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German researchers hear what women's voices reveal about fertility

A new study investigates whether women's voices change during their menstrual cycle. The provocative, sexy science impacts whom and how we love and marry, something interesting to biologists and lovers alike.

Do women's voices change when they're ovulating? And if so, is that change perceptible to potential mates?

A new study from Germany published last week in the journal PLOS ONE dives into this exact question, and raises fresh questions about whether and how women give off fertility clues.

This research is a provocative area of science that gives insight into how we live, love, reproduce, and marry. Previous research in recent years has documented ways women seem to signal ovulation through dress, behavior, appearance, and voice.

But the new report from the German Primate Center in Göttingen casts doubt on the idea that women's voices change during ovulation in a way men can perceive.

"While overall we confirm earlier findings in that women speak with a higher and more variable fundamental frequency just prior to ovulation," the researchers wrote in the paper's abstract. "The present study highlights the importance of taking the full range of variation into account before drawing conclusions about the value of these cues for the detection of ovulation."

Building on previous results

A 2009 study from the University of California, Los Angeles found that the pitch of women's voices increased during high-fertility periods.

German Primate Center scientists say that while the pitch of women's voices does change through the fertility cycle, it doesn't change in ways that would be helpful for a man to pick out a fertile woman simply by listening to her voice.

In fact, the study found that on average, women's voices rose by only five Hertz prior to peak ovulation - from 206 Hz to 211 Hz - a very marginal difference.

Pitch and catch

A key difference between the findings is that the new study took daily vocal and urine samples from women, whereas the earlier research from the United States only recorded women on two days during their reproductive cycle. In other words, researchers in the German Primate Center were able to track voice changes at every phase.

The new study found that women do speak at a higher pitch just before ovulation and more hoarsely during menstruation. (This adds some scientific heft to the old practice of granting top female opera singers days off during their period.)

But at the point of highest fertility, the tone of the women's voices wasn't consistently distinguishable from speech during low fertility. If a change in voice isn't evident during ovulation, it's not a useful mating cue, the researchers found.

Even though voices do change at other parts of the cycle, it's not clear that men are noticing. As part of the same experiment, the Göttingen researchers also tested how non-German-speaking British men rated the attractiveness of female voices, but the differences in preference were small.

Barroom biology

This kind of science is literally sexy, so similar studies tend to get a lot of attention, such as 2007 research reporting lap dancers getting higher tips while they're fertile. It's scientific literature that's unusually interesting to single men.

To emphasize the bottom line for randy young fellows, Julia Fischer, the paper's lead author, and a professor of ethology at the German Primate Center, put herself in one of their shoes.

"If I just listen to somebody speaking to me in the bar," she told Deutsche Welle, "would I be able to tell when she's fertile or not? No."

Not surprisingly, it turns out that what's bad for young men on the prowl is good for civil society. The lack of crystal-clear fertility signs sets humans apart from female baboons, for example, who sport bright red rumps when it's time to mate. Evolutionary biologists see this as a key factor in how human relationships developed over time.

Fischer wants to see future research go outside the lab to look more at people's real world interactions. But until then, perhaps men looking for a partner are better off listening to what women say, instead of hoping to gain advantage by focusing on how they say it.

"Concealed ovulation was sort of the precondition to evolve the dominant monogamous mating system that we have," Fischer explains. "The man now had to tend to the woman constantly because he just didn't know when she was fertile."

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