



# Q&A Almonds



with  
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## Beauty from the Inside Out: California almonds and skin health

Walk into any cosmetic or skincare emporium and you're as likely to walk out with a beauty supplement as you are with a jar of moisturizer or eye cream. Thanks to a recent increase in media stories focusing on the concept of "beauty from the inside out," American consumers are now considering beauty more than just skin deep.

"This trend really is beginning to take off in the U.S.," notes Swati Kalgaonkar, Ph.D., associate director, nutrition research program, Almond Board of California (Modesto, CA). "More consumers are seeking skin health benefits through whole natural foods or taking supplements."

But is there substance behind this increasing consumer trend? "Being a scientist at heart, I always tend to look first at peer-reviewed published reports," Kalgaonkar concedes. Fortunately, a pilot study<sup>1</sup> conducted by Dr. Raja Sivamani and his team at University of California at Davis and funded by the Almond Board of California explores the effects of daily almond consumption on facial wrinkles in postmenopausal women.



**ABC:** *Is it true that we can improve the effects of photo aging simply by choosing the right foods?*

**ABC:** *What inspired the recent pilot study?*

**ABC:** *What did the pilot study look like, whom did it involve and what do the results tell us?*

**KALGAONKAR:** Diet and appearance really do go hand-in-hand, both intuitively and scientifically.

But investigating almonds' role in skin health is a more recent focus and, so far, we have promising results and good guidance for future studies.

**KALGAONKAR:** The pilot study was inspired by almonds' role in skin and hair health as documented in Ayurveda—an ancient medicinal tradition with roots in India dating back to 1500 to 3000 B.C. Ancient Ayurvedic texts describe the use of almonds for skin and hair health benefits, so that's what got us thinking that they might be worth looking at in a pilot study.

**KALGAONKAR:** The pilot study was a 16-week randomized controlled human trial, which is the study design known to produce results with the highest level of evidence. It involved 28 healthy postmenopausal women as its subjects, all with Fitzpatrick skin types 1 and 2\* – both types are characterized by an increased tendency to burn with sun exposure.

The women were randomly assigned to one of two groups: one that ate an almond snack comprising about 20 percent of their total daily energy—about 340 kcal, or about two handfuls of almonds—and another that ate a

nut-free snack of their choice, such as a cereal bar, granola bar or pretzels, that also made up 20 percent of their daily calories.

The researchers then assessed the subjects' skin at four, eight, 12 and 16 weeks using high-resolution facial-imaging equipment to get a good view of any wrinkles and how they changed over the course of the trial.

At the end of 16 weeks, participants consuming the almond snack showed a statistically significant reduction in wrinkle width of about 10 percent—an intriguing result for a whole food—and a statistically significant reduction of 9 percent in wrinkle severity, a factor of the wrinkle's width and length taken together. Again, that's a statistically significant reduction resulting from consumption of a natural, whole food – and certainly warrants further investigation.

**ABC:** *Did the pilot study tell us anything about how almonds brought about these changes?*

**KALGAONKAR:** This study wasn't designed to look at the mechanism of action of almonds just yet. Since it was the first study to investigate this question, we simply wanted to see whether or not we'd get results. Several potential mechanisms of action are being evaluated in the follow-up study.

Almonds provide a number of nutrients linked to skin health.\*\* In addition, the two ounce (about 60 grams) serving of almonds in this study provided 12 grams of plant protein and seven grams of fiber in addition to 100 percent of the Daily Value for vitamin E (14.6 mg), 50 percent of the Daily Value for riboflavin (0.6 mg), 26 percent of the Daily Value for niacin (2.1 mg) and 16 percent of the Daily Value for zinc (1.8 mg).

**ABC:** *Are there future plans for more studies on the benefits of almonds and skin health?*

**KALGAONKAR:** Before plant-specific compounds were isolated, extracted and then repackaged as nutraceuticals and pharmaceuticals, we had whole foods. So, this study takes us back to basics, which I really love, and highlights the impact of whole foods – like almonds – on health and well-being.

It's further proof that almonds are an important piece of the health-aging puzzle. Aside from the fact that a large and growing body of evidence indicates that almonds can help support heart health, glucose regulation and weight management, we can now look forward to learning about how they help our skin. A larger and longer-term follow-up study is underway.

#### References

1. Foolad N, Vaughn AR, Rybak I, Burney WA, Chodur GM, Newman JW, Steinberg FM, Sivamani RK. Prospective randomized controlled pilot study on the effects of almond consumption on skin lipids and wrinkles. *Phytotherapy Research*. 2019;1–6. <https://doi.org/10.1002/ptr.6495>

\* Fitzpatrick skin type 1 = always burns/never tans. Fitzpatrick skin type 2 = usually burns, tans minimally

\*\* Riboflavin, niacin and zinc all qualify for nutrient function claims related to skin in the European Union.