

# Next Generation Vibraderm Surpasses Microdermabrasion Capabilities

Effective, painless dermabrasion with minimal recovery time can now be performed with the Vibraderm system from Vibraderm, Inc. (Irving, Texas). This patented cosmetic device gently exfoliates the epidermis while stimulating collagen growth, but unlike conventional dermabrasion treatments, Vibraderm does not use particulates. Instead, a fixed abrasive, vibrating stainless steel paddle is used to treat the face, neck and upper chest in just ten minutes.

**“This is a painless** procedure with absolutely no patient downtime,” said developer Brian Zelickson, M.D., an associate professor of dermatology at the University of Minnesota in Minneapolis. “Current microdermabrasion machines have several drawbacks, including a small spot size, which can lead to uneven and slow treatments. The aluminum oxide crystals also become aerosolized and form a residue that remains on the skin after treatment.”

Dr. Zelickson was principal investigator of an 11 patient study to evaluate the efficacy of vibradermabrasion in the treatment of photodamaged skin. “Our three major goals were to determine the percent clearance of photodamage, patient satisfaction with treatment and examining the histological skin changes found in skin biopsies.”

**The 11 patients** (ranging in age from 24 to 43 years old) were selected for five treatment sessions of vibradermabrasion, spaced at weekly intervals. “Each subject randomly had one side of his face treated with the Vibraderm and the other side treated with a standard

particulate microdermabrasion device,” Dr. Zelickson explained. Photographs were taken prior to each session and one week after the last treatment.

Two patients also had skin biopsies prior to treatment and one week after the final session on the side of the face treated with the Vibraderm. In addition, two other subjects (ages 69 and 70) had the dorsal surface

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of their arm treated with the Vibraderm three times a week for three weeks. Biopsies were then taken for histologic examination.

**“The most dramatic** results in the study were histologic in nature,” Dr. Zelickson said. “Clinically, short-term results were mild, but after three weeks, the epidermis and papillary dermis were undergoing dynamic remodeling, much like that seen after past tape-stripping studies. These findings suggest that the long-term cosmetic and healthy skin results of this mild wounding procedure may be cumulative.”

Histologic examination revealed an even and adequate removal of 75% of the stratum corneum, with the remainder being compacted. Epidermal thickening was also observed compared to pre-treatment samples and the Grenz zone was thickened. “There is a reactive epidermal hyperplasia noted after treatment. Immunohistochemistry also shows increase staining



Brian Zelickson, M.D.

for type I collagen in the superficial papillary dermis following treatment,” Dr. Zelickson said.

**Patient satisfaction was** also high: 75% felt they had improvement in the tone and texture of their skin on the Vibraderm treated side compared to only 55% of patients who observed improvement on the microdermabrasion side. Further, 85% of patients preferred the Vibraderm system over the microdermabrasion system. “There was noticeably less post-treatment erythema after vibradermabrasion as opposed to microdermabrasion,” Dr. Zelickson said.

The Vibraderm is powered by a standard electrical outlet. Each 30 mm x 30 mm paddle is reusable and specific to the client. A smaller paddle (10 mm x 30 mm) for fine features is also included. It is recommended that a non-alcoholic based moisturizer be applied to the skin during treatment.

“**Objective clinical** assessment of 35 mm slides showed vibradermabrasion improved fine lines twice as much compared to conventional particulate devices,” Dr. Zelickson reported.

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As for safety, “There were no complications associated with any of the treatments,” Dr. Zelickson said. “There was also less patient discomfort with vibradermabrasion compared to standard microdermabrasion.” ■

### Editor’s Note:

The following Clinical Roundtable was moderated by Mitch Goldman, M.D., who is one of the first physicians to investigate the broad uses of Vibraderm in an aesthetic practice.



### How is the Vibraderm system used in your practice?

**Eric Bernstein, M.D.** – We now exclusively use the device on all our microdermabrasion patients. It is used between non-ablative laser treatments to enhance the penetration of topicals.

**Robert Weiss, M.D.** – We use the Vibraderm as a substitute for microdermabrasion. It is easier to use on large body areas, and there is virtually zero risk of purpura.

