

# VersaClear™ Skin Therapy System (STS)

## FAQs

### Acne

**Question:** Why use blue light?

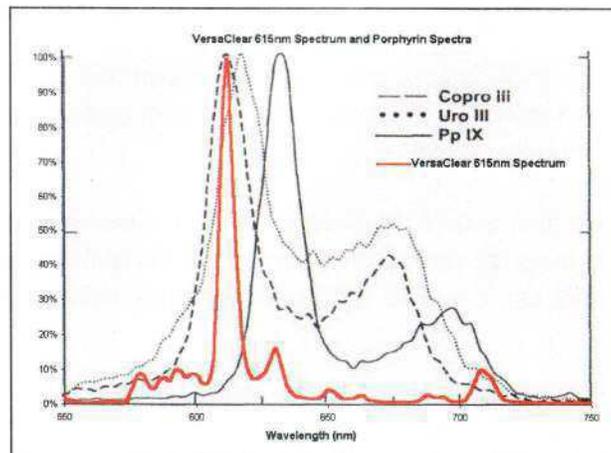
**Answer:** Inflammatory acne is characterized by colonization of sebaceous glands by *P. acnes* bacterium that produce and accumulate chemical porphyrins, mainly coproporphyrin III (CPIII). CPIII and other porphyrins (e.g. protoporphyrin IX) are endogenous photosensitizers. They are highly absorptive of visible light in the blue spectrum referred to as the “Soret Band”.

Photo-excitation of porphyrins with blue light results in the production of reactive oxygen species (ROS), the main constituents of which are singlet oxygen ( $^1O_2$ ), hydrogen peroxide ( $H_2O_2$ ) and superoxide anion ( $O_2^-$ ). ROS in localized high concentrations is bactericidal, and in low concentrations (zones not populated with *P. acnes*) is mitotic and proliferative. Photoactivation of CPIII also imparts anti-erythema effects to the skin.

**Question:** Why use red light?

**Answer:** Red light penetrates deeper into the skin than does blue light. It is 10 times less effective than blue light at photo-activating porphyrins, but its greater depth of penetration allows for the treatment of deeper tissues. In addition, red light also has anti-inflammatory properties by influencing cytokine release from macrophages and other cells. The net effect is fibroblast proliferation and the production of growth factors that influence the inflammatory process, healing, and wound repair. Red light also may increase microvascular circulation, thereby promoting the body’s natural healing processes.

A unique attribute of VersaClear red light (615nm peak) is that its wavelength coincides with the maximum absorption peak of CPIII, a porphyrin that is produced in abundance by *P. acnes* bacterium as shown in the graph below.



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### *Acne (cont'd)*

**Question:** Why use alternating blue and red light?

Answer: The combination of blue and red light therapy combines the anti-bacterial effects of blue light with the deeper and anti-inflammatory effects from red light. In addition, the mild warmth imparted into the skin by VersaClear Icteron Light Modules speeds chemical reactions (Arrhenius equation). The mild heat also dilates blood vessels to maximize oxygen perfusion. These combined effects work synergistically to optimize the benefits of VersaClear light treatments. Blue and red light modules are easily and quickly interchanged, and maximize instrument versatility.

**Question:** What treatment protocols are recommended for acne?

Answer:

2 Weeks Prior to Light Therapy – Consider the use of Tazorac 2 weeks prior to initiating light therapy. If this is not possible, then microdermabrasion or a mild peel for removal of the upper stratum corneum is recommended prior to initiating light sessions. In addition, for patients with high-grade inflammation, the physician should consider the use of a topical retinoid such as Tretinoin or Retin-A.

Immediately Before Light Therapy – Cleanse skin thoroughly to remove all makeup, pollutants, sunscreen and dead skin. Microdermabrasion, a mild peel, or a vigorous alcohol or medical-grade acetone scrub are common skin preparation techniques.

#### Light Therapy

- o Blue Alone (420 nm) light alone; VersaClear STS 420 Light Modules – 20-minute sessions twice per week, spaced at least 48 hours apart, for 4 week to 6 weeks.
- o Alternating Blue and Red; VersaClear STS 420 (blue) and STS 615 (red) Light Modules – Alternate 20-minute Blue (420nm) and Red (615nm) sessions twice per week, spaced at least 48 hours apart, for 4 weeks to 6 weeks.

In Between Sessions – The use of an anticomedonal preparation (e.g. Differin, Retin-A, topical isotretinoin) and/or salicylic wash in between light sessions is essential.

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**Question:** What results can I hope to achieve?

Answer: You can expect the average improvement in acne lesions to be from 60% to 80% and to last for 4-6 months. Improvements may be seen during the 2<sup>nd</sup> week of treatment and will continue through weeks 6-8 weeks, even after light treatments are completed. Alternating blue and red light sessions may provide superior results to blue light alone, with the blue light providing anti-bacterial action and the red light providing anti-inflammatory effects. However, so that patient expectations are in keeping with anticipated results, remember that 20-25% of patients will not respond to light therapy.

**Question:** What other tips are useful?

Answer: Microdermabrasion or a chemical peel to exfoliate the skin allows for greater light penetration and enhanced results. Physicians report staging these procedures prior to the first light therapy session, and midway through the course of treatments.

**Question:** What makes the VersaClear STS different from other light systems.

Answer: The VersaClear STS utilizes patented Osram® Sylvania® Icetron® magnetic induction light technology to produce high-intensity light at specific therapeutic wavelengths. Illumination areas are large and a pair of Icetron light modules is well suited for treatment both sides of the face, or broader skin areas (e.g. shoulders, back) during a single treatment session.

The VersaClear platform is versatile, in that it allows for light module interchangeability. Blue (420nm) and red (615nm) Light Modules are currently available. Under development are additional wavelength Light Modules for other indications that will expand product utility. The VersaClear is a platform that is cost-effective to acquire and maintain, and is easily upgradeable.

The red (615nm) Light Module peak wavelength also coincides with the absorption peak for CPPIII. Thus, porphyrin activation likely will be more efficient per watt delivered to the skin as compared with light sources that emit light with a peak of 630nm.

**Question:** Why not use one of the LED systems that are on the market today?

Answer: LEDs (light emitting diodes) were a significant innovation over previously available light sources that emit a very broad spectrum, and emit high enough heat as to be capable of burning the skin (e.g. metal halide, halogen, high intensity discharge lamps), and/or have relatively low output power (e.g. traditional fluorescent tubes). The patented Icetron technology