

LASER and Light Treatments for HS

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Burns, Plastic and Reconstructive Surgeon

Aims

- Overview of LASER and Light Therapies
- Evidence for the BEST Laser
- Targets - choosing different modalities or combining modalities
- Strategies to incorporate LASER and light therapy into HS Management
- Questions/Discussion

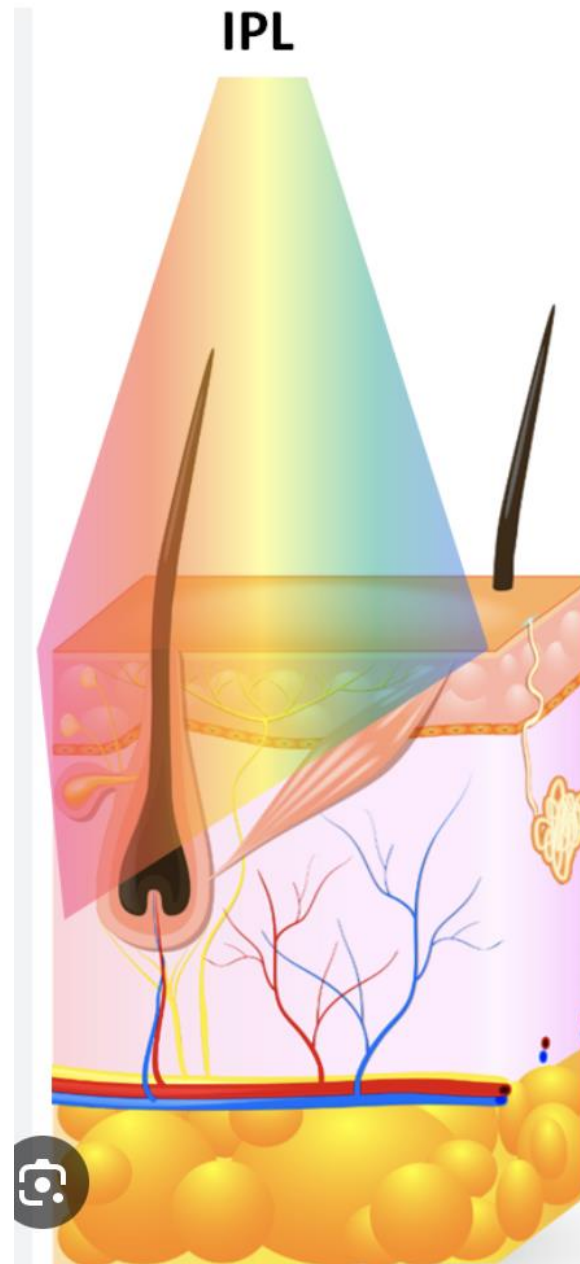
Overview of LASER and Light Therapies

LASER

- Monochromatic, coherent
- Continuous/pulsed/Q-switched

Intense Pulsed light (IPL)

