

## **Laser and Intense Pulsed Light**

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Laser and intense pulsed light source are radiations that in recent years have been used for the treatment of skin conditions. As laser is of a fixed wavelength, it is highly specific and can target specific elements within the skin including melanin, water and haemoglobin. It can be used to treat signs of aging secondary to sun damage. Examples of their use include the removal of freckles, excessive blood vessels and can even be used to stimulate the production of collagen in the deeper skin layer. Laser can also be used to remove birthmarks, tattoo, hair removal and can even be used to remove layers of skin with remarkable accuracy.

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Intense Pulsed Light (IPL) is radiation that consists of a fixed spectrum of wavelengths. It can also be used to improve the visible marks of sun-damage and ageing. It is less specific than laser and therefore inappropriate use can lead to a higher rate of complication. To avoid such risk, lower energy is necessary. Patients therefore often need to undergo multiple treatment sessions.

The advantage of laser is that as it is highly specific (different lasers are used for the treatment of different skin conditions), one can use higher energy to achieve the desirable clinical effect with lower risk of complication. As a result, the number of treatment sessions is lower as compared with intense pulsed light source. The disadvantage of laser is that for some Chinese patients, even the mildest type of skin injury, it can lead to post-inflammatory hyperpigmentation, a complication seen in about 15-20% of our population post-laser surgery. Furthermore, as different lasers are used for different purposes and therefore, the set up cost of a laser clinic is quite extensive, making it less commercially acceptable.

The advantage of intense pulse light source is that one machine can often be used to treat a wide range of conditions and therefore it is more cost effective for the operator. As lower energy has to be used to avoid complication, patients often do not have much skin injury after IPL treatment and the down time (time for patients to be off any social/work function) tend to be limited. The disadvantage of this treatment is that multiple treatment sessions (about 6 treatment sessions to completely remove freckles as compared with 1-2 for laser surgery) is necessary to have the same effect and therefore the cost for the patient is usually more.

### **Laser Safety in Hong Kong and other regions**

In many Asian and Western countries like UK, Singapore, Japan and mainland China, the government only authorizes medical professionals to use laser and intense pulsed light devices in order to safeguard the safety of patients. However, HKSAR does not have such legislation at the moment and no professional training is provided to doctors or operators in managing the devices. Complaints received by Hong Kong Consumer Council are also increasing for the past few years.

## **Recommendations**

It is recommended that the HKSAR Government should regulate the use of high power laser and intense pulsed light source to medical/dental practitioners only. Patients should also carefully select authorized medical professionals with proper training to perform laser or intense pulsed light operation in order to prevent unnecessary injuries.