LIGHT THERAPY

- UVB phototherapy
- Sunlight
- Home phototherapy
- Targeted UVB therapy
- Lasers
WHAT IS PSORIASIS?

**PSORIASIS** is pronounced sore-EYE-ah-sis. It is an autoimmune disease, meaning that certain triggers cause the immune system to go into overdrive. This hyper activity can result in painful, scaly, inflamed patches of skin (plaques) that can interfere with functions as basic as walking and sleeping.

Psoriasis is a chronic (persistent) condition that is genetic in origin. It is not contagious, but it is lifelong. Psoriasis is the most common autoimmune disease in the United States, affecting approximately 7.5 million people.

Symptoms often appear sometime between the ages of 15 and 25, but the condition can develop at any age. Psoriasis occurs nearly equally in women and men and across all socioeconomic groups. It also is present in all racial groups, but at varying rates.

Though psoriasis varies from person to person, both in severity and how it responds to treatment, it’s almost always a game-changer: limiting people’s activities, plunging them into depression, and raising their risk for comorbidities (related illnesses) such as diabetes and heart disease. People with psoriasis may deal on a daily basis with pain and itch — as well as low self-esteem, relationship problems, and feeling stigmatized because of how they look.

Psoriasis is incurable, but there are a growing number of ways to treat it and manage the symptoms. Studies continue to show that treating the disease is your best bet to improve your quality of life and reduce the risk of developing comorbidities.
Psoriasis is considered mild when it affects less than 3 percent of the body. It’s considered moderate when it affects 3 to 10 percent. Psoriasis is considered severe when it covers more than 10 percent.

For most people, the surface area of one hand, including palm, fingers, and thumb, equals about 1 percent of the skin surface.

However, the severity of psoriasis can also be measured by how it affects a person’s quality of life. Psoriasis can have a serious impact even if it involves a small area of skin, such as the palms of the hands or soles of the feet.
LIGHT THERAPY OVERVIEW

LIGHT THERAPY involves exposing the skin to wavelengths of ultraviolet light under medical supervision. Treatments usually take place in a doctor’s office or psoriasis clinic. However, it is possible to follow a treatment regimen at home with sunlight or home phototherapy equipment prescribed by your doctor. The key to success with light therapy is consistency.

Targeted treatments are used for psoriasis when less than 5 percent of body surface area (BSA) is affected. In these treatments, ultraviolet light is emitted on psoriatic skin sites only. Whole-body treatments are used when more than 5 percent of BSA is covered. During whole-body treatments, ultraviolet light is emitted on both affected and unaffected skin.

LIGHT THERAPY Q & A

UVB Light Therapy

What is UVB and how does it work?

UVB, or ultraviolet light B, is present in natural sunlight. It’s an effective treatment for psoriasis. UVB penetrates the skin and slows the rapid growth of skin cells associated with psoriasis. Treatment involves exposing the skin to an artificial UVB light source for a set length of time on a regular schedule. This treatment can be administered in a medical setting or at home using a device purchased with a doctor’s prescription.

There are two types of UVB treatment, broad band and narrow band. The major difference between them is that narrow-band UVB light bulbs release a smaller range, or wavelength, of ultraviolet
light. Narrow-band UVB is becoming more popular. Several studies indicate that narrow-band UVB clears psoriasis faster than broad-band UVB.

Narrow-band UVB has emerged as an alternative to PUVA therapy, which uses the light-sensitizing medication psoralen plus exposure to UVA light. (See page 8 to learn more about PUVA.) Although narrow-band UVB treatment doesn’t produce PUVA’s long remissions, it’s easier for people to undergo and may be safer over the long term. Because doctors in the U.S. use UVB more than UVA, this booklet discusses UVB more extensively.

Who is a candidate for UVB?

Both adults and children can benefit from UVB treatment. It’s effective in treating psoriasis for at least two-thirds of patients who have these conditions:

- Thin plaques (minimal scale buildup)
- Psoriasis affecting more than 5 percent of skin surface for whole-body UVB treatment. Targeted UVB treatment can be used on more limited BSAs.
- Lesions that are responsive to natural sunlight (most lesions are)

A treatment program may include medications applied to the skin or taken by mouth, in addition to UVB. Topical medicines, such as anthralin, Dovonex (generic name calcipotriene), Vectical (generic name calcitriol) and Tazorac (generic name tazarotene) are effective along with UVB for some people. These medications can be applied after UVB treatment but should not be applied right before.

Using systemic drugs such as methotrexate, acitretin (brand name Soriatane) or biologics along with UVB may also improve the effectiveness of the treatment.
How is UVB administered?

