Laser and Light Treatments for Rosacea

Today, dermatologists can choose from an increasing array of laser and non-laser light treatments available for treating rosacea. For several decades, laser therapy has provided a scalpel-free form of surgical and cosmetic treatment for the facial redness associated with rosacea. A recent form of light therapy called intense pulsed light (or IPL) has also emerged as a promising treatment that boasts very little recovery time.

The benefits of laser and light treatments, which include a dramatic reduction in symptoms with low side effects, are especially effective for forms of rosacea involving facial redness, visible red blood vessels (telangiectasia), and rhinophyma (enlarged nose). This therapy has not yet shown to be as successful for the bumps and pimples of papulopustular rosacea, which may be more effectively treated with oral and topical medications.

This handout will help you understand the benefits, risks, and issues to consider for laser and IPL therapies, so that you can make an informed choice when talking with your dermatologist about how to treat your rosacea. The information will include findings from some recent studies investigating the safety and effectiveness of laser and light therapy in treating rosacea.

How Do Lasers Work?

Laser therapy works by using high-energy beams of light to heat and disintegrate tiny blood vessels under the skin, as well as sculpt areas of the face that have been disfigured by rosacea. Lasers are used to treat these signs of rosacea:

- Persistent redness
- Dilated, visible blood vessels
- Thickening skin on nose and cheeks (also known as rhinophyma)

For the first two symptoms, dermatologist may use a pulsed dye laser (PDL), which delivers pulsed light beams (instead of a continuous wave of light) to treat damaged skin while leaving surrounding tissue intact.

Results from a recent study showed significant improvement (such as a 40%–60% reduction in facial redness) after just one or two of these types of laser treatments, with ongoing improvements maintained with each ensuing treatment. Patients in the study also reported less flushing, burning, itching, dryness, swelling, and sensitivity.¹

The study also monitored the side effects from PDL therapy, which included crusting and dark spots around treated areas. Physicians in the study treated the side effects successfully, and the side effects did not diminish PDL’s other benefits.

Another side effect is bruising, notable because the same study found that PDL treatment is more effective when the pulsed dye laser causes temporary bruising, which may last for 1 to 2 weeks. Newer pulsed dye lasers (such as the KTP, diode, and Nd:YAG lasers) are less likely to cause bruising; however, for that reason researchers found these lasers may not reduce redness, burning, and itching as effectively as the older PDL treatment.
A more advanced form of rosacea is the thickened skin on the nose and cheeks, which is called rhinophyma. This condition calls for a more ablative treatment, such as a CO₂ or erbium:YAG laser, which reshapes the affected tissue by cutting, heating, or abrading it. For tenacious cases of rhinophyma, some physicians combine this type of laser therapy with another procedure such as dermabrasion.

**What Is Intense Pulsed Light (IPL) Therapy?**

IPL is a non-laser light therapy that was approved in 1995 by the FDA. Although initially used for treating dilated facial blood vessels, dermatologists in recent years have expanded IPL’s uses for the persistent redness and flushing of rosacea.

Intense pulsed light therapy works by sending light energy through the skin’s outer layer to the dermal layer underneath, which minimizes visible after-effects and reduces healing time. Because IPL works from the skin’s inner layer, the side effects are generally much milder than those of laser therapy or other treatments such as dermabrasion.

As a newer form of light therapy, IPL has been the subject of several recent studies, with results confirming IPL’s promise as safe and effective tool for reducing the signs of rosacea.

For example, researchers in the Netherlands used IPL therapy on sixty patients afflicted with visible red blood vessels (telangiectasia), treating a total of 508 instances of these signs. The results showed meaningful, sustained results for clearing up rosacea symptoms. After three years and a 77.8% rate of symptom clearance, the rate of lesion recurrence was less than 1%. Patients in the study reported minimal side effects.²

Another study examined IPL’s effects on a broader set of rosacea symptoms, treating patients for persistent redness, flushing, and breakouts. After a regimen of one to seven IPL treatments, the 32 patients in the study yielded these results:

- An average of 83% experienced reduced redness.
- An average of 75% reported less flushing and improved skin texture.
- An average of 64% reported fewer acne-like breakouts.

³

Although studies do indicate that some patients will experience no significant benefits from IPL therapy, most will see some reduction in symptoms, especially in dilated blood vessels and facial redness. Side effects are temporary and include redness, swelling, bruising, pigment, and crusting and blistering. Your dermatologist may conduct a patch test to see how your skin will react.

