

Diet Affects Dermatological Conditions

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January 31, 2018

Abstract

Because the link between skin health and nutrition is so prominent, dermatologists should offer dietary modifications or refer patients to nutrition professionals. Commonly prescribed medication for skin conditions, especially antibiotics, have serious side effects. They should be used as a secondary treatment if the patient is unable to mitigate the condition through lifestyle changes.

INTRODUCTION

Diet and nutrition play a significant role in dermatological health. The link is so clear that patients should work with both a dermatologist and nutrition professional to help prevent premature skin aging and treat conditions such as acne and rosacea with dietary interventions. While medications, particularly antibiotics, are effective at alleviating dermatological conditions, they come with side effects. Alternative systems of medicine have long been suggesting dietary modifications as treatment with positive results.¹ Therefore, diet and lifestyle counseling should be an early step of treatment.

Even patients know there is a link between diet and their skin's appearance.² It's not uncommon for patients to talk to their dermatologists about food's effects on their skin. Misinformation learned from loved ones or the media is rampant, so it's important for the doctor to make dietary recommendations or suggest a nutrition professional.³

One in three people has a skin condition, making it one of the most common health problems in the United States. The cost of skin conditions was estimated at \$39.3 billion in 2004. Skin conditions are linked to overall health issues, including obesity, hypertension, and cancer.⁴

DISCUSSION

Skin protects the body from external influence and plays an important role in the immune system. Our biggest organ is also a symbol of health and attractiveness.⁵ Even more, skin is an outward reflection of the body's inner health and nutrition status.⁶

We know that nutrition plays an important role in skin wellness and appearance. Higher vitamin C intake was associated with fewer signs of skin aging, such as wrinkles, dryness, and atrophy. In exams with dermatologists, patients with higher intakes of vitamin C and linoleum acid and lower intakes of fats and carbohydrates showed fewer of the aging signs. The same was true regardless of age, education, sunlight exposure, body-mass index or other factors.⁷

Vitamin C, an antioxidant found in citrus fruits and berries, effectively prevents sun damage, which leads to signs of skin aging like wrinkles and cancer. Whether absorbed topically or ingested through diet, vitamin C is vital to the production of collagen and can help treat inflammatory conditions. It helps protect vitamins A and E and fatty acids from oxidation.⁸

Vitamins E, C, carotenoids and polyunsaturated fatty acids are essential for skin protection. A study⁷ showed that women with wrinkled appearances had significantly lower

intakes of protein, cholesterol, phosphorus, potassium, and vitamins A and C than women without wrinkled appearances. Lower protein intake seems to increase skin fragility. The study suggests skin will benefit most from eating a diet of fruits, vegetables, nuts and fish.⁷

Vitamins A, C, and E are popular cosmetic ingredients. These vitamins can nourish the body when applied topically, however, absorption can be limited. For example, degradation of vitamin C occurs quickly once exposed to oxygen, which means the product starts degrading before it even touches the skin.⁶ Whenever possible, it's best to get vitamins through diet.

Collogan is a structural protein that is responsible for the skin's strength and texture. Vitamin A treatments have been shown to protect against UV-induced decreases in collogan. Experts say getting vitamin through fruits and vegetables from dietary intake is the safest and promotes a youthful appearance.⁶

Rosacea and acne are two dermatological conditions that make skin appear older and are linked to lower self-esteem and quality of life. Acne scars don't age well and inflammatory conditions, a trademark of both acne and rosacea, can result in collagen loss.⁹ Both rosacea and acne appear to be exacerbated by consumption of foods that lead to a high glycemic load.²

Acne affects 40-50 million people in the United States, making it a common skin condition.¹⁰ It also takes an emotional toll and has been shown to lead to social withdrawal, anxiety, and depression, which makes it important to study.¹¹

A medical suggestion for acne treatment states that "no specific foods or food classes have been demonstrated to be of benefit in the treatment of acne." and "no evidence exists on the role of diet in acne."¹²

This is misleading and potentially harmful to patients. Rather than deny that diet affects skin, perhaps it would be more useful to say that high-glycemic load foods should be avoided for optimum skin health.¹³ In a study where acne sufferers were put on a low-glycemic load diet, the degree of acne was lessened after 12 weeks.²

Frequent consumption of a high glycemic load diet has been linked to acne. Research has shown a strong link between acne and dairy consumption, particularly nonfat milk.^{2,3,11,14} Consumption of whole milk and cheese did not show correlation with prevalence of acne.^{11,14} The hormones in milk are thought to elevate insulin levels, which stimulate the synthesis of androgen hormones. Those hormones increase oil production on the skin, which leads to acne. Chocolate also has a high glycemic load and has also been linked to an increase in acne.¹⁰

