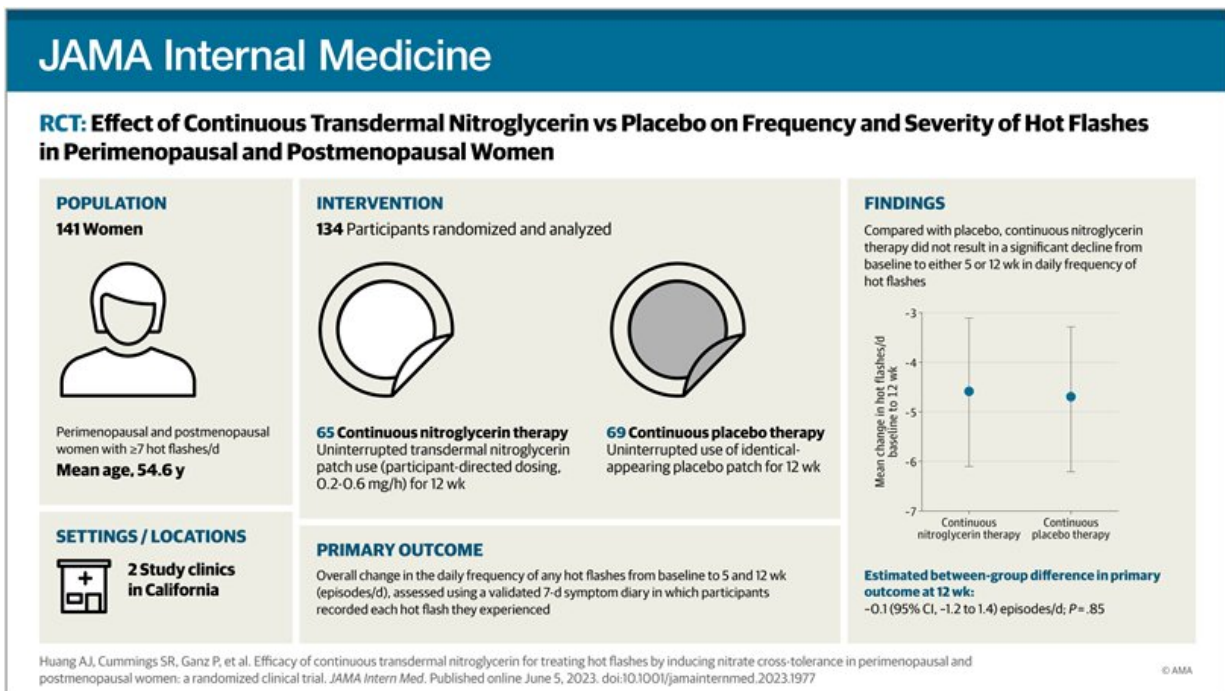


Doctors test chest pain medication to treat hot flashes

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Graphical abstract. Credit: *JAMA Internal Medicine* (2023). DOI: 10.1001/jamainternmed.2023.1977

Women have long searched for remedies for the bothersome hot flashes that often come with menopause.

In a novel investigation, researchers at UC San Francisco tested the benefits of continuously wearing a nitroglycerin patch—an established

treatment for [chest pain](#) from [coronary artery disease](#)—for menopausal women experiencing at least seven hot flashes a day. Unlike most treatments for hot flashes that target brain mechanisms, nitroglycerin works on [blood vessels](#) throughout the body.

The results were mixed. While women did experience short-term improvements in moderate to severe hot flashes, the benefits of nitroglycerin compared to placebo did not extend past 12 weeks. Some women also experienced side effects, like headaches.

The paper publishes June 5, 2023 in *JAMA Internal Medicine*.

"Nitroglycerin has been used for decades to treat chest pain in patients with coronary disease because it can increase blood flow to the heart when used for only 12 hours at a time," said lead author Alison J. Huang, MD, an internal medicine physician at UCSF Health and clinical epidemiologist.

"But [lab studies](#) suggested that if nitroglycerin is used continuously, it could prevent or suppress the type of rapid, increased [blood flow](#) under the skin that causes sensations of heat and flushing during hot flashes during menopause," she said. "In this line of research, we repurposed a medication that has been used for close to a century for a different indication."

Temperature flare: Common and uncomfortable

Medically known as [vasomotor symptoms](#), intense flushing and sweating are among the most common hallmarks of menopause, occurring in more than two-thirds of [menopausal women](#) in the U.S. and causing discomfort and disruption that can last for years.

Hormone therapy can be highly effective at reducing or suppressing

these symptoms, but there are potential risks to long-term estrogen use, including risk of some cancers, heart disease, stroke or dementia. As a result, many women have clamored for non-hormonal treatments that may pose fewer long-term health risks. So far, though, few non-hormonal medications have been found effective.

Almost all past non-hormonal treatment approaches have focused on brain mechanisms that were thought to trigger hot flashes. But researchers at UCSF decided to focus on what happens in women's blood vessels during a hot flash.

They enrolled 141 women between 40 and 62 years old who were in either late menopausal transition or postmenopausal, and randomized them to wear either a nitroglycerin or a placebo patch for 24 hours per day. The women recorded their hot flashes at five and 12 weeks. The randomized, placebo-controlled, and double-blinded design is the gold standard for testing a clinical intervention.

"It could be that the beneficial effects of nitroglycerin wore off over time," Huang said.

"The bottom line is that our study doesn't allow us to recommend [nitroglycerin](#) skin patches as a strategy for consumers to suppress hot flashes in the long term," she said. "But our study suggests that there may be promise in this overall approach to treating a common condition in midlife women. The menopause field is still lacking in effective treatment approaches that don't involve hormones."

More information: Alison J. Huang et al, Efficacy of Continuous Transdermal Nitroglycerin for Treating Hot Flashes by Inducing Nitrate Cross-tolerance in Perimenopausal and Postmenopausal Women, *JAMA Internal Medicine* (2023). [DOI: 10.1001/jamainternmed.2023.1977](https://doi.org/10.1001/jamainternmed.2023.1977)

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