The patient removes any clothing covering the affected skin, then exposes this area to the ultraviolet light.

For narrow-band treatment, a patient will generally have treatments three times per week. Broad-band treatments are given up to five times per week. It takes an average of 30 treatments for maximum improvement of psoriasis lesions. The first exposure to the light can be as short as a few seconds. Exposure time depends on the person’s skin type (see Table 1 below) and the intensity of the light coming from the bulbs.

<table>
<thead>
<tr>
<th>Skin Type</th>
<th>Sun History</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Always burns easily, never tans, extremely sensitive skin</td>
</tr>
<tr>
<td>II</td>
<td>Always burns easily, tans minimally, very sensitive skin</td>
</tr>
<tr>
<td>III</td>
<td>Sometimes burns, tans gradually to light brown, sun-sensitive skin</td>
</tr>
<tr>
<td>IV</td>
<td>Burns minimally, always tans to moderate brown, minimally sun-sensitive</td>
</tr>
<tr>
<td>V</td>
<td>Rarely burns, tans well, sun-insensitive skin</td>
</tr>
<tr>
<td>VI</td>
<td>Never burns, deeply pigmented, sun-insensitive skin</td>
</tr>
</tbody>
</table>

Because people with lighter skin absorb more light (and sunburn more easily), they start with shorter exposure times than people with darker skin. If there is no itching and/or tenderness from the previous session, the next treatment will be longer.

Administering UVB light is not an exact science. No one’s reaction to the light is completely predictable.

UVB treatment requires a significant time commitment. Individuals get the best results when they receive regular follow-up treatments and stick
to the treatment plan they make with their doctor. A doctor may require a patient to do one or more of the following before each UVB treatment:

- Inform medical staff of medications used, topically or internally
- Soak in warm water for 30 minutes to remove psoriasis scales
- Protect certain areas of skin (for example, neck, lips and nipples) with sunscreen
- Cover genitals
- Cover unaffected areas of the body (such as the face) with a cloth to shield them from unwanted light exposure

Some studies suggest that mineral oil and petroleum jelly applied in a thin layer before treatment can improve the ability of light to penetrate the skin. Talk to your doctor before trying this method.

Any other topical application left on the skin may block some or all of the UVB light and reduce the effectiveness of the treatment. This is especially true of salicylic acid and thick, white moisturizers. To receive the maximum benefit from light therapy, it is important to talk to your doctor about all moisturizers and topical medications you are using.

**What are the side effects of UVB?**

In general, short-term side effects include burns and blisters. Generally, these side effects go away with a lower dose or if the drug is stopped. Long-term effects include premature aging of the skin.

**What happens once the skin clears?**

Once the lesions disappear, phototherapy may be stopped. People can resume phototherapy when lesions begin to reappear.

However, studies show that continued UVB treatments after the skin clears can increase length of remission time. Most people need about eight maintenance treatments per month to prolong skin clarity, but this is different for every person.
If psoriasis lesions return, a person may start receiving three treatments per week again. Sometimes rotating different psoriasis treatments can give the skin a break from UVB. This reduces the risk of possible side effects.

**Sunburn**

Certain medications, herbal supplements and topical ingredients can increase sensitivity to light. It’s important for people to tell their doctors about all medications, treatments and dietary supplements (including vitamins and herbal medicines) they are taking. Avoid exposure to natural sunlight on UVB treatment days. The combination of the treatment light and natural UVB light can result in overexposure.

**Skin cancer**

UVB in sunlight is an established carcinogen (cancer-causing agent). UVB in phototherapy differs from UVB in sunlight, so the risk of skin cancer from phototherapy may be less. Narrow-band UVB is thought to have less skin cancer risk than PUVA. Nevertheless, it’s important to have your skin examined by a health care provider periodically. If detected early, skin cancer is usually treatable.

**PUVA**

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

Like UVB, ultraviolet light A (UVA) is present in sunlight. UVA is used with a light-sensitizing medication such as psoralen. This process, called PUVA, slows down the excessive cell growth of psoriasis and can clear symptoms for varying lengths of time.

Studies show that PUVA clears psoriasis for more than 85 percent of patients. Even without maintenance treatment, it induces long remission times that can last from a few months to more than a year.
PUVA is recommended for adults who have moderate to severe psoriasis. Stable plaque psoriasis, guttate psoriasis and psoriasis of the palms and soles are most responsive to PUVA treatment.

PUVA is not normally given to 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.

How is it used?

