

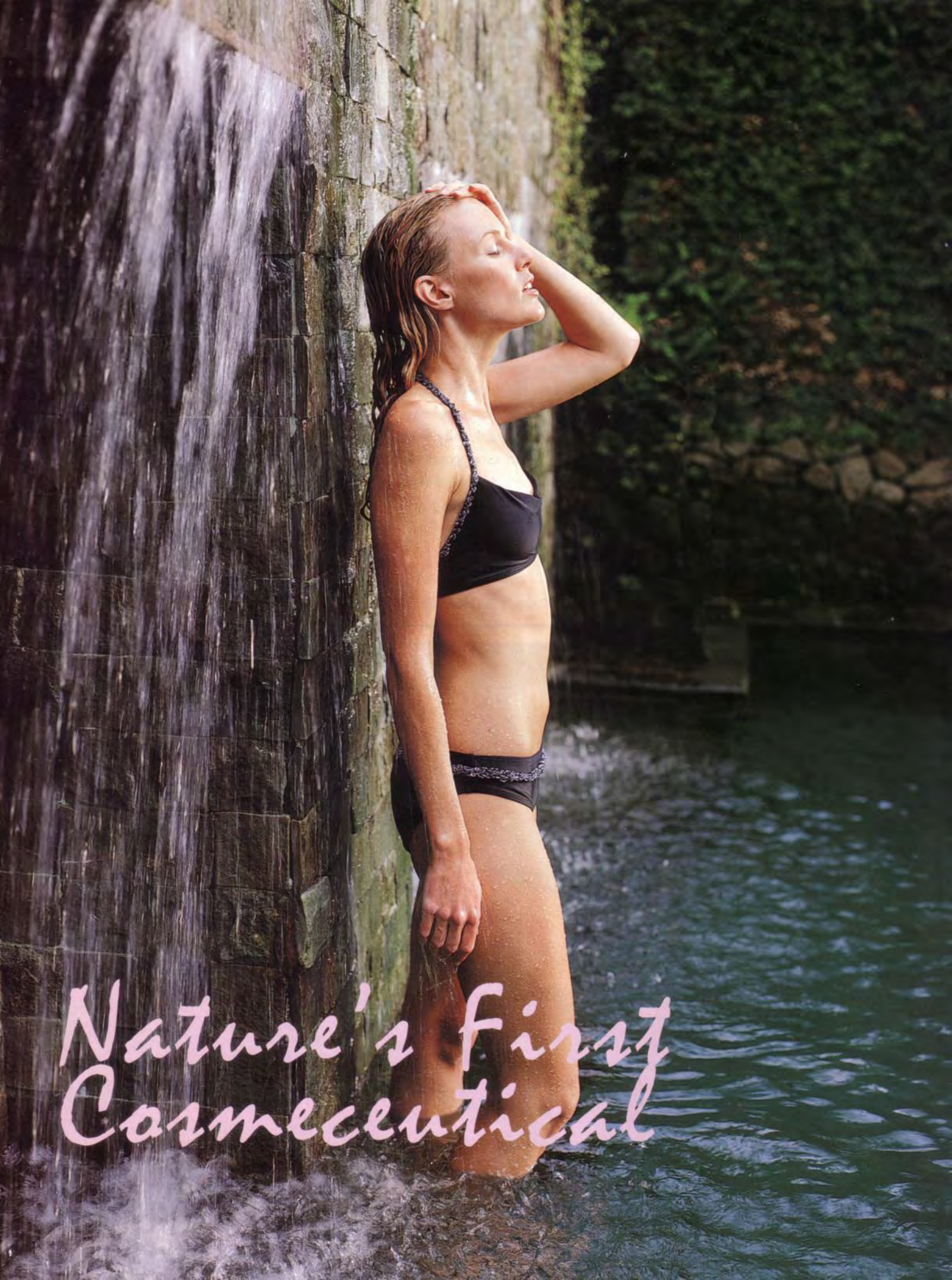
# DERMASCOPE

The Encyclopedia of Aesthetics and Spa Therapy



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**Basic Skin Care  
Body Treatments**



*Nature's First  
Cosmeceutical*

**M**y dermatologic practice has clearly demonstrated to me that skin aging is not just a loss of collagen, but also a loss of water. It's the loss of *both* that accounts for fine lines, deeper wrinkles, folds, and even sagging of the skin as we age. Collagen, no doubt, is the primary structural protein giving skin its firmness. But, if collagen serves as the bricks in skin structure, then hyaluronic (HA) acid clearly serves as the mortar.

HA is a natural constituent of skin and has the remarkable ability to hold nearly one thousand times its weight in water. That's how HA contributes to the thickness of skin: it doesn't build like collagen, it inflates with water.

