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Blue light acne treatment

Blue light acne treatment is a non-invasive procedure that uses light in the blue wavelength range of 405–420 nm to kill the *Propionibacterium acnes* or *P. acnes* bacteria in skin. This [photodynamic therapy](#) is FDA-approved for the treatment of moderate [acne vulgaris](#) or acne vulgaris that has not responded to other acne therapies.

How does it work?

The bacteria in acne release porphyrins. These are naturally occurring substances in the body, arising from the breakdown of haemoglobin in red blood cells. When porphyrins absorb light of certain wavelengths, free radical damage is produced, and this destroys the bacteria. Blue light acne treatment uses a narrow-band, high-intensity blue light source that is readily absorbed by porphyrins released by the bacteria causing acne.

Former light therapies used UV light (usually [UVB](#)), which can be damaging to skin. Hence UV light is no longer used to treat acne and blue light devices currently available for use do not contain ultraviolet (UV) light.

Blue light acne treatment can be used alone or in conjunction with a photosensitizing agent such as topical aminolevulinic acid (ALA) hydrochloride solution (Levulan® and Kerastick®). Pre-treatment with the photosensitiser appears to offer additional reduction of lesions and pustules but will cause a crusting reaction for a few days.

What does the procedure involve?

Blue light acne treatment is administered via a blue light delivery system. The procedure simply involves a patient sitting in front of a blue light lamp for about 15 minutes. Generally 2 sessions per week over a 4-week period is all that is required.

Pre-treatment with ALA requires the topical application of ALA 30 minutes prior to sitting in front of the blue light lamp for about 8 minutes. Treatments are usually spaced at 2-week intervals. The number of treatments depends on the severity of acne and improvements seen.

Blue light acne treatment is available from a dermatologist and the procedure performed in their rooms. Although blue light delivery systems can be purchased and self-administered at home, a dermatologist should oversee its use.

How effective is it?

Several small studies have shown that blue light acne treatment appears to improve acne vulgaris with a reduction in inflammation and the number of pustules and papules in some individuals. In one study, nodulocystic acne lesions worsened when treated with blue light.

Further large, controlled studies are needed to prove their efficacy and long-term effects. Other treatments for acne may be more suitable in the individual case.

Are there any side effects?

Side effects are generally minor and include:

- Swelling of the treated areas and dryness

- Temporary pigment changes

Related information

References:

On DermNet NZ:

- [Acne vulgaris](#)
- [Acne management](#)
- [Photodynamic therapy](#)
- [Cosmetic procedures](#)

Other websites:

- [Are laser and light treatments really light years ahead of conventional acne therapy?](#) - AcneNet

Books about skin diseases:

See the [DermNet NZ bookstore](#)

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DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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