



## COSMETIC LASER TREATMENTS

### The Issue

Laser technology is being used for an increasing number of cosmetic treatments. Examples include hair reduction, skin resurfacing for wrinkle reduction and/or treatment of acne scars, removal of pigmented blemishes (e.g., age spots and moles), and treatment of vascular lesions (e.g., port wine stains and spider veins). Lasers are also used to remove tattoos.

If you are considering any of these procedures, it is important to look at the potential risks as well as the potential benefits.

### Background

A number of medical devices using related technologies have been licenced in Canada for use in cosmetic treatments. These technologies include various types of lasers, intense pulsed light and radio-frequency energy, all of which operate on the same basic principle.

Lasers emit an intense beam of light or energy (visible or invisible) with a specific wavelength, which is targeted at a type of tissue in the part of the body being treated. When the beam of energy reaches its target, it is absorbed and converted into heat. If the procedure is done properly, the heat inactivates or destroys cells in the target area without having a significant effect on the other cells that surround it.

For hair reduction, the laser system targets the melanin (or dark colouring) in the hair follicle (or root). For wrinkle reduction and treatment of acne scars, the device targets and damages cells near the surface of the skin. The results are similar to the skin-tightening effect caused by traditional skin resurfacing procedures, such as chemical peels and mechanical abrasion. To treat vascular

lesions, including spider veins, the light from the laser is directed at the blood vessels. If the appropriate wavelength is used, the vessel wall is injured and is subsequently absorbed by the body. Treatments for surface blemishes and tattoos are based on a similar principle.

The effectiveness of cosmetic laser procedures depends on many factors, including:

- choice of the correct device for a given treatment
- the training and skill of the person operating the device
- the wavelength of the beam of energy that targets the tissue
- the power settings used, the duration of each energy pulse, the amount of time between pulses, the number of pulses per treatment, and the number of treatments administered
- the colour of the skin and/or hair of the person being treated

These factors also affect the type and severity of risks associated with the treatments.

### Risks associated with Cosmetic Laser Treatments

Even when the correct laser instrument is chosen for a given treatment, there is a risk of temporary effects, including immediate pain, reddening of the skin, bruising and swelling. Some lasers are equipped with cooling devices to reduce this risk. Other possible side effects include the formation of blisters, burns and infection. In some cases, there may be lightening or darkening of the



skin, but these complications are rarely permanent.

If the wrong device is used or if a procedure is not done properly, the desired results may not be obtained and there is a risk of permanent scarring. There is also a risk of eye damage if you do not wear proper eye protection during laser treatments.

## Other Concerns

Cosmetic laser procedures can be expensive, and you may be disappointed with the results if you are not a suitable candidate or do not have realistic expectations. For example, laser hair reduction works best for people with light skin and dark hair. It is not as effective on blond, red, grey or white hair or for people with dark skin. Most people need multiple sessions in order to achieve good results. Depending on the operator and the laser system used, there may be some permanent hair reduction (about 30%), but there are no guarantees that the procedure will work for every person or on every part of a person's body.

Also, the degree of effectiveness for many types of cosmetic laser treatments is subjective. You may not be happy with results that someone else would consider to be successful. In addition, some treatments, such as skin resurfacing, require detailed follow-up care, including up to two weeks of recovery time.

## Minimizing Your Risk

The best way to minimize your risk is to make informed decisions based upon thorough research. Find out whether you are a suitable candidate for the procedure you have in mind. Look into the requirements for recovery time and follow-up care. Investigate the risks, and weigh them against the benefits expected

for someone with your type of skin and/or hair.

If you decide to go ahead, be sure that the person who will operate the laser device has the training and experience needed to perform the procedure safely and effectively. Ask the operator for references. Experts in cosmetics with proper training in laser techniques should be able to perform hair reduction treatments with minimal risks to the Canadian public. Avoid tanning before and after treatments for laser hair reduction. Tanning increases melanin production in your skin and can reduce the effectiveness of the treatment.

For any other type of laser treatment, Health Canada advises you to seek the services of a licenced health care professional with specialized training in laser procedures. This is particularly important if you are seeking treatment for growths or pigmented areas on your skin.

Be sure to wear eye protection, and ask about cooling the skin during laser treatments. Also, make sure the laser device has been licenced by Health Canada for the specific procedure you have in mind. The licenced uses, expected benefits and potential risks of licenced laser devices are described in either the Operator's Manual or the Training Manual supplied by the manufacturer.

Finally, make a commitment to participate fully in any follow-up care that may be required.

## Health Canada's Role

Health Canada regulates laser devices under the Radiation Emitting Devices Act, the Medical Devices Regulations and the Food and Drugs Act. These Acts and Regulations ensure that laser systems sold in Canada are safe and effective when

used for their licenced medical purposes by trained professionals according to the manufacturers' directions.

## Need More Info?

For more information, contact:

Medical Devices Bureau,  
Health Canada  
Room 1605,  
Statistics Canada  
Main Building  
Tunney's Pasture  
Ottawa, ON K1A 0L2  
Telephone: (613) 957-4786  
[http://www.hc-sc.gc.ca/hpfb-dgpsa/tpd-dpt/aboutus\\_e.html](http://www.hc-sc.gc.ca/hpfb-dgpsa/tpd-dpt/aboutus_e.html)

and/or  
Consumer and Clinical Radiation  
Protection Bureau,  
Health Canada  
775 Brookfield Road  
Ottawa, Ontario K1A 1C1  
Telephone: (613) 954-6699  
<http://www.hc-sc.gc.ca/hecs-sesc/ccrpb/splash.htm>

To report problems associated with the use of medical devices, including laser systems, call Health Canada's toll-free hotline at 1-800-267-9675.

Also, see the following Web sites:

The U.S. Food and Drug Administration Web site at  
[http://www.fda.gov/fdac/features/796\\_hair.html](http://www.fda.gov/fdac/features/796_hair.html)  
and  
<http://www.fda.gov/cdrh/consumer/laserfacts.html>

For additional articles on this subject and other issues go to the It's Your Health Web site at:  
[www.healthcanada.ca/iyh](http://www.healthcanada.ca/iyh)  
You can also call (613) 957-2991