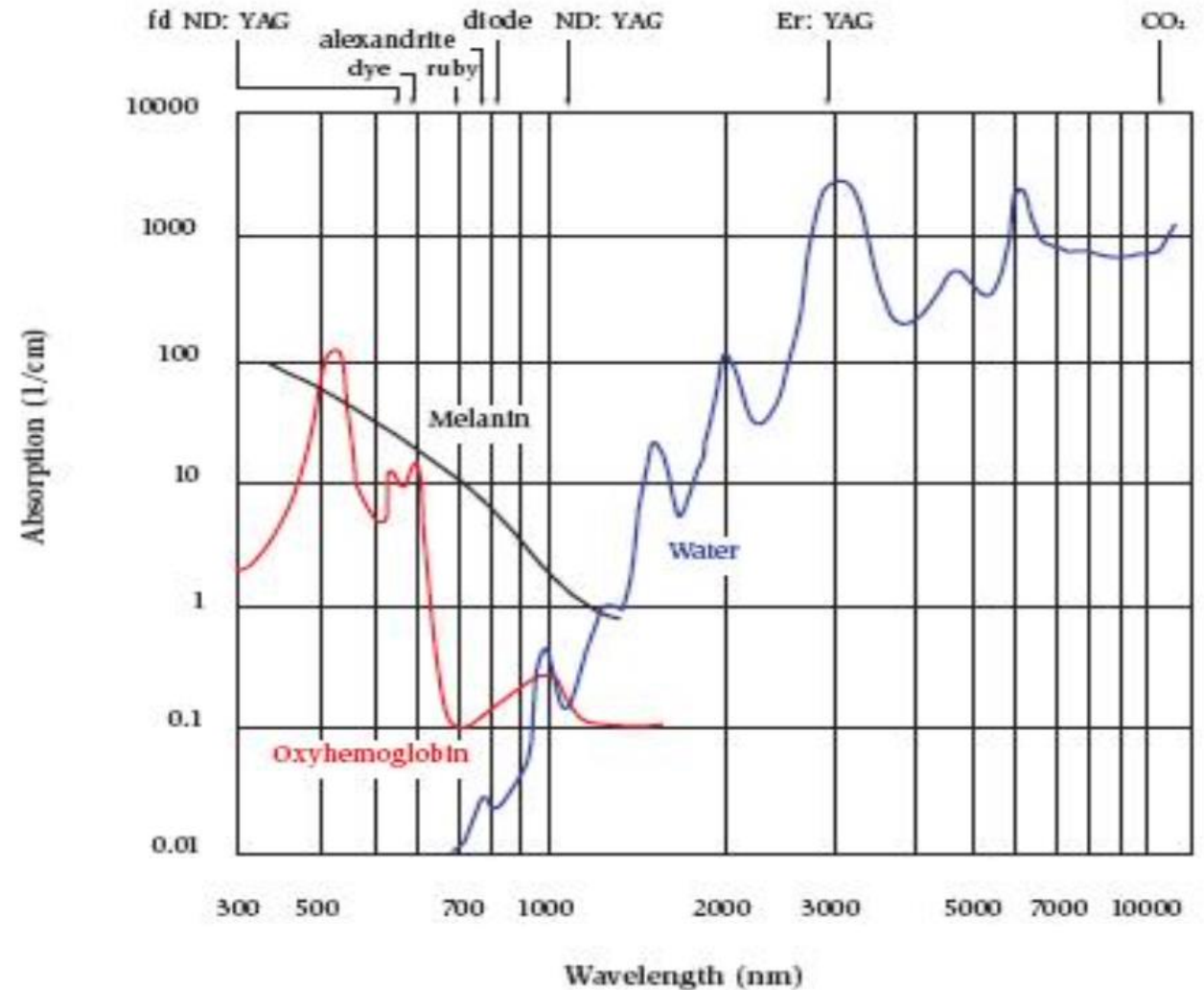
- Xenon flash lamp + filter
- Divergent



