

# *Photosensitivity and Lupus Erythematosus*

By: *Denny Tuffanelli, MD*

The first description of lupus erythematosus by Casanave in 1851 included photosensitivity. The patient was a teamster who worked on an uncovered delivery wagon in Paris. His lesions were confined to sun exposed areas. Henrietta Aladjem, in lay terms, vividly portrayed the problems of photosensitivity in lupus in her first book *The Sun is My Enemy*.

Thirty to forty percent of lupus patients are truly photosensitive while all people with lupus may be harmed by excessive exposure. All lupus patients should be aware of the potential harm of ultraviolet (sun) light and of preventive and protective techniques.

Photosensitivity in lupus is caused by ultraviolet light usually emitted by the sun. There are two principle kinds of ultraviolet light. UV-A (320-400nm) can cause tanning, and even sunburns, and is responsible for many photosensitivity reactions. UV-B (290-320nm) is responsible for sunburn, tanning, wrinkling and cancer. UV-B is mainly responsible for inducing lupus but UV-A also plays a role. UV-B rays are more intense in midday from 10am-3pm. UV radiation increases with high altitude and is also reflected by snow, cement and white sand, and is more intense. Window glass offers protection from UV-B damage. A cloudy sky only slightly reduces ultraviolet light. Other sources of UV light include sunlamps, some fluorescent light, photocopy machines, slide projector light, TV studio lights and welders arcs.

It is unknown why ultraviolet light exacerbates lupus. In all likelihood, ultraviolet alters DNA and proteins in the skin. The altered DNA acts as an antigen triggering auto-antibody production. Patients may become photosensitive early or late in their disease. Exposure to UV may flare or induce skin lesions, or may lead to systemic complaints such as fatigue, arthralgia, fever and nausea. Some medications can cause photosensitivity. If possible, these should be avoided by lupus patients. Photosensitizing drugs include hypertensive agents such as hydrodiuril, tranquilizers such as thiorazine, sulfa drugs, tetracycline, oral anti-diabetic drugs and numerous others. When a new drug is prescribed, the patient should inquire about its photosensitization potential.

Patients can be phototested to indicate how sensitive they may be. The test is very technical and rarely indicated. However, it may be useful when a life style change is considered; for example, when moving from Minnesota to Hawaii. Common sense rules in determining a lupus patient's relationship to sunlight. Even if a patient has no skin lesions or a history of photosensitivity, it is wise to be somewhat careful about sun exposure. Patients who work out-of-doors may have to change occupations to lessen sun exposure.

The patient should be moderate in his or her approach to the sun. About one-fourth of patients with SLE are quite sensitive to the sun. They may become ill if they are in the sun too long. People with lupus should not sunbathe. If they are going fishing or to the ball game, for example, they should wear a hat and sunscreen. Some physicians underplay and some physicians overplay the photosensitivity issue. A person with lupus should not be a "mole".

Patients have been told by their physicians to never go out into the sun. There are patients who have been told that it doesn't make any difference – that they can work as a lifeguard, etc. Neither approach is appropriate. Don't be either a mole or a lifeguard.

Extra precautions should be taken if skin is fair. Sensitivity is increased by saunas or hot showers. Baby oil, olive oil etc. offer no protection. Clothing, hats and thick applications of creams such as zinc oxide are examples of sunblocks. Zinc oxide is more effective than sunscreens. Thin clothing will allow UV light to get to the skin. Thickness is more important than color.

While avoidance of excessive ultraviolet light exposure may slightly diminish the quality of life, it should be emphasized that other harmful effects of excessive ultraviolet, such as premature skin aging, wrinkling and induction of skin cancer are also prevented.

In addition to avoiding prolonged or intensive exposure, high potency sunscreens which block UV light should be utilized. Sunscreens do not offer 100 percent protection. Perspiration and swimming remove sunscreens and reapplication is necessary. Sunscreens should be allowed to dry before applying makeup.

There are two major chemical sunscreens. PABA (para-aminobenzoic acid) and Benzophenone block UV-B and UV-A. Many sunscreens contain both. UV-B is most responsible for LE lesions, but UV-A may also be harmful. Other sunscreens include the cinnamates and salicylates. The amount of protection offered by sunscreens is called sun protective factor (SPF). Lupus patients should use at least 15. Sunscreens should be applied an hour before exposure. Products give the stated protection only when the manufacturers directions are followed. A good sunscreen should block out all UV-B and UV-A.

Some products which block out both UV-A and UV-B include: Eclipse 15, Clinique SPF Sun Block, TI Screen 15+, Elizabeth Arden Sun Blocking Cream 15, Total 15, Coppertone 15, Presun 15 and Block Out Cream Lotion 15. Lip protectors include Chapstick Sunblock 15, Blistex 15 and Presun 15 Lip Protector.

Before applying a sunscreen, patch test the product to a small area of skin to rule out sensitivity. The "caine" drugs such as benzocaine, procaine and novocaine can cross react with PABA, so patients allergic to one of these may be allergic to PABA.

For the typical lupus patient, a relatively normal life style can be attained. An individual's degree of photosensitivity is learned. Excessive sun is avoided. Utilizing the material discussed, common sense precautions and protections should prevent the "sun from being the enemy."

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