



## Pharmanex and Nu Skin Personal Care Join Forces with Stanford and Harvard Physicians on Skin-Health Study

April 5, 2005 — The results of a collaborative study funded by Nu Skin and conducted at the Department of Dermatology at Stanford University's School of Medicine were recently presented at the poster sessions of the American Academy of Dermatology's annual congress. The study was designed to measure the effects of UV light exposure on skin's protective carotenoid anti-oxidant levels.

During the study, researchers were able to measure the skin carotenoid levels by using the Pharmanex® BioPhotonic Scanner. This measuring tool is the only non-invasive method to measure carotenoid levels in human tissue. In another recent study, researchers determined that the BioPhotonic Scanner was a more precise measurement of the body's carotenoid levels than conventional HPLC methods which measure carotenoid levels in the blood.

"We know that carotenoids are potent antioxidants and may help protect the skin from some of the negative effects of UV light," said Lori Bush, president of Nu Skin. "By working with physicians from Stanford and Harvard universities, we were able to confirm that UV exposed skin is in fact depleted of carotenoids. This study sets the stage for future research that will advance our understanding of the impact of solar radiation on skin health."

### Carotenoids and Ultraviolet Radiation

Ultraviolet radiation is understood to play a role in premature aging of the skin, photosensitivity disorders and skin cancer. Carotenoids are believed to be important antioxidants associated with the body's immune system support. In an effort to more fully understand the science, dietary carotenoid supplementation is currently being researched to determine whether it is a prudent strategy for maintaining the anti-oxidant network that helps support skin health.

By conducting this study, researchers wanted to determine if long-term natural sun exposure results in decreased carotenoid levels in the skin; and if skin carotenoid levels can be significantly impacted in the short term as a result of UV light exposure.

Study author Alexa Boer Kimball, M.D., MPH, director clinical trials, dermatology, at Harvard Medical School said, "these findings support the concept that chronic sun exposure results in a depletion of the natural carotenoids usually found in the skin."

She continued by saying, "There was also a significant depletion of intrinsic skin carotenoids after exposure to artificial ultraviolet light, which became more extreme with longer exposures. Skin carotenoid levels dropped significantly from baseline after just 10 minutes of UV exposure, but levels returned to baseline levels after 60 minutes. However, when skin carotenoid levels were exposed to UV exposure for 20 minutes, the carotenoid levels depleted significantly from baseline levels and did not return over the 60 minutes patients were examined."

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## The Nu Skin Center for Dermatological Research at Stanford University School of Medicine

Nu Skin's partnership with Stanford University began in April 1999 with the establishment of the Nu Skin Center for Dermatological Research at Stanford University School of Medicine which focuses on scientific investigation, dermatology research, product development, patient care and training. The Nu Skin Center conducts clinical trials and research involving existing and potential Nu Skin products, ingredients and formulas.

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