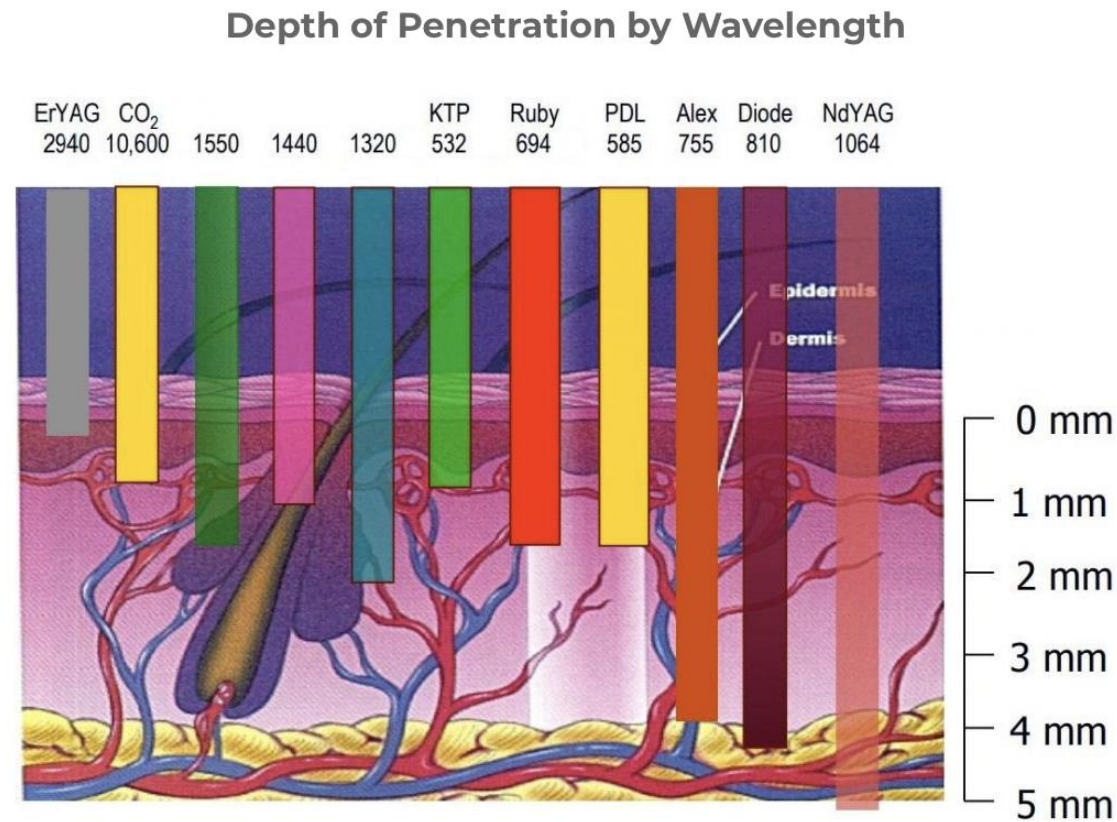
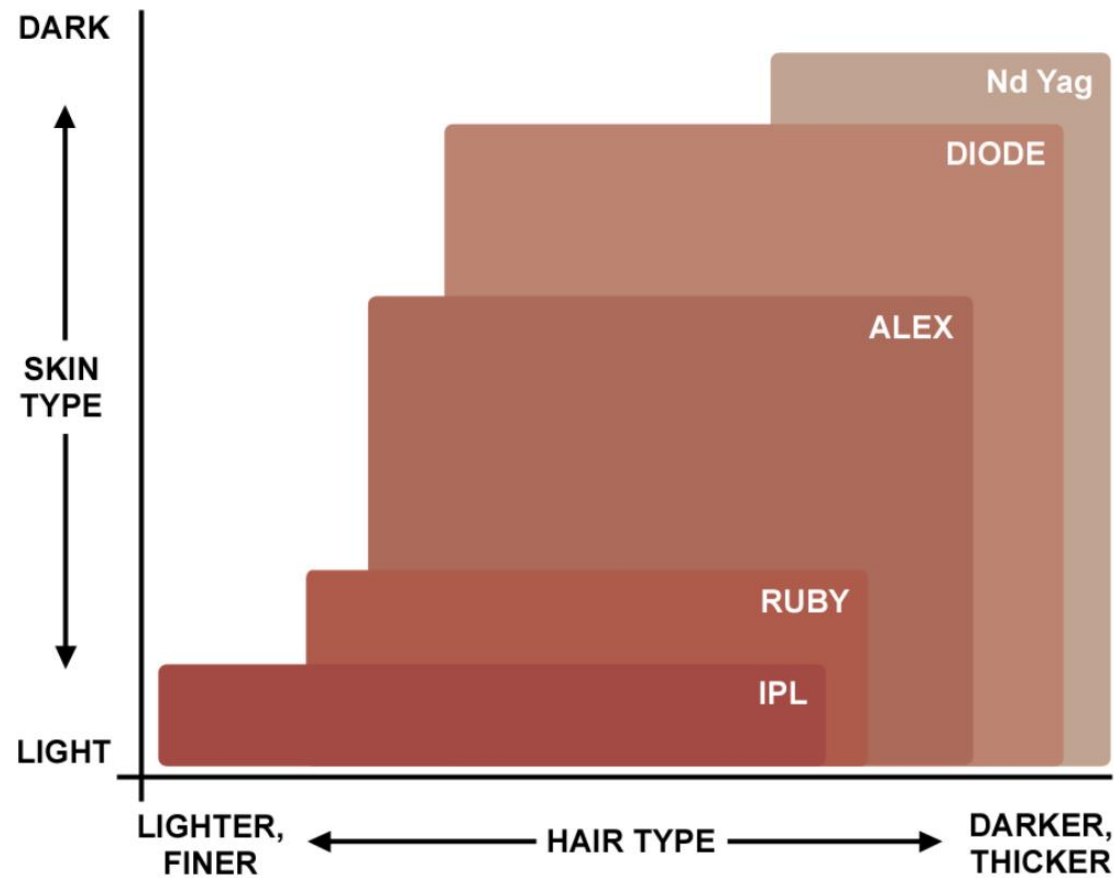
Chromophores

