

The uRepublic Guide to BBL Photo-rejuvenation

In many ways, the effect of BBL photo-rejuvenation is similar to a laser, except this method uses a range of light wavelengths instead of the single wavelength characteristic of lasers. That's because different skin structures, such as capillaries or pigment spots, absorb light energy at specific frequencies or wavelengths.

Photo-rejuvenation using the infrared range can also be used to give a more general heating of the collagen layer, which produces a light contraction or tightening of the skin around lax areas such as the face, neck, arms and abdomen.

What is the difference between IPL/ BBL and Lasers?

Lasers utilise a single wavelength to deliver the energy to skin targets. IPL or BBL uses a spectrum of wavelengths. Lasers have a reputation of precision and power and are established modalities in cosmetic dermatology. Early IPL/ BBL were dogged by technical and procedural issues that limited its effectiveness. Later generation IPL/ BBL are at least as good if not better than their Laser counterparts. Not surprisingly, IPL/ BBL and Lasers share a similar side effect profile.

What can photo-rejuvenation do for me?

Blood vessels & facial redness

- Reduces and eliminates broken capillaries
- Facial redness may be the result of thousands of fine broken capillaries that when treated will lead to reduction in the appearance of facial redness
- Leads to less facial flushing and burning

Pigment/ brown spots

- Freckles, liver spots, age blemishes
- Face, neck, v-chest and hands commonly affected areas

Skin tightening

- Subtle tightening of face, jaw-line, jowls, chin and neck
- Other areas – arms and abdomen

What does the procedure involve?

No anaesthetic is required as there is a cooling plate that protects the skin and also reduces the treatment discomfort. If required, cream anaesthetic may be applied 30 minutes before the procedure. Protective eyewear is required during the procedure as the reflected light can be very bright. Even with eye protection the BBL flashes may seem bright but this is safe and will not harm your eyesight in any way.

A cool gel may be used on the skin to facilitate skin contact of the handpiece. When the device fires, there is a bright flash followed by a brief stinging pain similar to a rubber band flick. This is followed by a mild burning sensation that may last for a few minutes. Super-chilled air is used to cool the skin during the procedure to minimize any discomfort.

Up to 3 treatments are necessary for best results, usually spaced a month apart. Additional treatment sessions will lead to further improvement in the complexion.

What is photodynamic BBL and what is it good for?

Photodynamic BBL uses a light-sensitive lotion to further enhance the effects of BBL/ IPL. The light sensitive lotion used in this procedure is amino-levulinic acid or ALA for short. This procedure is also known as ALA-BBL. Photodynamic BBL can enhance treatment results for pigmentation, blood vessels/ broken capillaries and the photorejuvenating effects of BBL in general.

A unique aspect of photodynamic BBL is its effectiveness in gently treating sun-damaged skin and reducing the risk of skin cancers. Photodynamic therapy using ALA with a light source is an established method of treating certain skin cancers in dermatology. However, if you have any possible skin cancers, this should be properly diagnosed and treated and it should not be assumed that the photodynamic BBL used here is adequate treatment for skin cancers.

The benefits of photodynamic BBL:

- Improves pigmentation
- Improves redness and capillaries
- Improves skin complexion
- Improves skin health
- Reverses sun damage and reduces the risk of developing skin cancers

Photodynamic BBL involves applying a layer of ALA lotion or cream to the treatment area (face, chest or arms) for 30–60 minutes. As the ALA is activated by light, you need to stay indoors. The ALA treatment is usually introduced on your second or third BBL session rather than on the first treatment session as this gives your skin time to respond. It is recommended that you avoid the sun for the next 48 hours, as the treated areas of your skin may remain light sensitive for 1–2 days after.

The addition of photodynamic ALA to BBL will increase the redness and swelling post-BBL, for 1–2 days longer. There may also be additional flaking of the skin for several days after – a good sign that the treatment is working well and the unhealthy skin is being shed. Most of the changes will be from the BBL treatment rather than from the addition of the ALA. All these changes are typically similar to a sunburn and do not need to be camouflaged.

What happens after treatment, and how long will the results last?

The treated area will be red and slightly sensitive for a few hours. Make-up may be applied if desired. Occasionally these may be accompanied by swelling (especially around the eyes), mild point scabbing that will settle within a week.