**Brian Beisman, M.D.** – The machine is used by our aesthetician when performing facials, prior to peels, and in conjunction with cosmeceuticals for skin rejuvenation.

**Michael Gold, M.D.** – This system has potential advantages over traditional methods in enhancing the penetration of topical medicines and formulas into the

skin, as well as a potential benefit in our Levulan photodynamic therapy (PDT) patients by enhancing Levulan’s penetration.

**Suzanne Kilmer, M.D.** – I’m also using the Vibraderm as a microdermabrader to smooth skin and enhance penetration of topical products.



Suzanne Kilmer, M.D.

**Suzanne Yee, M.D.** – The system smoothes the skin and helps with exfoliation. Six weeks after laser resurfacing, I will begin Vibraderm treatments to help remove any dullness to the skin. Occasionally, the skin feels like it has a grainy texture in some areas. These patients should benefit from vibradermabrasion. I have also used the technique for fine textural lesions on the skin, as well as for milia and syringomas, if a patient has a lot of these lesions. In addition, the treatment seems to help decrease the incubation time of Levulan. It can also be used in conjunction with a home skincare program to enhance the effects and to help skin achieve a healthy glow.

**Jeffrey Dover, M.D., FRCPC** – We use the Vibraderm as an alternative to traditional microdermabrasion. Patients are given a choice. Our staff and patients have been very pleased with the procedure.

**Mitchel Goldman, M.D.** – Levulan also penetrates better by performing vibradermabrasion beforehand.

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**Victor Ross, M.D.** – We have found somewhat faster protoporphyrin IX fluorescence after using the device.

**James Spencer, M.D.** – The Vibraderm is currently used in our practice in place of conventional microdermabrasion. Microdermabrasion has become a large part of our cosmetic skincare for polishing photoaged skin, for melasma and dyschromia, and for keratosis pilaris of the arms.

### How does vibradermabrasion differ from standard particulate microdermabrasion?

**Dr. Bernstein** – The skin seems smoother and more vibrant than standard microdermabrasion. The rapid motion really massages the skin. There is no mess as with sand microdermabrasion and no gritty feel.

**Dr. Weiss** – There are no particles in the air, a more soothing vibration for patients, and a faster procedure time.

**Dr. Beisman** – The Vibraderm does not create the biohazard waste associated with particulate microdermabrasion and it is also neater and cleaner to operate. Because there is no particulate debris to contend with, we are able to use the Vibraderm on the eyelids, an area that must be treated with great caution when performing particulate microdermabrasion.

**Dr. Gold** – Although most of us feel that crystal microdermabrasion is safe, there is always the thought of potential long-term effects from the aluminum oxide crystals. The Vibraderm eliminates that risk. The noise level has also been reduced.

**Dr. Kilmer** – I also really like the fact that there are no messy particles.

**Dr. Ross** – Another advantage is the relatively large area that is abraded per unit time because of the size of the paddle.

**Dr. Spencer** – Vibradermabrasion is a more pleasant experience for patients. Many find the treatment soothing.



Before Tx



After Vibraderm Tx

### What are the unique advantages of the Vibraderm system?

**Dr. Bernstein** – In my opinion, you achieve better results than with standard microdermabrasion. The system is also more compatible with post-treatment topicals, due to the lack of any mess.

**Dr. Beisman** – Particles can also become wet or clogged in the vacuum line. There are no filters to change with the Vibraderm. The large size of the paddles also allows treatments to be performed more efficiently than is otherwise possible with particulate microdermabrasion devices.

**Dr. Yee** – I'm seeing great results. We can treat very close to the eyelid margin. The machine is much faster than microdermabrasion, easy to use, and can be used on the body.

**Dr. Dover** – Microdermabrasion performed even by the most skilled operator leaves a residue of crystals on the skin and especially in the ears and along the neck. The various paddle sizes of the Vibraderm permits larger areas of the body — back, hands, arms — to be treated more quickly than with microdermabrasion.

**Dr. Spencer** – The Vibraderm also has some convincing science behind it.



Robert Weiss, M.D.



Eric Bernstein, M.D.



