

Attention, Ladies: Semen Is an Antidepressant

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Vaginal exposure to semen elevates women's mood.

Perhaps you're familiar with the McClintock effect, the observation that when groups of reproductive-age women live or work together (in college housing, the military, all-female workplaces, etc.), over time their menstrual periods tend to become synchronized. The accepted explanation is that the women detect each other's [pheromones](#), subtle scents that each of us produces, and somehow these only faintly aromatic but powerful compounds influence the women's [hormones](#) and make their menstrual periods arrive around the same time.

But at the State University of New York, two evolutionary psychologists were puzzled to discover that lesbians show no McClintock effect. Why not? Gordon Gallup and Rebecca Burch realized that the only real difference between lesbians and heterosexual women is that the latter are exposed to semen. They speculated that maybe semen chemistry has something to do with the McClintock effect. But if that were true, the vagina would have to absorb compounds in semen that affected the women's pheromones.

Semen is best known for what's *not* absorbed by the vagina, sperm, which swim through it on their way into the fallopian tubes where fertilization takes place. But sperm comprises only about 3 percent of semen. The rest is seminal fluid: mostly water, plus about 50 compounds: sugar (to nourish sperm), immunosuppressants (to keep women's immune systems from destroying sperm), and oddly, two female sex hormones, and many mood-elevating compounds: endorphins, estrone, prolactin, [oxytocin](#), thyrotropin-releasing hormone, and serotonin.

A study on semen exposure and women's mood

Vaginal tissue is very absorptive. It's richly endowed with blood and lymph vessels. Given vaginal absorptiveness and all the mood-elevating compounds found in semen, Gallup, Burch, and SUNY colleague Steven Platek wondered if semen exposure might be associated with better mood and less [depression](#). They surveyed 293 college women at SUNY Albany about intercourse with and without condoms and then gave the women the Beck Depression Inventory, a standard test of mood. Compared with women who "always" or "usually" used condoms, those who "never" did, whose vaginas were exposed to semen, showed significantly better mood—fewer depressive symptoms, and fewer bouts of depression. In addition, compared to women who had no intercourse at all, the semen-exposed women showed more elevated mood and less depression.

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Meanwhile, risky sex is usually associated with negative [self-esteem](#) and depressed mood. Among college women, risky sex includes intercourse without condoms, so we would expect sex sans condoms to be associated with more depressive symptoms, and more serious depression including suicide attempts. However, in the Gallup-Burch-Platek study, among women who "always" or "usually" used condoms, about 20 percent reported [suicidal](#) thoughts, but among those who used condoms only "sometimes," the figure was much lower, 7 percent, and among women who "never" used condoms, only 5 percent reported suicidal thoughts. (This study controlled for relationship duration, amount of sex, use of the Pill, and days since last [sexual](#) encounter.) So it appears quite possible that the [antidepressants](#) in semen might have a real mood-elevating effect.

Finally, recall that in addition to antidepressant compounds, semen also contains two female sex hormones, follicle-stimulating hormone (FSH) and luteinizing hormone (LH). FSH spurs egg maturation in the ovary. LH is involved in triggering ovulation. Why would semen contain compounds that encourage ovulation? From an evolutionary perspective, this makes perfect sense.

Consider our closest biological relatives, the chimpanzees. Chimpanzee semen contains no FSH or LH, but ovulating females develop red buttocks, clearly signaling reproductive readiness. In contrast, human women have concealed ovulation. Men don't know when women are most fertile. Compared with men whose semen lacked ovulation-triggering hormones, those whose semen contain these hormones would gain a small reproductive advantage. Their semen would encourage ovulation, and their sperm would be more likely to fertilize eggs.

I'm not advocating that reproductive-age people shun condoms to elevate women's mood at the risk of unplanned [pregnancy](#). But this effect might come in handy for women over age 50, who are experiencing [menopausal blues](#).

I'm fascinated by the chemical complexity of semen. Until recently, scientists believed that its sole purpose was to nourish and protect sperm on their way to fertilization. But now it appears that semen spurs ovulation and makes women feel happier. That might explain why many women report increased interest in sex around the time of ovulation.