Lasers, intense pulsed light (IPL) devices and light-emitting diode (LED) phototherapy for cosmetic treatments and beauty therapy

Advice for treatment providers

Light-based cosmetic treatments carry a risk to the client during their application and potentially even after the treatment. There is also a risk to the person providing the treatment. There are no nationally uniform laws and regulations with oversight of the use of lasers and IPLs in the cosmetic industry. Requirements are determined by the state or territory jurisdiction in which your business practises.

As a light-based cosmetic treatment provider, you should always provide a pre-treatment consultation with clients. All equipment, such as lasers, should comply with the Australian laser safety standards. You should promote safety in your practice when lasers are in use, including your technicians and clients using appropriate personal protective equipment (PPE) during procedures and when entering areas where lasers and intense pulse light (IPLs) devices are in use.

In the case of an injury occurring to a client receiving treatment, the treatment should be discontinued immediately. The injured person(s), whether they’re a client or a technician providing treatment, should be referred to a medical professional.

This advice gives information to assist you, as a treatment provider, in safely applying light-based therapies, specifically laser, intense pulsed light (IPL) devices and light-emitting diode (LED) phototherapy, for non-surgical cosmetic outcomes. The advice covers a wide range of safety aspects including qualifications and training, client assessment, relevant standards and hazard management. The information outlined is limited to protection of the client undergoing treatment from optical radiation, the technician/treatment provider performing the procedure and any other exposed person(s) in the vicinity.
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10. Terms and definitions
1. **Who can I provide laser, IPL and LED phototherapy cosmetic treatment services to?**

You should not provide any cosmetic treatments using lasers, IPLs or LED phototherapy to clients under the age of 18, unless they have a legal guardian’s consent to undergo such treatment. All eligible clients should consent in writing to proceed with treatment after you hold an initial consultation with them regarding their specific treatment requirements. You should consider a client’s suitability for treatment based on [medical clearance](#) from a registered medical practitioner. This clearance should give confirmation that the client has no suspected or diagnosed medical conditions that may make light-based treatment inadvisable.

Examples of these conditions may include:

- malignant skin conditions such as melanoma, carcinoma or other non-melanoma skin cancers
- health issues that make the client photosensitive (more sensitive to light than what is considered normal)
- taking any medications, supplements or having any other treatments that create contraindications (pre-existing circumstances or conditions that make treatment inadvisable due to the potential of negative effects occurring) to light-based treatment.

Consent from a client should also include a declaration from them stating any known medical conditions, any medications and/or supplements that they are taking as well as details of the client’s recent and regular level of sun exposure. As a treatment provider, you should be satisfied with the client’s suitability from the information gathered during the consultation process.

2. **Do I need a licence to perform cosmetic treatments using lasers or IPLs?**

There are no nationally uniform laws and regulations with oversight of the use of lasers, IPLs and LED phototherapy in the cosmetic industry. Requirements are determined by the state or territory jurisdiction in which a business practices. The use of lasers for cosmetic purposes is currently regulated in Tasmania, Queensland and Western Australia. The use of IPLs for cosmetic purposes is currently only regulated in Tasmania. There is no regulatory oversight for the use of LED phototherapy in Australia. The licensing requirements differ in each jurisdiction. The regulator in each jurisdiction will define these licensing requirements and assess any application before issuing a licence. There is no regulatory framework currently in place in the other states and territories within Australia and so a licence is not required to perform light-based cosmetic treatments in these jurisdictions.

3. **What information do I need to know about a client and what assessments should I conduct before performing any cosmetic treatments on them?**

Light-based cosmetic treatments carry risks to clients during their application and potentially even after the treatment. It is extremely important that a comprehensive medical history of the client be taken and documented. This information will assist in assessing whether the treatment is suitable for the client. A registered medical practitioner should examine any moles, lesions or pigmentation on the treatment area
before you commence any treatment. If this examination reveals any medical conditions needing further intervention, treatment should not proceed as planned.

You should collect the client’s personal information including name, address and contact details for identification and record-keeping purposes. This information may also be needed in the event of an injury that requires a referral to a registered medical practitioner or in the unlikely event that an injury is serious enough to require admission into a hospital. Personal information has to be recorded and managed in accordance with the Privacy Act 1988.

