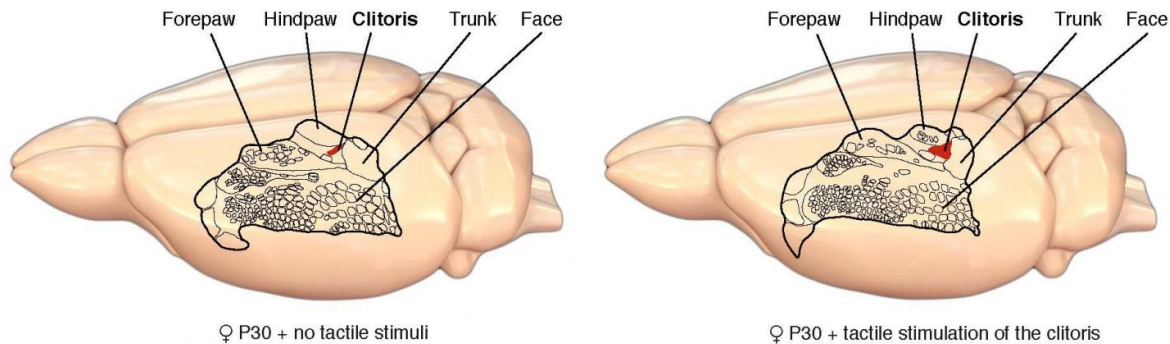


Touching helps build the sexual brain

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Scheme of the somatosensory homunculus of the rat cortex. Credit: Shimpei Ishiyama

Hormones or sexual experience? Which of these is crucial for the onset of puberty? It seems that when rats are touched on their genitals, their brain changes and puberty accelerates. In a new study publishing September 21 in the open access journal *PLOS Biology* researchers at the Bernstein Center, and Humboldt University, Berlin, led by Constanze Lenschow and Michael Brecht, report that sexual touch might have a bigger influence on puberty than previously thought.

It has been known for some time that social cues can either accelerate or delay [puberty](#) in mammals, but it hasn't been clear which signals are crucial, nor how they affect the body and [brain](#), and in particular the possible reorganization of the brain.

The researchers first observed that the neural representation of the genitals in the [cerebral cortex](#) expands during puberty. To begin with, the study confirms what was expected; that sexual hormones accelerate puberty and the growth of the so-called 'genital [cortex](#)'. However, what's new is that they find that sexual touch also contributes substantially to the acceleration of puberty.

During their study, the scientists first put young female rats together with male rats and found that the genital cortex expanded as a result. This didn't happen when the females were housed with other females, or if the males were separated from them by wire mesh, thereby preventing direct contact. However, they found that the same acceleration of cortical expansion could be observed when the rats' genitals were touched artificially using a lubricated brush.

Lenschow says: "the effects of sexual touch on puberty and the genital cortex are remarkable since you wouldn't expect this area of the brain to expand at this stage of development." Hence, the expansion of the genital cortex is not only triggered by hormones but also by sexual touch.

"The representation of the body changes in the cerebral cortex," says Brecht, "and in particular the genital cortex doubles in size. Our results help to understand why the perception of our body changes so much during puberty." Thus, changes of the [body](#) and the concurrent changes in the brain during puberty are not merely a matter of hormones - they are also co-determined by [sexual experience](#).

More information: Lenschow C, Sigl-Glöckner J, Brecht M (2017) Development of rat female genital cortex and control of female puberty by sexual touch. *PLoS Biol* 15(9): e2001283.

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