Almond Consumption Increased UVB Resistance in Healthy Asian Women

Susanne Henning, Jason Li, Gail Thames, Omar Bari, Patrick Tran, Chi-Hong Tseng, David Heber, Jenny Kim, and Zhaoping Li

University of California, Los Angeles

Objectives: Almonds are a rich source of phenolic and polyphenolic compounds, which have antioxidant activity. In vitro and in vivo studies have demonstrated that topical application of almond oil and almond skin extract reduces UVB-induced photoaging. Ultraviolet-B (UVB) protection by oral almond consumption has not been previously studied in humans. It was the objective to investigate whether oral almond consumption can increase resistance to UVB radiation and reduce skin aging in healthy Asian women.

Methods: Thirty-nine female participants (18–45 years) with Fitzpatrick skin type II-IV were randomly assigned to consume either 1.5 oz of almonds or 1.8 oz of pretzels daily for 12 weeks. Minimal erythema dose (MED) was determined using a standardized protocol, which determined the minimal radiation inducing erythema on the inner arm 24 hours following UVB exposure. Facial skin texture was evaluated by two dermatologists using the Clinician’s Erythema Assessment scale and Allergan Roughness scale. Facial melanin index, hydration, sebum, and erythema were determined using a cutometer.

Results: Women who consumed almonds, experienced a significant increase in MED from 415 ± 64 to 487 ± 59 (18.7 ± 19.2%, P = 0.006) from baseline to week 12 compared to women in the pretzel group from 415 ± 67 to 421 ± 67 (1.8 ± 11.1%). The exposure time to reach minimal erythema was also increased significantly in the almond group from 160 ± 23 to 187 ± 25 (17.5 ± 22.2%) compared to the pretzel group from 165 ± 27 to 166 ± 25 (1.7 ± 14%) (p=0.026). There were no differences noted between the groups consuming almonds versus pretzels in Allergan roughness, melanin, hydration, or sebum on facial skin.

Conclusions: Our findings suggest that daily oral almond consumption may lead to enhanced protection from UVB photodamage by increasing the MED. Protection from other UV radiation was not tested and therefore almond consumption will not replace other methods of sun protection such as application of sunscreen or wearing protective closing.

Funding Sources: Almond Board of California.