

# Skin Cancer Foundation Photosensitivity Report

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## **Introduction**

### **Photosensitivity Basics**

**Photosensitivity** is an increased sensitivity or abnormal response of the skin to sunlight or artificial light. In particular, both UVA radiation (longer wavelengths) and UVB radiation (shorter wavelengths) have been observed to trigger unusual reactions of the skin in people with certain disorders or those who are taking particular medications.

The most common manifestation of an increased photosensitivity is the appearance of lesions of various shapes and sizes on areas of the skin that have been exposed to sunlight. The time required for such a response to occur can be anywhere from under 30 minutes of exposure to sunlight to hours spent in it.

When a person suffers from an exaggerated sensitivity to sunlight, he or she most often will exhibit some form of dermatitis (a rash caused by an allergy or physical contact with a particular substance) on the part of the body that was exposed to light. Thus, naturally hidden body parts such as the skin of the upper eyelid or areas covered in hair such as the scalp are better protected and do not produce such rashes.

The most effective way to protect your skin and prevent damage to it, regardless of whether or not you have a photosensitivity disorder, is to minimize exposure to direct sunlight. Application of a high SPF sunscreen to all exposed areas and wearing protective clothing are also important practices in defending your skin from the sun's harmful UV rays.

Willis, Isaac. "Photosensitivity and Phototherapy." Dermatology in General Medicine. Second ed. 1 vols. New York: McGraw-Hill, Inc., 1979.

<http://www.dermnetnz.org/reactions/photosensitivity.html>

## **Phototoxic Reactions versus Photoallergic Reactions**

When a person experiences a photosensitivity reaction they actually undergo one of two separate reactions, known as either a *phototoxic* reaction or a *photoallergic* reaction. In a phototoxic reaction, which is much more common than a photoallergic response is, a change in the skin is usually observed within minutes to hours following exposure to the offending substance. As for photoallergic reactions, however, a response is not observed for 1 - 3 days after the substance has come into contact with the body.

Phototoxic reactions are the result of a release of energy by photosensitizing agents, causing potentially long term damage to the skin surrounding these molecules. This excessive energy is initially absorbed by the molecules from the sun's ultraviolet rays, explaining how sunlight can indirectly result in the death of skin cells. Although the medication or agent that causes the reaction might be stopped quickly, such a reaction can occasionally last 20 years after the substance has been removed. Medications that are taken orally, topically (i.e. a cream applied to the skin) or injected can all cause phototoxic reactions

Photoallergic reactions, as mentioned, are much less common. These responses are specifically caused by topical medicines or photosensitizing agents. As hinted by the name of the reaction, photoallergic responses occur when UV rays cause the shape of a molecule to transform into a new substance, eliciting a response of the immune system to attack these foreign antigens. As antibodies are produced and attack the photosensitizer a rash develops, usually a few days following application of the substance. The outbreak is not limited to sun exposed areas but can spread to all parts of the body.

<http://www.webmd.com/a-to-z-guides/sun-sensitizing-drugs>