

Acne

[Dermatol Surg.](#) 2004 Feb;30(2 Pt 1):139-46.

Light therapy in the treatment of acne vulgaris.

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BACKGROUND: Over the past decade, lasers and light-based systems have become a common modality to treat a wide variety of skin-related conditions, including acne vulgaris. In spite of the various oral and topical treatments available for the treatment of acne, many patients fail to respond adequately or may develop side effects. Therefore, there is a growing demand by patients for a fast, safe, and side-effect-free novel therapy.

OBJECTIVES: To address the role of light therapy in the armamentarium of treatments for acne vulgaris, to discuss photobiology aspects and biomedical optics, to review current technologies of laser/light-based devices, to review the clinical experience and results, and to outline clinical guidelines and treatment considerations.

RESULTS: Clinical trials show that 85% of the patients demonstrate a significant quantitative reduction in at least 50% of the lesions after four biweekly treatments. In approximately 20% of the cases, acne eradication may reach 90%. At 3 months after the last treatment, clearance is approximately 70% to 80%. The nonrespondent rate is 15% to 20%.

CONCLUSIONS: Laser and light-based therapy is a safe and effective modality for the treatment of mild to moderate inflammatory acne vulgaris. Amelioration of acne by light therapy, although comparable to the effects of oral antibiotics, offers faster resolution and fewer side effects and leads to patient satisfaction.

[Dermatol Ther.](#) 2005 May-Jun;18(3):253-66.

Optical treatments for acne.

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Light-based treatments for acne are becoming increasingly commonplace in dermatology. This article reviews various light approaches in acne therapy. Methods are discussed from an anatomical and a functional perspective. The emphasis is on the practicality of treatment as well as the pros and cons of various devices. Also, a review of the recent literature is presented. The article is intended to give the reader a panoramic view of this still-young and developing area. Most likely, light-based acne treatment will receive more popularity as dermatologists learn how to integrate this type of therapy within the context of more established drug agents.

1: [Hautarzt](#). 2005 Nov;56(11):1027-32.

Light, laser and PDT therapy for acne

[Article in German]

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In recent years, a number of studies have evaluated the treatment of acne using electromagnetic waves, such as lasers, photodynamic therapy, visible light or radio waves. While the efficacy of laser treatment is still uncertain, photodynamic therapy shows promising results, but with marked side-effects, as destruction of sebaceous glands. Treatment with blue light (405-420 nm wavelength) also appears effective and can be regarded as an treatment option for inflammatory acne.

[Semin Cutan Med Surg](#). 2005 Jun;24(2):107-12.

Lasers and light therapy for acne vulgaris.

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Acne vulgaris remains an emotionally and debilitating dermatologic disease, and is conventionally treated with a variety of oral and topical therapies with a number of significant side effects. An evolving understanding of laser-tissue interactions involving *Propionibacterium acnes*-produced porphyrins, and the development of infrared nonablative lasers to target sebaceous glands, has lead to the development of an escalating number of laser, light and radiofrequency devices for acne. Used as monotherapy or in combination, these devices are showing promise as a method to clear

acne in a convenient, non-invasive manner, though there remains a clear need for long-term data and randomized, blinded studies.

[J Cosmet Dermatol](#). 2005 Dec;4(4):318-20

Light/laser therapy in the treatment of acne vulgaris.

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Acne vulgaris is one of the most prevalent skin diseases known. As common as this condition is, the social and psychological consequences are limitless. Although current treatments are available and include topical or oral antibiotics, it is crucial to develop a less risky and more effective therapy such as light/laser therapy. This article focuses specifically on the benefits of the light/laser treatment on acne vulgaris. Porphyrins accumulated in the bacteria, *Propionibacterium acnes*, one of the etiologic factors involved in the pathogenesis, allows phototherapy to be a successful modality. They have specific absorption peaks at which lasers have optimal effects. The longer the wavelength of the light is, the deeper its penetration and thus the greater its damage to the sebaceous glands. Although blue light is best for the activation of porphyrins, red light is best for deeper penetration and an anti-inflammatory effect. Ultraviolet (UV) light, although it may have initial anti-inflammatory effects, has been proven to be potentially carcinogenic and have adverse effects such as aging (by UV-A) and burning (by UV-B). Previous studies indicate successful long-term intervention and selective damage of the sebaceous glands by using a diode laser with indocyanine green (ICG) dye. Mid-infrared lasers have been found to decrease lesion counts while also reducing the oiliness of skin and the scarring process. Nonablative laser treatment of acne scars using the Er:YAG laser with a short-pulsed mode has been successful in reducing the appearance of scars by stimulating neocollagenesis. The light/laser therapy has started to be explored with promising results in highly selected patients that require further investigation in greater populations and well-designed protocols.

[J Cosmet Laser Ther](#). 2004 Dec;6(4):191-200.

The new age of acne therapy: light, lasers, and radiofrequency.

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BACKGROUND: Current treatments for acne vulgaris include topical and oral medications that counteract microcomedone formation, sebum production,

Propionibacterium acnes, and inflammation. Concerns about the short- and long-term consequences of these medications, along with technological advancements, have to significant progress in the management of acne. These developments include light, laser, and radio frequency, which may offer faster onset of action, equal or greater efficacy, and greater convenience than traditional approaches. CONCLUSION: Research emphasizing long-term follow-up and comparative, randomized trials is necessary to determine whether these emerging technologies will become a viable alternative to standard therapies such as antibiotics.

[Cutis](#). 2003 May;71(5):353-4.

Lasers, light, and acne.

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Acne vulgaris is a highly prevalent disease with significant potential for physical and emotional scarring. Acne lesions have long been noted to improve after exposure to sunlight. This improvement may be secondary to activation of endogenous porphyrins produced by Propionibacterium acnes. Recently, several investigators have presented studies in which light of particular wavelengths has been used to treat acne vulgaris. In this article, we review the results of these studies as we look to the future of light-based acne treatment.