

Photodynamic Therapy for Photorejuvenation and Actinic Keratoses

Krauss Dermatology, Wellesley, MA

1. What is photodynamic therapy?

Photodynamic therapy (PDT) is the use of a medication activated by light. PDT for treating precancerous lesions (actinic keratoses), improving skin tone and erasing sun damage utilizes a topical (on the skin) solution in conjunction with a blue light, or intense pulsed light source. This treatment acts by eliminating sun-damaged and precancerous cells as well as shrinking sebaceous glands damaged by the sun.

2. How is the procedure performed?

The skin is swabbed to remove oils. Levulan Kerastick® (aminolevulinic acid) is then applied to the skin and left on for 60 minutes. The patient then rests in a reclining position with goggles on while a blue light shines on the skin for eight minutes. In some patients, Intense Pulsed Light (IPL) may be used instead of the blue light to help with brown spots and blood vessels. A titanium/zinc sunscreen is then applied.

3. Is photodynamic therapy painful?

A slight stinging, tingling or warm sensation may be noticeable during treatment with the blue light or IPL. For those patients receiving IPL photodynamic therapy (not blue light), a numbing cream may be used. It can be applied in our office after the Levulan solution has been washed off.

4. Are there any risks or side effects of treatment?

Redness, swelling, increased warmth and tingling sensations may occur for 1 to 3 days after treatment. Redness and scaling may be present for up to 1 week depending on the degree of sun damage. Rarely crusting, darkening or lightening of areas of the skin, intense redness and prolonged swelling or stinging may occur. These generally resolve with proper skin care. Sun avoidance is absolutely necessary for 48 hours after the procedure. A sunscreen containing titanium and zinc oxide must be worn daily. Patients must wear a hat to protect the face from sunlight while outside during this 48 hour period as well.

5. Is Photodynamic therapy FDA Approved?

PDT has been FDA approved for treatment of precancerous lesions (actinic keratoses). The original FDA approval involved overnight application of the Levulan medication, with light treatment the following day. Side effects and discomfort were too great with this method. For this reason, PDT is more commonly being performed with 1-3 hour application time of Levulan. PDT is also being used to treat acne because of its shrinking effects on sebaceous glands.

6. How many treatments do I need?

Current recommendations suggest 1 to 2 treatments are necessary to achieve results. Recent data suggests approximately 90% of patients obtain significant improvement from this regimen. In addition, precancerous lesions and sometimes very superficial skin cancers that are not yet visible on the skin can be cleared. Improvement likely lasts years with continued use of sunscreens and antiaging creams such as retinoids (Retrinal, Retinol, Retin-A, Renova).

Patient Instructions for Photodynamic Therapy

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Pre-PDT Instructions:

1. It is imperative to protect the treated skin from the sun for a full 4 weeks prior to PDT. This is best accomplished by the use of spf 30 sunscreen daily (containing zinc oxide) and a hat worn during times of greater exposure to the sun's rays. Any tan or "color" from the sun can increase the chance of discoloration. Artificial tanners should be stopped 3 weeks before treatment.
2. Wash your face well just prior to your appointment to remove any make-ups or creams.

Post-PDT Instructions:

1. Sun protection including spf 30 sunscreen with titanium and zinc, and a hat, are mandatory for at least 48 hours after each treatment. Reapply frequently. We highly recommend Skinceuticals Physical UV Defense which can be purchased at our office. Reapply frequently. Avoid direct sunlight to the face even for minute. Wear sun protection as above even when sitting near a window or in a car. After the first 48 hours, you may use your usual spf 30 or higher sunscreen instead of the thicker, heavier Skinceuticals product.
2. Make-up may be put on gently 3-5 days following the procedure unless there is crusting or intense redness.
3. Scrubs and facials must be avoided for 1 week after the procedure.
4. Retinoids (Retrinal, Retinol, Retin-A, Renova) and glycolic acid products may be restarted after 5 days only if the skin is no longer red, swollen or peeling.
5. Light scaling and peeling as well as mild to moderate redness are expected to occur for 2 to 7 days. Any areas of crusting or oozing should be covered at least 3 times per day with Vaseline petroleum jelly or Aquaphor ointment. Notify our office if heavy crusting, intense redness or swelling, or other unwanted side effects occur. Symptomatic relief may be obtained by placing cool tapwater compresses on the skin. Compresses made from one cup of cool tapwater mixed with one tablespoon of white vinegar may provide additional relief from discomfort if necessary. Advil (ibuprofen) and Tylenol (acetaminophen) can also help alleviate discomfort.