Jeffrey Dover, M.D.,  
FRCP

## What specific clinical indications do you use the Vibraderm for?

**Dr. Weiss** – It can be used prior to treatment with light emitting diode (LED) photomodulation, and also as an adjunct for intense pulsed light or pulsed dye laser treatments. It is gentler, with less risks of melasma.

**Dr. Beisman** – We use the Vibraderm for similar indications as microdermabrasion: exfoliation, treatment of epidermal pigment, enhanced penetration of cosmeceuticals, prior to glycolic acid peels, etc.

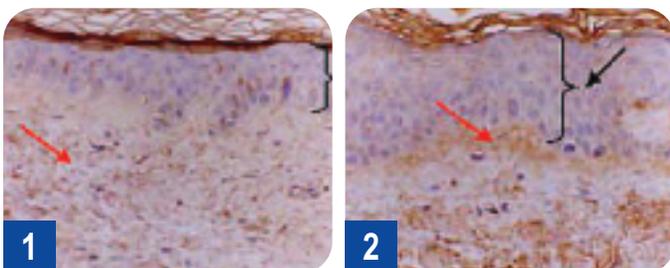
**Dr. Yee** – We use it in combination with chemical peels for skin with acne and also for pigmented areas of the skin. Other indications are hyperpigmentation, exfoliation, syringomas, milia, superficial skin lesions and keratosis pilaris of the arms.

**Dr. Dover** – Photoaging is our major indication, but the machine is also effective for mild inflammatory acne and very mild acne scarring.

**Dr. Goldman** – We use the Vibraderm before application of Levulan for treating both acne and actinic keratoses. The device can also be used for photorejuvenation with Levulan / intense pulsed light.

**Dr. Ross** – We use this system mainly for speeding the action of topical anesthetics and Levulan.

**Dr. Spencer** – In our practice, we recommend microdermabrasion, and now vibradermabrasion, for a polishing of the skin. I find that a series of treatments pro-



Immunocytochemistry staining for Type 1 Collagen 1) Prior to treatment. Note paucity of staining. 2) One week after treatment three times per week for three weeks. Note increased staining in the superficial dermis (400x).



Brian Beisman, M.D.



James Spencer, M.D.

duce a noticeable tactile sensation of smoother skin, as well as changing the optical properties of the skin. Specifically, the skin is a better reflector of light, such that the face appears brighter. However, we have had great success combining these treatments with bleaching creams for the treatment of melasma and other dyschromias. These treatments are also quite effective for keratosis pilaris.

## Describe the treatment protocols that you typically use involving Vibradermabrasion.

**Dr. Bernstein** – I prep the skin with a pre-treatment cleanser, evenly covering the skin. The Vibraderm can also be used when applying post-treatment antioxidants.

**Dr. Weiss** – The Vibraderm is used for ten minutes on the face. We have also performed epidermal smoothing on arms and legs for better absorption of topicals.

**Dr. Beisman** – We often combine Vibraderm treatments with cleansing facials, in conjunction with retinoids, TNS (tissue nutrient solution) Recovery Complex, antioxidants and other topical treatments for

**“We have had great success combining these treatments with bleaching creams for the treatment of melasma and other dyschromias.”**

skin rejuvenation. The device is also used prior to some energy based (laser, pulsed light) non-ablative rejuvenation and photomodulation.

**Dr. Gold** – The Vibraderm is useful for mild exfoliation of the skin when our aestheticians are performing facials, which combines procedures and gets patients used to the idea of cosmetic treatments.

**Dr. Kilmer** – We first cleanse before using the Vibraderm evenly over the skin. We often apply glycolic / salicylic acids or vitamin C afterwards.

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**Dr. Yee** – We first wash the face and tone, before using the Vibraderm for 8 to 15 minutes, depending on the patient's response. We then apply a soothing photocorrective gel and sunblock. If I am using the device with a peel, like lactic acid, I will first perform vibradermabrasion before applying lactic acid. That is then followed up with the photocorrective gel and sunblock. I also use the Vibraderm on the face and then wipe with acetone.