- Melanin
 - hair, skin pigmentation
- Water
 - ablates cells
- Oxyhaemoglobin
 - vessels, redness

Laser Absorption

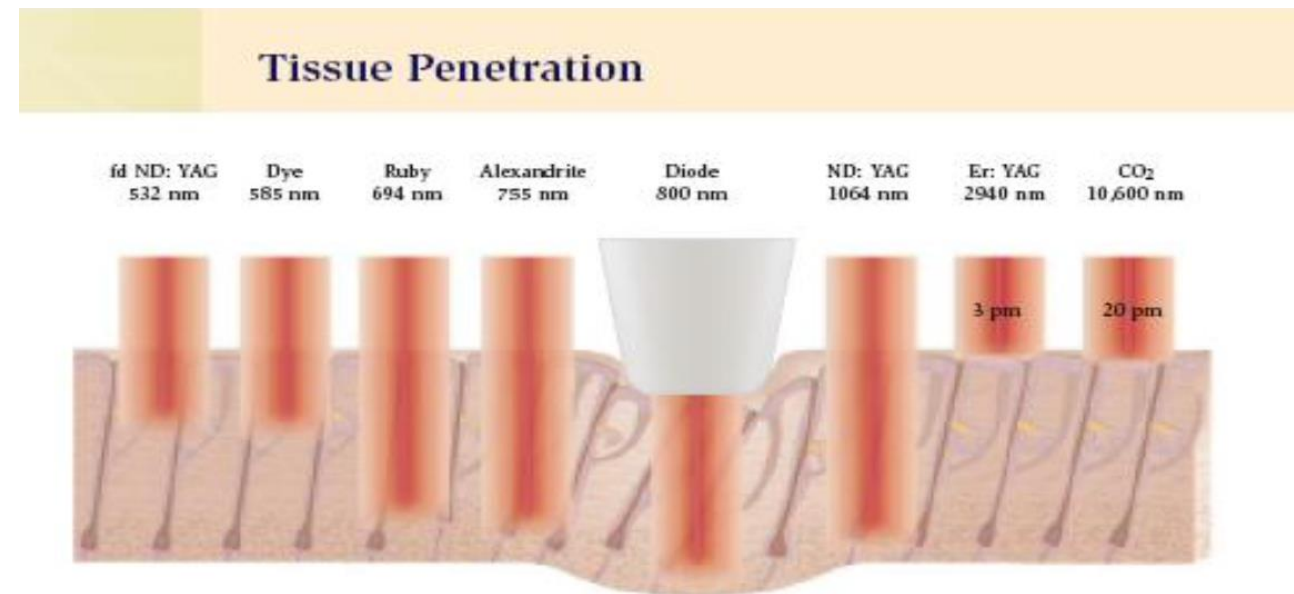


Laser Wavelength (Colour of light)



Evidence for the BEST Laser/Light Treatment

- Laser hair removal using various modalities is safe and effective in the treatment of HS
- Most evidence for Nd:YAG
 - Better for darker skin types
 - Reduces inflammation too
- IPL/Alexandrite/Diode
- +/- CO2
- Variability explained by differing protocols, follow up timelines and outcome measures



