

## **Wrinkle Warriors**

Peptides are the new star ingredients on the antiaging front, but can they win the war? DAYSPA separates friend from foe. By Andrea Renshoff

Staying ahead of the competition drives most businesses, and skincare manufacturing is no different. The marriage of chemistry and marketing puts new products on shelves and into treatment rooms every day. Whether they're for "miracle cures" or maintenance, spa owners and consumers are bombarded by choices. In the war against aging, Peptides are the new soldiers on the front lines. As a skincare ingredient, Peptides burst onto the scene in a product called StriVectin. Originally intended to reduce the appearance of stretch marks, the product studies claimed it also improved the appearance of wrinkles on the face. Now, many manufacturers have at least one peptide product available in their arsenal. Research is leading toward the use of peptides for other skincare purposes as well.

Peptides present one of the biggest challenges in the skincare industry. Understanding the science behind them, the best way to utilize them in treatment rooms and the many conditions they address keeps you one step ahead of the competition.

### **In the Lab**

With the dizzying array of complicated chemical names, such as acetyl hexapeptide 3, or cosmeceutical names, such as Matrixyl 3000 and Argireline, peptides can be confusing. A peptide is a chain of amino acids strung together, and a chain of peptides forms a protein. A dipeptide is two amino acids bonded together, a tripeptide is three, tetra is four, penta is five and so on, explains Tino Lerma, global corporate trainer and medical esthetics educator for Pevonia ([pevonia.com](http://pevonia.com)). "It's important that the amino acid fragments are low in molecular weight, which allows them to penetrate skin," he says. "A polypeptide applied to a collagen growth, which may diminish with aging. Ben Kaminsky puts the use of peptides into a historical perspective. "In the 1980s, we began to have new insights into how to treat aging skin," says the biochemist and founder of B. Kamins, Chemist ([bkamins.com](http://bkamins.com)). "The '80s were all about retinoids, but they were harsh on many skin types. The '90s brought in the era of AHAs, and in this decade, we've improved products with growth factors such as peptides. Botox Cosmetic can take a crease away for three months, but new formulations offer therapy and prevention. Even five or seven years ago, we wouldn't have spoken of a possibility like that." To see benefits, it's important that ingredients can pass through the layers of skin to reach and affect receptor cells, Kaminsky says. "Peptides take patience, but if you can increase collagen by 10%, you can change your appearance," he says. Multifunctional products containing peptides as well as other key ingredients, such as vitamins, hydrators and antioxidants, can also help enhance barrier function and provide protection.

Certain peptides stimulate fibroblasts, which are precursors to collagen. In combination with ingredients, such as salicylic acid and vitamin E, which are used in wound healing, today's peptide formulations even surprise experts with their ability to stimulate collagen growth. Improvements are being made on a yearly basis, according to Robert Posner, founder of ABBE Laboratories ([abelabs.com](http://abelabs.com)). "It's a matter of additions and

subtractions,” he says. “First, we replicate the nutritive substance in skin and add it to ancillary ingredients, such as a system of herbs that will support the peptide activity. Then, we choose an effective base that brings the material to the cell membrane quickly and hydrates skin at the same time. Being able to reduce the number and severity of wrinkles while building new tissue is cutting edge.”

### **In the Treatment Room**

Because peptide molecules naturally occur in the body, skin is readily able to accept them topically. “They have messaging systems that get between cells and tell skin to behave in a certain way,” explains Mark Lees, Ph.D., founder of Mark Lees Skin Care (marklees.com). “These products are allergy and ophthalmology tested, and nonirritating. You can even use them on eyelids, which you couldn’t touch with an AHA.” Lees and other experts don’t recommend using peptides in place of other effective ingredients. The key to modern skin care is to properly combine and layer products. Lees used to recommend peptide creams as a supplemental product, but today’s multipurpose formulations can serve as daily moisturizers, he says. Many professional-use products incorporate peptides as well. Howard Murad, M.D., founder of Murad (murad.com), offers a treatment protocol that employs a marine peptide that helps improve the immune system, and one from okra that contains a moisturizing lipid that skin needs. Results from peptides are only maintained with regular use. “Using peptides is like losing weight,” he says. “If you don’t stay on your diet, you’ll gain the weight back.” Peptides can also be derived from synthetic sources, explains Jean Stewart, regional operations director for Sothys USA (sothys-usa.com). However, most of the company’s peptide formulations are derived from natural ones. Some use derivatives of protein grains, such as rice and barley, to nourish skin. Peptides derived from plants, such as everlasting flowers and peppermint, are known as neuropeptides, which send signals to the brain to release endorphins. Prickly pear peptides help reduce inflammation. “Botanical ingredients can create a drug-like effect that calms skin,” she says. “We have a treatment protocol that uses a peptide derived from green tea that, along with seaweed proteins, provides an element of detoxification.” Spas today can offer antiaging treatments that were impossible 20 years ago, Lerma notes. “Peptides can be forced into skin with galvanic current or ultrasound for amazing results,” he says. Stewart recommends spotlighting peptides on your menu as treatments that rebuild what naturally occurs in the body. She refers to them as food for cells malnourished from aging. “The skin is a faithful reflection of health and well-being, and the visible sign of nutritional deficiencies. Skin dietetics is a real concern,” Stewart says. However, Lerma cautions against using antiaging peptides on young skin unless it’s prematurely wrinkled from sun or other damage. “This isn’t a product that just sits on the skin, and not all peptides should be used all over the face,” he says. “Apply just a small amount on the actual line. Also, it’s possible that young, unwrinkled skin could have a temporary papular response of little, red bumps. The intention is to make the line plump, so if there’s no line, it might be too much for the skin.” Consumers have become concerned about chemical additives, carcinogens and preservatives contained in formulations. Many peptide creams and serums are water-based, and a stabilizer is necessary to prevent the growth of substances such as yeast and fungus. “You could put it into an oil-based product that won’t need a preservative,” Zone says, “but then it won’t penetrate deep into skin.” She notes that

many professional skincare manufacturers have stopped using to achieve maximum penetration, a water base and additives are needed.

### **Special Effects**

While peptides gained popularity for their antiaging benefits, more uses are being discovered. “We’re looking at peptides that help control oil production to reduce acne,” Zone says. “Some peptides cause an action and others inhibit one. The ingredients are exciting, but it’s also what’s done with them, and how they’re combined for best results. Apples are good for you, but you’d be missing out on other nutrients if you ate them exclusively.”

Another effect of aging is change in pigmentation, and certain peptides are being isolated to combat that as well. Peptides can be used to brighten and even skin tone, says Karoline Kanani, marketing manager for G.M. Collin (gmcollin.com). “They have a targeted action when compared to many other actives on the market. And we’re always evaluating new strategies and technologies.”

Lees says he’s excited about the discovery of a peptide that reduces the flabbiness of double chins. “It appears to tighten the extra fat,” he says.

Stewart points out the hormonebalancing effects of certain peptides.

They can combat the damaging effects of cortisol, a hormone released when skin is stressed. Some have an effect similar to DHEA (youth hormone) that firms and restructures skin. In the medical community, peptides are being studied as a way to assist with inducing labor, Zone says. And some peptides have antimicrobial properties that can have a similar effect as antibiotics, Murad adds. “There are hundreds, if not thousands of peptides,” he says.

Peptide technology is advancing at a breakneck pace. While a manufacturer is promoting one product, its replacement is being developed in the lab.

Skin professionals can deliver noticeable results to clients in the spa and also offer a home regimen that brings them back. Professional-use and retail products containing peptides in combination with other ingredients are now resulting in the best antiaging skincare on the market. •

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