Oral PUVA—the most common form—requires the patient to take psoralen pills 75-120 minutes before entering the UVA light booth.

Topical PUVA comes in three forms:

01. **Paint**
   - A psoralen preparation in ointment or liquid form is painted directly on lesions.

02. **Soak**
   - Affected areas are immersed in a basin of water that contains psoralen.

03. **Bath**
   - The entire body is immersed in a tub of water that contains psoralen.

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

What are the side effects of PUVA?

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

PUVA treatments are no longer as commonly used as in the past. This is because of the increased
risk of non-melanomic skin cancer. PUVA can also increase the risk of cataracts if the eyes are not protected for 12 to 24 hours after a treatment. People who have received more than 150 PUVA treatments within five years are at a higher risk for premature aging of the skin as well.

**Sunlight**

**How is it used?**

Although both UVB and UVA are found in sunlight, UVB is the light that works best for psoriasis. UVB from the sun works the same way as UVB in a doctor’s office.

Short, multiple exposures to sunlight are recommended. Your doctor will recommend how much exposure time to start with and by how much you should gradually increase that time. To get the most benefit from the sun, all affected areas should receive equal and adequate exposure.

Avoid overexposure and sunburn. It can take several weeks or longer to see improvement. A dermatologist should check regularly for sun damage.

**Who should not use it?**

Some topical medications can increase the risk of sunburn. People using topical products should talk with a doctor before seeking sun exposure for treatment. People who are using PUVA or other forms of light therapy should limit or avoid exposure to natural sunlight unless directed by a doctor.

**What are the side effects?**

**Sunburn**

Just as some people experience a psoriasis flare-up when they injure their skin, sunburn can cause the same problem. Sunburn can also increase the risk of skin cancer and premature aging.

Sunburn can be treated with cool oatmeal baths,
fragrance-free moisturizers or over-the-counter hydrocortisone creams. Taking aspirin can also help with the pain associated with sunburn. Medical attention is advisable for severe sunburn accompanied by a headache, chills or fever.

**Skin cancer**

Exposure to sunlight increases the risk of skin cancers such as basal cell carcinoma, squamous cell carcinoma and actinic keratoses. These non-melanoma cancers often appear as a change in the skin. Using sunscreen can reduce the risk.

**Premature aging**

According to the American Academy of Dermatology (AAD), just a few minutes of sunlight exposure each day over the years can cause skin to show signs of aging. Signs of aging include freckles, age spots, spider veins on the face, rough and leathery skin, fine wrinkles that disappear when stretched, loose skin and a blotchy complexion.

It is very important to use sunscreen on areas of the body without psoriasis to prevent skin damage, signs of aging and cancer. Recommendations by the AAD for using sunscreen on skin unaffected by psoriasis include:

- Wear a broad-spectrum sunscreen (this protects against UVA and UVB) with a sun protection factor (SPF) of at least 30
- Use sunscreen every day if sun exposure lasts for more than 20 minutes
- Apply sunscreen to dry skin 15 to 30 minutes before going outdoors
- When applying sunscreen, pay particular attention to the face, ears, hands and arms, and generously coat the skin
- Reapply sunscreen every two hours and immediately after swimming or strenuous activity

Sensitivity to sun varies from person to person (see Table 1 on page 6). People with skin types I-IV, who are most likely to experience sunburn, benefit from
Over-the-counter sunscreens.

Home Phototherapy

What is home phototherapy?
Treating psoriasis with a phototherapy device at home can be an economical and convenient choice. Like phototherapy at a clinic, it requires a consistent treatment schedule. Often, people begin treatment at a medical facility. Later, they begin using a light unit at home. There are home phototherapy devices available for psoriasis limited to certain parts of the body and psoriasis that is widespread. All phototherapy requires a prescription.

A dermatologist experienced in home phototherapy provides a schedule to follow. The length of exposure to ultraviolet light depends on skin type (see Table 1 on page 6), the type of UVB device and the intensity of light emitted from the device.

Just as with phototherapy at a clinic, people should take care to protect their eyes and other sensitive areas. Protective eyewear must be worn to protect the eyes from permanent damage. Men should also shield their genitals with clothing (see page 15 for more details). A doctor can provide more guidance.

The most important advice for using home phototherapy is to follow your doctor’s instructions. Even though the treatment is at home, continue with regular checkups. Home phototherapy is a medical treatment that requires monitoring by a medical professional. Contact your health care provider if you notice any unexpected effects.

How should I choose phototherapy equipment?

