

Phototherapy

PUVA

### **What is PUVA and how does it work?**

PUVA is an acronym for psoralen (a light-sensitizing medication) combined with exposure to ultraviolet light A (UVA). UVA, like UVB, is found in sunlight. By itself, however, UVA is not usually used to clear psoriasis. It is relatively ineffective unless used with a light-sensitizing medication such as psoralen.

PUVA slows down the excessive cell reproduction of psoriasis and can clear the symptoms for varying periods of time.

### **How effective is PUVA?**

Studies show that PUVA clears psoriasis for more than 85 percent of patients. It induces long remission times, even without maintenance treatment, that can last from a few months to more than a year.

### **Who is a candidate for PUVA?**

PUVA is considered for moderate to severe cases of psoriasis, eczema, or other inflammatory conditions of the skin in adults. Stable plaque psoriasis, guttate psoriasis, and psoriasis of the palms and soles are especially responsive to PUVA treatments.

PUVA is not normally recommended for children or teenagers. However, it can be used by young people to avoid unwanted side effects of other treatments or if other treatments have not been successful.

Some people are not good candidates for PUVA due to their medical histories. The following are possible reasons to avoid PUVA:

A family history of allergy to sunlight

Pregnancy or nursing

A history of arsenic intake (e.g., Fowler's solution)

Previous ionizing radiation therapy (Grenz ray or X-ray)

Medical conditions such as lupus erythematosus, porphyria or skin cancer that require one to avoid the sun

Heart or blood pressure problems so severe that one can't tolerate heat or prolonged standing

A history of skin cancer

Liver disease (may increase levels of medicine in the blood, although people with liver disease may use bath PUVA)

### **How is PUVA administered?**

PUVA treatments take place in a doctor's office. After psoralen is ingested or applied to the skin, a patient exposes his or her psoriasis lesions to UVA in a light unit lined with ultraviolet lamps. Most UVA

units are vertical, and patients stand during treatment. Other special UVA units are used for exposing only specific parts of the body, such as the hands and feet.

A doctor and his or her phototherapy staff know exactly how much time should elapse between the patient taking the pill or applying psoralen topically, and exposing the lesions to UVA. Timing is critical to the success of the treatment. For the UVA light exposure to work, it must be administered at a time when the psoralen is at a high level in the skin.

Oral PUVA is the most common form. It calls for the patient to take psoralen pills 75 to 120 minutes before entering the UVA light box.

The topical forms of PUVA are referred to as "paint," "soak" and "bath." In paint PUVA, a psoralen preparation in ointment or liquid form is painted directly on lesions, especially those on the palms and soles. In soak PUVA, affected areas are immersed in a basin of water that contains psoralen. Similarly, in bath PUVA, the entire body is immersed in a tub of water that contains psoralen. The UVA should be administered within 15 minutes after the psoralen is applied to the skin. Light sensitivity drops dramatically after one hour.

Topical PUVA avoids some of the unpleasant short-term side effects associated with oral PUVA. However, topical PUVA poses a higher risk of a person's skin burning from the light treatment, and it is more labor intensive.

Topical PUVA can be useful for people with stubborn patches of psoriasis because it provides a higher local concentration of psoralen. Consequently, it requires a lower amount of UVA for an effective response. Also, people who are resistant to oral PUVA may respond to topical PUVA.

Initially, exposure to UVA may be very short (30 seconds to several minutes), depending on the patient's skin type and the kind of UVA unit. Exposure time is gradually increased to 20 minutes or longer, depending on the strength of the UVA light. On average, 25 treatments are required for clearance, but may be greater for very severe psoriasis.

After clearing, a person may or may not go on a maintenance regimen, depending on the aggressiveness of the psoriasis. Only one or two PUVA treatments per month may be needed to maintain clearance, although the exact regimen will vary for each patient.

### **What are the side effects of PUVA?**

The most common short-term side effects of oral PUVA are nausea, itching and redness of the skin. Drinking milk or ginger ale, taking ginger supplements or eating while taking oral psoralen may prevent nausea. Antihistamines, baths with colloidal oatmeal products or application of topical products with capsaicin (an extract of hot peppers) may help relieve itching caused by PUVA. Swelling of the legs from standing during PUVA treatment can sometimes be relieved by wearing support hose.

### **Skin cancers**

The primary long-term risk of PUVA treatment is a higher risk of skin cancer, particularly non-aggressive forms like squamous cell carcinoma (SCC) and basal cell carcinoma (BCC). Studies show the more PUVA treatments you have, the more at risk you are for developing skin cancers, compared to the general, non-PUVA-treated population.

Long-term PUVA treatment requires careful monitoring for skin cancer, even after treatments are finished. If you have had more than a total of 150 PUVA treatments, it is advisable to have an annual skin examination by a dermatologist. Skin cancers generally can be removed easily if detected early.

Early signs of an increased risk of non-melanoma skin cancer are keratoses, or raised, scaly wart-like bumps, that can range from a tenth- to a half-inch in diameter at the base. PUVA-induced keratoses (as opposed to sun-induced keratoses) tend to appear on skin that does not receive regular sun exposure (e.g., the trunk and thighs). Keratoses and early skin cancer lesions generally can be removed.

## **Cataracts**

There is a potential for PUVA to induce cataracts if the eyes are not protected for 12 to 24 hours after a PUVA treatment. Psoralen remains in the eye lens for a period of time following ingestion of the drug. To date, no increase in cataracts has been noted in patients using proper eye protection.

Special UVA-blocking PUVA glasses are prescribed for use following treatment. They must be worn for at least 12 hours following ingestion of psoralen, and this means anywhere the sun shines—even indoors. Unlike UVB, UVA penetrates windows.

Use of commercial sunglasses should be discussed with your doctor. Sunglasses must filter out 100 percent of the ultraviolet light.

## **Freckling and skin aging**

PUVA patients who have received more than 150 treatments within five years are at a higher risk for premature aging of the skin. The aging usually takes the form of wrinkling and dryness, or tight, shiny skin. Discolored spots that look like dark freckles may develop.

## **MINIMIZING PUVA RISKS**

### **Combining treatments**

PUVA may be used alone or in combination with topical treatments or systemic medications. Sometimes doctors will prescribe steroid medications or anthralin to help clear a few stubborn lesions rather than prolong UVA exposure. Dovonex is also combined with PUVA in some cases, but this medication should always be applied after a treatment. UVA exposure can inactivate Dovonex.

If the lesions are extensive, some doctors will combine UVB, biologics or methotrexate with PUVA to speed up the clearing and reduce the cumulative exposure to PUVA. RePUVA, a popular treatment in Europe, combines PUVA with a systemic retinoid medication. It can clear psoriasis with far less UVA exposure.

### **Rotating treatments**

Rotating treatments also may reduce PUVA side effects. For example, a person may be rotated off PUVA to another treatment to limit exposure and long-term risks. Six treatments used for moderate to severe psoriasis are UVB, PUVA, biologics, methotrexate, soriatane and cyclosporine. One of these treatments is used from 12 to 24 months, and then the patient is rotated to another of these treatments. Rotating treatments can prevent individuals from becoming resistant to certain treatments, and can minimize long-term side effects. A doctor will determine if rotating treatments is an appropriate option for you.