Targets in HS

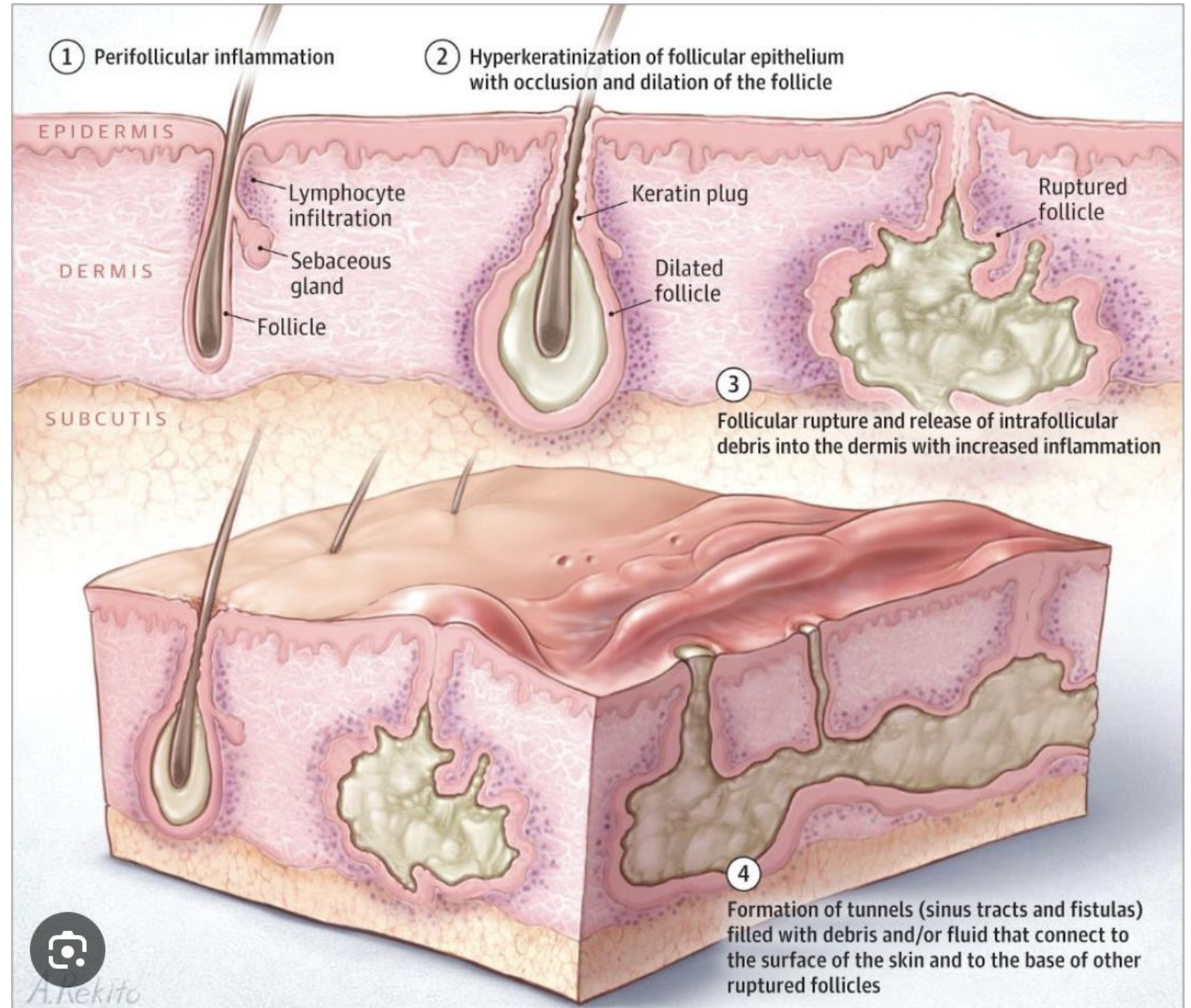
Hair follicle

Inflammation

