

# DEVICES IN DERMATOLOGY

THE STATE OF THE ART



## Taking the Pulse of Device-based Aesthetics Procedures

With new developments in store, the evolution of devices for aesthetic procedures is creating new possibilities.

BY E. VICTOR ROSS, MD

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To characterize the current time within the scope of device use and development in dermatology is a tricky proposition. On one hand, we're in a bit of a "status quo" situation, wherein things have not changed too dramatically, save for a couple of specific areas. In another sense, we are seeing the gradual evolution of light-based and other forms of technology that show increasing utility in a variety of procedures. We might not be seeing massive leaps from the standpoint of technology, nevertheless the advances happening in terms of the accessibility and convenience of device-based procedures may indeed have a measurable impact on the world of cosmetic dermatology.

Ahead, I will examine some of the latest trends in the laser- and device-based realm of treatment. This article will delve into some of the latest technological advances in aesthetic device-based procedures, as well as offer strategies for integrating devices into your practices and communicating with patients about device-based procedures.

## THE LATEST ADVANCES IN TECHNOLOGY: A CONTINUED EVOLUTION

The newest developments in device-based technologies

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in dermatology span a variety of modalities. A detailed discussion of specific technologies will follow later in this article; however, some broader trends and directions based on the latest releases are worth noting. Perhaps in response to clinician and patient desires, much of the latest developments emphasize portability and shortened duration of procedure. For instance, the Syneron Core is small and light and can be moved quite easily from room to room (almost as readily as a hyfrecator). There also are multiple beam shapes and patterns and a somewhat unique "fusion" mode, where both deep smaller wounds and more superficial broader wounds are created simulta-

neously. Another device that's received positive feedback is the Ultra Pulse Fractional CO<sub>2</sub> (Lumenis), because it allows clinicians to treat large areas very quickly, which is ideal for certain procedures (i.e. full leg rejuvenation).

Outside of these general advances, other innovations are opening up entire new areas of treatment for dermatologists. These include tattoo removal and fat reduction, which I'll discuss ahead.

**Advances in Tattoo Removal.** Tattoo removal is an area of dermatologic device-based procedures that is seeing great strides of late. Pico-second or Pico lasers, for example, could be a commercially viable solution to the current problem of laser tattoo removal needing too many treatments. These lasers could potentially fully remove tattoo ink in one to three treatments, which would revolutionize tattoo treatments if this speculation were realized. It may also help treat certain color types that currently present challenges with our currently available devices.

Another recent advancement in tattoo removal is application of the topical agent perfluorodecalin to Q-switched laser treatments. Often when you treat a tattoo, the treatment leaves a white area. But perfluorodecalin may cause this whiteness to dissipate relatively quickly. In addition, the addition of this agent may also speed up the entire tattoo removal process, with the whiteness being gone on roughly

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the second or third treatment rather than third or fourth.

Fractional lasers have also enhanced tattoo removal, often in concert with Q-switch lasers.

**Tissue-tightening Technologies.** We're also seeing continued development in the world of tissue-tightening and fat reduction technologies; however, we have not seen one or two devices declared as the leading technologies in this realm. Ultrasound technology has created some buzz; however, its capacity is limited in terms of what it can treat and how it is used. Having said that, Ultherapy (Ulthera) has recently introduced new treatment algorithms that appear to yield better results. Essentially, the new algorithms enable operators to do more lines with

#### COMMUNICATING WITH PATIENTS ABOUT DEVICE-BASED PROCEDURES

Unlike with fillers and toxins, patients tend to be less “in the know” when it comes to devices. Therefore, it is important to try to explain their options in simple, relatable terms that they can understand.

When I am doing an initial consult, I'll sit down with the patient and my laptop computer and show them some before and after pictures of different procedures that I've done. I used to use a notebook to try to draw out, but I've found that patients like action. For example, a video that shows a blood vessel disappearing pre-treatment and post-treatment is much more effective than attempting to explain the science of the process. Brochures and demonstrations simply aren't effective tools anymore, particularly in an age in which so many people now use tablets and laptops. What's most important to the patient is giving them an idea of why we would perform a given procedure.

