

This laser is supposed to rejuvenate vaginal tissue. But scientists say it's no better than a placebo

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Human skin structure. Credit: Wikipedia

Have you heard of a fractional carbon dioxide (CO₂) laser?

These lasers are a commercial form of treatment for various skin conditions, such as acne, deep wrinkles and scarring.

While the lasers are commonly associated with facial skin, they are also promoted as an effective way to treat painful vaginal symptoms that can happen after menopause.

According to its advertisers, the CO₂ laser removes the outer layers of damaged skin and encourages the growth of new, healthy skin, which are said to reduce—or even get completely rid of—the negative vaginal symptoms.

But a new UNSW Sydney-led trial, the results of which are published today in *The Journal of the American Medical Association (JAMA)*, compared the results of the laser to results from a [placebo](#) treatment—and surprisingly, it found there was no difference between the two.

"The treatment of laser for postmenopausal vaginal symptoms just wasn't effective," says gynaecologist Jason Abbott, a professor at UNSW Sydney.

"Based on our study, we hope that women don't go for commercial laser treatment for postmenopausal symptoms."

About half of women experience changes to their vagina after menopause, caused by a drop in oestrogen. These changes can also happen to women who have been treated for breast cancer.

Some of the more common symptoms including pain during sex, vaginal dryness, itchiness or irritation, and urinary tract symptoms.

"These symptoms aren't life-threatening, but they can be pretty uncomfortable and decrease your quality of life," says Prof. Abbott, who is also the director of the Gynaecological Research and Clinical Evaluation (GRACE) Unit at Royal Hospital for Women and medical

director of the charity Endometriosis Australia.

The researchers recruited 78 women with postmenopausal vaginal symptoms to test the laser's effectiveness. The women were randomly split into two groups: half were given the laser treatment, while the other half were given a placebo treatment.

The study was double-blind—meaning that not only did the participants not know which group they were in, but neither did the researchers and clinicians. Double-blind studies are considered the most scientifically robust research method.

After 12 months, the research team compared outcomes—both self-reported changes as well as changes reported by an assessing doctor or independent pathologist—and found there wasn't any difference between the two groups.

"No matter which way you look at it, there wasn't any difference between whether you had the actual laser or whether you had this placebo treatment," says Prof. Abbott.

"It's really important for women to be made aware when it's quite an expensive treatment that it isn't different to having no treatment at all."

Debunking past studies

So why have fractional CO₂ lasers for vaginal symptoms been on the market for so long if they're not effective?

Well, up until now, many studies have shown that they *are* effective—in fact, initial studies suggested the symptoms might reduce by up to 100 percent.

But many of these studies used less scientifically sound test methods or smaller sample sizes.

"All of the studies up until now have been pushed with a great deal of fervour and enthusiasm, but it's very important that we go back to science and put things into a very rigorous methodology," says Prof. Abbott.

Lead author of the study Dr. Fiona Li, Ph.D. candidate at UNSW Medicine & Health, says she hopes the findings highlight the importance of researching new technologies before they come onto the market.

"Medications have to go through rigorous testing before they're TGA approved in Australia, but devices and procedures don't need to be," says Dr. Li, who is also an obstetrics and gynaecology resident at the Royal Hospital for Women.

"Patients don't always know that these treatments don't need to have a strong evidence backing before they're rolled out and recommended from clinicians."

Finding solutions that work

Surprisingly, many women participating in the study did see some improvements: on average, the participants showed a 20 percent improvement in their symptoms. But these improvements happened to both the laser *and* placebo groups.

Prof. Abbott says this highlights the power of the placebo effect.

"The placebo effect can have a very profound arrangement on the way that someone perceives their symptoms," he says.

"We're very keen to try and better understand how that happens and how the placebo effect works."

To further investigate this, the team are next offering the laser treatment to the women who received a [placebo treatment](#) in this study. They hope to learn more about the power of placebo by studying how these women respond to the change when they *know* they are getting the actual [laser](#) treatment. The team hope to see the results in a year's time, depending on COVID-19 interruptions.

In the meantime, women who are experiencing these vaginal symptoms may find relief in topical lubricants or moisturisers. But as everyone's experience is different, the best port of call would be your GP.

"The most important thing is to have a chat with your doctor to explore all the options and consider what is the best treatment for you," says Dr. Li.

"In the future we're looking into new areas where we might be able to find other treatments to help [women](#)."

More information: Effect of Fractional Carbon Dioxide Laser vs Sham Treatment on Symptom Severity in Women With Postmenopausal Vaginal Symptoms, *Journal of the American Medical Association* (2021). jamanetwork.com/journals/jama/.../1001/jama.2021.14892

Provided by University of New South Wales

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