

Facial Muscle Training: The Art of the Smile

By Kevin A. Wilson, Contributing Editor

Acknowledging the smile's crucial role in social interaction is widespread. A 2014 article in the *Journal of Clinical & Diagnostic Research*¹ states, "A 'smile' is not only a single category of facial behavior, but also the emotion of frank joy which is expressed on the face by the combined contraction of the muscles involved." This study suggested that muscle retraining may improve facial aesthetics for the perception of youth, health, vigor and attitude.

Not only do smiles transmit positive vibes, but they also lift one's own sense of wellbeing, according to facial plastic surgeon Lucy Barr, MD, founder and director of Barr Aesthetics in Salt Lake City, Utah. "I find the concept of 'emotional proprioception' fascinating," she began. "According to the facial feedback hypothesis, facial expression generates feedback signals that will reinforce those emotions. The emotional and psychological impact of smiling more could be absolutely profound."

"Someone's aging process also changes the smile as our muscle tone diminishes," elaborated Catherine Vieregger, DDS, director of Vibrance Comprehensive Dentistry (Greenwood Village, Colo.). "The upper lip becomes longer and does not lift the same, making the smile appear smaller. The face appears heavier and droopy, the corners of the mouth become downturned creating the appearance of being negative."

Correspondingly, a 2018 pilot study by Alam and colleagues² subjects (n=27) performed a specific 30-minute daily or alternate-day facial exercise program consisting of 32 exercises over a period of 20 weeks. Significant improvement was shown in 18 of 20 facial features monitored and participant satisfaction was high.

Emface® from BTL Aesthetics (Boston, Mass.) addresses these realities by improving facial musculature and skin – and it does not take weeks of time-consuming facial exercise. Emface's patented technology tones facial musculature and improves skin by combining BTL's signature Synchronized RF with high intensity facial electromagnetic stimulation



Before and after one course of treatment with Emface
Photos courtesy of Yael Halaas, MD

(HIFES™) in four 20-minute weekly sessions. "This stimulates collagen and elastin, and improves local microcirculation. HIFES selectively stimulates key facial muscles with thousands of pulses per session to revitalize, rather than change, musculature and structure in line with the patient's natural appearance," explained facial plastic surgeon Yael Halaas, MD (New York City, N.Y.).

Emface's capabilities are proven in ten clinical trials* – which are in various stages of publication – representing work done at 15 research locations worldwide. Results include an average of 23% lifting effect, a 30% average increase in muscle tone, a 37% average reduction of wrinkles, a 26% increase in collagen and two-fold increases in elastin with through-the-roof overall patient satisfaction.

"As with Emsculpt Neo, Emface has taken me by surprise by its impact on overall well-being," Dr. Barr mentioned. "I never imagined that the functional component would be so significant. The increase in strength and tone of the muscles that lift the face translate to improved structural support of its soft tissue framework. A hidden value is that not only can you see the difference, but you can also feel it."

"With Emface we can greatly accelerate improvement that took so much work in the past because it does the work for patients," Dr. Vieregger noted. "By rebuilding the foundation



Lucy Barr, MD
Facial Plastic Surgeon
Founder and Director
Barr Aesthetics
Salt Lake City, UT



Catherine Vieregger, DDS
Director
Vibrance Comprehensive
Dentistry
Greenwood Village, CO



Yael Halaas, MD
Facial Plastic Surgeon
New York City, NY



Before and after five treatments with Emface
Photos courtesy of Lucy Barr, MD

of the face, Emface makes it possible to engage the muscles required for a youthful smile. It renews facial symmetry, lifting and broadening the smile. The upper lip lifts to reveal more tooth structure, and the smile translates to the eyes as well. There is a physiological and psychological benefit, elevating mood and feelings of well-being. Emface is greatly enhancing the aesthetic results for my patients, and I recommend treatment for both males and females.”

Facial muscle stimulation with Emface primarily targets specific elevator muscles crucial for achieving the desired effect, including the frontalis, zygomaticus major and minor, and risorius. While up to 43 muscles may be involved in the formation of a smile, the zygomaticus muscles are the most important. “I have had patients report that their face feels less heavy, more supported and it actually feels easier to smile. This makes a lot of sense because the device is targeting the smile muscles,” Dr. Barr noted. “When smiling feels easy, you tend to smile more, which not only feels amazing, but also impacts those around you!”

Until recently, facial improvement paradigms were shaped around the concept of relaxation, using tools such as injectable neurotoxin to inhibit facial movement and subsequently reduce wrinkles. According to Dr. Halaas, this is a consequence of the toolbox, which Emface has changed dramatically. “From aging, the frontalis and zygomaticus major decrease basal resting tone and areas like the forehead hyper-compensate giving us motion lines in response. We relax this hypermobility with injectable neurotoxin,” she explained. “With aging, particularly around the smile, people say they feel like their face is ‘falling down’, instead of a pleasing countenance, at rest. Improving muscle restores the more appealing visage, with a better smile and better cheeks surrounding that smile – but it is natural-looking.”

BTL technologies’ tendency to enhance appearance, function, and wellness is appealing to numerous physicians, Dr. Barr being one of them. “I am ecstatic about the concept that Emface improves the health of facial tissues. It provides lift and structural support to the face by optimizing the health and support of your own tissue. I consistently see improvements to facial shape that clinically reflect these changes, which is something that previously could only be obtained via facelift. That is why I recommend Emface to the majority of my patients. It is a great option on its own or complementing injectables, resurfacing and surgical procedures.”

“The whole concept of Emface is that essentially, we are physically rehabilitating the muscles of the aging face. This resonates with patients and is a concept they can readily understand.”

“Emface has provided an amazing tool to enhance smile makeovers in my cosmetic dentistry practice,” said Dr. Vieregger. “Patients that have been ashamed of their smiles tend to hide them by covering their mouths with their hands or by intentional avoidance. Years of hiding the smile changes the facial form and musculature, in teenage patients as well as adults. The upper lip becomes elongated, and the corners of the mouth become downturned, then the cheeks lose natural tone. Once they have a smile they are proud of, they must literally relearn how to smile, which takes a concerted effort and I have had to coach my patients to regain their smile. I have had smile makeover patients be told by others that they look like they had a facelift, or that their eyes/face look brighter.”

“The whole concept of Emface,” said Dr. Halaas, “is that essentially, we are physically rehabilitating the muscles of the aging face. This resonates with patients and is a concept they can readily understand.”

References:

1. D'souza R, Kini A, D'souza H, Shetty N, Shetty O. *Enhancing facial aesthetics with muscle retraining exercises-a review. J Clin Diagn Res.* 2014 Aug;8(8):ZE09-11.
2. Alam M, Walter AJ, Geisler A, et al. *Association of facial exercise with the appearance of aging. JAMA Dermatol.* 2018;154(3):365–367.

*Data on file, BTL Aesthetics.