MILITARY DERMATOLOGISTS MAKING STRIDES IN APPLYING TREATMENTS FOR WOUNDED WARRIORS TO INJURED CIVILIANS

Laser therapy proving effective in improving traumatic scars; botulinum toxin A injections helping curb common side effect associated with prosthetic limbs

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OVERVIEW:
For the millions of men and women serving in the U.S. military, injuries are a job hazard that can be nearly impossible to avoid in the line of duty. As a result, many in the military suffer from scars and wounds that, in some cases, last a lifetime and pose considerable challenges by restricting motion in affected limbs when performing common, everyday activities.

To aid in the function and appearance of battlefield scars, military dermatologists began experimenting with ablative fractional laser surgery – known to improve the appearance of acne scars. Results over the last seven years have been impressive, and dermatologists now are treating civilians injured from car accidents, fires and job and household accidents with this laser therapy to enhance scar and wound healing.

AMERICAN ACADEMY OF DERMATOLOGY EXPERT
Information provided by board-certified dermatologist Chad M. Hivnor, MD, LtCol, USAF, MC, FS, staff dermatologist (Chief Research, Chief Lasers) for the San Antonio Military Health System.

Dr. Hivnor recently received the prestigious Paul W. Myers Award from the Air Force Association for his work using fractional lasers to treat scars and improve range of motion for wounded service members. The Paul W. Myers Award honors the Air Force medical corps officer who has made the largest contribution to the overall health and well-being of men and women in the branch.

PHYSICAL AND COSMETIC ASPECTS OF SCARS IMPROVE WITH LASER
Ablative fractional lasers work by delivering very tiny columns of heat quickly to the top and deeper layers of skin, which produces a wound that heals with the help of the surrounding healthy skin tissue. When Dr. Hivnor began experimenting with the ablative fractional laser to treat scars nearly seven years ago, his motivation was to try to improve the cosmetic aspect of scars that caused considerable psychological pain for patients. His early findings were both surprising and promising:

- Patients noticed an immediate and significant loosening of the skin around the scar following treatment. For example, patients with facial scars reported the ability to open their mouths wider. This improvement in range of motion was an unexpected and important benefit.
- Scars treated with the fractional laser showed what Dr. Hivnor considered “amazing improvement” in color and texture. Optimal results were seen six to 12 months post-treatment.

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• Any scar – new or old – can potentially be successfully treated with fractional laser surgery.

NEW CONSENSUS REPORT HIGHLIGHTS BEST PRACTICES
Based on the success of Dr. Hivnor and other dermatologists using fractional laser surgery to improve the physical and cosmetic aspects of scars, new consensus guidelines¹ were developed to summarize their collective experience and provide guidelines for treating traumatic scars. Dr. Hivnor’s specific recommendations are as follows:

• Typically, four laser treatments are administered every three to six months for best results.
• Treating scars early is preferred, as it helps remodel the skin. This aids healing and improves range of motion as scars heal, but there are limitations.
• Traditional surgery still is performed when there is tension or an underlying pulling or tightness in the scars – particularly scars caused by burns. Dr. Hivnor has had good results when treating scars with the fractional laser prior to traditional surgery, as it helps restore the skin allowing the surgeon to optimize results. In addition, performing fractional laser surgery after traditional surgery when removing sutures has also produced better-than-expected results by allowing better movement in the treatment area and an improvement in the scar’s appearance.
• Location of the scar on the body plays a role in how it is treated with fractional laser surgery. For example, scars on the face are easier to treat than scars on the back. Facial scars benefit from the oil glands on the face, which help improve skin texture; skin on the back is thicker skin than facial skin, resulting in thicker, deeper scars that are harder to treat.

BOTULINUM TOXIN A: LENDING A HELPING HAND TO AMPUTEES
From serious injuries sustained on the battlefield or in traumatic accidents back home, amputations can affect people from all walks of life and cause considerable challenges in mobility. In treating patients in the military with prosthetic limbs, Dr. Hivnor encountered active patients who complained that perspiration was impairing the seal of a prosthetic limb – causing it to become detached, sometimes midstride.

For physically active patients who don’t want to be slowed down by this problem, Dr. Hivnor experimented with botulinum toxin A injections to decrease perspiration in the area where the prosthetic limb attaches to the body. Dr. Hivnor explained how this treatment works:

• Hundreds of tiny injections are needed to treat an area of the body where a prosthetic limb attaches, such as a leg.
• Injections are extremely safe but can cause considerable discomfort for the patient, and treatments must be repeated every six months to a year to sustain improvement.
• Active patients stand to benefit the most from treatment, and Dr. Hivnor recommends that patients should determine if the injections are worth it for their level of activity.
• Patients living in climates with more heat and humidity also can be adversely affected by increased perspiration and may opt for injections if they regularly experience problems.
• Injections can be life changing for some patients who want to continue participating in activities they enjoy, such as running marathons, hiking or dancing.

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“People with traumatic scars often have something tangible they look forward to following treatment, such as being able to eat a double cheeseburger again if a scar has limited the range of motion of the mouth,” said Dr. Hivnor. “While we started using fractional laser surgery for wounded soldiers, this treatment also is helping civilians who may be suffering from scars due to injuries from things like dog bites, motorcycle accidents or fires. Dermatologists are making great strides in treating scars because they are experts in understanding the complexities of the skin. Patients should do their research when considering a treatment involving the skin and consult a board-certified dermatologist with experience in these procedures.”

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