

# Stimulation of female genital regions produces strong activation of various brain sites

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A new study published in The Journal of Sexual Medicine reveals that for the first time, stimulation of the vagina, cervix, or clitoris was shown to activate three separate and distinct sites in the sensory cortex.

Some sexuality experts have claimed that the major source of genital sensation is from the clitoris, with relatively little sensation produced by vaginal or cervical stimulation.

Researchers led by Barry R. Komisaruk, B.S., Ph.D., of Rutgers University, used [functional magnetic resonance imaging](#) (fMRI) to map sensory cortical responses to clitoral, vaginal, cervical, and nipple self-stimulation in 11 healthy women, ages 23-56. For points of reference on the homunculus (also referred to as the "point-to-point body map" or a diagram showing where nerves from different parts of the body are represented in the brain) researchers also mapped responses to stimulation of the thumb and great toe.

Results found that stimulation of each of these genital regions in fact produces a significant and strong activation of specific and different sites in the sensory cortex.

The three representations are clustered in the same sensory cortical region as the genitals of men on the homunculus.

Nipple self-stimulation activated not only the chest region of the homunculus as expected, but also surprisingly the genital region of the sensory homunculus, suggesting a [neurological basis](#) for women's reports that nipple stimulation feels erotic.

"Our findings demonstrate undeniably that there is a major input to the sensory cortex in response to stimulation of not only the clitoris, but of the vagina and cervix as well, which also evidently receive a significant and substantial sensory nerve supply," Komisaruk concludes. "This lays the groundwork for an understanding of how genital stimulation spreads sequentially through the brain from initial activation of the [sensory cortex](#) to eventually activate the [brain regions](#) that produce orgasm."

Irwin Goldstein, editor-in-chief of The Journal of Sexual Medicine, further explained the enormous significance of this ground breaking sexual medicine research. "In the 1930's-1950's, researchers localized in the brain exactly where all sensations in man were represented, including male genitalia. Data regarding location of clitoral sensation were only studied in 2010, some sixty years later. This current study in The Journal of [Sexual Medicine](#) reveals, for the first time, brain sensation localization data not only from the clitoris, but from the vagina, cervix and nipples. Being able to demonstrate the multiple locations in the brain where stimulation of different female genital regions are represented and how these [brain](#) locations inter-relate helps us to better understand women's sexual function."

Provided by Wiley

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