

# What is the difference between IPL and Laser

There is a lot of misinformation about the differences and effectiveness of IPL hair reduction versus laser hair reduction.

Please also look at our information sheet for Intense Pulsed Light.

## How does laser work?

Lasers emit a set wavelength, which is targeted to the colour of melanin in the hair follicle. Typical wave lengths used for hair removal are:

Ruby	694 nm
Alexandrite	755 nm
Diode	800 nm

The wavelength will affect how effective it is for hair reduction, depending on the amount of colour of the melanin in the hair follicle.

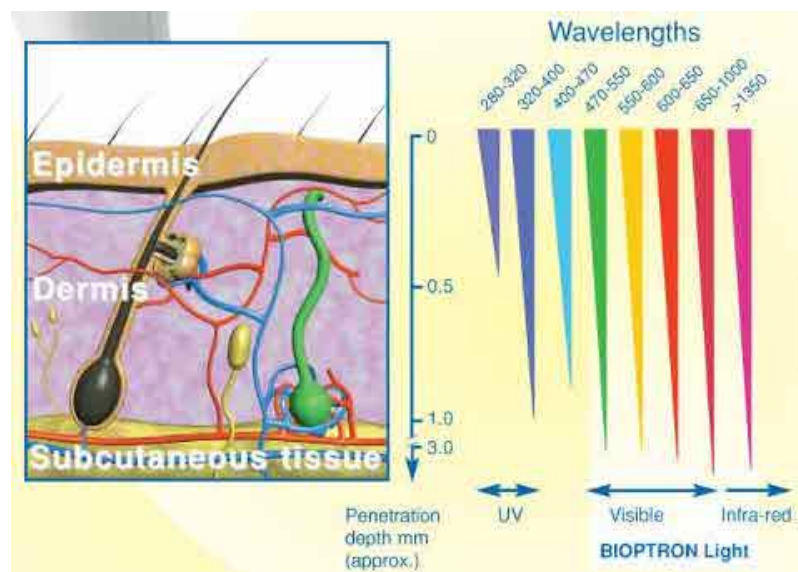
For this reason light hairs and dark skin are contra indications for the use of laser hair removal.

## So what about IPL?

IPL is an intense pulsed light emitted from a xenon bulb. The wave lengths emitted range from around 420 nm to 1060 nm. Filters are used to limit the wavelength to a smaller band suited for the purpose.

For hair removal	640 - 690 nm
For skin rejuvenation	530 - 590 nm
For vascular pigmentation	480 nm

The wavelengths penetrate the skin to different depths



### **What is the size of the treatment area?**

Lasers tend to have a small spot, often around 10mm diameter. Many shots are required to get coverage of the treatment area and it is more difficult to get accuracy in coverage.

IPL has a coverage area of around 40mm x 10mm and so treatment is faster and coverage is easily managed.

### **Some salons quote a study saying laser is more effective, is it true?**

One study undertaken by McGill et al found that the Alexandrite laser was more effective in treating women with PCOS induced facial hair growth.

What is not quoted is the author's later acceptance that previous studies showed that the systems were very similar in efficacy, and that patients were happy with their treatment by IPL.

The study also found that long term (6 months) hair loss rates were better with the IPL than with the Alexandrite laser. In addition the clients found that the Alexandrite laser was more painful, and it had significantly more skin damage than the IPL.

### **What about treating light hairs, or dark skin?**

Laser systems can not be used to treat lighter coloured hair, or on people with darker skin. This is because the wavelength is fixed and will not be attracted to light hair. Dark skin will attract these laser wavelengths and so be more likely to be damaged as a result of treatment.

IPL machines with modern technology incorporate radio frequency in addition to the light waves. The RF heats the skin in the same way as the light wave, but is not targeted to melanin. For this reason it is possible for a skilled IPL operator to reduce the power of the light, and increase the power of the RF to get effective treatment of lighter coloured hair, or hair on people with darker skins.

### **Conclusions:**

- The use of IPL or laser in most instances is comparable and neither has any distinct advantage in terms of effectiveness.
- IPL tends to be faster and cause less pain.
- IPL works on darker skins, where laser does not.
- IPL works on fairer hair, where laser does not.
- Laser *may* work better on women with PCOS.