

The uRepublic Guide to Q-switch/Pico Lasers

In Australia, sun-damage is extremely common and frequently causes irregular brown pigmentation that may appear unsightly. The Q-switch laser is effective for a wide range of skin pigmentation disorders including sun-freckles. The Q-switch laser can also safely treat many forms of birthmarks ranging from brown to blue-gray in colour. The uRepublic Q-switch laser has a range of wavelengths that allow safe treatment of all skin types including dark skin. The Q-switch laser may also rejuvenate the skin by improving its colour and texture. Pico lasers are the new generation Q-switch devices that are particularly useful for textural improvement to pores, fine lines and acne scars.

What is the difference between regular Lasers and Q-switch/Pico lasers?

Lasers utilise a single wavelength to deliver the energy to skin targets. The regular targets in skin are pigment, blood and water. Q-switch/Pico lasers are a special category of lasers that can deliver energy in extremely short bursts (within several billionths of a second). Pico lasers have an even shorter burst of energy (by 1000x) when compared to Q-switch lasers. As a result this unique property makes it an ideal laser for treating pigment-related conditions such as sun-freckles, birthmarks or tattoos. The ultra-short bursts of energy delivered by the laser disrupts the pigment-containing cells within the skin, leading to fading and clearing of the treated area. The considerable energy delivered by the Q-switch/Pico laser can also remodel skin collagen and improve its texture.

Pico lasers have the unique feature of creating LIOB (Light Induced Optical Breakdown) which are micro-cavities within the skin. It is this Pico property that makes it especially useful for treating fine lines and acne scars. The laser energy is delivered as an array of highly focussed beam spots similar to fractional lasers – but without any damage to the top layer of the skin – making it a low downtime procedure.

What can Q-switch/Pico Lasers do for me?

Clears brown-black pigment blemishes

- Sun-freckles and brown spots
- Stubborn melasma
- Birthmarks of various colours including brown, blue, gray and black (eg Café-au-lait spots, Nevus of Ota and Hori's nevus)
- Skin staining from Iron injections, medications and sclerotherapy

Skin rejuvenation

- Laser skin toning
- Laser peels
- Fine lines and pores (pico laser best)
- Acne scars (pico laser best)

Tattoo removal (refer to additional info)

- Professional and amateur tattoos
- Gravel tattoos

What does the procedure involve?

Spot-treatment of most sun-induced brown blemishes may not require any anaesthetic as the procedure is often well tolerated. When the laser fires it feels like a rubber-band snap against the skin. Treatment of deeper pigment found in birthmarks and tattoos may be slightly more uncomfortable and may require cream or injectable anaesthetic. If required, anaesthetic cream may be applied 30 minutes before the procedure. Protective eyewear is required and provided during the procedure to protect your eyes.

Q-switch/Pico Laser treatment for pigment

Sun freckles can be cleared with 1–2 treatment sessions of the Q-switch/Pico laser. Spot-treatment can safely and effectively target individual brown marks on the face, torso and limbs. Tattoos and brown pigment birthmarks can also be similarly treated, although more treatment sessions (6 or more) are required as the response to treatment is less consistent. For birthmarks, a test treatment at the time of consultation may be carried out to assess treatment responsiveness and to select the appropriate laser dose. Treatments may be spaced 4–6 weeks apart.

Stubborn melasma can be treated by a series Q-switch/Pico laser treatment sessions. Melasma is a challenging condition to manage as recurrence is common and it responds variably to a range of treatments such as skin bleaching, chemical peels, IPL, regular lasers and fractional resurfacing. Stubborn, end-of-the-line melasma often responds to the Q-switch/Pico laser, with up to 10 treatment sessions spaced 1–4 weeks apart. Often a combination approach gives the best results for melasma.

