

Solving chronic pain during intercourse

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Women suffering from chronic conditions that result in painful intercourse represent about 10% of females of reproductive age—triggering a combined economic burden of more than \$7.7 billion per year—yet scant knowledge about the origins of this pain is preventing an effective way to treat it.

Researchers at Flinders University are working to remedy this situation by identifying what triggers this [chronic pain](#) in the [female reproductive tract](#).

Dr. Joel Castro Kraftchenko—Head of Endometriosis Research for the Visceral Pain Group (VIPER), with the College of Medicine and Public Health at Flinders University—is leading research into the [pain](#) attached to Dyspareunia, also known as vaginal hyperalgesia or painful intercourse, which is one of the most debilitating symptoms experienced by women with endometriosis and vulvodynia.

Pain is detected by specialized proteins (called [ion channels](#)) that are present in sensory nerves and project from peripheral organs to the central nervous system.

"Very little is known about which ion channels are in charge of detecting painful stimuli from the

female reproductive tract; and how pain is transmitted via peripheral sensory nerves (innervating these organs) to the central nervous system," says Dr. Castro Kraftchenko.

"Also, little is known about how mechanical stimuli is detected and transmitted from female reproductive organs to the Central Nervous System.

"This lack in knowledge provides a limiting factor for developing treatments for painful intercourse associated with endometriosis and vulvodynia.

"The aim of our study is to fill this gap in knowledge. this study provides novel findings advancing the understanding of vaginal sensation that can be used to recognize and explore changes in states of chronic pelvic pain associated with endometriosis and vulvodynia."

The study—Pharmacological modulation of voltage-gated sodium (NaV) channels alters nociception arising from the female reproductive tract, by Joel Castro Kraftchenko, Jessica Maddern, Anelain Erickson, Ashlee Caldwell, Luke Grundy, Andrea Harrington and Stuart Brierley, published in the journal *Pain*, describes how sensory nerves innervating a vagina (tested on mice) respond to different mechanical stimuli.

It also identifies for the first time the presence of specialized ion channels involved in the transmission of pain signals throughout these [sensory nerves](#); and how pharmacological modulation of these ion channels alters pain signaling and ultimately regulates vaginal pain sensitivity in vivo.

"These findings contribute towards the understanding of how mechanical stimuli is detected and transmitted from female reproductive organs and uncover potential molecular targets to investigate as novel therapeutics to relieve painful intercourse," says Dr. Castro Kraftchenko.

"With this, we hope to ultimately improve the quality of life of patients with endometriosis and vulvodynia."

More information: Joel Castro et al.

Pharmacological modulation of voltage-gated sodium (NaV) channels alters nociception arising from the female reproductive tract, *Pain* (2020).

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