Treated vessels may darken which is a good sign but is not necessary for the treatment to be effective. Most of the treated vessels will disappear although some may return after 24 hrs, indicating a need for further treatment. The treatment results are long lasting but new vessels may occur naturally, or as part of the underlying rosacea process, requiring top-up treatments years later.

Treated pigment will darken indicating that the treatment has worked. These pigmented spots will further darken in the next few days and gradually work its way up the skin and be expelled after 7 days. Sun avoidance is crucial to keep the pigments away. In Australia, the rate of pigment recurrence is higher because of the higher level of UV exposure.

What are the unwanted side effects of photorejuvenation?

Side effects are uncommon with newer generation devices.

However, the following may occur:

- Burns to the skin leading to significant scabbing
- Alteration in pigment – darker or lighter
- Darker skin individuals are those with recent tanning are at greater risk of developing both increase or decrease in pigment
- The alteration in pigment may either be temporary or rarely, permanent
- Scarring and indentations – usually as a result of burns (extremely rare)

Is everyone suitable for photorejuvenation?

We do not treat:

- Pregnant or breast-feeding women
- Children under age 18 without parental consent
- Current significant skin disease / infections such as cold sores at the site of treatment
- History of keloid scarring (special precaution in high risk areas)
- History of light sensitivity including connective tissue disorders, lupus, porphyria
- Patients on medication that causes sensitivity to light
- Any emotional, mental or medical condition that may impair judgment

Retrospective Evaluation of the Long-term Antiaging Effects of BroadBand Light Therapy

BroadBand Light (BBL), which utilises visible and infrared light (400–1400 nm) delivered for phototherapy, is a nonablative treatment designed to rejuvenate the skin on the face, chest, neck, forearms, legs, and hands. The objective of this retrospective study was to evaluate if participants who underwent regular treatment with BBL over a period of 5 to 11 years looked noticeably younger than their actual age. Fifteen participants aged 38 to 69 years (median, 46.0 years; interquartile range, 19.7 years) with Fitzpatrick skin types I to IV received at least 1 full-face treatment per year with BBL device (BBL, Sciton, Inc) during the study period. Blinded evaluators (N=491) analysed clinical photographs taken before the first treatment and after the last treatment to estimate pre-treatment and posttreatment ages of participants over 5 to 11 years. Before treatment, the median estimated age of participants was slightly lower than the median actual age, but the difference was not significant.

The median estimated age at the end of the study period, which varied from 5 to 11 years depending on the participant, was significantly lower than the corresponding median actual age ($P=.0084$). Although treated skin actually aged a median of 9 years, participants appeared to have aged a median of -2 years. Results from our study indicate that patients who maintain a regular annual or biannual regimen of BBL treatments over 5 to 11 years can reduce and delay the long-term sign of skin ageing such as photo damage, telangiectases, fine lines and wrinkles, and skin laxity in a natural-looking way.



Figure 1. A 46 year old woman before (A) and 5 years after treatment on the right cheek with BroadBand Light therapy at least once per year (B)



Figure 2. A 69 year old woman before (A) and 6 years after treatment of the perioral area with BroadBand Light therapy at least once per year (B).

publication	Rejuvenation of Gene Expression Pattern of Aged Human Skin by Broadband Light Treatment: A Pilot Study
About AOP	<i>JID Open</i>
Current issue	
Archive	
JID Cover Archive	Anne Lynn S Chang ¹ , Patrick H Bitter Jr ² , Kun Qu ¹ , Meihong Lin ¹ , Nicole A Rapicavoli ^{1,3} and Howard Y Chang ^{1,3}
Research Techniques Made Simple	¹ Department of Dermatology, Stanford University School of Medicine, Redwood City, California, USA ² Advanced Aesthetic Dermatology, Los Gatos, California, USA ³ Howard Hughes Medical Institute, Stanford, California, USA
Press releases	

Method

5 subjects >50yo, forearm skin (mod-severe photo damage), x 3 monthly session BBL.
BBL parameters: 515 – 560nm filter/ 10-20s pulse duration/ 8-14j/cm2, 2 or more passes.
Skin biopsy 1m post for histo and genetic analysis.
Control: 5 subjects < 30yo, protected arm skin.

Conclusion

“We find that skin aging was associated with a significantly altered expression level of 2,265 coding and noncoding RNAs, of which 1,293 became “rejuvenated” after BBL treatment; i.e., they became more similar to their expression level in youthful skin.