You can get detailed information about the types of home phototherapy equipment available directly from manufacturers. A dermatologist will also have more information about these devices.
Here are a few important tips to keep in mind when choosing phototherapy equipment:

- Look for safety features in home UVB equipment, such as key switches or disabling keys that make the unit inoperative when the owner is not around
- Check for safety guards or grids over the bulbs
- Ask whether the price includes shipping and/or assembly charges
- Find out if the company sells replacement bulbs and their cost

Check with your health insurer to see if they will pay a percentage of the cost of home phototherapy equipment.

Targeted UVB Treatment

When is targeted UVB treatment used?

Targeted UVB treatments are used only on skin affected by psoriasis, unlike whole-body ultraviolet light treatments, which target widespread disease and expose normal skin as well as affected skin to ultraviolet light. Targeted UVB treatments are used when less than 5-10 percent of BSA is covered with psoriasis. They are beneficial because higher doses of light therapy can be used right away. That results in fewer treatments overall when compared with the number of whole-body UVB treatments needed.

Additionally, if someone experiences a burn while using targeted UVB treatments, this burn will be limited to the area affected by psoriasis. Targeted UVB is useful for hard-to-treat areas such as the scalp, hands and feet.

Lasers

When are lasers used?

The excimer laser, approved by the FDA in 1997 for psoriasis treatment, emits a high-intensity beam of ultraviolet light very similar to the light delivered by narrow-band UVB units.
The excimer laser’s beam is less than an inch across. It can target selected areas of the skin affected by psoriasis. Excimer laser is indicated for adults and children with mild or moderate psoriasis. Studies show the excimer laser is particularly effective for scalp and palmoplantar psoriasis.

Similar to narrow-band UVB, the excimer laser focuses directly on individual lesions and penetrates deeper into the skin. The excimer laser has the advantage of treating only involved skin, therefore minimizing potential risks of exposing normal-appearing skin to UV radiation. Individual response to the treatment varies. It can take an average of four to 10 sessions to begin to see results. Two treatments per week are recommended, with a minimum of 48 hours between treatments.

Dosage

There are few studies on the best dosage and scheduling of excimer laser. Your doctor will consider your skin type and the thickness of psoriasis plaques to determine the dose; dosages are adjusted based on the response to therapy or development of side effects. Treatment with the excimer laser is two to three times a week, with a minimum of 48 hours between treatments.

Remission time/success rate

Although treatment with the excimer laser can clear psoriasis, there is little information on how long psoriasis stays clear. One study suggests that the average remission time is three to four months after therapy stops.

Side effects

Because excimer laser therapy is targeted to only the skin affected by psoriasis, side effects like erythema, burning, and hyperpigmentation occur only on the skin being treated. Higher exposure can result in blisters. The long-term safety of excimer laser therapy has not yet been fully established.
Precautions and potential drug interactions

- A person taking photosensitizing medications or who has photosensitivity disorders may need a lower dose of excimer laser
- Excimer laser has not been studied in pregnant patients with psoriasis, but it’s unlikely to cause birth defects or complicate pregnancies because the treatment is targeted to only the psoriatic skin

There are few data regarding the use of the excimer laser on children with psoriasis, but expert opinion is that it is safe.

TIPS FOR PROTECTION AND COMFORT WITH LIGHT THERAPY

Protect sensitive areas

Light therapy patients need to protect unaffected skin during treatment. Men should shield their genitals using an athletic supporter, shorts or a towel, unless that area is being treated. Men and women should apply sunscreen to their nipples.

The face, lips, and ears should be protected with sunscreen or cloth during treatment even if psoriasis is present.

Report any new medications

It’s important to tell your doctor when taking any new prescription and over-the-counter medications or supplements as some may increase the risk of burning. These include some antibiotics, anticancer drugs, antidepressants, antihistamines, antihypertensives, antiparasitics, antipsychotics, diuretics, hypoglycemics, nonsteroidal anti-inflammatory drugs and oral contraceptives.
Wear protective glasses

Long-term exposure to ultraviolet light can produce cataracts. If you sunbathe regularly, invest in high-quality sunglasses from an optical shop. Sunglasses sold in retail stores probably do not provide necessary protection unless they are marked “100 percent UVA and UVB protection.” An ophthalmologist or optometrist can recommend a brand of glasses.

Know the signs of skin cancer

The following noticeable skin changes may be signs of skin cancer:

- A sore that does not heal
- Areas of the skin that are:
  - Small, raised, smooth, shiny and waxy
  - Small, raised and red or reddish-brown
  - Flat, rough, red or brown and scaly
  - Scaly, bleeding or crusty
  - Similar to a scar and firm

People who notice any of these signs should see a doctor immediately.

