

# Researchers may have noninvasive way to diagnose endometriosis

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Women can suffer for years with the debilitating pain and medical

complications of [endometriosis](#) without a diagnosis.

Now, researchers believe they may be able to diagnose the condition using just menstrual [blood](#), which has distinct characteristics in [patients](#) who have endometriosis.

"Millions of adolescents and [women](#) suffer from endometriosis without a proper [diagnosis](#), delaying their care and extending their pain," said study co-author Christine Metz, a professor in the Institute of Molecular Medicine at the Feinstein Institutes for Medical Research in Manhasset, N.Y. She is also co-director of [Research OutSmarts Endometriosis \(ROSE\)](#) study.

"This new paper describes the potential for a novel screening tool to identify endometriosis earlier and enable patients to get the help they need," Metz said in an institutes news release.

In endometriosis, uterine-like tissue grows outside of the uterus and forms lesions. This can cause chronic, debilitating pain and [infertility](#).

About 1 in 10 women of reproductive age are affected by the condition, but there are currently no nonsurgical diagnostic tools, so it can take seven to 10 years to get a diagnosis. Invasive laparoscopic surgery has been the only definitive way to diagnosis endometriosis.

Feinstein scientists have been studying the genetic and cellular makeup of menstrual blood since 2016 with the goal of diagnosing endometriosis more easily.

The research analyzed the genetic and cellular differences in menstrual blood of healthy patients compared to those with endometriosis, to find common biomarkers they hoped would lead to new diagnostic approaches and potential treatments.

The new study details the first use of single-cell RNA-sequencing to compare endometrial tissues in freshly collected menstrual blood from 33 study participants.

It found that the characteristics of endometrial tissue shed in menstrual blood are distinct in patients with endometriosis compared to healthy people.

"ROSE study research helps us understand the molecular and genetic makeup of endometrial tissues ...," said study co-author Dr. Peter Gregersen, professor in the Institute of Molecular Medicine at the Feinstein Institutes and co-director of the ROSE study. "More than 2,000 women have participated in the ROSE study to date and we are grateful to them for helping us to produce knowledge that will improve patients' lives."

"While [endometriosis](#) is a common condition, there continues to be a lack of diagnosis and proper early intervention," said Dr. Kevin Tracey, president and CEO of the Feinstein Institutes. "These important findings by Drs. Gregersen and Metz hold promise to change our understanding of this disease and focus on improving the diagnosis and care they need."

The findings were published Sept. 15 in the journal *BMC Medicine*.

**More information:** The Office on Women's Health has more on [endometriosis](#).

Andrew J. Shih et al, Single-cell analysis of menstrual endometrial tissues defines phenotypes associated with endometriosis, *BMC Medicine* (2022). [DOI: 10.1186/s12916-022-02500-3](https://doi.org/10.1186/s12916-022-02500-3)

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