**Is Laser and Light Therapy the Right Choice for Me?**

Even with such encouraging findings, the study results nonetheless indicate that some rosacea patients will see little or no effect from treatment. These therapies are not for everyone. If you are considering laser therapy or IPL to treat your rosacea, keep the following points in mind:

1. **Expense**—These therapies are not typically covered by health insurance, so you may have to cover the expense of these treatments out of your own pocket. Each treatment session may cost several hundred dollars per session, and multiple sessions and follow-up treatments may be required.
2. **Not a quick fix**—Laser and light therapies may seem like a miracle cure, given that many patients do see long-term, dramatic results. But there is no cure yet for rosacea, and laser and light therapies may provide only temporary or partial relief of your symptoms. It is important that you continue to avoid triggers, avoid sun exposure, and be aware that you may need multiple or maintenance treatments, as well as supplemental medications.

3. **You may not be a candidate**—Patients with the following conditions may not be eligible for laser and light therapies:
   - Clotting disorder
   - Tendency to develop keloids (thick fibrous scars from skin injuries)
   - Diabetes
   - Pregnancy
   - Light sensitivity

   Also, if you have even a mild suntan, you may have to wait until your skin fades to its palest color before receiving laser and light therapies.

**Further Reading**


   *Pulsed dye laser treatment of rosacea improves erythema, symptomatology, and quality of life*

   **Abstract:**

   **Background:** Persistent erythema and dysesthetic symptoms are typical manifestations of rosacea.

   **Objective:** We sought to assess improvement in erythema, symptoms, and quality of life after pulsed dye laser treatment.

   **Methods:** Sixteen patients with erythematotelangiectatic rosacea participated. Spectrophotometric erythema measurements were taken from the right and left malar prominence; chin; and nasal alae, dorsum, and tip. A questionnaire rating the Dermatology Life Quality Index and symptoms of flushing, burning, itching, dryness, swelling, and skin sensitivity was completed. Treatment was undertaken with the pulsed dye laser at purpuragenic fluences. Measurements and treatment were repeated at 8-week intervals for a total of two treatments.

   **Results:** A statistically significant improvement was observed in symptoms, quality-of-life score, and erythema in all areas with the exception of erythema of the left nasal ala.

   **Conclusions:** Pulsed dye laser treatment at purpuragenic fluences is a safe and effective treatment for symptomatic rosacea, resulting in a significant improvement in erythema, symptoms, and quality of life.


   *Effective treatment of rosacea using intense pulsed light systems.*
Abstract:

**Background:** To date, a variety of lasers have been used for treating vascular skin lesions. Intense pulsed light (IPL) is a proven technology for vascular lesion management, such as rosacea.

**Objectives:** The aim of this study was to test the effectiveness of IPL in treating vascular facial lesions in rosacea patients.

**Methods:** Sixty patients presenting with telangiectasia owing to facial rosacea were selected randomly from the patient population in the Department of Laser Therapy at the Medical Centre Maastricht, the Netherlands. Patients of various skin types (Fitzpatrick I-IV) were selected with an average age of 44.2 years. Five hundred eight sites were treated, with a mean of 4.1 treatments per site and an IPL spectrum ranging from 515 to 1,200 nm with different pulse durations between 4.3 and 6.5 milliseconds. The energy density varied from 25 to 35 J/cm².

**Results:** Patients were assessed clinically and photographically. A mean clearance of 77.8% was achieved and was maintained for a follow-up period averaging 51.6 months (range 12-99 months). No correlation was found between the clearance of rosacea and patient-related or technical data. For approximately 3 years post-treatment, lesion recurrence was noted in 4 of the 508 treated facial sites.

**Discussion:** This study demonstrated that IPL treatment of facial rosacea is effective in obtaining clearance of 77.8%, with minimal side effects, and that treatment effects are maintained.

**Conclusion:** The IPL system, with its broad range of technical variables, is an effective tool in achieving meaningful and lasting rosacea clearance.


*Treatment of rosacea with intense pulsed light*

Abstract:

Rosacea is a chronic disease that affects millions of men and women. Topical and oral antibiotics are effective yet often leave individuals with treatment plateau associated erythema and persistent flushing. We investigated the use of intense pulsed light for treatment of the redness, flushing, and breakouts associated with rosacea. Thirty-two consecutive patients of Fitzpatrick skin types I-III underwent 1 to 7 treatments with intense pulsed light. Patients were assessed clinically and photographically. In addition, patients completed a detailed questionnaire regarding their response to treatment. Following treatment, 83% of patients had reduced redness, 75% noted reduced flushing and improved skin texture, and 64% noted fewer acneiform breakouts. Complications were minimal and transitory. It appears that intense pulsed light is an effective treatment for the signs and symptoms of rosacea and represents a new category of therapeutic options for the rosacea patient.

**Sources**

- *Types of Laser Treatments.* International Rosacea Foundation.