The consumption of tea, turmeric, and omega-3 fatty acids lessen the appearance of acne. The polyphenols in teas contain antioxidant molecules with antimicrobial and anti-inflammatory properties, which can help eliminate acne. Green tea has the highest polyphenolic content. Similarly, turmeric, a spice, has anti-inflammatory properties.¹⁰ Fish consumption was shown to have a 32% decrease in moderate-to-severe acne. Whereas drinking nonfat milk three or more times per week showed a 2.2% increase.¹⁵

The Western diet has been linked with acne to the extent that cultures without Western influence did not appear to have acne at all. In Western societies, acne primarily affects adolescents and 40-54% of adults over age 25.¹⁶ The Western diet is often low in vitamins A, B, C, E, iron, and zinc. The deficiency can be made up for through supplements or applied topically to help repair skin tissue, promote cell growth, and protect against the effects of pollution.¹⁷

In remote locations, where Western influence on diet is nil or minimal, natives eat local plant and animal foods. In one location, not a single sign of acne was seen in the entire population examined. Anecdotal evidence from doctors treating isolated populations as they became more Westernized suggests those populations also went from being unaffected to showing signs of acne. Genetic resistance is probably not the reason for the populations' lack of acne because the people are not genetically dissimilar from nearby populations.¹⁶

The remote populations studied had diets that lacked Western carbohydrates that lead to high glycemic loads that elevate insulin levels. In contrast, cultures that recently transitioned to more Western-influenced diets now have higher rates of insulin resistance and type 2 diabetes.¹⁶

Rosacea is a chronic inflammatory skin condition that affects up to 15 percent of certain populations. The cause is uncertain, but it is especially prevalent in fair-skinned people of European descent. A flushed appearance is a characteristic of the condition. It's been well established that dietary triggers exacerbate rosacea.¹⁸ Therefore, it stands to reason that dietary changes could improve rosacea symptoms.

Foods and beverages known to trigger rosacea fall into four categories: alcohol, heat, capsiacin, and cinnamaldehyde-related. Nutrition counseling is generally part of the treatment. Dermatologists often advise rosacea patients to avoid foods that trigger rosacea flare-ups. These can include spicy foods and hot drinks. Increasing omega-3 fatty acids can calm inflammation.¹⁸ Cold water fish like halibut, salmon, and sardines are a good source. As is flaxseed oil. Limiting dairy, meat, aged cheese, and red wine will also help clear skin.

Because the standard oral treatment for rosacea is an antibiotic, there is interest in encouraging dietary or lifestyle modifications to control the condition.¹⁸ Antibiotics are commonly prescribed to treat a range of dermatological conditions, particularly acne and rosacea for long periods of time. Whether applied topically or taken orally, long-term use of antibiotics can lead to resistance, which is concerning to dermatologists and should be to patients as well.¹⁹ The Centers for Disease Control called antibiotic resistance one of the world's most pressing health concerns.

In a survey by the National Rosacea Society of more than 500 patients, 73% had altered their diet due to rosacea, mostly to avoid spicy food. or alcohol. Most of them reported improvement as a result.²⁰

Often, the cause of a skin reaction is food sensitivity or microbial imbalance in the gut, which can lead to inflammation. Asking patients about diet and supplements can help identify the cause of skin problems and lead to a treatment plan. For many, eliminating trigger foods or improving gut health can lead to improved skin health and appearance.²¹

CONCLUSION

Anyone can tell healthy skin by looking at it. It's smooth, unblemished, and could be described as radiant. Signs of an unhealthy diet also show on the skin. It could be red, splotchy, and prematurely wrinkled. Healthy skin reflects a person's vitality inside. A diet to nourish both includes plenty of fruits, vegetables, and water. Skin will be nourished with omega-3 fatty acids when the diet is rich in avocados, salmon, and nuts. Cutting back on inflammatory and dehydrating foods, like caffeine and alcohol also helps eliminate signs of aging, such as dark circles, fine lines, and wrinkles.¹⁷

Encouraging patients to make dietary modifications is preferred over prescribing medications, particularly antibiotics as the first method of treatment. Patients generally want to be educated about how to care for their skin.²¹ Patients can feel in control of their body and improve skin health and appearance. In turn, this outward change can lead to an increase in self-esteem and happier, healthier, more fulfilling lives.

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