Tanning beds

Tanning beds in commercial tanning salons emit mostly UVA light, not UVB. Both UVA and UVB are found in natural sunlight, but the beneficial effect for psoriasis is attributed to UVB. The spectra of light in tanning beds vary greatly and often include wavelengths of light that are carcinogenic and can damage the skin.

Moreover, unlike physician-prescribed phototherapy units, UVA is relatively ineffective unless used with the light-sensitizing medication psoralen [see PUVA above]. Psoralen should not be used with tanning beds as it may result in severe sunburn. Psoriasis often affects previously injured skin and the damage caused by sunburn can worsen psoriasis.
The American Academy of Dermatology, the U.S. Dept. of Health and Human Services, the World Health Organization and the National Psoriasis Foundation (NPF) Medical Board all discourage the use of tanning beds and sun lamps. Tanning beds are not a substitute for phototherapy.

Access to phototherapy

Phototherapy is one of the safest and most cost-effective therapies for psoriasis and is a front-line therapy option for psoriasis patients with limited treatment options, including children, pregnant women, nursing women and immunosuppressed patients. However, reimbursement cuts to physicians and disproportionately high copayments for patients threaten access to this important treatment option.

NPF works diligently to bring these critical issues to the attention of insurance companies, policy makers, and the public. Our advocacy efforts have helped to stop significant reductions in physician reimbursement rates that would have drastically reduced phototherapy access. We will continue to fight to preserve access to phototherapy.
BILL OF RIGHTS AND RESPONSIBILITIES

For People with Psoriasis and Psoriatic Arthritis

01. You have the right to receive medical care from a health care provider who understands that psoriasis and psoriatic arthritis are serious autoimmune diseases that require lifelong treatment.

02. It’s your responsibility to get involved in managing your disease by participating in health care decisions, following treatment plans and making healthy lifestyle choices.

03. You have the right to a health care provider who can fully assess your disease and related conditions, knows the benefits and risks of treatments and medications, and readily coordinates treatment plans with your other providers.

04. It’s your responsibility to be honest with your health care provider about any health and lifestyle decisions that may affect the success of your treatment plan.

05. You have the right to clear or almost clear skin with effective treatment throughout your lifetime. Seek another health care provider if your current provider is not comfortable prescribing and monitoring psoriatic disease treatments.
06. It’s your responsibility to ask for support and encouragement from your loved ones, your doctors, and anyone else you feel comfortable with discussing personal and health issues.

07. You have the right to be treated in a courteous and nondiscriminatory manner by health care providers, employers and others.

WE’RE HERE FOR YOU
At NPF, our priority is giving you the information and services you need to take control of your psoriasis and/or psoriatic arthritis, while funding research to find a cure.

Research
Finding a cure for psoriasis and psoriatic arthritis is our highest priority. We’re working for you by:

- Funding promising new studies through our Discovery and Translational grants programs
- Increasing the number of scientists doing research through our Medical Dermatology Fellowship program
- Hosting the world’s largest collection of psoriasis DNA for genetic research

Advocacy
We’re ensuring that people with psoriasis and psoriatic arthritis have a say in the policies that affect their lives. Join us as we:

- Work to increase federal funding for psoriasis and psoriatic arthritis research
- Improve access to health care for patients
Health education

NPF is your one-stop shop for news and information about psoriasis and psoriatic arthritis. Visit www.psoriasis.org to learn more about:

- The latest treatment information and research updates
- Health events in your area

Connection

Sometimes the best resource to manage psoriasis and psoriatic arthritis is another person with your condition. Share information and get support from:

- TalkPsoriasis.org, the largest online community for people affected by psoriasis and psoriatic arthritis
- Psoriasis One to One mentor program: www.psoriasis.org/one-to-one
- Team NPF Walk, Run, Ride and DIY events: www.teamnpf.org

Learn more

Find more information and resources at www.psoriasis.org.
NPF is a 501 (c) (3) charitable organization governed by a volunteer Board of Directors and advised on medical issues by a volunteer Medical Board.

NPF’s educational materials are reviewed by members of our Medical Board and are not intended to replace the counsel of a physician.

NPF does not endorse any medications, products or treatments for psoriasis or psoriatic arthritis and advises you to consult a physician before initiating any treatment.

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- Yes, I want to join the National Psoriasis Foundation. Please send me a bill for $35.

For faster service, join online at www.psoriasis.org or call 800-723-9166.

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