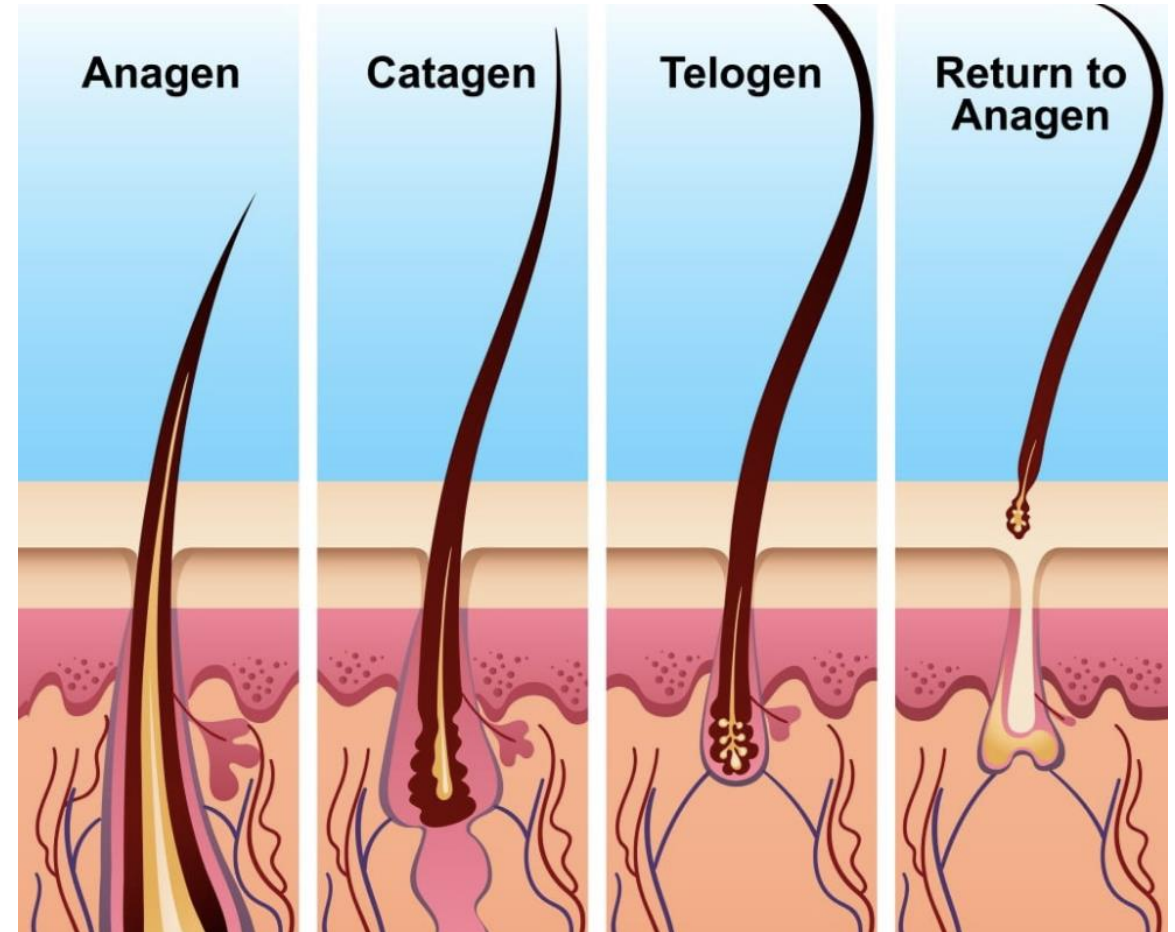
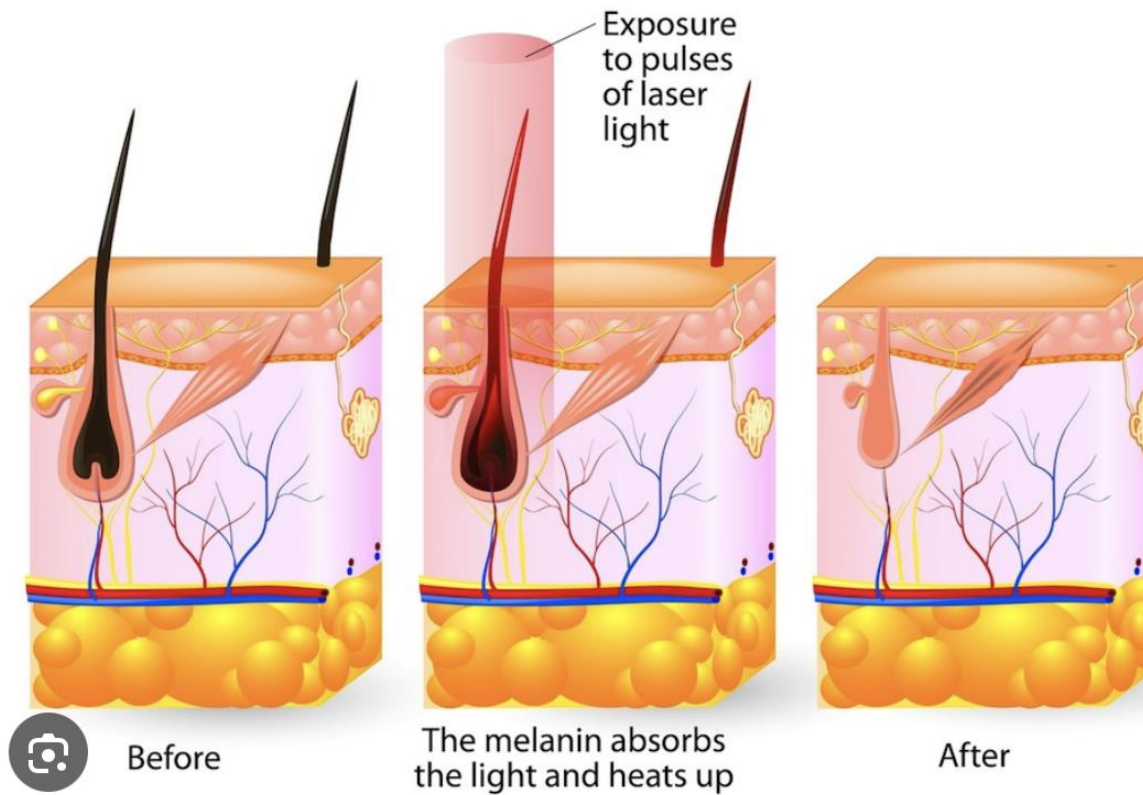
Abscess