**Dr. Dover** – Vibradermabrasion is performed by our medical aestheticians. The visit lasts about one full hour. It starts with a medical cleansing, followed by the ten minute procedure, cooling packs, and finally the application of a gentle moisturizer.

**Dr. Goldman** – For facials, we combine the Vibraderm with a cell rejuvenation serum (CRS) with growth factor to increase penetration of the CRS, as well as an addition to our cellulite treatments.

**Dr. Ross** – We normally do a full-face Vibraderm treatment just before application of the topical anesthetic or Levulan.



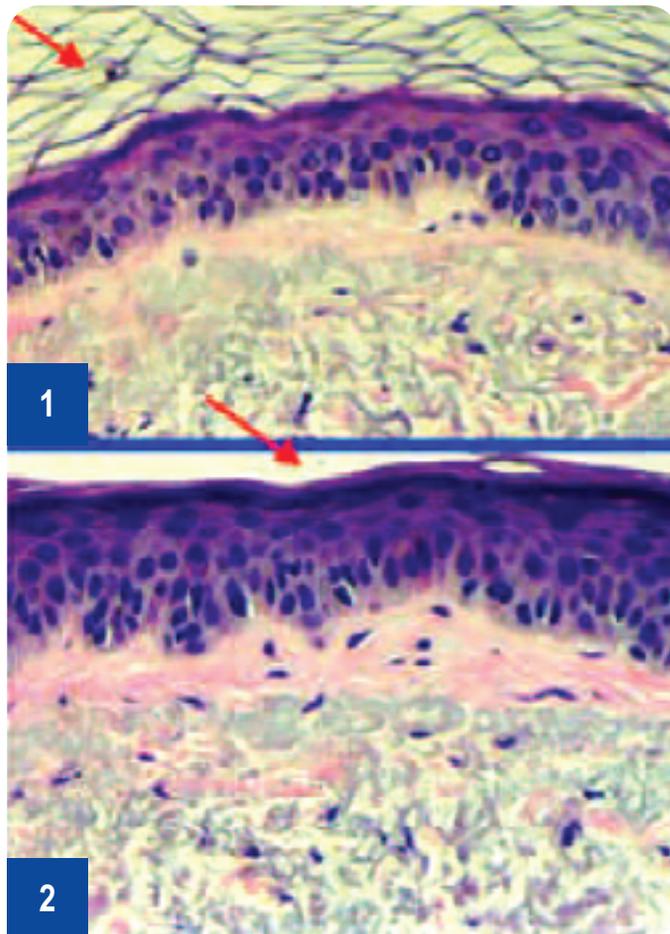
### What future applications do you envision for the Vibraderm?

**Dr. Bernstein** – To enhance penetration of numerous topicals.

**Dr. Weiss** – There could also be liposomal packets on the Vibraderm paddle for topical anesthesia.

**Dr. Gold** – The Vibraderm may be helpful in improving early cellulite changes. This is a promising area we are beginning to explore.

**Dr. Goldman** – Although some cellulite creams have been found to be effective alone and under bioceramic short occlusion, preliminary results demonstrate a further enhancement of results when used after vibradermabrasion. We now incorporate this technique prior to cellulite treatments with the TriActive (Cynosure), followed by daily use of an anti-cellulite cream.



Light microscopy 1) Prior to treatment. Note thinned irregular epidermis (3 - 4 cell layers in thickness) and elastotic dermis. 2) One week after treatment three times per week for three weeks. Note removal of stratum corneum, epidermal hyperplasia (4 - 6 cell layers in thickness) and lightly increased Grenz zone (400x).

**Dr. Yee** – I envision full-body treatments in conjunction with laser or other light-based devices.

**Dr. Dover** – As paddle sizes are further optimized and modified, large areas will be easily treated in a shorter time.

**“Topicals can be directly applied with the paddles, thus treatment may significantly enhance topical penetration.”**

**Dr. Ross** – The Vibraderm could be used to enhance the effects of topical bleaching agents and other topical agents in the treatment of melasma.

**Dr. Spencer** – Topicals can be directly applied with the paddles, thus treatment may significantly enhance topical penetration. ■

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