

SECTION 10

RADIATION HAZARDS



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SECTION 10 - RADIATION HAZARDS

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10.2 Introduction

Radiation is the emission of energy that travels as energy or particles. Radiation can occur naturally – such as light, heat, microwaves, and radio waves.

Radiation is classed as ionising radiation or non-ionising. Ionising radiation carries more energy than non-ionising radiation.

Electromagnetic fields (EMFs) are a type of non-ionising radiation. Ionizing radiation, like X-rays and radioactive sources, can break up molecules and damage human cells.

There are many types of beauty services that use low frequency, non-ionising radiation. The following are examples where radiation might be used:

Radiation Type	Applications	Potential Risks if Not Used properly
Ultraviolet light; non-ionising	UV & LED lights used by nail technicians Sunlamps, sunbeds and tanning booths	<ul style="list-style-type: none"> • burns due to product on skin during curing • increased risk of skin cancer
Infra-red radiation; non-ionising	UV & LED lights used by nail technicians	<ul style="list-style-type: none"> • burns to skin and eye tissue Lasers
Lasers; non-ionising	Beauty industry treatments such as skin exfoliation and hair removal	<ul style="list-style-type: none"> • skin damage including burns • eye damage, including blindness
Light Emitting Diode (LED); non-ionising	beauty industry treatments such skin exfoliation and hair removal	<ul style="list-style-type: none"> • eye damage, burns and or blindness • burns to skin
Intense Pulse Light (IPL); non-ionising	beauty industry treatments such as hair removal and the stimulation treatments and hair removal	<ul style="list-style-type: none"> • eye damage, burns and or blindness • burns to skin • hyperpigmentation
Ultrasound; non-ionising	beauty industry heat treatment and skin exfoliation	<ul style="list-style-type: none"> • overheating and burning of body tissue

10.3 Risk assessments

If you use any of this equipment (or any other equipment that uses radiation), you have to do a risk assessment.

Identify all sources of ionising and non-ionising radiation in your workplace and the risks they pose. Once you have identified the significant risks, you must control them.

The consequences of exposure to the hazard of UV radiation, such as those from UV tanning equipment, are as follows.

- Burns
- Skin dryness and itching
- Eye irritation or conjunctivitis (where suitable goggles are not worn)
- Customers becoming trapped if the equipment fails mechanically
- Skin cancer
- Premature skin aging
- Damage to DNA
- Organ damage
- Cataracts (where suitable goggles are not worn)
- Premature ageing of the skin, which will look coarse, leathery and wrinkled

10.4 Training

It is essential that the correct training is provided for use of these machines.

Training can be provided by a machine supplier, senior laser technicians in the business and/or achieved through completing competency training

10.5 Control measures

Install special cubicles to carry out UV and laser treatments to prevent accidental exposure to radiation.

Always:

- Provide workers with instruction and training on the health effects associated with radiation exposure and the safe use of equipment
- Use equipment according to the manufacturer's instructions



- Display signs warning other persons that radiation-emitting equipment is in use
- Do not exceed the recommended times for treatments
- Ensure workers and clients wear goggles that meet Australian Standards at all times when UV and laser equipment is in use
- For laser treatments, remove or cover all items with smooth reflecting surfaces, such as mirrors, bottles, polished metal and jewellery, with matt black paper or cloth
- Make sure the light in the laser work area is as bright as possible to construct the diameter of the pupil of the eye and reduce the risk of damage to the retina

10.6 Resources

For more information, see

[UV tanning equipment](#) (HSE)

[INDG209 Reducing health risks from the use of ultraviolet \(UV\) tanning equipment](#) (HSE)

[INDG334 Working safely with ionising radiation. Guidelines for expectant or breastfeeding mothers](#) (HSE)