

STRENGTHEN YOUR SKIN'S DEFENSE



More and more, scientists are learning how your diet may benefit your skin's appearance, confirming the old adage that you are what you eat. As the body's largest organ system, your skin is the first and last line of defense against the outside world.

Food choices might influence the skin's intrinsic protection against damage from sun exposure. A new study provides the first clinical evidence that consuming almonds may help support the skin's resistance to sunburn.

Can Almonds Help Boost Your Skin's Resistance to Sunburn?

Researchers at the University of California, Los Angeles (UCLA) investigated whether daily almond intake could increase resistance to UVB light (the main source of skin damage from sun exposure) and improve skin texture.¹

They recruited 29 Asian women (18 to 45 years old) with skin types that ranged from "burns and does not tan easily" to "burns a little and tans easily," technically classified as Fitzpatrick skin types II, III or IV.

Women were randomly assigned to one of two groups for a 12-week period:

- **Group 1 ate:** 1.55 ounces (42 grams, 246 calories) of almonds daily for 12 weeks
- **Group 2 ate:** 1.8 ounces (51 grams, 200 calories) of pretzels daily for 12 weeks

The researchers measured each person's skin response to UVB rays—the type of rays known to cause sunburn—at the beginning and end of the study by quantifying their individual minimal erythema dose (MED). MED is the lowest dose of UVB light needed to cause slight skin reddening to a specific site on the skin—in this case, inner-arm skin was chosen because it has little exposure to the sun. Skin reddening is the first indication of skin photodamage, so increased MED indicates improved protection against and resistance to UVB photodamage.



Our team is interested in whether certain foods like almonds can help maintain healthy skin and strengthen the skin's natural defenses from within.

-Dr. Zhaoping Li

At the beginning of the study, there were no differences in MED between groups. After the 12-week intervention, there was **an increase in both MED (~20%) and exposure time to reach minimal reddening for women in the almond group compared to the pretzel group.** No statistically significant changes in MED or exposure time were observed in the pretzel group. No differences in skin texture, sebum or hydration were seen in these measures over time or between groups.

THIS CLINICAL STUDY FOUND: Eating almonds may be one way to help your skin from within and support the other things you already do, like wearing sunscreen, to protect your skin from UVB rays.

As with all studies, there are a few limitations to keep in mind regarding these findings: a smaller study population was included than originally planned, due to the exclusion of those participants found to be UVB resistant at the dose and exposure time selected. This study did not investigate the effect of sunlight exposure in general or UVA exposure; findings are limited to protection against UVB radiation. This study also investigated a younger population. Further research is needed to investigate the effects of almond consumption for older subjects with moderate-to-severe photoaged skin and for other Fitzpatrick skin types.

1. Li JN, Henning SM, Thames G, Bari O, Tran PT, Tseng C-H, Heber D, Kim J, Li Z. Almond Consumption Increased UVB Resistance in Healthy Asian Women. *Journal of Cosmetic Dermatology*. 2021;00: 1-6. <https://doi.org/10.1111/jocd.13946>.



Ultraviolet (UV) Rays: What's the Difference?

Your eyes can't see UV rays, but your skin can feel them. There are two types of UV rays from the sun that are important to know about when it comes to protecting your skin:

UVA: This type has longer wavelengths and is most associated with skin cancer. It is slightly less intense than UVB rays, but it penetrates your skin more deeply. Exposure to UVA rays causes genetic damage to cells on the innermost part of the top layer of skin. Over time, UVA can lead to premature aging and skin cancer.

UVB: These are shorter wavelengths and are associated with skin burning. UVB penetrates and damages the outermost layers of your skin. This type of UV is what causes suntan, sunburn or, in extreme cases, skin blistering. Its intensity changes depending on the season—for example, in the summer, the sun's rays are the strongest. But UVB rays can damage your skin year-round.

Why Are Almonds Your Skin's Best Friend?

Almonds are a whole food with numerous nutrients, several of which are linked to skin health. Although the mechanism for the improvement in UV resistance among the almond eaters as seen in this study is unknown, the researchers speculate that "good" mono- and polyunsaturated fatty acids, vitamin E, quercetin (a flavonoid), and other phenolic and polyphenolic compounds found in almonds may be responsible for the increased photoprotection against UVB light.

Here's a list of the skin-friendly nutrients you get in a one-ounce healthy handful of almonds:

- **50% DV Vitamin E:** An antioxidant that may help protect cells from the damaging effects of free radicals caused by pollution, UV rays from the sun, cigarette smoke and other environmental and intrinsic factors
- **32% DV Copper:** Plays a role in skin and hair pigmentation
- **25% DV Riboflavin** and **6% DV Niacin:** Two B vitamins that contribute to the maintenance of normal skin
- **8% DV Zinc:** Contributes to the integrity of healthy skin
- **3.5g Linoleic Acid:** An essential fatty acid that helps prevent skin dryness



Checklist for Protecting Your Skin

Protecting your skin from the sun is an important habit for all ages

- ✓ **Use a topical broad spectrum sunscreen with an SPF of at least 15 or higher for both UVA and UVB protection**
Higher numbers indicate more protection. For most people, sunscreen with SPF values between 30 and 50 offers adequate sunburn protection, even for those most sensitive to sunburn.
- ✓ **Avoid prolonged sun exposure**
- ✓ **Stay in the shade, especially during midday hours**
- ✓ **Wear sun-protective clothing to cover your chest, arms and legs**
- ✓ **Wear a wide-brim hat to shade your face, head, ears and neck**
- ✓ **Wear wraparound sunglasses that block both UVA and UVB rays**

AND NOW: Stick a stash of almonds in your beach bag—delicious, nutritious and, as these new study findings show, almonds support enhanced protection from UVB photodamage!