

# New insights into fibroids might lead to better treatments

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Hormone therapy is the usual go-to when women develop painful uterine

fibroids, but researchers report they are zeroing in on new avenues for treatment.

A University of Cincinnati team found that fibroid cells respond to physical strain differently than the uterine cells around them. That's important, said researcher [Stacey Schutte](#), because treatment aims to target the tumor without affecting the tissue around it.

Fibroids are common: Nearly 8 in 10 women develop the noncancerous uterine tumors during their lifetime. While they typically aren't life-threatening, they can cause heavy bleeding and the pain can be intense.

Treating fibroids is often invasive, costly and can lead to infertility, researchers noted in a university news release.

"One in nine women will have a hysterectomy in their lifetime. And one-third to one-half of those are [because of] [uterine fibroids](#)," said Schutte, an assistant professor of biomedical engineering and co-author of the study recently published in the journal [E&S Science](#).

Study co-author [Andreja Moset Zupan](#), a research associate in Schutte's lab, said the investigators are looking for non-hormonal fibroid treatments.

"It's another option we could use to preserve the fertility of [women](#) who still want to get pregnant," she explained in a university news release.

A woman's body releases estrogen and progesterone during each [menstrual cycle](#). These hormones prompt tissue lining the uterus to thicken in case of a possible pregnancy, but they can also fuel fibroid growth.

Schutte noted cells can also react to physical strain, and that's what her

team set out to investigate.

In their study, fibroid cells and uterine cells were grown in the lab on plates with an elastic bottom. Researchers then used a vacuum to pull and stretch the cells, mimicking the [uterine](#) environment. They saw differences in the way cells held their shape.

"We found that fibroid cells were more sensitive to strain," said lead author [Dr. Rachel Warwar](#), from the University of Cincinnati's College of Medicine. She said the findings underscore the importance of incorporating mechanical strain, and not just hormones, into the study of fibroid cells.

"The more we are able to mimic the environment of these cells in the uterus, the more we will understand the pathology of these cells and then can work to target anomalous pathways in fibroid [cells](#)," Warwar added.

Once researchers understand the pathology, they can use 3D simulations and modeling to learn more about how the tumors develop and the best ways to treat them. The next step: Creating more complex tumor models.

"It makes me really happy to think we can find a target," Schutte said.

Fibroids represent a major health care cost, researchers said, costing up to \$9 billion a year in the United States alone.

**More information:** The U.S. Office on Women's Health has more about [fibroids](#).

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