

# Study of data from thousands of women suggests ovarian cycle is regulated by circadian rhythm

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Credit: Puwadon Sang-ngern from Pexels

A team of reproductive researchers affiliated with several institutions in France and the U.S. has found that the timing of monthly ovarian cycles in women is mostly likely attributable to the circadian rhythm. In their paper [published](#) in the journal *Science Advances*, the group describes their study of thousands of ovarian cycles as reported by thousands of women in Europe and the U.S. and what they found.

The timing mechanism behind the ovarian cycle has mystified scientists for centuries, though one of the strongest theories has been that it is tied to the [lunar cycle](#). Charles Darwin suggested that the two became linked back when humans lived near the seashore, where the tides heavily impacted daily scheduling.

And three years ago a team led by Würzburg chronobiologist Charlotte Förster found evidence for women's [menstrual cycles temporarily synchronizing with the cycles of the moon](#). In this new effort, the research team has found little evidence of a lunar impact—they suggest the mechanism most likely controlling the ovarian cycle is the circadian rhythm.

The circadian rhythm is defined as physical, mental, and [behavioral changes](#) that organisms, such as humans, experience over 24-hour cycles. One of the most famous behaviors impacted by the circadian rhythm is sleep—people tend to feel sleepy at the same time every night. However, it has also been noted that the circadian rhythm can be impacted by the lunar cycle—people have been found to [go to bed later and sleep less, for example, on nights before a full moon](#).

To learn more about the ovarian cycle-controlling mechanism, the research team obtained [medical records](#) for over 3,000 women living in Europe and North America, which held data relating to 27,000 ovarian

cycles. The team tracked the first day of each cycle for all the [women](#) under study. In doing so, they found little correlation between cycle start time and lunar cycling.

The researchers did find something else, though. Many examples of what they describe as phase jumps—where something disturbs the timing of a cycle for a given woman, and the body responds by changing the clock rhythm over several months to bring the cycle back to its original norm. They compare it to how the circadian rhythm reacts to people experiencing jet lag. This, they suggest, indicates that the circadian rhythm is much more likely the mechanism that controls ovarian cycling.

**More information:** René Ecochard et al, Evidence that the woman's ovarian cycle is driven by an internal circamonthly timing system, *Science Advances* (2024). [DOI: 10.1126/sciadv.adg9646](https://doi.org/10.1126/sciadv.adg9646)

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