I have also found that when it comes to communicating with patients about their option, it's best not to overwhelm them with choices. In the initial consult, when I am sitting down with the patient, it's important to first ask them what's bothering them. This will help you to determine areas to emphasize and whittle the number of treatment options down to a couple of options. I find that when you present two or three focused options that more visits are converted to treatments than if I were to simply present the patients with options. It also gives you more time to spend with patients if more are likely to do the procedure. Visual aids help along this process, but remember not to overwhelm the patient, as the number of options in front of them might immobilize them. Try to hone them on a particular approach and go from there. Since only roughly five to 10 percent of patients that come into my practice for a consult know exactly what they want, it's important to give the patient a general sense of the procedures that you've narrowed down, as well as how each device/treatment offers unique benefits.

—E. Victor Ross, MD

different transducers, which allow them to go to different depths (roughly 3-5ml deep in the skin). With its new algorithms, Ultherapy represents a case in which you can achieve different results in skin tightening simply by changing how the machine is used. Another relatively new treatment in the broader tightening realm is Cynosure's Cellulaze, which was approved in 2012. Treatments appear to be effective for both cellulite and possibly tightening; however, Cellulaze is somewhat labor-intensive and time-consuming, which can present challenges for both clinicians and patients.

**Aids and Add-Ons.** Advancements in the dermatologic device realm are not limited to the devices themselves, however. Sometimes add-ons and other supplemental pieces can provide added efficacy or convenience. For example, Palomar's Skintel Melanin Reader gives a real-time guide that measures pigment in three measurements. Once it determines the pigment, it sends the signal to the IPL device and gives the clinician a reasonable setting to use as a starting point. This can help to avoid over- or under-treatment. Other new aids being integrated into devices now include wireless connections and other features that aid in assessment or conveniences during the actual treatment.

**EMERGING COMBINATION APPROACHES**

One very interesting trend that's started over the last year or two is what appears to be an emerging treatment algorithm for rejuvenation of the face that involves treatment with a device in addition to treatment with botulinum

**THE FIVE LASER ESSENTIALS**

Depending on your patient base and the type of practice you own, your priorities for dermatologic devices are going to vary. The following list is simply a reference point for devices to potentially purchase if you're not fully cosmetic.

1. Pulsed Dye Laser, Intense Pulse Light Laser, or Large Spot KTP Lasers: for red and brown spots
2. Laser for Hair Removal: Judging by the popularity of laser hair removal, purchasing one of these devices is a solid bet, particularly if you have a medspa
3. Fractional Non-ablative Device
4. Fractional Ablative Device
5. Q-Switch Laser for Tattoos

**GENERAL APPROACH TO COMBINATION THERAPY**



Step 1

**Neurotoxin**  
(Top third)

**Fillers**  
(Lower face)

Step 2

**Laser**

Exercise caution to avoid excess swelling or toxin diffusion.

toxins and fillers. If these procedures are performed appropriately and in the right order (toxin first, filler second, laser last), all three can be used in the same session. It's the equivalent of "one-stop shopping" in cosmetic dermatology and it can provide very good results. How much you use or inject in each session will depend on the patient and the specific goals of treatment; however, the general rule I apply is that toxins may be used in the upper face and fillers in the lower face to re-volumize. Then, you can introduce a laser treatment, the results of which can couple very nicely with the toxins and fillers.

While combination approaches utilizing a variety of cosmetic modalities can offer immediate results, it's important to be mindful of how each product or procedure may affect the others. If you do too much in one session, problems may arise. For example, if you are injecting neurotoxin, a laser that causes significant swelling can actually diffuse the toxin and diminish the effect or cause eyelid drooping. That's why it is important to inject the toxin first and select a device carefully that can compliment the toxin rather than potentially diffuse it. For example, fractional ablative laser may result in diffusing the toxin away from where you want it to be. However, if you feel that a procedure that's associated with more swelling is warranted in a specific situation, it might be more prudent to defer on the toxin until the following visit or sometime later.

