

Skin-Whitening and Overall Skin Tone– Improving Effects of Oral Supplementation with Lutein and Zeaxanthin Isomers: A Randomized, Double-Blind, Placebo- Controlled Trial

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Abstract

Objective: To examine the effects of oral lutein and zeaxanthin isomers (RR-zeaxanthin and RS-(meso) zeaxanthin) in healthy subjects on skin-whitening, overall skin tone, minimal erythema dose (MED), and other skin attributes.

Methods: In a randomized, double-blind, placebo-controlled clinical trial, forty six subjects (N = 46 subjects, M/F, 30–50 y) with mild to moderate dry skin, Fitzpatrick Skin Type II–IV scale, normal healthy individuals received either an oral dietary supplement containing 10 mg lutein and 2 mg zeaxanthin isomers (Lutemax2020) or a placebo daily for 12 wk. The photo protective activity was measured by the skin surface redness with a Minolta Chromameter CR-400, 24h after exposure of the right forearm to 60 mJ/cm² UVA/UVB light [280–320 nm) from a 150 watt solar stimulator. Skin lightening was measured via the Chromameter L* value and/or the Individual Typology Angle (ITA°) was calculated. Subjective assessments for skin attributes were also recorded.

Results: After 12 wk of lutein and zeaxanthin supplementation, overall skin tone improved over placebo (–78.20 compared with 7.17, P < 0.0237) and the luminance (L*) values were significantly increased from baseline (63.08, p < 0.0094) compared with placebo (62.59, p < .0.3216). Also b* values significantly decreased (–0.56 compared with –1.05) over baseline in lutein and zeaxanthin supplementation. Mean MED increased after 12 wk of lutein and zeaxanthin supplementation (3.25 compared with 6.42) over baseline. Lutein and zeaxanthin supplementation significantly increased Individual Typological Angle (ITA°) from baseline.

Conclusion: Lutein and zeaxanthin supplementation effectively whitens the skin and improves skin health attributes. There were no marked adverse effects.

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