There are a number of medications, medical or health conditions, herbal supplements, and other treatments and lifestyle choices that may compromise the safe delivery of light-based treatments or lead to complications post-treatment. Generally, these factors result in higher photosensitivity in the skin of affected individuals.

Some of these factors include:

- sunburn, the recent use of a solarium, or the application fake tan to the area within the last two weeks
- eczema or psoriasis in the treatment area
- birthmarks, moles or raised lesions in the treatment area
- a past history of cold sores or shingles in the treatment area
- waxing, plucking or the use of depilatory (hair removal) creams in the treatment area in the last two months (for hair reduction treatments)
- melanotan injections
- the use of photosensitising medical or herbal supplements in the last six months
- pregnancy or breast feeding
- medical conditions such as epilepsy, uncontrolled diabetes, vitiligo or autoimmune diseases
- previously or currently undergoing a course of chemotherapy or radiation therapy and have used a numbing cream in the treatment area
- topical rejuvenation creams that exfoliate the skin (e.g. alpha hydroxyl, retinoids, etc.).

This list is an indicator of some of the contraindications associated with light-based therapies and does not constitute a comprehensive description of all contraindications. It is your responsibility as a treatment provider, based on the information provided by the client and the current body of documented health research and evidence, to ensure that all possible contraindications have been considered and assessed before performing treatment on the client.

Another important consideration is the client’s skin type. Different skin types will react to light-based therapies in different ways. The skin type and hair colour, as well as any recent sun exposure, will be an important factor in deciding whether treatments are advisable.

A client’s skin type can be characterised using the Fitzpatrick Skin Phototype characterisation or any other industry accepted skin characterisation model. Clients with Skin Type IV and above, as determined by the Fitzpatrick Skin Type, are at higher risk of injury from light-based treatments due to the higher pigment
content of their skin. Any proposed treatment should consider this higher risk factor. Due to the lack of pigment in blonde, red or grey hair, clients with these traits will not gain the same level of benefit from procedures such as hair reduction or may have to undergo more sessions to achieve their desired outcome. You should consider a client’s suitability for treatment before commencement of any procedure to avoid exposing a client to optical radiation with little or no benefit. You may need to modify the treatment for it to be effective while minimising the risk of adverse effects.

When applying treatment using lasers or IPLs, you should perform a patch test of the intended treatment on part of the treatment area to assess if any adverse reaction may result from treatment. This simply means performing a first “zap” or treating a very small area. As part of the assessment, reasonable amount of time needs to be allowed in order to be confident that no adverse reactions will occur. This should be performed before each session as the skin may react differently on any given day.

You can gather all the above information in a consultation with the client which should be complete before treatment starts.

4. What information should I provide to clients before they agree to undergoing treatment?

As a light-based cosmetic treatment provider you should always provide a pre-treatment consultation with clients. During the session(s) you should:

- explain the type of the light-based treatment you intend to use to achieve the treatment outcome(s) (laser, IPL or LED phototherapy)
- outline and discuss the risks associated with the procedure including any side effects of treatment and any potential for harm in case the treatment does not go to plan
- discuss the recovery time and any waiting period between treatments (This will depend on various considerations such as the area of the body treated and skin colour)
- provide comprehensive consent documentation which gathers all the required information identifying the client and safety-critical information regarding the client’s medical history
- discuss alternative methods and approaches to achieving the desired cosmetic outcome so that the client can make an informed decision about going ahead with the treatment
- explain any preparation that needs to occur before treatment
- explain any aftercare that needs to occur post-treatment
- explain who the client should contact in the event that they are unsure about something or if a complication occurs after the treatment.

You should provide the client with information on the cosmetic services offered, how they are applied and the risks associated with their application in a comprehensive product disclosure statement (PDS). You should also give the client adequate and reasonable time to consider the contents of the PDS before you accept their consent to proceed with the treatment.

5. What qualifications and training do I need to perform cosmetic treatments?

Nationally, there are no consistent requirements in place for mandatory qualifications or training in order to perform light-based cosmetic treatments using lasers and IPLs. There are no regulations in Australia in
regard to providing LED phototherapy. In states where a regulatory framework is in place, the regulator may require you to obtain a qualification or undergo training prior to being issued with a licence to perform light-based therapy. If you are a business practising or intending to practise in Tasmania, Queensland or Western Australia, you will need to consult with your state or territory radiation safety regulator for information on obtaining a licence.

