

Reproductive hormones related to how attractive a woman smells

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The sniff test shows: sexual hormones control a woman's body odour attractiveness. Credit: Social Neurosciences / University of Bern

Reproductive hormones control a woman's monthly cycle and regulate fertility. Reproductive hormones are also related to how attractive a woman smells a study now shows. Researchers at the University of Bern demonstrate that some women smell better to men than others—namely

those who are "fittest" for reproduction.

We don't just trust our eyes but we also follow our nose: it's not just the visual impression that plays an important part when choosing a partner but also their scent – both in the animal kingdom and in human beings. Previous studies have shown that how attractive a woman smells changes across the menstrual cycle: a woman smells most attractive to the male nose during the most fertile days, during the time when she can actually reproduce. What had remained unanswered until now: Do certain women smell "better" than others?

A team of researchers led by Daria Knoch from the Social Psychology and Social Neuroscience Department at the University of Bern working together with colleagues from the University of Constance, the Thurgauer Institute of Economics and University Hospital, Inselspital Bern have now been able to show that this is actually the case: The scent of certain women is universally more appealing to men than others.

Reproductive hormones make a woman's scent attractive

The researchers also discovered the reason for this: Women are perceived to be more or in fact less attractive by men depending on their [hormone](#) levels. "Women with high oestrogen and low progesterone levels are most attractive to men in an olfactory sense," Daria Knoch says. Which undoubtedly makes sense from an evolutionary perspective. These hormone levels, lots of oestrogen and not much progesterone, indicate high [female fertility](#). According to evolution theory, men look for women with whom they can successfully reproduce.

The researchers also investigated other factors that might influence [body odour](#): the [stress hormone cortisol](#) and certain genes that have an impact

on the immune system. "Several studies postulate that the choice of a partner is based on the man and women having a different immune system so that children are given the best possible defence against pathogens from birth," explains the lead author Janek Lobmaier from the Social Psychology and Social Neuroscience Department at the University of Bern. But the results clearly show that these two factors do not have an influence on how attractive the female scent is.

Strict trial protocol

The researchers conducted their study with 28 women and 57 men. The women who donated their body odour, followed "a strict protocol to minimise any factors that could distort the odour," says Lobmaier. The women were not allowed to use hormonal contraception, refrained from sexual relations during the time of odour collection washed themselves and their bed clothes using neutral detergents and did not drink any alcohol or eat any spicy foods on these days. During the time of peak fertility, they stuck cotton pads in their armpits overnight to "capture" their unique body odour. Their [hormone levels](#) were determined using saliva samples. Later, the men sniffed the cotton pads in the laboratory and awarded each smell 0 to 100 points – with the known result.

"Reproductive hormones are indicators of a woman's fertility. And the higher their levels are, the more attractive the woman is to men," says Lobmaier. Oestrogen, for example, also has a positive effect on how visually attractive a woman is, as studies show: high oestrogen levels make a woman's face and body attractive to men. And their scent too, with [women](#) who are not using hormonal contraception in any case. The study did not investigate how the pill affects this. "However, it is presumed that [hormonal contraception](#) may distort the body's own odour," says Knoch. The study has now been published in the *Proceedings of the Royal Society B* journal.

More information: Janek S. Lobmaier et al. The scent of attractiveness: levels of reproductive hormones explain individual differences in women's body odour, *Proceedings of the Royal Society B: Biological Sciences* (2018). [DOI: 10.1098/rspb.2018.1520](https://doi.org/10.1098/rspb.2018.1520)

Provided by University of Bern

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