

Microdermabrasion: a new science in skin care

Controlled Exfoliation

THE SKIN IS THE ORGAN THAT plays the most important role in the cosmetic outlook of a person. Any alterations even minimal ones, may have great repercussions on the psychology of some individuals. Many procedures or treatments have been used in trying to correct skin imperfections. These include cosmetic (creams and skin care products), surgical (dermabrasion) and chemical (chemical peels) applications. The Microdermabrasion system, is a system that closely simulates manual dermabrasion and is the closest treatment to a medical procedure performed by the aesthetician.

Manual vs. Open Dermabrasion

Traditional dermabrasion or "Open" dermabrasion consists of surgical planing of the skin using specifically designed instruments such as wire brushes and diamond fraises at high

speeds to reduce cutaneous imperfections. While results are fairly good, these procedures are well known to be associated with pain and a long healing process that can be traumatic to patients. In addition, a high risk of contamination is involved including AIDS and Hepatitis B infection. An ideal situation would be a dermabrasion where tissue particles and fluids resulting from the procedure are removed immediately from the skin in proper containers. Such a system is now available in the form of "Closed" Dermabrasion. Microdermabrasion provides this flexibility to the medical as well as to the aesthetic profession. The system has been modified and any aesthetician who is certified and skilled to carry out a wide range of treatments safely and efficiently on a routine basis in the salon or clinic can perform this procedure.

The System

The microdermabrasion system is an innovative approach for a peeling technique. By performing a progressive and controlled exfoliation of the skin, it helps to improve or correct the skin abnormalities that originate in the epidermis and the most superficial layers of the dermis. It utilizes corundum crystals for the exfoliation of the skin. Corundum is the second hardest mineral after diamond. They are inert crystals that are used as abrasive agents and do not have any biological effect on the skin. They are supplied as a sterile and non-reusable powder and are stored in a designated container on the unit. During the procedure a flow of inert microcrystals is projected across the skin through a clear handpiece made of "Pyrex glass" that is autoclavable and disposable. It has a small hole (3-6 mm) which, when placed on the surface of the skin creates a vacuum effect that generates a flow of microcrystals. When the vacuum is interrupted, the flow of crystals stops. This characteristic allows perfect control since the operator can stop the procedure by simply lifting the handpiece off the skin.

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The handpiece is connected to two totally independent systems. When the unit is on, a compressor generates a flow of fresh crystals through the handpiece and at the same time, the used crystals and epidermal debris are vacuumed into a used crystal container for waste. The only connection between these two systems (compressor and vacuum tubes) is at the level of the handpiece tip. Since the flow of crystals is activated only during the vacuum procedure (the tip being in contact with the treated area), there is no possibility of unexpected

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projection of crystals. This feature demonstrates the absolute control of the operator on this procedure. The unit is literally maintenance free once the operator takes good care of the equipment. The operator controls not only the duration and intensity of the treatment, but is able to stop the procedure at any time by simply removing the handpiece. The used crystals are vacuumed back in a different container keeping the circuit fully isolated and independent from the client or patient. The new microcrystals powerline (compressor) and the used crystal line (vacuum pump) are totally independent making cross contamination impossible.

Indications for Treatment

The controlled Microdermabrasion can be considered to be a safe and highly effective treatment for both the client and the operator because of the lack of trauma and precision of the system. It can be used in the treatment of a vast array of skin conditions and has demonstrated unsurpassed results in the following skin conditions: fine lines and wrinkles, enlarged pores, rough coarse textured skin, age spots, non-inflammatory acne, localized or diffused hyperpigmentation (blotchiness, mild melasma), stretch marks, sun damaged skins and hypertrophic scars such as post-acne scars. Excellent results are also seen in stretch marks treatments (under clinical studies). Most superficial irregularities respond well to treatment with the Microdermabrasion system.

