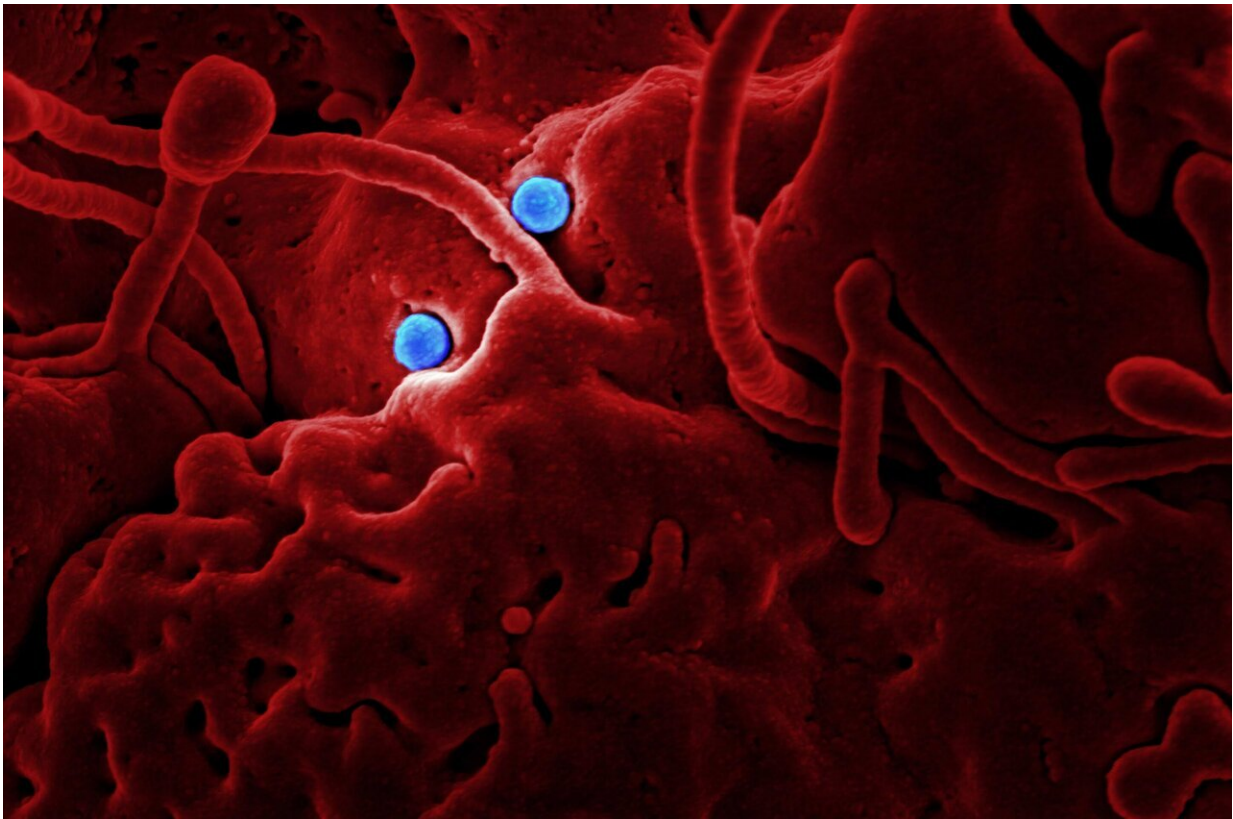


Menopause increases your risk of STIs due to how aging changes your body

August 1 2024, by Thomas L. Cherpes



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Diagnoses for sexually transmitted infections, or STIs, are increasing in older adults. The Centers for Disease Control and Prevention reports the number of people older than 65 diagnosed with chlamydia, gonorrhea or

syphilis in the U.S. [increased about three-, five- and sevenfold](#), respectively, from 2010 to 2023. Data also suggests that women older than 50 are at [greater risk for HIV](#) than younger women.

[Explanations for why](#) these infections are so common in older adults include limited understanding of STIs in this age group, infrequent condom use and increased availability of medications for conditions that typically limit sexual activity in older adults, such as like Viagra and Cialis for [erectile dysfunction](#) and estrogen creams and tablets for [vaginal dryness](#). Many older adults are reluctant to discuss their sexual history with their partners and health care providers, which contributes to misconceptions that they are [monogamous or sexually inactive](#).

In my work as an [infectious disease scientist](#), I examine the largely unexplored biological reasons for why postmenopausal women have increased susceptibility to STIs. My recently published research shows that menopause is associated with [loss of the genital tract's protective barrier](#), an essential defense against the microbial pathogens that cause STIs.

Menopause: A natural part of aging

Menopause is the stage in a woman's life marked by no menstrual periods for 12 consecutive months. In the U.S., menopause begins [on average between ages 45 and 55](#). It is estimated that [by the year 2030, 1.2 billion women worldwide](#) will be menopausal or postmenopausal.

Menopause results from a loss of estrogen production from the ovaries, which can diminish vaginal lubrication and vaginal tissue elasticity. This can cause a condition called [genitourinary syndrome of menopause, or GSM](#), which involves symptoms such as vaginal dryness and irritation, painful sex and frequent urinary tract infections. Roughly half of postmenopausal women experience GSM.

In addition to these negative effects on vaginal health, research from my lab has found that menopause also [compromises the structural integrity](#) of the tissue lining the vagina. The surface of the vagina is composed of multiple layers of epithelial cells that are held together by numerous adhesion molecules, including the proteins desmoglein-1, or DSG1, and desmocollin-1, or DSC1. These proteins strengthen the vaginal lining and restrict pathogen access to deeper tissue, reducing the risk of [infection](#).

To explore how menopause affects the vaginal lining, we [compared the DSG1 and DSC1 levels](#) in vaginal tissue from postmenopausal and premenopausal women. We found significantly lower DSG1 and DSC1 levels in postmenopausal women.

We then surgically removed the ovaries of mice to model the loss of ovarian estrogen production in [postmenopausal women](#). We also detected significantly less DSG1 and DSC1 proteins in vaginal tissue from mice without ovaries compared with mice with intact ovaries.

Mice without ovaries also had [greater susceptibility to infection](#) with herpes simplex virus type 2, or HSV-2, and were less able to clear chlamydia infection from their lower genital tract. On the other hand, applying estrogen cream to mice without ovaries restored the integrity of their vaginal lining and fully protected these mice from HSV-2 infection.

Too important to ignore

Fully understanding the behavioral and biological risk factors that contribute to STI susceptibility can help clinicians and public health officials tackle the startling increases in STIs among older adults.

Together, our studies show there is a loss of integrity in the vaginal lining after menopause. While additional research is needed, findings from our lab suggest that estrogen-containing compounds used to relieve vaginal

irritation and other symptoms of genitourinary syndrome of [menopause](#) can also reduce susceptibility to STIs among older adults.

In the meantime, health care providers can help reduce the risk of STIs among older adults by consistently counseling them about safe sex practices and offering routine STI screening.

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