It is important to be aware that the provision of light-based cosmetic treatments using lasers, IPLs and LED phototherapy poses risks not only to the client but the treatment provider and any other person(s) in the vicinity of the equipment being used. From a radiation protection perspective, these risks are associated with optical radiation exposure to the skin and eyes. In order to mitigate some of these risks, service providers are encouraged to undertake appropriate training courses and qualifications to gain a comprehensive understanding of the risks involved with using lasers, IPLs and LED phototherapy.

Aspects governing light-based cosmetic treatment safety can be broken down into two broad areas: the physical properties of optical radiation and optical radiation equipment, and the biochemical and biomechanical responses of the body to optical radiation.

The physical properties of optical radiation and the capabilities and properties of the equipment used to deliver the treatment

In this area, some educational and practical packages that may assist you in developing your skills include:

1) Accredited laser safety courses for using laser equipment

2) Courses offered by the manufacturer of the equipment to be used in delivering the light-based cosmetic treatments

   This course should give information on the capabilities and operation of the equipment with a focus on the safe delivery of treatment during its use. The safety aspect should include the safety of the person receiving treatment, the equipment operator and any other person(s) who may receive any exposure to the optical radiation emitted.

3) Accredited vocational courses or postgraduate qualifications that focus specifically on delivering light-based therapies.

The biochemical and biomechanical response mechanisms within the skin and eyes that are affected by exposure to optical radiation.

You can attain higher levels of competency in this area by completing:

1) An accredited vocational course or an accredited post graduate qualification with a focus on the safe delivery of light-based treatments using lasers and/or IPL devices. This qualification should be undertaken for the delivery of treatments to the skin and an understanding of the potential risks to the eye.
2) A relevant graduate degree or higher in physical health care or an appropriate course focussing on treatment in the deeper layers of the skin. You should complete this as a prerequisite to the courses listed above for the delivery of services involving extended treatments in the dermis such as tattoo removal and treatments to the deeper dermis layer such as some skin resurfacing and skin rejuvenation treatments.

Note: In lieu of the specific qualification and training recommendations outlined, equivalent experience may be viewed as sufficient qualification based on a documented history of safe service delivery.

All technicians performing light-based procedures should do so under the supervision of a fully qualified treatment provider until they gain sufficient experience and/or qualification to perform treatment unsupervised.

In the event of an injury occurring to a client or to the treatment provider, every practice should have a designated First Aid Officer to render assistance until handover to a registered medical practitioner or ambulance service is possible.

6. Does my equipment need to comply with standards?

If you provide light-based treatment using lasers you should make sure that all of your laser equipment complies with the relevant Australian laser safety standards. The manufacturer, in accordance with AS/NZS IEC 60825.1 2014 Safety of laser products Part 1: Equipment classification and requirements, should appropriately classify lasers used for cosmetic purposes. The classification should be clearly visible on a label affixed to the housing of the laser equipment and should look similar to that shown in Figure 1. In addition to classification requirements, this standard also outlines other safety-related requirements and recommendations for the use of lasers.

![Classification and Safety Requirements Label](image-url)
Lasers, intense pulsed light (IPL) devices and light-emitting diode (LED) phototherapy for cosmetic treatments and beauty therapy

Figure 1. Examples of laser classification and hazard labels.

It is important to note that this Australian standard follows international best practice and is derived from the standard produced by the International Electrotechnical Commission (IEC), which is used widely around the world. IEC standards adopted globally will have been rebranded to reflect the country in which they are being applied; however, equipment classified in another country using the IEC standards will be compliant with the Australian standard due their common origin. Lasers purchased from international sources or online may be certified as compliant with other standards. For example, equipment manufactured in the United States of America is classified according to the American National Scientific Institute (ANSI) standards. While Australia recognises these standards, it is important to note that there are some differences in the laser classification systems in each standard.

In the cosmetic industry, the most common laser classes are Class 3B, Class 4 and Class 1C laser products. The Class 1C classification (referring to lasers used in contact with the skin) is described within the IEC standards but is not part of the classification system used in the ANSI standards.

IPLs used for cosmetic purposes do not have any specific standards they need to comply with for radiation protection purposes. IPL equipment requirements are set out in AS IEC 60601.2.57:2014 Medical electrical equipment - Part 2-57: Particular requirements for the basic safety and essential performance of non-laser light source equipment intended for therapeutic, diagnostic, monitoring and cosmetic/aesthetic use. In Tasmania, the state radiation regulator may have specific safety requirements for the use of IPLs.

