D`Oxyva® - A Breakthrough in Transdermal Wound Care

D`Oxyva® from InvisiDerm Healthcare is a breakthrough transdermal microcirculatory health treatment for the wound care industry. D`Oxyva® delivers wound care outcomes that are simpler, less invasive, more effective, and much less costly than currently accepted treatments.

D`Oxyva® works by safely and quickly delivering CO2 transdermally, where it can enter the bloodstream directly. The resulting increased CO2 concentration can significantly improve microcirculation and blood flow throughout the body often by well over 100%. D`Oxyva®’s success in CO2 delivery has been demonstrated in a soon-to-be-published clinical study sponsored by InvisiDerm. [In advance of the results being published, they can be made available for review to interested parties under nondisclosure agreement.]

D`Oxyva® is the ideal value proposition for podiatry and wound healing practices seeking ways to simultaneously improve patient outcomes and boost revenue. Its low-cost, high-value treatments offer practices freedom from capital-intensive commitments to competing products that occupy large blocks of office space, require specialized training to operate, and produce inferior results.

**Microcirculation is the Key to Wound Healing**

The challenge with non-healing wounds is that they require better microcirculatory blood flow in order to heal…but they are non-healing in the first place due to insufficient microcirculatory blood flow\(^1\). This chicken-and-egg conundrum is leading to serious health problems and a rapidly growing number of amputations. With the combination of genetics and modern lifestyle choices contributing to this growing epidemic of poor microcirculation and non-healing wounds, the stage is set for D`Oxyva® technology to create a new standard in wound care.

The secret to D`Oxyva®’s novel method for boosting microcirculation is its proprietary, patent-pending method of controlling the rate of mixing CO2 and water inside the device’s water chamber, which creates a **Supersaturated CO2 + H2O Vapor™**. By achieving the correct balance of CO2 and water, D`Oxyva® is able to produce a stable solution that is 50 times more highly concentrated than competing products. The vapor exits the water chamber and is almost imperceptibly misted onto the skin.

Independent clinical research suggests that without the high CO2 content in the supersaturated vapor, it is not possible to generate such elevated blood flow and oxygenation levels and efficient transdermal delivery of molecules in the skin tissue\(^2\). The increased presence of CO2 in the bloodstream auto-regulates the blood supply while inducing the Bohr effect, attaching to red blood cells and ultimately leading to increased blood flow and oxygen delivery within the tissues.

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\(^2\) Matsuo, H., Hayashi, T., Takeda, Y., Tsuji, T., Endo, H., and Shinohara, T., The Effects of Artificial Carbon Dioxide Foot Bathing on the Skin of Ischemic Feet, as Measured by a Laser Doppler Flowmeter. Unpublished Japanese study using a CO2-enriched water production unit manufactured by Mitsubishi Rayon Engineering Co., Ltd., describing results showing that artificial CO2 foot bathing at concentrations of 900-1,000 ppm significantly and reproducibly increased cutaneous blood flow in ischemic feet, as well as improving subjective symptoms.
Following is a Skin Perfusion Pressure (SPP) sample result conducted by U.S. FDA-cleared Vasamed® SensiLase® 3000 and measured on a healthy female volunteer with a single 5-minute D`Oxyva® treatment applied.

Pre-treatment SPP reading of 64 mmHg

Skin Perfusion Pressure reading 10 minutes after D`Oxyva™ therapy:
105% capillary blood flow increase from 64 to 131 mmHg*
D’Oxyva® and the Wound Healing Practice

D’Oxyva® is both patient-friendly and doctor-friendly, making it a perfect fit for the wound healing practice. The device provides everything patients want, without any of the things they fear. The process is completely non-invasive, free of needles and pain, and requires only 5 minutes. And it really works in helping wounds heal quickly and completely, potentially saving limbs from amputation.

For the doctor running a wound healing practice, D’Oxyva® represents a valuable addition. It is low-cost to acquire, and because it can be administered by a non-specialist with minimal training, it is simple and inexpensive to use in practice. D’Oxyva® is a portable device that can be held in the palm of the hand, requiring no storage space, and because each treatment takes only 5 minutes, a practice can increase revenue by sustaining a very high throughput of patients, day-in and day-out, all while producing better patient outcomes. D’Oxyva® makes great medical and financial sense to the wound healing practice.

There are several primary methods by which offering D’Oxyva® treatments can increase a practice’s revenue:

1. Sell a new, safe, effective, and clinically proven treatment that is currently in the process of seeking medical device approvals, and whose efficacy can be detected at point of care (POC)
2. Increase sales of microcirculatory diagnostics (skin perfusion pressure measurements) packaged with the D’Oxyva® treatments, or begin to offer them if they are not currently offered
3. Increase the sale of other cardiovascular tests (before/after, progress assessment, long-term record keeping online) as ancillary services to D’Oxyva® patients
4. Retail D’Oxyva® to patients who want to self-administer treatments at home

D’Oxyva® is the ideal addition to the forward-thinking wound healing practice seeking to remain on the cutting edge of patient care while simultaneously boosting its bottom line.

Short List of Published Studies on CO2 Skin Delivery Treatments

- The Role of Carbon Dioxide Therapy in the Treatment of Chronic Wounds http://iv.iiarjournals.org/content/24/2/223.abstract
- Transdermal CO2 Application in Chronic Wounds http://ijl.sagepub.com/cgi/content/abstract/3/2/103
- Two Cases of Arteriosclerosis Obliterans (Fontaine Stage IV) with Total Occlusion of Below-the-Knee Vessels, for Which Artificial CO2 Foot Bath Therapy Was Found to Be Effective http://www.co2bath.com/toriyama.pdf
- The Effect of Artificial CO2 Water Immersion on Physiological Functions http://www.co2bath.com/academic-a-1.htm
- The Effect of Artificial Carbon Dioxide Foot Bathing on the Skin of Ischemic Feet, as Measured by a Laser Doppler Flowmeter http://www.co2bath.com/matsuo.pdf