

Photorejuvenation From Wikipedia, the free encyclopedia

is a skin treatment using [lasers](#), [intense pulsed light](#), or [photodynamic therapy](#) to treat [skin conditions](#) and remove effects of [photoaging](#) such as [wrinkles](#), spots, and textures by inducing controlled skin wounds, prompting it to heal itself by creating new cells. It reverses the signs of photoaging to a certain extent by removing appearances of damage.

Skin rejuvenation can be achieved through various modalities including:

1. Thermal rejuvenation with a radio-frequency device to induce a thermal effect.
2. Chemical rejuvenation with [chemical peels](#).
3. Photo rejuvenation with light pulses from [lasers](#) or lamps.
4. Mechanical rejuvenation by [dermabrasion](#) or microneedling of outer layers > skin regrowth
5. Injections for rejuvenation with botox, fillers, collagen.

Laser resurfacing^[edit]

Laser resurfacing is [laser surgery](#) that disassociates [molecular bonds](#) to treat wrinkles, [solar lentigenes](#), [sun damage](#), [scaring](#) ([acne scars](#) and surgical scars), [stretch marks](#), [actinic keratosis](#), and [telangiectasias](#). It can be combined with [liposuction](#) to help tighten and smooth over the new contours after removal of excess fat.

Resurfacing can be ablative, which vaporizes tissue and creates wounds, or non-ablative which keeps the skin intact. Use of laser allows customization for each patient & area of the face. Laser resurfacing is usually done with a 2940 nm [Er:YAG laser](#) or a 10,600 nm [CO₂](#) laser. Complete resurfacing was first done with a CO₂ laser. Both Erbium and CO₂ (problem: hypopigmentation from high degree of coagulation from heat) are used to treat deep [rhytides](#), [sun damage](#) and [age spots](#). Through the heating of the deep [dermis](#), [fibroblasts](#) are stimulated to form new [collagen](#) and [elastin](#) helping to bring increased turgor and thickness to the skin.

Fractional laser [photothermolysis](#) (FP) is another form of laser resurfacing commonly used now, with several devices on the market. **A fractional laser delivers tiny pinpoints of laser light to a part of the skin. Hundreds or thousands of laser pinpoints may be used per square inch, leaving healthy skin between the [ablated](#) areas, to allow more rapid healing and lower risks.** FP may provide similar results to CO₂ laser resurfacing without risk of scarring or significant downtime. Complications observed in a study of 961 treatments included [acne](#) and [herpes](#) outbreaks and were temporary.^[5] There have been, however, anecdotal accounts of bad scarring and [hyperpigmentation](#) without any findings of [infection](#).^[6] Erbium fractional systems have a better safety profile.^[7]

Laser Types

Laser	Wavelength	Uses
CO ₂	10,600 nm	rhytides , photodamage
Er:Yag	2940 nm	scars, photoaging
Er:Glass	1540 nm	rejuvenation, scaring
Nd:Yag	1064 /1320 nm	Photodamage
Diode	1450 nm	facial rejuvenation

[Intense Pulsed Light](#) (IPL) uses flashlamps to produce high intensity light over broad visible and infrared wavelengths with filters that select the desired range. IPL is used to treat dyschromia, rosacea, melasma, acne, photodamage, vascular and pigmented lesions, and rhytides.^[8]