Q-switch/Pico Laser treatment for skin rejuvenation

Q-switch/Pico laser is a popular method of skin toning and rejuvenation. The whole face is treated and 4–6 treatment sessions are required at intervals of 4–6 weeks. Compared to other forms of rejuvenation, there is minimal down-time associated with the Q-switch/Pico lasers. The Q-switch/Pico laser is operated by both the doctor and the specialist nurse. Treatments for melasma and skin rejuvenation may be carried out by the specialist nurse. Birthmark treatments are usually carried out by the doctor.

Pico Laser treatment for scars

Pico laser is a relatively new modality for treating scars such as acne, surgical or traumatic scars. A typical course is 5 treatment sessions every 1–2 months. The Pico beam creates vacuoles or micro-spaces (LIOB – Laser Induced Optical Breakdown) within the dermis, which triggers collagen repair and subsequent improvement of scarring. The LIOB is created without damaging the skin surface to ensure faster and safer healing. However, the treated skin often looks red for several days and can be camouflaged with make-up. More intensive treatments for deeper scars can lead to a more pronounced discoloration lasting up to a week. Pico laser scar repair is usually carried out by our specialist nurses. Pico laser scar repair therapy can be undertaken as a series of stand-alone procedures or can be combined with other procedures to boost collagen remodelling - for example as a series of booster lasers following resurfacing procedures.

What happens after treatment of birthmarks and tattoos?

Birthmarks and tattoos require higher energy and will therefore show more post-treatment changes. Tattoos often show immediate whitening of the treated areas that fade within hours. This is followed by redness, swelling, bruising and crusting that heals without scarring. Treated birthmarks will often darken and may peel off over the next 1–2 weeks. The 'new' skin may look slightly pink but will blend with the rest of the skin in time. Mild scabbing may occur but rarely leaves scars. The pigment may recur with sun exposure, therefore strict sun protection is recommended. Three treatment sessions or more may be required to keep the pigment at bay. Certain birthmarks (eg Cafe-au-lait spots) tend to recur with time. Repeat treatments can be carried out, if the condition recurs. Tattoos will lighten with each treatment session and 5–10 treatment sessions or more may be required.

What are the unwanted side effects of Q-switch/Pico Lasers?

Side effects are uncommon (less than 5%) with newer generation devices.

Apart from the expected degree of post-treatment bruising and swelling, the following may occur:

- Burns to the skin leading to significant blisters and scabbing
- Infection of treated areas
- Alteration in pigment – darker or lighter
- Darker skinned individuals or those with recent tanning are at greater risk of developing both increased or decreased pigmentation after treatment
- The alteration in pigment after treatment may either be temporary or rarely, permanent
- Persistence or recurrence of pigment
- Scarring and indentations may occur as a result of burns (extremely rare)

Is everyone suitable for Q-switch/Pico Lasers?

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)
- Prior treatment with gold injections (may darken)
- Cosmetic 'make-up' tattoos that are pale or skin coloured (as they may darken)
- Any emotional, mental or medical condition that may impair judgment

Procedural consent for Q-switch/Pico Lasers

To be completed by patient

Before you undergo Q-switch/Pico laser treatment make sure you have read and fully understood the background information on the procedure. To get the most out of it, you need to understand the nature of the procedure, the associated benefits and risks, as well as the available treatment options.

Photos are routinely taken before treatment as a visual record. These may be used for teaching purposes and may be shown for scientific purposes including publications in medical journals. There will be no identification of the images, and they will remain the property of uRepublic.

For best results, it is necessary to have the full series of pre-determined treatment sessions. In a minority of patients, the Q-switch/Pico laser procedure may not work satisfactorily or may not last for the expected period of time. As it's not possible to predict a sub-optimal response, uRepublic is unable to guarantee expected outcomes, nor the number of treatment sessions needed for satisfactory outcomes.

By signing the informed consent, you acknowledge that all the above issues relating to the procedure have been addressed; and that you've been given ample opportunity to ask questions and raise any concerns relating to the procedure.

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Signature of Patient

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Date

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Name of Patient (print)

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Witness