As the market for aesthetic device-based treatments continues to evolve, it nonetheless remains a challenge to identify where device-based interventions stand and where they are headed in our field. Over the last several years, several clear directions have emerged as "hot spots" for device-based therapies. These include skin tightening and non-invasive fat reduction in the aesthetic arena. While the emphasis may be on certain procedures, gradual improvements are occurring across the wider device spectrum. Therefore, it is critical for all of us—the owners of multiple devices and the dabblers alike—to consider the growing influence and potential of devices in our field as well in our practices.

NEW ADVANCEMENTS IN AESTHETICS

Devices have arguably made the greatest strides in the realm of aesthetics, particularly in the relatively new arenas of skin tightening and non-invasive fat reduction.

Skin Tightening. Although the notion of skin tightening has long piqued the interest of the device-using community, the technology gains have outpaced clinical outcomes as far as predictability and patient satisfaction. In recent years, the skin-tightening front has seen several developments that have rendered it a more viable therapy. Both the RF-based Thermage (Solta Medical) and the ultrasound technology Ultherapy (Ulthera) have been given upgrades that have improved their efficacy. In particular, the recent changes to Ultherapy’s algorithm seem to have yielded overall better results with less pain. Deeply penetrating RF needle devices (such as E-prime and Infini) are also applied for skin tightening.

One of the newer devices on the skin tightening front is PrecisionTX (Cynosure), which is used to lift and contour the lower face and neck. Although the device has only been available for a short time, it has made an impression, with some results continuing to improve three to six months after treatment. Another recent device that has garnered some attention is the ThermoRF, the use of which involves placing a cannula under the skin to heat it with a thermal camera.

Non-invasive Fat Reduction. While gradual improvements have brought skin tightening more into the popular fold, even more widespread of late is non-invasive fat reduction. Several technologies are already on the market, including cryolipolysis (CoolSculpting by Zeltiq), ultrasound (LipoSonix, Solta Medical), radiofrequency (Exilis, BTL Aesthetics), and Tru-sculpt (Cutera). Recently joining this already crowded space is the RF-based device Vanquish (BTL Aesthetics), which selectively heats adipose tissue to the point of apoptosis, leaving the surrounding tissue less affected. Each of these technologies offers slightly different methods of action toward achieving the same goal of non-invasive fat reduction.

As a broader category of treatments, non-invasive fat technology has created a new niche on the device-based treatment space. Since fat treatment is such a robust area, it has become something that physicians tend to either offer nearly full-time or hardly at all. Some practices offer it as an alternative for those patients who might benefit more from liposuction but are reluctant to have any level of invasiveness.

Body contouring procedures have proven to be financially lucrative for some practices offering them, but, scientifically, much work likely remains toward ensuring their efficacy. While each device in the world of skin tightening, fat reduction, and broadly body contouring offers patients unique advantages, they also have specific limitations that
both physicians and patients should learn about before investing in them. These run the gamut from applicator fees to unpredictability in results. Given how this area is still very young, physicians can expect continued growth and hopefully more evolution in terms of the viability of many of these devices.

**Fractional and Radiofrequency Technology.** Fractional lasers have seen a great emphasis in recent years, as evidenced by the sheer number of devices on the market. One newer device is the Halo from Sciton, a fractional device that offers ablative and non-ablative wavelengths in the same handpiece. The respective ablative and non-ablative microbeams can be deployed adjacent to or one atop each other depending on user preferences.

Radiofrequency (RF) technology also continues to be a popular avenue of devices, and these devices 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 complementary and allow you to treat a range of conditions.

**NEWS USES FOR TATTOO REMOVAL TECHNOLOGY**

Tattoo removal is considered a niche area of device-based procedures. The reason for that, primarily, is the insufficient application spectrum to make tattoo removal devices (traditionally Q-switched lasers) financially successful. Recently however, picosecond technology has changed the tattoo removal landscape by potentially reducing the number of treatments required to treat some tattoos. The PicoSure laser from Cynosure is very effective for tattoos, for example. And yet, even with improved technology, tattoo removal remains an area in which it is hard to “dabble,” given the time commitment and significant investment required.