The Australian Standard AS/NZS IEC 62471:2011 Photobiological safety of lamps and lamp systems may assist with radiation protection and guidance for the safe application of LED phototherapy.

7. Does my place of practice have to comply with any standards and what safety measures can I implement to make my practice safer?

Many strategies are available to assist you in promoting safety in your practice when strong optical radiation sources are in use. These strategies focus on the protection of all persons exposed to the optical radiation emitted from lasers, IPLs and LED phototherapy devices. In any case, you should focus on providing radiation protection to the client, the technician(s) delivering the treatment and any other potentially exposed person(s) in the vicinity.

- designing the environment where high-powered optical radiation sources are used to minimise inadvertent exposure to anyone working with or around the equipment
- developing procedures and local rules focussed on the safe use of the equipment
- the use of PPE to prevent or minimise injuries in the event of an exposure.

The Australian Standard AS/NZS 4173: 2018 Safe use of lasers and intense light sources in health care may assist with the safe use of most strong sources of optical radiation used for cosmetic treatments. The standard is intended for use by health care facilities. This standard discusses safety practices and controls for the safe use of lasers and intense light sources. Facilities that are not engaged in health care but use IPLs for cosmetic treatment do not have any specific standards they need to comply with for radiation protection.

8. **What personal protective equipment should be used during cosmetic treatments with lasers, IPLs and LED phototherapy?**

You should provide treatment providers, technicians and clients with appropriate PPE both during procedures and when entering areas where lasers and IPLs are in use. When lasers are used to deliver treatment, safety eyewear (with an optical density appropriate to the laser wavelength in operation) should be worn by the treatment provider, the client and all potentially exposed individuals at the place of business.

The Australian standard AS/NZS 1337.4:2011 Eye and face protection Part 4: Filters and eye protectors against laser radiation (laser eye-protectors) outlines appropriate eyewear requirements for protection when using lasers.

The previously mentioned AS/NZS IEC 60825.14:2011 Safety of laser products Part 14: A User’s Guide (specifically Section 8.4.5 Personal Protection) also discusses the use of laser safety eyewear.

When using IPLs to deliver treatment, dark tinted eyewear, which complies with the Australian sunglass standard AS/NZS 1067:2016 Eye and face protection — Sunglasses and fashion spectacles Part 1: Requirements, may offer some reduction in the light intensity to the eyes. You should make this eyewear available for the client, the treatment technician and all potentially exposed individuals at the place of business. There are also specific light responsive IPL protection glasses available that darken according to the intensity of the light passing through them. In addition, occlusive shields will provide additional protection to the client, especially if both lasers and/or IPLs are used around the face.

It is important to protect the client’s eyes while providing LED phototherapy. Particularly, blue LEDs have the potential to cause phototoxic reactions in the eyes and disturb the human sleep cycle (circadian rhythm). You should provide appropriate eye shields to client’s undergoing LED phototherapy.
9. **What do I do if an injury occurs to the client receiving treatment or to staff performing treatment at my practice?**

In the case of an injury occurring to a client receiving treatment, you should discontinue the treatment immediately. If an injury occurs to a service provider, technician or other exposed person on the premises, treatment should be discontinued and all equipment should be disengaged from use. A First Aid Officer can render initial assistance, however, anybody with an injury should be ultimately referred to a medical professional for further advice.

You should record details of the injury in an appropriate incident register maintained by your business. If you are practising in Tasmania, Queensland or Western Australia, you may be required to report any injuries to your state radiation regulator as part of your licencing conditions.
10. Terms and definitions

Contraindication

A contraindication is a condition, or set of conditions, that may lead to an altered or unexpected outcome when treatments or procedures are performed. Contraindications to light-based treatments may include taking herbal supplements or medications, having pre-existing health conditions or undergoing other treatments. Contraindications make light-based treatments inadvisable and should therefore be assessed before commencing a procedure.

Cosmetic treatment

Cosmetic procedures focus on enhancing one’s appearance, improving aesthetic appeal, symmetry and proportions. Cosmetic procedures can be surgical or non-surgical, and can include treatments like facial surgery, body contouring, skin therapies, light-based therapies and the injection of fillers.

