

# Phototherapy, PUVA

PUVA therapy, a combination of psoralen (P) and long-wave ultraviolet A (UVA) radiation, is an established treatment for psoriasis and several other severe skin conditions, including eczema, vitiligo, and cutaneous T-cell lymphoma (CTCL). The therapy utilizes psoralen, a photosensitizing agent, which increases the skin's sensitivity to UVA light, allowing for deeper penetration of the radiation and more effective treatment of the underlying skin disorders.

## Treatment Protocol

PUVA therapy is typically administered 2-3 times a week for a duration of 12 to 15 weeks, depending on the severity of the skin condition. Treatment is not given on consecutive days to prevent excessive skin damage and allow for recovery between sessions. After the initial course, maintenance therapy is often recommended, usually once a week, to sustain clinical improvement.

During a typical PUVA session, patients undress the affected skin areas and stand inside a light box equipped with UVA lamps. The UVA radiation exposure begins at 1-10 minutes per session, with the duration gradually increased as treatment progresses. Protective eyewear is required to prevent eye damage from UVA exposure, and patients are instructed to wear UVA-absorbing sunglasses for 24 hours post-treatment to avoid ocular complications.

## Side Effects and Management

While PUVA is generally effective, it can cause various side effects, both acute and chronic, which are important for patients to be aware of.

### Acute Side Effects

- Headache and dizziness (<1% of patients)
- Skin burn and blistering (1-2% of patients)
- Nausea (4-8% of patients)
- Skin redness (4-8% of patients)
- Itching (10-20% of patients)
- Stinging sensation (20% of patients)
- Tan or darkening of the skin (100% of patients)

The most common reason for discontinuation of PUVA therapy is nausea, which can be managed by reducing the dose or taking adjunct medications such as ginger supplements or

metoclopramide (Reglan). Most side effects are temporary and resolve after the completion of therapy.

### **Long-Term Side Effects**

- PUVA therapy has been associated with a higher incidence of SCC, a common form of skin cancer that is generally treatable with minor surgery.
- Although melanoma is less commonly associated with PUVA, there are reports suggesting an elevated risk after at least 150 treatments. However, this risk remains controversial and requires further investigation.
- The prolonged exposure to UVA radiation accelerates the aging process of the skin, leading to wrinkling and loss of skin elasticity.
- Patients may develop white or brown spots on the skin, similar to the effects of chronic sun exposure.

### **Ocular Complications**

One of the most concerning long-term side effects of PUVA therapy is the development of cataracts if the eyes are exposed to UVA radiation. To prevent this, patients must wear protective goggles during the treatment and continue wearing UVA-absorbing sunglasses for 24 hours post-treatment, even indoors. This precaution helps to minimize ocular damage, which can be irreversible without proper protection.

### **Contraindications and Precautions**

PUVA therapy is contraindicated for patients with certain conditions such as pregnancy, severe liver disease, and photosensitivity disorders. Patients are also advised to avoid direct sun exposure for 24 hours after treatment to reduce the risk of burns and exacerbating side effects. A comprehensive eye examination is recommended before initiating treatment to assess for any pre-existing ocular conditions that may predispose patients to complications.

### **Conclusion**

PUVA therapy remains a highly effective treatment for various chronic and severe skin conditions, especially psoriasis, by leveraging the synergistic effects of psoralen and UVA radiation. However, the therapy comes with notable risks, particularly with prolonged use, including the potential for skin cancer and photoaging. Patients undergoing PUVA therapy require careful monitoring, regular follow-up appointments, and adherence to protective measures to minimize the risk of adverse effects. Despite these risks, the benefits of PUVA in managing challenging dermatologic conditions often outweigh the potential harms, especially when combined with appropriate safety protocols and personalized treatment regimens.

### **References**

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