Frankly, for these devices to become more successful and widely incorporated into practice, they have to do more than treat tattoos. Fortunately, picosecond technology may have wider utility than previously thought. In fact, it can potentially be used for rejuvenation. In one application, the picosecond laser beam is similar to the beam of a fractionated laser, in that it does lots of individual pulses on the skin. The result is a rejuvenative effective with no downtime. It can even be used to treat redness with even less downtime than a typical intense pulse light procedure.

While the ideal tattoo removal technology has yet to be discovered, picosecond technology is a step in the right direction. This, coupled with its potential for rejuvenation, makes it a more accessible technology that will hopefully continue to be explored and refined in coming years.

**BROADER USES AND ROADBLOCKS**

Although many of the newer device-based approaches for aesthetics tend to take weeks or months before showing results, on the medical side of the spectrum results are often instantaneous. However, advancements have been far fewer when it comes to the utility of device-based treatments for conditions such as psoriasis, warts, acne, and other dermatologic conditions. Thus, as devices gain increased popularity for aesthetic indications, their utility for more general dermatologic conditions is decidedly more niche-based. Often, smaller practices can only house one or two lasers, due to the significant financial investment and/or space issues within a practice. While medspas stock devices that treat everything from hair to pigment, cellulite, and tattoos, smaller practices must often decide based on which applications best suit their patient base. But even still, a patient base that’s large enough to generate a large enough return on investment remains a challenge for many practices.

In terms of advancements, one area that is continually being investigated for laser treatment is acne. Specifically, some companies are starting to look at how certain devices that might have been developed for cosmetic conditions may also have utility for conditions like acne and scarring. If enough evidence is published to suggest these links, lasers may become more commonplace in care. However, difficulty in securing insurance reimbursement may prove to be a roadblock too difficult to overcome. Take, for example, one of the most effective devices for hyperhidrosis: the MiraDry microwave tool. It is a sound and well-conceived device that offers patients predictable reduction in sweating, but there is no insurance route for reimbursement. And if patients are not willing to pay an out-of-pocket
expense for treatment, physicians will require fair reimbursement if and when these types of devices are “coded” specifically with CPTs. Another example would be scars that do not have CPT codes, such as a patient I recently saw who had a dog bite at age 15. There are several devices that could probably offer good results in these cases, but the question that immediately comes up is: Who’s going to pay for it? Is it out of pocket, essentially making it a cosmetic procedure? If insurance companies are willing to reimburse you, will it pay at a rate that will compensate for depreciation, time, and other factors?

Some insurance companies and providers are involved in efforts to integrate new CPT codes for conditions like scars, port wine stains, and acne, in order to pave the way for better reimbursement and ultimately greater access to care for patients. However, the time it will likely require for the potential for fair reimbursement for medical treatment with lasers to be realized will likely be substantial. Thus, lasers for some medical indications will likely continue to be a niche realm for the foreseeable future.

A FUTURE OF RELIABILITY

One key element that should aid in the smoother integration of devices into practice is reliability. Often the most successful device platforms are the ones that are easy to operate and incorporate tools to enhance outcomes and reduce provider stress and guesswork. For example, the Skintel device for pigment (Cynosure) assessment can provide real time feedback and increase confidence in provider parameter selection. All of these types advancements (better touchscreens, etc) will make lasers more mainstream. Devices that are safe to operate and easy to navigate will continue to garner the most attention and bridge the gap of device-based procedures in our specialty.

With the strains associated with device-based procedures for medical indications contrasted with the booming popularity of devices for aesthetic procedures, our field is at something of a crossroad when it comes to device-based interventions. However, with the continued advances in aesthetics and a stronger emphasis on finding utility for medical and aesthetic treatments, the role of devices is likely only to grow more prominent across the spectrum of aesthetic specialties.

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