

# skin|hands on

## Something old that's new again

*This article intends to provide skin care and spa professionals with the basics on a therapeutic method designed to provide deep penetration of ingredients into the skin, thus enhancing treatment results.*

**G**alvanic current, also called iontophoresis, has been used for more than a century in the skin care and spa industry. It is an often proven way of increasing the absorption of ingredients into the skin. The noninvasive technique is designed to allow chemicals to penetrate the skin and provide highly effective effects.

### The history

According to the Atlanta Institute of Aesthetics, galvanic current skin care treatments use electrical currents to both cleanse the skin of impurities and infuse moisture into the deeper layers of the skin. In essence, electrical current is applied to a water soluble molecule that serves to transport or drive the molecules through the stratum corneum. The treatment method is also finding renewed interest in medical applications as a method of transdermal drug delivery.

Galvanic current first gained popularity at the turn of the century when Stéphane Leduc in 1900 and Walter John Turrell in 1921 advocated its use to enhance transdermal absorption of molecules. In the early '40s, a German chemist named

Paul Meminger used a combination of electrical current and vitamin rich solutions to hydrate and rejuvenate the skin.

The principle behind the use of galvanic current in the skin care industry was generally acknowledged at the time. Nevertheless, it was the research and development conducted by Des Fernandes, M.D., that caused modern

concepts of iontophoresis to gain widespread acceptance in the mid '90s. Fernandes is an internationally renowned plastic surgeon, author, founder and medical director of a prominent skin care company.

### Increased absorption

Dr. Des Fernandes was one of the first medical researchers to reexamine the use of iontophoresis and how it actually works on the skin. Fernandes was able to demonstrate that properly prepared skin care formulations combined with electrical current increases product penetration by 400 percent in comparison to topical applications. He also advocated the



Become well educated on how galvanic current and sonophoresis work. Learn the proper techniques and product ingredients to treat various conditions.

use of setting up a galvanic iontophoresis field as opposed to spot applications. The iontophoresis field allows the entire treatment area to receive the benefits of the galvanic current by dispersing the application to four corners of the treatment area and applying a mask for greater conduction. Low currents over a longer period of time work more effectively than stronger currents for shorter time intervals. The electrical charge application increases the skin's permeability.

Think back to the time when you were a child playing with magnets. If you put the positive end of a magnet next to the positive end of another magnet, you

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In galvanic current, all products used must be water soluble and have the proper pH to be effective. The procedure time should be no less than 10 minutes.

could feel the magnets repelling or pushing away from each other. If you had opposite poles next to each other, the magnets would draw closer and stick to each other. Consider the term, "opposites attract." Now imagine the effect this principle has on skin care products with galvanic current on one hand and the molecules in a skin care product on the other. If the molecules were not ionized properly, the use of electrical current could actually pull the product away from the skin as opposed to pushing it in. Generally, acidic products carry a positive charge while alkaline products are negatively charged.

### Electrical charge required

For iontophoresis to work with skin care products the products must have an ionized, electrical charge. You must know what that electrical charge is—whether it's positive or negative—to ensure the correct current is applied. You must use the same charge to push the product into the skin or for better results use a pulsed electrical current to deliver product ingredients into the skin. Make sure the molecular size of the product is small enough to penetrate the skin's surface—the larger the molecule size the less it can penetrate, so a smaller molecule size is preferable.

In galvanic current, all products used must be water soluble and have the proper pH to be effective. The procedure time should be no less than 10 minutes. Vitamins have a significant rejuvenating effect on the skin, especially vitamins A and C, in proper formulations, size and concentrations.

### Combo therapy

When iontophoresis is combined with sonophoresis—a low frequency sound process that increases the absorption of topical compounds into the skin—the transdermal penetration increase is more than 4,000 percent compared with topically applied products. Combining iontophoresis and sonophoresis in a skin care treatment is worth researching further, as the results speak for themselves.

Become well educated on how galvanic current and sonophoresis work. Learn the proper techniques and product ingredients to treat various skin conditions. Ask your skin care product provider for recommendations. Without gathering adequate information you cannot be sure you are adding value to your clients' therapies via galvanic current and sonophoresis treatments. ■

**Rob and Carol Trow**, his wife, own *Derma-Concepts USA*, the eastern U.S. (excluding metro NYC) distributors for *Environ® Skin Care*. Rob's background includes two decades in higher education as a faculty member, administrator and business consultant. He has been in the skin care field for over ten years. Prior to her involvement with *Environ® Skin Care*, Carol served as an RN, director of marketing for *Professional Service Business Development* and operated her own consulting firm focusing on practice development. Rob is an authority in the business of skin care and has authored articles for professional publications. He speaks frequently on current and emerging topics of interest to medical spas, estheticians and physicians.

