously received treatment, while 11,727 were untreated and had a positive HPV screening test immediately before or during their pregnancy.

Of the women previously treated for CIN, 9.1 percent gave birth prematurely. The corresponding proportion in the group with HPV infection in conjunction with their pregnancies was 5.9 percent. This was a statistically significant increase compared with a reference group of [women](#) whose cervical screening test had always been normal, of whom 4.6 percent gave birth prematurely.

Importance of vaccines and cell sampling

Verena Sengpiel, Associate Professor of Obstetrics and Gynecology at Sahlgrenska Academy and obstetrician at Sahlgrenska University Hospital, is the study's last author.

"Our study is register-based and, although we've adjusted for various factors in the analyses, we can't reliably answer the question of whether it's the virus itself that causes the pregnancy and childbirth complications. All we can do is show a statistical association," she says.

"Soon we'll be able to see how the incidence of preterm birth is affected after the vaccination program against HPV has been introduced. That will give us more information about whether there's a causal connection between HPV infection itself and delivery outcome."

The researchers emphasize the importance of heeding calls for gynecological cell sampling, in order to detect any cervical cell changes due to HPV infection. Johanna Wiik again:

"The earlier these abnormal cell changes are detected, the better we can follow and treat them. And when you're admitted to [maternity care](#), it's a good idea to tell your midwife if you've had cervical cell changes, and whether you've been treated for them. Then the maternity health staff can take that information into account when planning the monitoring of your pregnancy."

More information: Johanna Wiik et al, Associations of treated and untreated human papillomavirus infection with preterm delivery and neonatal mortality: A Swedish population-based study, *PLOS Medicine* (2021). [DOI: 10.1371/journal.pmed.1003641](#)

Provided by University of Gothenburg

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