Sinus Tract

Scarring



LASER HAIR REMOVAL



Cycles of treatment (hair growth cycle)

Depth of hair (dermal thickness)

Hair colour and thickness

Aims to stop disease process

Secondary benefits of reduced inflammation – not sustained

Inflammation

IPL

- Selective photothermolysis
- Targets both haemoglobin and melanin in and around the hair follicle
- Result = anti-inflammation and follicular destruction
- 420-1,200 nm, 20–100 ms pulse duration, 7–32 J/cm².
- Settings vary by skin type and device
- Not recommended in Fitzpatrick skin types IV-VI



CO2 Laser Surgery

Excisional/deroofing procedure (LA)

Continuous mode

Heals by secondary intention (3-5 weeks)

Reduce flares

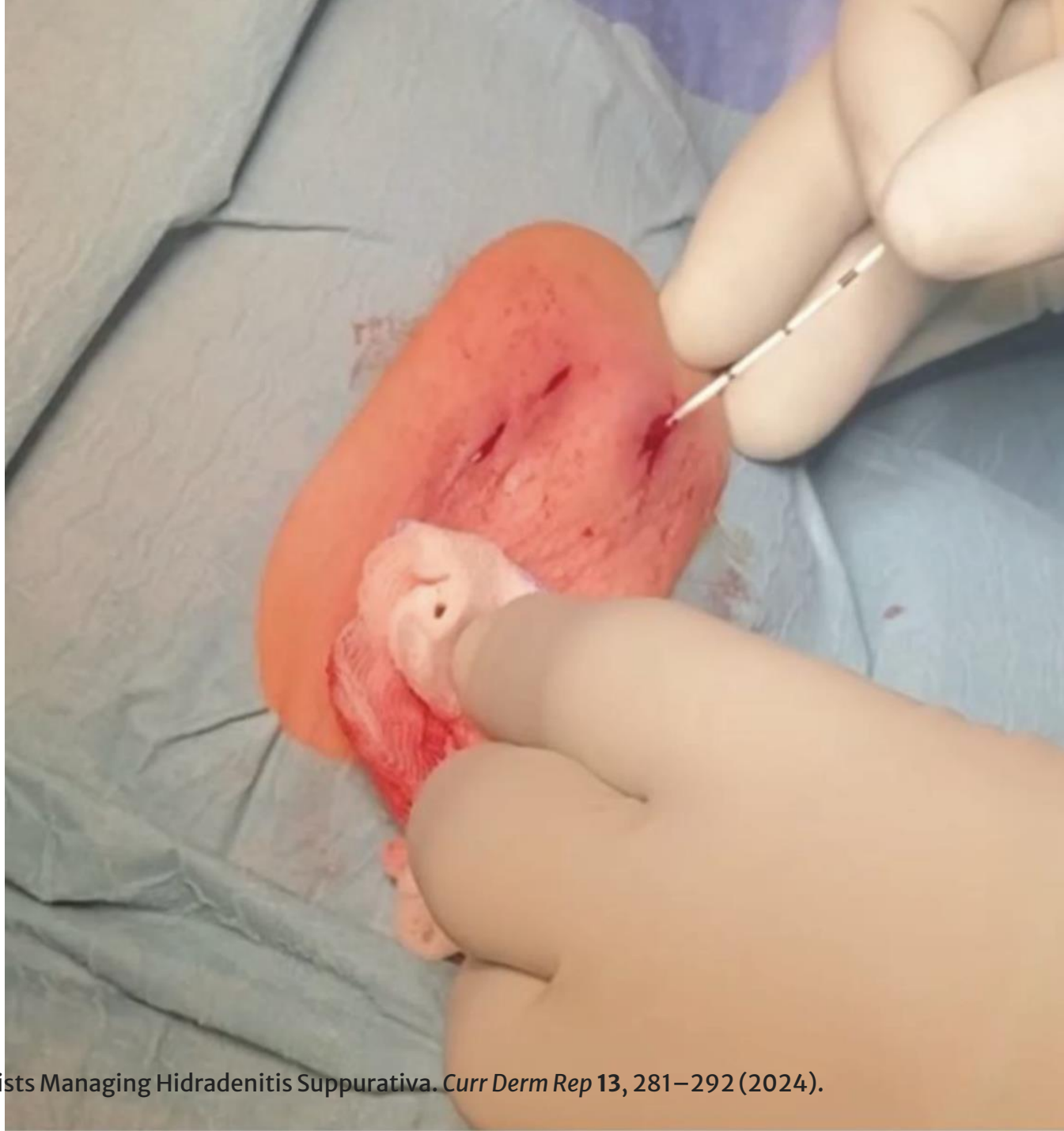
Address sinus tracts/nodules

