

## Advances in the treatment of burn scars with intense pulsed light, laser and radiofrequency

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### Intense pulsed light (IPL)



IPL delivers focused, controlled light energy through a coupling gel in the 515-1200nm spectrum. It has been shown to improve the vascularity, pliability and height of immature burn scars.

### Pulsed dye laser (PDL)



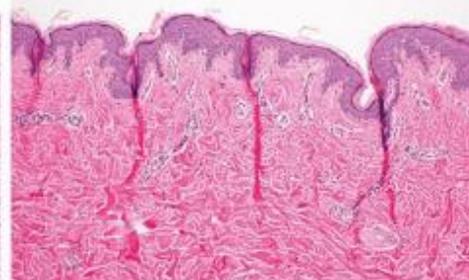
PDL generates thermal energy with wavelengths of 595-nm. It targets microvasculature and ultimately decreases inflammation and oedema and is effective in treating erythematous and pruritic scars.

### Immature burn scar



Immature scars are hypervascular, contain oxy-haemoglobin, collagen and water. Therapies that target these chromophores, such as IPL, are useful.

### Mature burn scar



Treatment with lasers involves targeting dermal architecture and collagen organisation. therapies such as CO2 laser, PDL, Q-switched Nd:YAG and are useful.

### Ablative CO2 laser



Fractional ablative CO2 laser produces light at a wavelength of 10,600nm. It targets intracellular water and leads to vaporisation of tissue and denaturation of surrounding extracellular proteins resulting in microscopic columns, or 'treatment zones', being vaporised. This leaves significant amounts of epidermis and dermis intact to allow for organised wound healing. It can be used to improve erythema, height, texture and pliability of burns scar.

### Q-switched Nd:YAG laser



Q-switched 1064nm Nd:YAG laser generate thermal energy in short pulses and can suppress collagen production and induce remodelling. It has been shown that Q-switched Nd:YAG lasers to be effective in improving the pigmentation, vascularity, pliability and height of scars.

### Radiofrequency



Micro-plasma radiofrequency creates plasma sparks from the nitrogen in the air creating micro-channels. Ablation and thermocoagulation are used to induce neogenesis of collagen and remodelling of the epidermis and dermis. It is a useful adjunct in scar management.

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