

ASLMS ROUND-UP

Portable Laser Safe, Effective for Hair Reduction, Study Shows

Researchers report good results using a Nd:YAG laser that has a 0.65 ms pulse duration and is small enough to carry in a suitcase

A portable Nd:YAG laser is safe and effective for permanent hair reduction, researchers say. Moreover, the treatment can be performed and is well tolerated without any cooling or applications of gels or lotions, according to a prospective study.

"This laser uses a unique pulsed duration that has not been used for hair removal before, and it is also portable, so it comes in a small suitcase that you can carry around," said study investigator Khalil Khatri, M.D., of the Skin & Laser Surgery Center of New England in Nashua, N.H. "A lot of doctors use multiple offices, so it is easy to travel with it. It is not too expensive. So these findings may be of particular interest. We found the average hair count reduction was 84 percent, and that is pretty good. It is comparable to what has been found with other lasers."

Six women underwent laser hair removal for underarm hair, with the researchers dividing armpits into two halves. One half was treated and the other served as a control. Patients were instructed not to shave their underarms one week before each treatment and at the follow-up visit.

A Nd:YAG laser (LightPod Neo, Aerolase, Tarrytown, NY) with a wavelength of 1064 nm and pulse duration of 0.65 ms was used in the treatment. Based upon the thermal relaxation time of the hair shaft (3-30 ms) or hair follicle (30-100 ms), most laser and light devices use relatively longer pulse widths for hair removal.

The treatment site received either a fluence of 21 or 36 J/cm². Higher fluence was used with a focused 5 mm spot, and lower fluence was used with a collimated 6 mm spot.

No skin cooling gel or lotion was used. A manual hair count was done before treatment and at each follow-up visit.

Dr. Khatri, who presented the findings at the meeting, said overall hair reduction was graded on a 1-to-5 scale, with 1 being the lowest amount of hair reduction and 5 the highest. One month after a series of four monthly treatments, hair reduction was graded a five (75 to 100 percent improvement) by the study participants, investigators, and observers, Dr. Khatri said. "The average hair count in the high fluence treated sites went from 114 to 18, representing an 84 percent reduction; in the low fluence areas from



Women had an average 84 percent reduction in average underarm hair count.

135 to 24 or an 82 percent reduction," he added.

None of the study participants experienced any complications, and all described the pain as tolerable without skin cooling or applications of gels or lotions. There was only faint redness and mild peri-follicular swelling, Dr. Khatri said. He said he believes this study opens door to other portable lasers that can be as powerful and effective as large, bulky and very expensive devices. "We should look for many such portable devices in near future," Dr. Khatri added.

Pneumatic Skin Flattening Eases Pain of Laser Hair Removal

By producing a pressure sensation on the skin, a pneumatic skin flattening device blocks pain sensation

The potential pain associated with laser hair reduction discourages some patients from having the procedure, but a new study suggests that use of a pneumatic skin flattening (PSF) device can significantly reduce that pain. New data suggest that decreasing pain in this manner may help increase patient acceptance.

"I have a lot of patients who want to treat a larger area such as the legs or back and using pneumatic skin flattening appeals to them," said Eric Bernstein, M.D., director of the Main Line Center for Laser Surgery in Bryn Mawr, Pa. "It could help build your practice because patients are not shying away from

the treatment because of the pain."

Dr. Bernstein and his colleagues investigated the affect of PSF versus conventional treatment using the dynamic cooling device (DCD). The researchers looked the effects of PSF and DCD on pain during laser hair reduction treatment and evaluated it also immediately following the procedure.

The study enrolled 40 volunteers, of whom 34 were treated with a 755 nm, 3 ms pulse-duration alexandrite laser using fluences ranging from 16 to 20 J/cm². Six patients were treated with the 1,064 nm laser with the same parameters but fluences ranged from 22 to 26 J/cm². Researchers treated one axilla of each individual with the PSF device and one axilla of each individual with DCD.

The level of pain reduction was greater with the PSF device, reducing pain scores in 95 percent of the treated patients. While there was no difference

in the amount of hair reduction with the two techniques, there was a notable difference in the level of pain experienced by the patients.

"On a scale of one to 10, with one being the lowest sensation of pain and 10 being the highest, the mean pain score of the subjects receiving laser

Researchers say use of PSF device can increase patient satisfaction.

treatment of one underarm using pneumatic skin flattening was rated 2.8," Dr. Bernstein said. "In comparison, the average pain score for the other underarm treated with the dynamic cooling device was 5.4. Clearly, pneumatic skin flattening can reduce the pain as-

sociated with laser hair reduction and increase patient's level of satisfaction with the procedure."

The PSF device employs a thin evacuation chamber that generates a negative pressure on the skin, he explained. The chamber elevates and flattens the skin against a transparent sapphire window. By producing a pressure sensation on the skin the device blocks the sensation of pain.

"This is a new device that works on the gate theory," Dr. Bernstein told *Aesthetic Dermatology News*. "The gate theory states that you can only have one sensation at a time. So if you are feeling pain you cannot feel pressure. The other advantage is that it blanches the skin so that the blood that would normally be there does not absorb the laser light. This reduces discomfort and side effects and allows most of the light to be taken up by the hair and not the blood."