



# The Power Of Probiotics In Skin Care: Real Science Or Imagined?

Let's explore the research and opportunities.

by *Ada S. Polla, with research assistance from Ting Liu and Anne Pouillot of Alchimie Forever*

**IN THE JANUARY 2016 ISSUE OF THIS MAGAZINE,** I wrote a column on inflammation and its role in skin health and skin aging. In some ways, this review of probiotics as the new miracle skincare ingredient can be construed as a follow-up—given the current thought that probiotics typically can calm inflammation and, thus, help with skin conditions, including rosacea, acne and even overall signs of aging. Let's dig deeper to see if this is indeed the case.

## WHAT ARE PROBIOTICS?

Were you to ask the next customer who walks into your store about probiotics, she would probably say that these are "good bacteria" that help your digestive system. After all, haven't we all seen Jamie Lee Curtis' ads for Dannon's Activia? But what are they really? Dr. David Williams describes them as "strains of bacteria that are beneficial to one's health because they protect their host and help prevent disease." ❶

He goes on to explain: "For every one human cell in the body, there are 10 microbes. ... The symbiotic relationship between humans and bacteria has evolved over thousands of years, and we've come to depend on it for certain essential metabolic functions. [For example], bacteria in the gut ensure that the body is able to metabolize excess bile acids and hormones, which keeps our cholesterol and estrogen levels in a healthy range. ... Probiotics are usually discussed within the context of digestion because these good bacteria are densely concentrated along the entire length of the GI tract. They are especially plentiful in the intestines and colon. Their functions and benefits are numerous and include such things as improving the absorption of nutrients from food and supporting immune health by helping to block pathogens and other toxins from being reabsorbed into the body." ❷

The health benefits of oral probiotics, whether as foods or as supplements, go beyond a healthy gut, and include helping to maintain healthy cholesterol levels, strengthening the immune system, increasing energy

levels, helping to manage your weight and more. Overall, they offer the typical benefits that come with increasing any aspect of a healthy lifestyle.

## WHERE DO PROBIOTICS COME FROM?

The best way to increase your "good bacteria" is to eat lactic-acid fermented foods. What? These include vegetables such as kimchi and sauerkraut, dairy products (yogurt, cheese, buttermilk), soy products, tofu and even naturally fermented unpasteurized beer. Side note from Dr. Williams going back to Jamie Lee Curtis' endorsement of Activia: "Although supermarket yogurts advertise that they contain active cultures, the truth is that most products don't provide much, if any, benefit. In addition to being loaded with sugar, yogurts—like other dairy products—are pasteurized. This process kills most, if not all, of the bacteria they claim to contain, rendering them ineffective. (After all, that's the point of pasteurization, to minimize bacteria that may cause the product to spoil or harm consumers.)" ❸

## WHAT ABOUT PROBIOTICS USED TOPICALLY?

I am usually skeptical about any oral ingredient that is then applied topically in skincare products. Not because this application doesn't make theoretical sense, but rather because of how compounds are absorbed when eaten orally, which is so much different from how they are absorbed through the skin. However, in this case, there are recent data to suggest that at the very least probiotics should not be completely ridiculed as ingredients in skincare products. Here are two studies worth taking note of:

First, the American Academy of Dermatology released an opinion paper in February 2014 on probiotics stating that Whitney P. Bowe, M.D., FAAD (Fellow of the American Academy of Dermatology), a board-certified dermatologist and clinical assistant professor of dermatology at Icahn School of Medicine at Mt. Sinai Medical Center in New York, and adjunct assistant clinical professor of dermatology at State University of New York (SUNY) Downstate College of Medicine in Brooklyn, believes that

"skin prone to acne or rosacea has shown improvement with daily probiotic use, giving dermatologists reason to consider supplementing traditional acne therapy with a dose of this beneficial bacteria."

Specifically, Dr. Bowe explains that there are three main possible benefits to using probiotics topically (as quoted in the AAD opinion paper):

### ✓ PROTECTIVE SHIELD

In patients with acne and rosacea, living microorganisms on the skin are recognized as foreign by the body's immune system. The immune system springs into action to counter this potential threat, resulting in the inflammation, redness or bumps common in these skin conditions.

