

Acne Scars (acne scarring)

What are acne scars?

Acne scars are permanent textural changes and indentations that occur on the skin as a result of severe acne. The term “scarring” is not used for the temporary red and brown marks left early after acne has occurred as these marks will almost always improve without treatment.

What causes acne scarring?

In severe acne, large pus-filled spaces known as acne cysts are formed. These cysts destroy skin tissue which is not replaced during the healing process. When the cyst eventually empties and the area heals, it usually leaves behind an indentation (or scar) on the face. On the chest and back the scarring can be lumpy (known as “hypertrophic” or “keloid” scarring).

What does acne scarring look like?

Acne scarring on the face appears as damage to the skin texture with depressed (or indented) areas of various sizes.

On the back and chest, scars tend to be raised and lumpy. Scars are usually a normal skin colour. Some keloid scars can remain red for many years.

The following are the main types of acne scars.

- ***Box car acne scars***

Box car scars are depressed scars which are shallow to medium in depth with well-defined edges, most commonly located on the cheeks and temples. Due to the relatively shallow depth, this type of scarring responds well to numerous treatments including full resurfacing, fractional lasers, dermal fillers and radiofrequency treatments.

- ***Ice pick acne scars***

Ice pick scars are deep and narrow scars that extend into the lower layer of the skin. Due to the depth of ice pick scars, procedures such as fractional treatments are not as effective as TCA CROSS (trichloroacetic acid chemical reconstruction of skin scars). The foundation of ice pick scar treatment is either to raise the depth of scarring or excise (remove surgically) the pick itself. Procedures such as punch excision or TCA CROSS can improve deep ice pick scars. Once scars are raised up to a shallower level, laser resurfacing provides the finishing touches.

- ***Rolling, atrophic and depressed acne scars***

Rolling acne scars appear as undulations and depressions on the skin. Some scar areas may be anchored to deeper structures. A number of methods can be used to treat rolling scars and tethered scars including subcision, fractional laser resurfacing, radiofrequency and dermal fillers. The basis behind scar revision is to free up bound scars and fill up depressions with collagen. This form of acne scarring will usually require several treatments for the best possible outcome.

- ***Mixed acne scars***

This is the most common form of acne scarring. Most people will have a mixture of acne scars, including tethered or anchored scars, ice pick scars, box scars and rolling scars. Different types of acne scars will require different treatments and a tailored approach to scar

revision therefore provides the best outcome.

- **Red acne scars – macular scars**

Macular acne scars are commonly seen on the cheeks and forehead areas and present as red areas. They occur as a result of early acne scarring. This type of scarring can fade over 6 to 12 months without treatment however vascular laser treatment can sometimes hasten the resolution of scars. Several treatments are required for best results.

- **Lumpy hypertrophic and keloid scars**

This type of acne scarring results in lumpy red scars, most commonly seen around the jawline, neck, chest and back areas. Lumpy scars are best treated with a series of corticosteroid injections. Most people will require 2 to 4 injections spaced 6 weeks apart. Redness in scars can be treated with vascular lasers however 3 to 4 treatments may be needed for best results.

How is acne scarring treated?

There are many treatments available for acne scars which can improve and soften the appearance of the scarring. A combination of treatments may be required. It is unrealistic to expect the return to completely normal skin following treatment.

The ideal treatment will depend on four main factors:

1. Skin type (skin type is classified according to the amount of pigment in the skin)
2. Type of scar (scars can be "rolling", "atrophic", "box car", "ice pick" or "anchored")
3. Down time available (time it takes the skin to heal after the procedure)
4. Cost of the procedure (more complex procedures involving lasers and fillers will usually cost more than simple procedures such as radiofrequency and skin needling. Some procedures such as full laser resurfacing or scar revision conducted by specialists carry a Medicare rebate).

The following information describes the various methods of treating acne scarring.

- **Fillers**

Hyaluronic filler injections are best used for atrophic scars and rolling scars. They have the advantage of immediate improvement and minimal downtime.

The treatment is initially repeated at 6 monthly intervals but eventually the frequency may be reduced to twice yearly.