Fitzpatrick Skin Phototype

The Fitzpatrick skin phototype summarised in Figure 2 is a commonly used system to describe a person’s skin type in terms of response to UV exposure. The same system can give an idea of a person’s response to light in terms of the pigment content in the skin. Darker people have more pigment in their skin and are therefore more photoresponsive to light therapies than lighter-skinned people. This is an important consideration in the delivery of light-based treatments. Treatments need to be appropriate for the client’s skin type in order to reduce any risk of injury.

A Fitzpatrick Skin Phototype fact sheet is available on our website.
**Fitzpatrick skin phototype**

The Fitzpatrick skin phototype is a commonly used system to describe a person's skin type in terms of response to ultraviolet radiation (UVR) exposure.

### Genetic (physical traits)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>What are the colour of your eyes?</td>
<td>Light blue or green, grey</td>
</tr>
<tr>
<td>What is the colour of your hair (naturally and before aging)?</td>
<td>Red</td>
</tr>
<tr>
<td>What is the colour of your skin (unexposed areas)?</td>
<td>Pink</td>
</tr>
<tr>
<td>Do you have freckles on unexposed areas?</td>
<td>Many</td>
</tr>
</tbody>
</table>

### Sensitivity (reaction to sun exposure)

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>What happens to you skin if you stay in the sun for an extended period?</td>
<td>0</td>
</tr>
<tr>
<td>Severe burns, blistering, peeling</td>
<td>Moderate burns, blistering, peeling</td>
</tr>
<tr>
<td>Do you turn brown after sun exposure?</td>
<td>Never</td>
</tr>
<tr>
<td>How brown do you get?</td>
<td>Hardly or not at all</td>
</tr>
<tr>
<td>Is your face sensitive to the sun?</td>
<td>Very sensitive</td>
</tr>
</tbody>
</table>

### Intentional exposure (tanning habits)

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do you tan?</td>
<td>0</td>
</tr>
<tr>
<td>Never</td>
<td>Rarely</td>
</tr>
<tr>
<td>When did you last expose your skin to the sun or artificial tanning sources (tanning beds)?</td>
<td>More than three months ago</td>
</tr>
</tbody>
</table>

Score: genetic + sensitivity + intentional exposure = skin type
<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–6</td>
<td><strong>Pale white skin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extremely sensitive skin, always burns, never tans</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Example: red hair with freckles</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7–13</td>
<td><strong>White skin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very sensitive skin, burns easily, tans minimally</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Example: fair skinned, fair haired Caucasians, northern Asians</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14–20</td>
<td><strong>Light brown skin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sensitive skin, sometimes burns, slowly tans to light brown</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><em>Example: darker Caucasians, some Asians</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21–27</td>
<td><strong>Moderate brown skin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mildly sensitive, burns minimally, always tans to moderate brown</td>
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<tr>
<td></td>
<td><em>Example: Mediterranean and Middle Eastern Caucasians, southern Asians</em></td>
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</tr>
<tr>
<td>28–34</td>
<td><strong>Dark brown skin</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Resistant skin, rarely burns, tans well</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><em>Example: some Hispanics, some Africans</em></td>
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<tr>
<td>35+</td>
<td><strong>Deeply pigmented dark brown to black skin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very resistant skin, never burns, deeply pigmented</td>
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<td></td>
</tr>
<tr>
<td></td>
<td><em>Example: darker Africans, Indigenous Australians</em></td>
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</tbody>
</table>

*The information published here is not intended to take the place of medical advice. Please seek advice from a qualified healthcare professional.*

**Figure 2. Fitzpatrick Skin Type Scheme**
**Intense pulsed light (IPL) device**

Intense pulsed light devices differ from lasers in that they emit light containing a spectrum of colours (many wavelengths) over a generally broader and less controlled area. The ultraviolet light components emitted by the lamp within the IPL device are normally filtered out before delivery of the light pulse to the target area. The emission usually contains visible and infrared light. The infrared component of the emission may deliver a large amount of heat to the treatment area. Aside from these differences, the treatment mechanism is the same as that for a laser. Damage to the tissue caused by the exposure to the intense light is repaired by the body’s natural healing process to deliver the desired treatment outcome. However, the use of IPL devices does not allow for extreme precision and is not recommended for treatments in the deeper dermis layer of the skin.

