

Affirm Laser Simultaneously Stimulates and Remodels Collagen

By Bob Kronemyer, Associate Editor

Photos courtesy of Bruce Katz, M.D.



Before Tx



After three Affirm treatments

"Patient feedback has been very favorable. They comment on improvement in skin texture and skin appearance."

Combined Apex Pulse (CAP) technology is the cornerstone of the 1440 nm Nd:YAG Affirm laser from Cynosure, Inc. (Westford, Mass.) that delivers light energy of varying intensity levels, simultaneously remodeling and stimulating collagen. "Basically, CAP is a very sophisticated focusing lens. The laser beam hits this diffractive lens and focuses on small areas," said Emil Tanghetti, M.D., clinical professor of cosmetic dermatology at the University of California, Davis. "The Affirm laser focuses on the papillary dermis. It does not enter the reticular dermis, such as other fractionated devices at 1550 nm wavelength. This is because the Affirm laser has a higher absorption coefficient with water and deposits most of the injury in the papillary dermis. Dr. Tanghetti noted that, "Deeper penetration with the CO₂ laser got us into trouble before. Results indicate that papillary dermis wounding is ideal."



Emil Tanghetti, M.D.
Associate Professor UC Davis
Medical Center
Center for Dermatology and
Laser Surgery
Sacramento, CA

Besides observing improvement in photodamage with the Affirm laser, the most impressive improvement is in patients with acne scars, according to Dr. Tanghetti. "This is the proof of the pudding. Acne scars have been very difficult to treat. We've never had a great acne scar treatment until fractionated technology," he said. "Histology studies of the Affirm laser show that the wound is exactly in the papillary dermis. Histology also shows tightening and new collagen formation occurs after treatment."

Wounding techniques vary among technologies. "The scanning technologies wound in tiny microthermal injury zones, without any background heating," Dr. Tanghetti explained. "But the Affirm laser

heats the whole area and selectively superheats certain areas. Results compare favorably to what I have seen with the Fraxel laser (Reliant Technologies, Mountain View, Calif.) photos." Patients schedule three to six treatment sessions with the Affirm laser, at monthly intervals.

According to Brian Biesman, M.D., an oculoplastic surgeon in private practice in Nashville, Tenn., "The depth of penetration most fractional devices are trying to target, for photo-aged skin, is in the 300 to 500 micron range, which is similar to the original CO₂."

Since the days of the CO₂ laser, "we've been trying to find ways to achieve tissue tightening with non-invasive devices without removing the epidermis,"



Brian Biesman, M.D.
Oculoplastic Surgeon
Private Practice
Nashville, TN

Dr. Biesman said. "The Affirm targets pigmented and fine and medium wrinkles. Deep heating in conjunction with the 1440 nm wavelength will provide an added dimension that is lacking in current devices without deeper heating."

With the Affirm, Dr. Biesman treats mild-to-moderate photo-aging, brown discoloration, mild-to-moderate wrinkles and surgical scars, on the face, neck, chest and hands. He is also experimenting with eyelids. "Results have been very good to excellent in all these areas. Patient feedback has been very favorable. They comment on improvement in skin texture and skin appearance. We use the laser every day. I think the Affirm is an excellent fractional resurfacing device and I'm excited by the prospect of adding deep heating."

"The Affirm laser provides much less pain than the Fraxel laser," added Sherry Collawn, M.D., Ph.D., a plastic surgeon and clinical

Photos courtesy of Sherry Collawn, M.D., Ph.D.



Melasma before Tx

Melasma after four Affirm treatments

“Distributing energy between microthermal zones causes collagen stimulation and new collagen formation. We’re seeing excellent results.”

associate professor of plastic surgery at the University of Alabama in Birmingham. “Although actual treatment time is similar for the two technologies – 10 to 15 minutes – the overall patient time with the Affirm laser is much, much shorter. There is no prep time with the Affirm unlike with Fraxel.

The Fraxel laser requires you to apply a topical agent one hour before treatment. You also need to apply a blue dye after removing the topical, then apply a second topical.

After treatment, another 15 minutes is spent removing the blue dye, which can stain the skin for several days. Fraxel treatments are very time consuming: 1-1/2 to 2 hours.”

Usually patients experience erythema from 2 to 24 hours with the Affirm laser, which is significantly less than the Fraxel laser. “With the Fraxel laser, patients do not return to baseline until day five,” Dr. Collawn said. “For smaller wrinkles, results are faster with the Affirm laser, especially around the eyes. Furthermore, the Affirm laser is easier to use.”

A split study of the Fraxel vs. Affirm laser being conducted by Dr. Collawn finds the majority of patients have switched to the Affirm laser. “The Affirm is much easier for patients,” she said. “Some patients have also achieved better results with wrinkles. I now use the Affirm laser 80% of the time since patients tell me they love the Affirm treatment. Some people see an improvement at one week. But at two months you achieve even more improvement due to the collagen remodeling taking effect. Optimal results occur several months after treatment, and I estimate they will last for years.”



Sherry Collawn, M.D., Ph.D.
Plastic Surgeon
Clinical Professor of Plastic Surgery
University of Alabama
Birmingham, AL

Dr. Collawn observes excellent results when treating dark skinned individuals with the Affirm laser. “It helps with wrinkles and the skin becomes smoother and has a more homogeneous color and texture,” she noted. As with all skin types, however, appropriate fluences must be used for treatment.

“The Affirm laser has been a significant addition to my practice by being able to provide fractional resurfacing to patients, without a significant time commitment on their part and in our office,” said Bruce Katz, M.D., director of JUVA Skin & Laser Center in New York City. “The laser has been a major benefit for treatment of wrinkling and acne scarring. Compared to other fractional resurfacing devices, we are also actually seeing skin tightening at the same time. Overall, we are seeing significant improvements in wrinkling, acne scarring and skin tightening. Patients are very pleased. I think the Affirm laser is a significant innovation in fractional resurfacing.”



Bruce Katz, M.D.
Director
JUVA Skin & Laser Center
New York City, NY

According to Dr. Katz, the time commitment of patients with the Fraxel laser is up to two hours. “It ties up our exam rooms. This causes congestion in our office. The blue dye is also really messy.” Dr. Katz believes that the Affirm laser is as effective, if not more so, than the Fraxel laser. “The Affirm laser creates both microthermal zones and deposits energy between these microthermal zones. The Fraxel laser only creates microthermal zones. Distributing energy between microthermal zones causes collagen stimulation and new collagen formation. We’re seeing excellent results.”