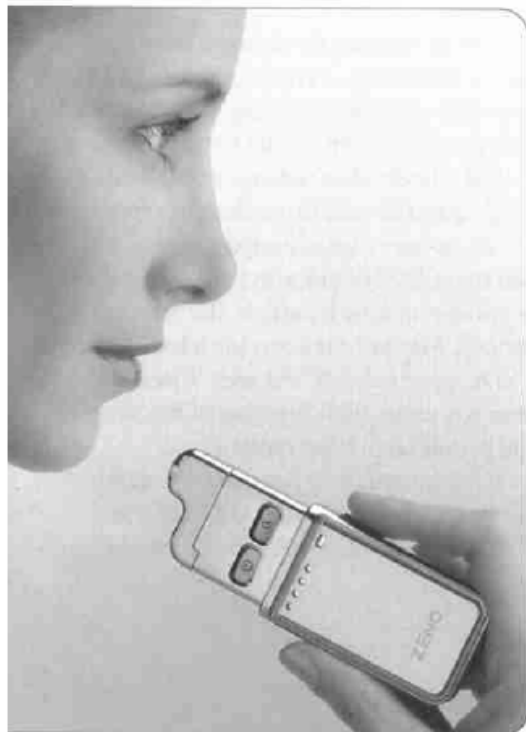


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Zeno delivers controlled heat to pimples to help resolve them. Photo: Tyrell Inc.

Device uses controlled heat to help resolve spot pimples

Quick read

A device now sold

in many dermatologists' offices uses heat to make the occasional pimple self-destruct.

Patients buy the cell phone-sized technology and use it at home with no reported adverse effects and significantly faster resolution of their pimples than if they did nothing.

By LISETTE HILTON
STAFF CORRESPONDENT

Houston — Since its Food and Drug Administration (FDA) 510k clearance in June of last year, Tyrell Inc., maker of Zeno, a pimple-fighting device, estimates 20 percent of dermatologists in the United States are selling the device.

Zeno, the size of a cell phone, delivers controlled heat to pimples and makes them self-destruct without the use of medications or topical creams. Patients purchase the device for a suggested retail price of \$225 from their dermatologists for at-home use.

Robert Conrad, chief operating officer and founder of Tyrell Inc. and Zeno developer, decided to apply to *p. acnes* the theory that heat shock proteins would increase in cells after heat exposure, resulting in cell death.

The owner of a biologic testing company at the time, Mr. Conrad was able to test the concept in his lab and found a four-log decrease in the bacterial count.

"We went from base count 1,053 colonies and, after exposing the bacteria to the temperature and time that we found

optimal, we had less than one colony surviving. It was remarkable," he says.

He developed a device that reaches a temperature of about 118.5 degrees Fahrenheit, which, he says, is slightly less than the 120 degrees that child safety organizations recommend as a safe setting for water heaters. It is also less than the temperature of wax used for hair removal.

The sleek device, which looks like a fancy cigarette lighter, imparts a specific heat for a specific time into a given lesion.

"When you have an infection, you have a natural response to it — a fever. What we are doing is putting a localized fever on the pimple. It does two things: It causes the bacterial colony to die, and you get a lot of blood flow into the area, which also helps to break down the bacterial infection," Mr. Conrad says.

Speeds improvement

Mr. Conrad hired an outside contract resource organization to monitor a double-blind study with three doctors, who were unrelated to the company. Fifty-one participants with mild to moderate acne and not on systemic medications enrolled in the study. Subjects received treatments with both active and placebo devices. Each participant received three study treatments to each blemish of 2.5 minutes each, a minimum of one hour and no longer than 12 hours apart.

The third treatment was done on the second day and occurred at a minimum of 18 hours and no more than 48 hours after the first treatment. The device delivered a thermal dose of 121 degrees Fahrenheit to the surface area (which was about the size of one pimple).

Authors of the study report that treating

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— Robert Conrad
Zeno developer

individual acne lesions with the Zeno device significantly shortened the median times to improvement and resolution compared to treatment with the placebo device. Active treatment took a median 12.8 hours for improvement versus 35.6 hours for the placebo treatment, and resolution occurred in a median 89.7 hours versus a mean 140.1 hours after placebo treatment. The monitoring physicians and participants observed and reported no adverse events from Zeno treatment.

The key to the technology and what separates it from simply applying a hot compress, according to Mr. Conrad, is that its algorithm holds the temperature to the ideal within one degree Fahrenheit throughout the treatment process.

People who use Zeno turn it on. It takes about a minute to reach the appropriate temperature, while the device does a series of safety checks. Users are alerted that the device is ready when an amber light turns to flashing green. Once users press the flashing green light, it turns to solid green, which means treatment has started.

"It then starts the timer and makes the algorithm stay within a certain range during the timed cycle. It is an incredibly accurate device that is designed to — no matter what the circumstance — hold the temperature to one degree," Mr. Conrad says.

Zeno is not for the treatment of severe acne; rather, it is a spot treatment. And, according to Mr. Conrad, people who are particularly sensitive to heat should not use Zeno.

Dermatologist backs device

Doris J. Day, M.D., dermatologist, clinical assistant professor of dermatology at New York University, New York City, at first was skeptical about Zeno's efficacy. But she changed her mind when she saw that it worked and has decided to sell it through her New York City practice.

According to Dr. Day, Zeno treatments are best for patients who come in for regular acne treatments or injections and have occasional acne between office visits, as well as patients who are not undergoing an acne treatment regimen but are concerned

about occasional acne.

"As soon as the pimple starts, they can use it two or three times a day, usually for one or two days, and the pimple should just clear. I warn them that they should not use it just before going out because it can leave a red circle for about half an hour. Otherwise, there seem to be no side effects," Dr. Day says.

Patients who use the at-home treatment have to replace the device's cartridge head every 90 treatments, according to Dr. Day, so each pimple ends up costing them about \$1 to treat. The device is rechargeable, she says, eliminating the need to purchase batteries.

"If you have a lot of pimples it is not the best thing. It is not going to replace all acne treatments or acne injections. But for select patients who just get a few pimples, I find it to be quite helpful," she says. "I have not seen any issues with burning of the skin, and people seem happy with it."

Tyrell is marketing Zeno to dermatologists, plastic surgeons and OB/GYNs and does not, at this time, sell it directly to consumers. DT

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