Reduces recurrence at site of surgery, not regionally



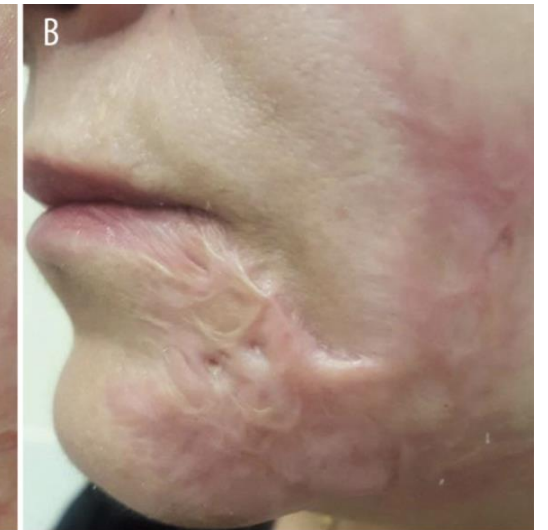
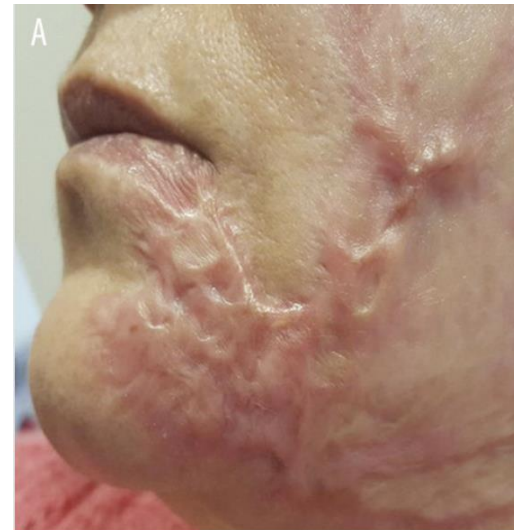
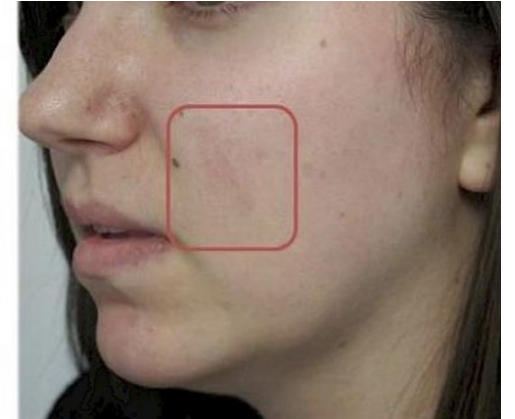
Sinus tracts

- Diode Laser 1470nm
- PDT - intralesional photodynamic therapy with 5-aminolevulinic acid and 630 nm laser
- Inside sinus tracts
- Minimally invasive obliteration of epithelium in the tracts
- Avoids damage to intact overlying skin
- LA procedure
- Treating sinus tract, not underlying disease process (hair follicle)



Scarring

- Fractional CO2 Laser
- Improves surgical scarring if delivered within 1 month of surgery
- Improves burn-related scarring – thickness, pliability
- Improves acne type scarring - resurfacing





Questions/Comments

Thanks very much for your attention