Probiotics applied topically sit on the skin's surface and prevent the skin cells from seeing the bad bacteria and parasites that can cause this immune system response. This is known as "bacterial interference," as probiotics protect the skin and interfere with the ability of bad bugs (or bacteria and parasites) to provoke an immune reaction.

### ✓ ANTIMICROBIAL PROPERTIES

Dr. Bowe explained that sometimes the substances produced by probiotics have antimicrobial properties, meaning they can create holes in bad bacteria and kill them. Similar to the way antibiotics work in the treatment of acne and rosacea, probiotics can help fight harmful bugs from triggering inflammation.

Researchers are testing probiotics to determine which ones make the substances that can kill bad bacteria. Dr. Bowe predicts that the strains could be identified in the future and will then be marketed in products.

### ✓ CALMING EFFECT

When certain types of probiotics are placed in contact with skin cells, they calm the parts of the cells that may want to react to the presence of bad bacteria that they see as a threat. These healthy signals produced by the probiotics stop the skin cells from sending "attack" messages to the immune system that result in flares of acne or rosacea.

Even more recently in a study from this past October a team of scientists reported the topical benefits of probiotics in the *Journal of Microbiology and Biotechnology*. The topical benefits of *Lactobacillus plantarum* HY7714 were investigated in a double-blind study involving 110 volunteers ages 41 and 59 years who have dry skin and wrinkles. The methodology and results of this study were as follows:

"Participants took 1 1010 CFU/day of HY7714 (probiotic group) or a placebo (placebo group) for 12 weeks. Skin hydration, wrinkles, skin gloss and skin elasticity were measured every four weeks during the study period. There were significant increases in the skin water content in the face and hands at week 12 in the probiotic group. Transepidermal water loss decreased significantly in both groups at weeks 4, 8 and 12, and was suppressed to a greater extent in the face and forearm in the probiotic group at week 12. Volunteers in the probiotic group had a significant

reduction in wrinkle depth at week 12, and skin gloss was also significantly improved by week 12. Finally, skin elasticity in the probiotic group improved by 13.17% after four weeks and by 21.73% after 12 weeks." 4

In layman's English, the benefits of the group using *Lactobacillus plantarum* included increased hydration and reduction in wrinkles.

What are some brands using probiotics as signature ingredients? So, if probiotics are potentially an interesting skincare ingredient, which brands are pioneering the technology? Four brands come to mind.

First, NUDE Skincare. Founded in 2007, this product is rooted in high-performance nutrition and includes ingredients such as omegas, minerals, probiotics and antioxidants.

Second, Dr. Ohhira's Probiotics, a brand developed by renowned Japanese microbiologist, Dr. Ichihiro Ohhira. The formulae, based on a traditional Asian fermentation

processes, are said to contain both live probiotics (12 probiotic strains) and their prebiotic food supply.

Third, Éminence Organics Skin Care, founded in 1958, uses sustainable farming and green practices to create natural, organic and biodynamic products. It has a number of products that contain yogurt as a key ingredient.

And finally, the British brand Aurelia Probiotic Skincare combines probiotic technology with ethically-sourced, 100% bio-organic botanical formulations.

What does this mean for you as a retailer or distributor? Probiotics may be more than a fad, and skin care containing them worth exploring—both topical and oral products actually. Indeed, beyond topical benefits, there is also the thought that since the skin is a reflection of what is going on inside, there are skin benefits to taking probiotics orally—something referred to as the "gut-brain-skin axis." So look at your skincare offerings, and at your

oral-supplement assortment, and assess if either are an opportunity for growth. ■

*Ada S. Polla is the president and CEO of Alchimie Forever. She is the co-creator of her family's Swiss-based skincare line, which she launched in the United States in 2004. Her skincare knowledge and business skills have yielded double-digit annual revenue growth for the brand. She holds an MBA from Georgetown University and received a bachelor of arts degree from Harvard University.*

- 1 "The Definitive Guide to Probiotics," Dr. David Williams, page 8, distributed by Healthy Directions
- 2 "The Definitive Guide to Probiotics," Dr. David Williams, pages 8-10, distributed by Healthy Directions
- 3 "The Definitive Guide to Probiotics," Dr. David Williams, pages 12-13, distributed by Healthy Directions
- 4 [ncbi.nlm.nih.gov/pubmed/26428734](https://pubmed.ncbi.nlm.nih.gov/pubmed/26428734)