

Endometriosis linked to reduction in live births before diagnosis of the disease

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Endometriosis is linked to a reduction in fertility in the years preceding a definitive surgical diagnosis of the condition, according to new research published in *Human Reproduction*.

In the first study to look at [birth](#) rates in a large group of women who eventually received a surgical verification of [endometriosis](#), researchers

in Finland found that the number of first live births in the period before diagnosis was half that of women without the painful condition. This was the case regardless of what form of endometriosis the women had: ovarian, peritoneal, deep endometriosis or other types.

In addition, the researchers found evidence that the number of babies women had before endometriosis was diagnosed was significantly reduced, compared to women who did not have endometriosis.

Professor Oskari Heikinheimo, of Helsinki University Hospital (Finland), who led the study, said, "Our findings suggest that doctors who see women suffering from painful menstruation and [chronic pelvic pain](#), should keep in mind the possibility of endometriosis and treat them effectively. Doctors should discuss with these women the possible effects on their fertility, in addition to the effects of their age, and the impairment of fertility should be minimized by offering relevant treatment for endometriosis without delay."

Endometriosis is a chronic inflammatory condition that affects up to about 10% of women of child-bearing age. Tissue from the lining of the womb grows in other places, such as the ovarian and fallopian tubes. Typical symptoms include painful menstruation, pain in the pelvic area, difficult or painful sexual intercourse, and difficulty getting pregnant.

Correct diagnosis is often delayed by around seven years. Surgery has traditionally been the "gold standard" for diagnosing the condition and classifying the type of endometriosis, although diagnosis by ultrasonographic findings or the symptoms alone is currently accepted.

Until now, there has been little information about the live [birth rate](#) among women with endometriosis, and little is known about the possible effects of different types of endometriosis on fertility, especially in the years before a diagnosis.

"Given the chronic nature and typical long delay in diagnosis of endometriosis, we wanted to find out if there were differences in first birth rates before diagnosis in a large group of women in the population," said Prof. Heikinheimo.

He and his colleagues looked at 18,324 women in Finland, aged between 15 and 49 years, who had surgical verification of endometriosis between 1998 and 2012. They matched them with 35,793 women of similar age who did not have an endometriosis diagnosis. The follow-up period started at the age of 15 years, and continued until the first live birth, sterilization, removal of the ovaries or womb, or until the surgical diagnosis of endometriosis, whichever came first. The group of women with endometriosis were also divided into four groups according to the type of endometriosis.

The average (mean) time of follow-up before surgical diagnosis was 15.2 years. The average (median) age at the time of diagnosis of endometriosis was 35 years.

A total of 7,363 women (40%) with endometriosis and 23,718 women (66%) without endometriosis delivered a live baby during the follow-up period. The incidence rate of first live births among women with endometriosis was half that of women without the condition (0.51%).

When analyzed according to women's birth decade from 1940s to 1970s, the birth rate decreased in both groups of women. Importantly, over the decades, an increasingly lower first live birth rate was seen in women with endometriosis, compared to women without. In those women born between 1940 and 1949, the difference in live [birth rates](#) between the two groups was 28% before surgically diagnosed endometriosis, but this difference increased steadily to 87% by 1970–1979.

"We assume that this is associated with the older age of women when

they have their first baby, earlier surgical diagnosis of endometriosis and accumulating adverse effects of endometriosis in women affected by the condition," said Prof. Heikinheimo.

The number of children that women had before their diagnosis of endometriosis was 1.93 and 2.16 for women without endometriosis.

"The possible effect of endometriosis on the desired number of children highlights the importance of early diagnosis and treatment of the disease," he said.

He continued, "It is important to note that this study reports on live births before a definitive diagnosis of endometriosis. Next, we will be reporting on the fertility rates after the surgical [diagnosis](#) and treatment of endometriosis. We hope that the fertility of women with endometriosis catches up with that of the women without the condition after surgical management."

The strength of the study is its large size, and that it includes information about women nationwide in Finland contained in the high-quality Finnish national health care registers. There are some limitations. These include its focus on only surgically-confirmed endometriosis, which may have ruled out women with milder symptoms who were treated for the condition. There were no data available on whether or not women wanted to become pregnant.

The researchers could not rule out the possible effect of fertility treatments or the effect of adenomyosis, which is known to occur often with endometriosis, and which also affects fertility and pregnancy outcomes. Differences in socioeconomic and educational backgrounds between the two groups of women might have affected the findings.

More information: Anni Tuominen et al, First live birth before

surgical verification of endometriosis—a nationwide register study of 18 324 women, *Human Reproduction* (2023). [DOI: 10.1093/humrep/dead120](https://doi.org/10.1093/humrep/dead120)

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