- **Intralesional corticosteroids**

Intralesional corticosteroid injections are best used for lumpy acne scars.

Several injection treatments may be needed. This treatment can also be combined with vascular laser.

- **Laser treatments**

There are two main types of laser treatments – ablative and non-ablative. Ablative (or wounding)

lasers remove thin layers of skin. Non-ablative (non-wounding) lasers stimulate collagen growth and tighten underlying skin. Although non-ablative laser resurfacing is less invasive and requires less recovery time, it is less effective than ablative laser resurfacing for deeper scars.

- ***Fractional non-ablative (non-wounding) lasers***

Variable wavelengths of fractional laser devices have been shown to improve acne scarring.

They are best used for atrophic and rolling scars.

These lasers can cause some temporary redness but do not actually break the skin surface.

The advantages of non-ablative fractional lasers are rapid recovery times, the ability to treat darker skin types and higher safety profile.

Recovery time following fractional laser treatment ranges between 3 to 8 days.

Most people will benefit from a series of fractional laser treatments (2 to 5). Darker skin types will usually require more treatments compared with lighter skin types. Fractional laser resurfacing can reduce scars. However, 2 to 5 treatments are needed for best results.

- ***Ablative (wounding) lasers***

Ablative lasers are the “gold standard” for the treatment of box car scars.

There are two types of ablative lasers, fractional ablative and fully resurfacing.

If fully ablative, CO2 lasers are best employed on lighter skin types, whilst erbium lasers have a wider safety threshold for darker skin types. Fractional CO2/Erbium lasers have a higher safety profile than fully ablative lasers and can be used in all skin types.

The downside of ablative lasers is the longer recovery times which can be up to 2 weeks. Redness following ablative lasers is a common side effect. Fully ablative lasers such as CO2 or Erbium can effectively reduce acne scars.

- ***Radiofrequency (RF)***

Radiofrequency is a non-invasive method of scar remodelling.

This treatment is best employed in early acne scars, atrophic scarring, rolling scars and in darker skin types.

New forms of RF incorporate skin needling which delivers higher energy deeper into the dermis (skin).

- ***TCA CROSS (Chemical reconstruction of skin scars)***

This method uses high strength TCA (50-100%).

This form of scar revision is ideal for ice pick scars and can be safely used for all skin types.

2 to 3 treatments are ideal for best results.

Dark skin types can be treated with TCA CROSS. However, skin darkening may take months to fade.

- ***Surgical methods of scar removal***

Procedures such as punch excision, punch elevation and subscision still remain a useful method for

treating deep ice pick scars as well as anchored or tethered scars.
In most cases, surgery is followed by laser resurfacing several months later.

- ***Vascular Lasers***

Pulse dye lasers, KTP and long wavelength Alexandrite lasers can be used to treat early red scars known as macular acne scars.

Longer wavelength lasers reduce the redness and stimulate collagen production.

- ***Skin needling***

Skin needling can be effective in the treatment of acne scars. Pen held devices have largely replaced skin needling rollers.

Skin needling, as the name suggests, delivers needles of varying depths (0.5 to 3 mm) into the dermal layers of the skin.

Needling breaks down scar tissue and stimulates the formation of new collagen.

This treatment is ideal for darker skin types however it is not as effective as fractional laser treatments. Lasers deliver controlled heating of the dermal layers, resulting in greater stimulation of collagen and more effective scar revision.

- ***Dermabrasion***

Laser treatments have now largely replaced full dermabrasion.

What is the likely outcome of acne scarring?

The ultimate goal for treating acne scars is improvement rather than complete disappearance or "cure". The degree of improvement is dependent on the scar type and the skin colour of the individual.

Each person's acne scars present as a unique challenge for the specialist. Treatments are tailored to each individual's goals, tolerances, acne scar type and skin type along with the specialist's preferences, equipment and expectations.

The treatment of darker skin types is particularly challenging as laser treatment can be associated with colour changes after treatment, most often seen as temporary darkening of the skin. In this subgroup of people the use of conservative settings, fractional lasers, post-procedure fading creams and photoprotection can help achieve acceptable results.