**Laser**

Laser stands for Light Amplification by Stimulated Emission of Radiation. Lasers emit a beam of optical radiation consisting usually of one colour of light (represented by a specific wavelength). The light emitted can be continuous or pulsed when delivered. Continuous lasers emit light when they are activated and the beam only discontinues when they are deactivated. A pulsed laser emits light in an ‘on-off’ manner when activated. Pulsed lasers are the most common laser type for cosmetic treatment purposes. In particular, Q-switched lasers are able to deliver large amounts of energy for very short lengths of time. For the purposes of non-surgical cosmetic treatments, lasers work by focussing their optical radiation onto specific chemicals in the skin, known as chromophores. After treatment, the body’s natural healing processes repair the damage caused by the exposure to deliver the desired treatment outcome.

**LED phototherapy**

LED phototherapy is a service offered for the treatment of superficial skin conditions. LED phototherapy involves the use of continuous light from light emitting diodes with either a specific wavelength set of well-defined wavelengths of light rather than the pulses of light from lasers or IPLs. Different wavelengths of LED are used for various skin conditions. Each wavelength penetrates to a different depth and the effect within the skin will differ. For example red-light emitting LEDs can be used for skin rejuvenation, to reduce inflammation, and to improve healing. Blue light emitting LEDs are primarily used for acne treatment.

LED phototherapy is different from photodynamic therapy. Photodynamic therapy uses medications or agents that increase the photosensitivity of the skin. Photodynamic therapy is generally only used by medical professionals for both medical and cosmetic purposes in Australia.

**licence**

Licences are issued to cosmetic treatment providers in Tasmania for the use of both lasers and IPLs and in Queensland and Western Australia for the use of lasers. Licences may be issued on the basis of qualifications and training, safety documentation or equipment approvals. A licence may apply to an authorised treatment provider, equipment, a place of practice or a combination of these. The relevant state
radiation regulator will set the licensing conditions and requirements for treatment providers in their jurisdiction.

**Medical clearance**

Before commencing any light-based cosmetic treatments it is advisable for a potential client to have an examination performed by a registered medical practitioner. This may assist in determining any contraindication to treatment, in particular the assessment of any skin blemishes, moles or lesions as benign or malignant. It is important to remember that such a clearance is valid only for the time it is issued and does not last indefinitely.

**Photosensitivity**

Photosensitivity refers to the degree of sensitivity a body tissue has to optical radiation. This tissue response makes certain people more photosensitive than others. Photosensitivity may be affected by the amount of pigment a tissue such as skin contains or by an existing medical or health condition that makes a person more sensitive to light. Photosensitivity is an important consideration in the delivery of cosmetic treatments using lasers and IPLs. Adverse reacts may occur in highly photosensitive people who are exposed to these light-based therapies.

**Qualification**

Qualifications are made up of individual units or subjects and can form the basis of training packages designed to deliver recognised levels of competency within an industry. There may be several qualifications that treatment providers can attain to assist in the safe delivery of cosmetic treatment services using lasers and IPLs. There are ten levels of qualifications in Australia ranging from Certificate 1 courses to Doctoral degrees. The Australian Qualifications Framework (AQF) is the nationally recognised system for qualifications in Australia. Further information on qualifications can be on the AQF website.

**Regulator**

For the provision of light-based cosmetic treatments, the regulator is the independent government body that promotes the safe use of lasers and/or IPLs. A regulator has statutory authority by an Act of Parliament in the matters it oversees. In states where the use of lasers and/or IPLs used to deliver light-based cosmetic treatments is regulated, the regulator has authority in licensing matters. Details for the state and territory radiation regulators can be found on the ARPANSA website.

**Skin**

The skin is made up of three main layers: the epidermis, dermis and hypodermis (see Figure 3).

The epidermis is the thin surface layer that provides a waterproof barrier and gives us our characteristic skin tone. The dermis contains hair follicles, connective tissue, sweat glands and blood vessels. The hypodermis or deeper subcutaneous tissue is made of fat and connective tissue and also contains blood vessels.
Light-based cosmetic treatments are typically applied to the epidermis and dermis layers of the skin depending on the procedure. In general, extensive treatments in the deeper layers of the skin such as tattoo removal and skin resurfacing carry greater risk of injury than superficial or less involved treatments such as hair removal. However, many complications and adverse health effects from light-based treatments occur because of epidermal disruption (i.e. superficial symptoms resulting from superficial or deep treatments. Hair removal frequently causes problems due to lack of recognition of superficial pigment in the skin).