After treatment with toxin and filler, the types of devices that I find are most effective and complimentary are pulsed dye lasers and some non-ablative IPL or KTP (green light) lasers for red and brown colors. Then, non-ablative fractional devices tend to be very effective after these. This is my default regimen for about 50-60 percent of patients



who do not want downtime. I have observed that patients increasingly are requesting procedures associated with less downtime. That rules out many ablative procedures, which, by definition, are open-wound. Some devices are not inherently ablative or non-ablative, but instead provide variable results depending on how aggressive you are with them. The UltraPulse, for example, is one of these devices. However, sometimes the extent of treatment that patients require in order to achieve their desired outcome will require ablative intervention.

At this time, the role for combinations of fillers, toxins, and device-based procedures is growing. The reason for this is that each procedure has unique benefits that the others do not. They complement each other with very little overlap. Patients may request just one or two of these, but with an approach that incorporates a well-designed regimen of all of these therapies, the results can be profound. With eight to 10 different fillers, three toxins, and over 100 lasers available, it can be difficult to choose and find the right approach, but the key is to keep it simple and recognize the strengths of each modality and how it may compliment the others.

### INTEGRATING DEVICES INTO PRACTICE

Given the sheer number of dermatologic devices currently on the market, deciding on which to integrate into your practice can be a daunting task. It's important to do your research before selecting a device. Some devices may be appealing because they offer a broad capacity of services, others because they are less invasive, or perhaps cover more surface area in less time. Then there is cost, which is important but shouldn't be the main reason for investing. Some of the more "low-end" devices may be attractive based on cost but should really be avoided. All of these factors should be weighed individually and against each other in order to determine what works best for your practice. Seeing a device in action also boosts your ability to determine whether it's a good fit. You can do this at the annual meetings of American Academy of Dermatology (AAD), American Society of Laser Medicine and Surgery (ASLMS), and others. A good relationship with your local manufacturer representative can also be very beneficial, as some may allow you to sample the machine in your practice.

The most useful analogy I can think of when it comes to navigating the crowded market is to think of devices like a baseball team. You're going to need a pitcher, a catcher, infielders, and outfielders. In other words, there are some base functions that you're probably going to need filled if you want to cover a range of aesthetic procedures. Thus, it may be wise to have a device for each broad category.

For example, treating red and brown spots is one of the

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most basic and important functions to offer; therefore, it makes sense to offer any of the visible light technologies, which include pulsed dye lasers, IPL lasers, or large spot KTP lasers. A number of lasers in all three of these categories can provide very good results. In the ablative arena, the RF Pixel (Alma) and a large array of the CO<sub>2</sub> lasers both cover a range of fractional procedures.

Fractional technology has seen a great emphasis in recent years, as evidenced by the sheer number of fractional devices on the market. Radiofrequency (RF) technology also continues to be a popular avenue of devices, and they tend to run much cheaper than fractional devices. A select number of devices offer both fractional technology in a RF device, such as Syneron's eMatrix and Alma's RF Pixel, and the Invasix Fractora. It is likely that fractional technology (particularly of the RF variety) will continue to grow, given that they are reasonably cost-effective to manufacture and provide reasonably effective results on the whole. As with any technology, however, there is no one device type that treats the gamut of dermatologic conditions. We will likely see more non-ablative technologies flourish, but the most important thing is to select technologies that are complimentary and allow you to treat a range of conditions.

### STILL IMPROVING

The vast landscape of device-based therapies we can now offer to patients has given us fresh possibilities for how to treat a range of conditions. Given how rapidly we've seen the field grow and develop, we now have a clearer picture of what still needs to improve. Thus, as we await further developments in the world of skin tightening and non-invasive fat reduction, it's important to take note of the smaller advancements taking place that are making treatment easier for both ourselves and our patients. And more generally, although masters we may become of certain technologies and procedures, we would all benefit from a greater willingness to learn as the evolution of device-based procedures continues. ■

*Dr. Ross has disclosed relationships with Palomar, Lumenis, Alma, Sciton, and Syneron.*

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