

# Scientists are surprised to find an involuntary link in the brain between the pelvic floor and other muscles

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Wherever you are right now: squeeze your glutes. Feel that? You just also contracted your pelvic floor too, whether you wanted to or not.

Scientists studying the source of chronic abdominal and pelvic floor pain found an unexpected connection in the brain between the pelvic floor – the muscle responsible for, among other things, keeping you from peeing your pants – and various muscles throughout the body. They've found some evidence for a link as far away as the toes (try tapping a [toe](#) and see if you feel the clench), but the strongest link so far is with the glutes.

"We knew that [pelvic floor muscles](#) contract involuntarily in healthy people to make sure they don't accidentally urinate, but we didn't know what part of the nervous system was doing this," said Jason Kutch, corresponding author on a study about the research and an assistant professor in the Division of Biokinesiology & Physical Therapy at the USC Ostrow School of Dentistry. "Now we know that there are specific brain regions controlling involuntary pelvic floor contraction."

Kutch collaborated with colleagues at USC Ostrow, the Keck School of Medicine of USC, and Loma Linda University on the research. Their findings were published on October 8 in the *Journal of Neuroscience*.

The team used electromyographic recordings – which measure the activation of [muscle](#) tissue – to show that pelvic floor activation

occurred in conjunction with the activation of certain muscles (like the glutes), but not others (like fingers).

They then used functional magnetic image resonance (fMRI) imaging to show that a specific part of the brain (the medial wall of the precentral gyrus – a part of the primary motor cortex) activates both when the pelvic floor contracts and when the glutes are squeezed – but not when fingers move.

"We hope that this vein of research will help us to find the causes of chronic pelvic floor pain, which disproportionately affect women, and may even yield information that could help people struggling with incontinence," Kutch said.

Broadly, the finding speaks to the interconnected nature of our bodies and brains, and all of the hard work going on in the [pelvic floor](#) muscles - without us even know it.

Provided by University of Southern California

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