

How to Overcome the Appearance of Wrinkles

DNA plays critical role in rejuvenating aging skin.

by Verretta Deorosan, M.D.

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A new understanding of what causes skin aging, plus the development of substances that inhibit or mitigate premature skin aging, can result in profound changes in the appearance of mature skin.

Aging gives and takes away: It gives our skin unwanted free radical damage, and it takes away healthy collagen, making skin stiff and inflexible and causing wrinkled, dried-out skin. But now, researchers can offer new ingredients to help change this look. One of the most promising of these “cosmeceutical” ingredients is called *Matrixyl*[®]. Indeed, the results of early research on its stunning effects on wrinkled skin caused a stir at the 20th World Congress of Dermatology in Paris (*Matrixyl*[®] 1999).

Significant, Progressive Changes

A six-month study revealed that *Matrixyl*[®] temporarily produces “a highly significant reduction in the deep and moderate wrinkles,” the researchers determined. In fact, they documented changes as high as 68% (*Matrixyl*[®] 1999). The research left no doubt: Women who had used *Matrixyl*[®] throughout the study experienced dramatic results. Plus the longer they used it, the better they looked.

Matrixyl[®] came into being through the work of two branches of dermatological research: the search for substances that accelerate recovery from skin wounds and investigations into what causes wrinkles. When skin is wounded, tiny cells called *fibroblasts* change their characteristics (kind of like changing into their work clothes) and help to repair the damaged tissue and assist in the process of forming new tissue. Part of their job is to manufacture new *collagen*, an important component of connective tissue.

Fibroblasts never completely lose this ability to create more collagen, even in mature skin. After all, even older people’s wounds heal eventually. But as you grow older, your collagen levels dwindle, and your taut, dewy skin dries out and crinkles. “Wrinkles are nothing more or less than the depletion of collagen in the skin,” according to Robert Garonne, Professor of Cell Biology at Lyon University in France.

Acting Like Old Tissue

Why do skin fibroblasts slow down their collagen production as we get older, even though they can still produce it? Scientists found out why: Fibroblasts in aged tissue start acting old themselves. But—and this is a big but—when they are isolated from aged tissue in the lab and exposed to the same stimulating factors the body uses to kick them into gear, skin fibroblasts once again start producing significant quantities of collagen (Matrixyl® 1999).

With this knowledge, cosmetic scientists started exploring ways to stimulate fibroblasts in living skin on living people, not just in Petri dishes in the laboratory. Using the most advanced cosmetic technology, they developed a five-sided molecule called *palmitoyl pentapeptide*. This molecular “suitcase” is small enough to be absorbed into skin tissue and uses a delivery system that specifically targets skin cells—providing door-to-door delivery, as it were. The pentapeptide was then loaded with a precious cargo for skin cells: the stimulating factors that get fibroblasts pumping out collagen, plus a unique agent called *Endonucleine*™ (Laboratoires Serobiologiques 1989).

Skin Needs Hydration

Skin needs water—a great deal of it—to keep its cells plump and saturated with moisture. These moisture-saturated skin cells help your skin look firm and taut. As aging skin dries out and loses its ability to stay hydrated, your skin turns from looking like peaches to prunes.

Endonucleine™ helps skin maintain its hydrating ability by supplying natural and synthetic versions of skin cells’ own genetic material: the nucleic acids DNA and RNA. DNA carries the specific information for the cell, including how to hydrate it, while RNA transmits that information. By reconstituting the skin’s DNA and RNA, Endonucleine™ has a pronounced hydrating and moisturizing effect on the skin.

A Classic Double-Blind Study

Matrixyl® wowed dermatologists at the Paris conference with its demonstrated effects in women. The six-month, double-blind study involved 35 women ages 34 to 72, all of whom had wrinkles (skin experts call it “photodamaged skin”). The researchers set five parameters: global area of wrinkles, density of furrows, volume of wrinkles, mean depth of the main wrinkle, and roughness of skin. Using sophisticated imaging techniques, including photometry and computerized image analysis, they measured these five markers at the beginning of the study and two months, four months, and six months later.

The women were divided into two groups. The first group of 25 women put a cream containing Matrixyl® on one side of the face and a placebo cream on the other. The other

10 put Matrixyl[®] cream on one side and a commercial vitamin-C cream on the other. None of the women knew which cream contained what.

The researchers reported, “A highly significant reduction in the deep and moderate wrinkles was obtained on the side treated with 3% Matrixyl[®]. This reduction increased with time, and a difference developed from the placebo, which never produced a significant effect. The surface area occupied by deep wrinkles was reduced by a mean of 68% over six months. The surface area occupied by moderate wrinkles was reduced by a mean of 51% over six months.”

Regarding the density of furrows, the researchers reported, “This parameter takes into account the length of the deepest wrinkles; their total sum relative to the area under analysis is used to define the density per unit area. A very marked reduction in the mean density was found for Matrixyl[®], whereas the placebo tended to have the opposite effect. The results produced by Matrixyl[®] improved with time: -28% after two months, -31% after four months, and -47% after six months.”

Big Changes

The researchers also assessed the volume of wrinkles. To do this, for each subject they selected one of the deepest wrinkles, then measured its changes over time. As to their results, they reported that the volume of the wrinkle “decreased with time, successively being reduced by 7% (two months), 21% (four months), and 24% (six months). The placebo continued to produce no effect.”

Matrixyl[®] also helped to reduce the roughness of the skin, an effect that became visible after two months (-10%), which intensified with time to reach -16% after six months.”

Concerning the depth of the main wrinkle, they reported, “This determination is useful because it provides a good illustration of the improvement obtained on the most severely affected area of skin. It is therefore a rigorous criterion for evaluating the efficacy of the product. The mean depth of the wrinkle decreased throughout the treatment.”

Self-Evaluation of Female Subjects

The women reported that Matrixyl[®] “produces lasting moisturizing of the skin,” “makes the skin smoother,” “makes the skin more supple,” and “reduces wrinkles and lines.” These and their own results led the researchers to conclude that their study demonstrates “the long-term anti-wrinkle activity of Matrixyl[®]. The parameters used to compare the Matrixyl[®] cream with the placebo cream were significant throughout the treatment. These differences increased with time, which indicates that the physiological activity of the peptide in the skin was progressive.”

There you have it. We now have a golden opportunity to look as good as we feel—and for far longer. After all, many of us have reached another one of those irritating

milestones: The clerk no longer asks to see your ID when you buy that bottle of wine. He doesn't see how young at heart you are. All he sees are the years on your face.

“Don't deny your age. Defy it!” actress Melanie Griffith urges in a popular TV ad. With Matrixyl[®] you can defy the premature signs of aging, by reminding your skin cells what they're supposed to do: stay hydrated and produce collagen. It just took 21st-century technology to figure out how to do it, and now we all can reap the benefits. I can hardly wait to tell my patients.