Treatment Technique

This procedure is simple and painless and can be performed on any part of the body where minor irregularities need to be corrected. The area should be cleansed and deep cleansed, particularly on oily and acne skins. The treatment can begin as soon as the skin has dried. The handpiece is applied in a gentle and rhythmic motion across the skin's surface. Stretching the skin with the free hand leads to a good contact with the handpiece and ensures a smooth and effective vacuum. By simple transfer of kinetic energy, the crystals are able to remove the top layers of the epidermis without any significant trauma to the skin. This technique can be compared to a controlled and gentle sanding of the skin. In this way, the inert corundum crystals act as an abrasive material. There are three levels of usage, the depth of the abrasion depends on the force and quantity of the flux of the microcrystals. The action can therefore be superficial (level 1) or deeper (levels 2 and 3) for scars or stretch marks. Two or three applications can cleanup serious cases of hyperpigmentation. At level 1, the skin may feel tight after the treat-

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figure 1

before



after



ment as if it was exposed to the sun or wind. Some skins may peel and the client must be told to use a very good moisturizer and sun block cream. This home care advice can increase sales of creams in the salon or clinic. A treatment at level 2 will result in a slight redness for a few hours while in-depth treatments at level 3 may require a longer healing time. However, the results are well worth it. The skin's texture improves immediately after the treatment and the client is motivated to return for future treatments.

The duration of the treatment depends on several factors. The size of the area and the type of lesion to be treated play an important role because a larger area or a thicker lesion requires a longer treatment. The selection of the vacuum control is also important. Some sensitive skins may find the treatment uncomfortable, therefore the intensity of the vacuum can be reduced. A lower intensity may require a longer treatment time, or the number of sessions can be increased to achieve the desired results. The

final decision about the treatment time depends on the operator's judgement and experience. As soon as some degree of irritation such as redness of the skin is observed it is an indication to stop treatment on that area. It is normal to expect superficial erythema (redness) of the treated area, but this lasts only for a few hours and does not disrupt the client's social life.

Are There Any Side Effects?

During its usage for the past 6 years in Europe, no significant side effects have been found. The most common problems given were a little discomfort during treatment on some sensitive areas but in general, most people find the treatment quite tolerant. Shallow excoriation may occur on areas where the stratum corneum is thinner. The lesions are always very superficial and of very small size. They occur mainly on photodamaged skins, and open and closed comedones. In most cases, the healing time is no more than a few days. Since the level of the skin's disruption is very superficial, no

figure 2



before



after

permanent marks are usually expected. Some dryness of the skin is frequently observed immediately after the treatment session. This occurs naturally because the treatment removes the superficial layers of the epidermis and this is usually corrected by the application of the appropriate moisturizer.

Post-Treatment Recommendations

The skin **usually** feels tighter after the treatment and further peeling may occur after a few days. No change in the skin care routine of the patient or client is usually required but a good moisturizer is highly recommended on the night of the treatment in order to prevent any uncomfortable drying sensation. The regular use of topical tretinoin retinoic acid or alpha hydroxyl (AHA) is not discouraged, except the night of the treatment session. An SPF 15 and over is highly recommended after the treatment and excessive sun exposure should be discouraged. In most cases, the controlled microdermabrasion is mild and insufficient to prevent the

patient or client from continuing their usual daily activities.

Conclusion

The most outstanding aspect of this controlled microdermabrasion treatment is that it is painless and does not require any pre-treatment or topical anesthesia. There are no visible marks on the skin after the treatment and unlike open dermabrasion the clients normal life is not affected. The success of the Microdermabrasion can bring an unsurpassed income that will maximize the profitability and growth of the skin care industry, not to mention boost the credibility of the aesthetic profession as a whole. It is a high tech skill that is invaluable to the aesthetician who works closely with the medical profession. In conclusion, the Microdermabrasion offers a safe method to correct superficial epidermal defects with minimal discomfort and without any disruption of one's daily life.

Editor's Note: Please check your state and local laws to make sure aestheticians are allowed to perform this procedure.