HA is also known as sodium hyaluronate and is a macromolecule officially classified in the chemical group known as a glycosaminoglycan. Collagen and HA are, interestingly enough, both produced by the same dermal skin cells called fibroblasts. Born of the same mother cell, both collagen and HA degenerate in human skin with aging and sun damage. Hormone depletion, lowered estrogen, and menopause all cause the manufacturing of HA to diminish.

HA is probably the most underrated and powerful ingredient the cosmeceutical industry has yet to fully exploit. It has been the focus of much of my own research. The key benefit and added beauty HA brings to skin is defined by the word *turgid*: the optimal plumpness of skin achieved by the retention of water.

When skin is optimally turgid, it appears smoother and plumper. HA achieves this effect because it is one of the most important regulators of water metabolism in the skin. To appreciate how it beautifies the skin, one must explore HA's different mechanisms of action on the epidermis and dermis.

When applied directly to the epidermis via topical products, such as creams and gels, HA hydrates the skin as a humectant. It literally attracts airborne water vapor into the skin and retains water delivered to the skin by the circulation.

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Because of this mechanism, the dermatologic effect of moisturization is superior to what could be achieved by the typical moisturizer composed only of a routine oil and water mixture. HA is a key ingredient that is fortunately highly soluble and adds another dimension to product design. The truth is

that a moisturizer without a humectant only provides the skin with the additional water barely contained in that small amount of product one spreads over their skin.

HA also provides another key benefit by preventing the *evaporation* of water from the skin. Clinical research on dry skin measures a key index known as trans-epidermal water-loss (TEWL). Think of it as a measurement of the skin's inability to retain water, which is lost by evaporation. Studies clearly demonstrate that sun damaged skin takes on its chronic dry skin, appearance because of its associated increase TEWL. While this condition may also involve an abnormal lack of exfoliation, HA should be a key therapeutic ingredient in one's skin care regimen, because humectants ordinarily synthesized by the skin are reduced as a consequence of sun damage.

The skin's natural HA may also be lost by mistakes made in one's cleansing routine. Whereas aging and sun damage reduce the skin's ability to retain water, cleansing may strip the skin of its own humectants and oils beyond the skin's ability to manufacture them. Generally, bar soap is more drying than non-soap liquid cleansers, and soapy liquid cleansers are often the most

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drying of all. Everyone knows when their skin is severely dry simply because it looks flaky. Educating your clients on how to prevent dryness is more challenging. Facial skin may be especially tricky to diagnose, because it may be dry and yet, show no flaking. Many people simply do not know whether their cleansing routine is right for them. What's right for you today, may change with the seasons, your age, or even with what other products you use. After years of practice, I have learned the best overall way to determine if someone is at risk of dryness is to simply ask whether their skin, especially their face, feels tight and uncomfortable thirty seconds after toweling dry. If the answer is yes, switching to a milder cleanser is recommended. Remember, the skin is an insensible organ, which means we are not aware of it, unless something is wrong. After several episodes of feeling tight, true dryness and even irritation may result. Sometimes simply using less soap is

sufficient (I constantly tell patients soap is not like shampoo, so don't lather up the same way) or simply changing from a scrub cleanser to a gentle one does the trick.

Thus far, we have focused on the role of HA in the superficial epidermal portion of the skin where its chief function is to moisturize. But, HA is also naturally found in the deeper dermal portion of the skin, where its major role is to increase thickness (turgidity) by holding water. Unfortunately, applying HA topically has its limitations, because only a limited amount can penetrate. HA is a thick viscous substance, which feels sticky, even gummy, on the skin if overly concentrated in a topical product. So far, the only solution the beauty industry has for getting HA into the deeper skin is via an injection administered by physicians.

Injectible HA is now a very popular procedure performed by dermatologists and plastic surgeons and is probably another contributing

factor to the statistical decline of some plastic surgery procedures (such as brow lifts) performed in recent years. Injectible HA procedures have been increasing steadily in the U.S., since gaining FDA approval several years ago.

HA injected into the dermal skin acts as a filler to plump and elevate wrinkles, folds, and even depressed acne scars. The nasolabial fold is the most popular use of the material, although it may be used to plump any deeper defects in the face such as the perioral or brow areas.

Injectible collagen was the first synthetic filler approved by the FDA in the 1980s and is still widely used. In my experience, injectible HA does offer several advantages over its predecessor. Injectible HA is more natural and hypoallergenic and unlike injectible collagen does not require skin testing before treatments. Some newer versions of injectible collagen are also hypoallergenic, as they are derived from cadavers.

A typical patient receiving injectible HA is told to avoid taking any aspirin products or vitamin E for at least three days prior to the procedure to avoid bruising. Upon entering the treatment room, topical anesthesia is applied for 15-20 minutes to minimize the pain from the injection. Some mild pain is still usually felt from the procedure due to the depth of the injection. Multiple shots with a fine needle are used to fill the lines or grooves and the area is then massaged for several minutes to avoid lumping and assure a smooth correction. I find ice

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**MARTINA GEBHARDT  
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