



August 2007's Featured Article:

Aquaporin Technology

Increase water movement within the skin to keep it hydrated and balanced

Dehydration is one of the most prevalent conditions found in problematic skin. In fact, in my 20 years in the skin care industry, I have never met a client who was not dehydrated. The importance of drinking eight glasses of water a day to keep your body and skin hydrated is frequently recommended but many do not realize that outside factors such as pollution, sun exposure and stress make it more difficult to achieve ultimate hydration.

Water intake is still an effective and important way to keep our bodies and skin healthy and hydrated. However, choosing the right water to balance the ions in the body is crucial to achieving beautiful skin. Spring water is best—just be sure to alternate the type of spring water, as each contains varying amounts of trace minerals that nourish different parts of the body. The body and the skin need nine essential minerals to function properly: magnesium, calcium, potassium, zinc, manganese, copper, sodium, phosphorus and silicon.



Water variety is key

Drinking the same kind of water results in the continual intake of the same select minerals and can create an imbalance of the ions in the skin, limiting the absorption of water and fluids in the skin cells. Purified water only contains a limited amount of minerals but is better than drinking or using tap water on the skin. Tap water often contains heavy metals that increase the interaction between the skin's cells and the free radicals.

These free radicals weaken, damage and destroy the skin's support fibers and accelerate the aging process.

Water intake is a crucial step towards skin hydration. However, in order for the water to effectively nourish the skin, the movement of water within the skin is essential.

Water movement within each cell is necessary so that minerals, trace minerals and other nutritional elements in water can cross the cell walls and penetrate each cell. And, vice versa: water movement from within the cells allows metabolic toxins to be flushed out through the cell membrane, enabling the cell to regenerate and prevent premature aging.

Cellular channels

Dr. Peter Agre, professor of biological chemistry at Johns Hopkins School of Medicine,

discovered how to increase water movement within the skin to keep the skin cells hydrated and balanced. How? Through Aquaporins.

For more than 50 years we have known that water can be transported in and out of cells through specific "pores", but it was Dr. Agre who discovered the presence of cellular water channels called Aquaporins, or "water pores", in 1990. In his Nobel Prize winning study, Dr. Agre defined Aquaporins as intercellular protein membranes that form tunnels or water channels, which specialize in transporting water through cell walls.

There are several different types of Aquaporins. In humans, the circulation of water within the skin is made possible by the presence of Aquaporin-3, which ensures that the skin maintains a healthy balance, even in unfavorable conditions. Aquaporin-3 also facilitates movement of water and glycerol through the cell membrane to maintain even pressure. Without water movement, the skin does not receive the amount of moisture it needs and, as a result, becomes dehydrated.

Natural moisturizers

In 2006, an innovation in moisturizer technology took a further step in developing products that would not only provide more hydration to the skin but also increase the water movement within skin cells by utilizing the Aquaporin technology. These moisturizers include natural ingredients that simulate the effectiveness of Aquaporins while increasing Natural Moisturizing Factor (NMF), preventing dehydration and protecting the skin from harmful agents and pollution.

Keep the liquid flowing

The lack of water movement within the cell, and the inability of skin cells to receive enough water and nutrients, are unfavorable conditions that may result in:

- Slowed cell metabolism and cell function.
- Deteriorated Natural Moisturizing Factor (NMF), a series of composites that form the mattress of the skin, keeping it looking plump and healthy. NMF plays an important role in strengthening the collagen and elastin fibers that maintain elasticity and firmness of the skin.
- Increased water evaporation, leaving the surface of the skin dehydrated and vulnerable to the environment, allowing pollution, free radicals and other factors to destroy the skin's natural protection barriers.

Bottom line, an increase in the water movement in and out of skin cells provides continual and complete hydration of each skin cell, boosting the production of the skin's NMF and in turn preventing premature aging.

on our skin will keep it hydrated. Encourage your clients to drink water and use the most advanced products that will promote water movement in skin cells and continually help in the production and maintenance of NMF.

For example, Wild Pansy (*Viola Tricolor*) Extract has the capacity to stimulate the synthesis of Aquaporin-3 by improving water circulation from the dermis to the epidermis. The increase in Aquaporin-3 also allows the epidermis to retain more water within the skin because it prevents dehydration. Furthermore, an in vitro test shows that Wild Pansy can increase the NMF hyaluronic acid that is present in the skin. Combined with the Aquaporin-3 enhancing Wild Pansy, Original Orange Water and Mint Essential Water are very powerful in the fight against dehydration. Original Orange Water is very similar to the physiological fluid of the skin, therefore effectively replenishes and penetrates the deeper epidermal layers of the skin. Mint Essential Water, which immediately tightens the skin's top layer, is also beneficial in preventing moisture loss.

The microproteins found in the seeds of *Moringa Oleifera*, an exotic tree from Africa, strengthen the skin's defense system and prevent harmful substances from adhering to the surface of the skin, preventing absorption. *Moringa Oleifera* protects skin cells and fibroblasts against mercury, cadmium and even cigarette smoke.

It is a known fact that dehydration causes the formation of skin lines and wrinkles. In order to prevent aging due to dehydration, we must do whatever it takes to slow the process and ensure that whatever we use

About Fabienne Guichon-Lindholm



Fabienne Guichon-Lindholm, director of business development for Decl or and Carita, has worked in the beauty industry for 20 years, and has earned a CIDESCO International diploma and a French National Diploma. Guichon-Lindholm has developed training programs for estheticians and massage therapists, and refined her "hands-on" experience working in France.

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