PROCEDURE

Laser therapy

Laser therapy uses concentrated light energy to remove, reshape, seal, or destroy targeted tissue.

PURPOSE
Remove, reshape, seal, or destroy targeted tissue

PROCEDURE TYPE
Therapeutic; minimally invasive, endoscopic, or surgical

WHERE IT IS DONE
Outpatient clinic, endoscopy suite, or operating theatre

ANAESTHESIA
None, local, sedation, or general, based on treatment

HOW LONG IT TAKES
About 10 minutes to several hours

PREPARATION
Treatment-specific fasting, medicine, skin, or eye instructions

RECOVERY
Same day to several days; driving restrictions may apply

MAIN RISKS
Burns, scarring, pigment changes, infection, or eye injury

RESULTS
Immediate to weeks; pathology takes days when tissue is sampled

Overview

Laser therapy uses a narrow, controlled beam of light to treat tissue. Different lasers produce different wavelengths, or types, of light. The laser may cut tissue, seal blood vessels, break up material, or heat and destroy selected cells.

"Laser therapy" describes many procedures rather than one standard treatment. Lasers are used in dermatology, eye care, cancer treatment, dentistry, urology, gynaecology, and other specialties. Treatment can range from a brief skin procedure in a clinic to an operation under general anaesthesia.

Some lasers act at the surface. Others are passed through an endoscope, which is a thin viewing instrument placed inside the body. The experience, preparation, and recovery therefore depend on the body area and the purpose of treatment.

Why the procedure is performed

A laser may be offered when its focused energy can treat a small area while limiting damage to nearby tissue. The goal may be medical, cosmetic, or both.

Laser therapy can be used to:

The expected benefit should be specific to your condition. Ask whether the aim is to cure a problem, reduce symptoms, improve appearance, or make another treatment easier.

- Remove or reduce skin growths, scars, tattoos, unwanted hair, or visible blood vessels
- Reshape the cornea, the clear front surface of the eye
- Seal bleeding vessels or abnormal blood vessels
- Open narrowed or blocked passages
- Break up stones or other hard material
- Remove, shrink, or relieve symptoms from some tumours
- Cut tissue during surgery

Who should and should not have it

Laser therapy may suit you when the target can be reached safely and the chosen laser is appropriate for that tissue. Your clinician should explain why laser treatment is being recommended instead of medicine, observation, or another procedure.

It is not right for every person or every condition. Treatment may be avoided, changed, or delayed if you have an active infection in the treatment area, a condition affecting wound healing, or a medical problem that makes anaesthesia unsafe at that time.

Elective treatment may also be delayed during pregnancy. Some medicines can increase bleeding, affect healing, or make skin more sensitive to light. Do not stop prescribed medicine unless the treating team tells you to.

Your skin tone, tendency to form raised scars, previous procedures, and recent sun exposure can affect the choice of laser and settings. These factors do not always rule out treatment, but they may change the risks and likely results.

If cancer is possible, a biopsy may be needed before tissue is destroyed. A biopsy removes tissue for examination under a microscope. Laser destruction alone may leave no sample to test.

How to prepare

Follow the treating facility's own instructions first, because preparation differs greatly between laser procedures.

Tell the team about your medical conditions, allergies, implanted devices, previous reactions to anaesthesia, and all medicines and supplements you take. Include blood thinners and medicines that increase sensitivity to light.

Depending on the treatment, you may be asked to:

Ask whether you need someone to stay with you afterward. Confirm what to do with your regular medicines rather than making changes yourself.

- Avoid tanning or heavy sun exposure
- Stop using certain skin products
- Remove makeup, creams, contact lenses, or jewellery
- Avoid eating or drinking before sedation or general anaesthesia
- Arrange for an adult to take you home
- Use prescribed eye drops, skin preparations, or antiviral medicine

What happens during the procedure

The team confirms the treatment area and positions you safely. Protective eyewear is used when there is a risk that laser light could reach the eyes. Everyone in the room may need wavelength-specific eye protection.

Pain control may involve cooling, numbing cream, an injection of local anaesthetic, sedation, or general anaesthesia. Sedation makes you relaxed and drowsy; general anaesthesia makes you unconscious.

The clinician directs laser pulses at the target. You may notice flashes, clicking sounds, warmth, or a smell similar to singed hair. Cooling air, gel, or a chilled device may protect the skin and reduce discomfort.

For internal treatment, the laser may pass through an endoscope or another thin instrument. The team may remove tissue, control bleeding, or treat a blockage while watching the area on a screen.

A dressing, ointment, eye shield, or other protective covering may be applied afterward.

Recovery and what to expect afterward

Pain is often described as soreness, stinging, burning, or a gritty feeling, depending on the site. Use only the pain relief and skin or eye products recommended by your treating team.

You can usually eat normally after a surface treatment. If your mouth, throat, digestive tract, or urinary tract was treated, you may need temporary diet or fluid instructions. After anaesthesia, begin eating as directed.

Activity limits depend on the treated area. You may need to avoid strenuous exercise, swimming, rubbing the area, sexual activity, or direct sunlight while it heals. Redness, swelling, bruising, crusting, or mild drainage can occur after some treatments.

Do not drive home if you had sedation or general anaesthesia. You should also avoid driving if your vision is blurred, the treatment affects movement, or you are taking medicine that causes drowsiness.

Some people return to work the same day. Others need several days or longer, especially after deeper skin treatment, eye surgery, internal treatment, or general anaesthesia.

Risks and possible complications

The risks depend on the laser, energy setting, treatment depth, body area, and your health. Possible complications include:

Some treatments require several sessions. More treatment may not fully correct an uneven result, colour change, or scar.

- Pain, swelling, blistering, or burns
- Infection or delayed healing
- Bleeding
- Scarring or changes in skin texture
- Skin becoming lighter or darker
- Eye injury if appropriate protection is not used
- Damage to nearby tissue
- An anaesthetic or sedation-related complication
- Incomplete treatment, recurrence, or an unwanted cosmetic result

Results and follow up

Some results are visible immediately, such as removal of a growth or sealing of a bleeding vessel. Swelling and redness can hide the final result of skin or eye treatment for days or weeks. Collagen remodelling and fading of pigment may take longer.

If tissue was collected, laboratory results usually take several days. Ask how and when you will receive them.

Routine follow-up may be used to check healing, review test results, adjust medicines, or decide whether another session is needed. Keep these appointments even if recovery seems straightforward.

Alternatives

The alternatives depend on what the laser is intended to accomplish. Ask what would happen if you delayed treatment or chose no treatment.

Common options include:

The best comparison includes expected benefit, number of sessions, recovery time, cost, and whether tissue must be saved for diagnosis.

- Observation: avoids a procedure but may allow the condition to persist or progress
- Medicines: avoid surgery but may work slowly, require ongoing use, or be less targeted
- Conventional surgery: provides direct access and may supply tissue for testing, but often involves a larger wound and longer recovery
- Freezing, heat, electrical treatment, or chemical treatment: may treat some surface lesions but have different risks of scarring and pigment change
- Radiation or drug treatment for cancer: can treat areas a laser cannot reach but may affect more surrounding tissue or the whole body
- Glasses or contact lenses instead of laser vision correction: avoid eye surgery but continue the need for vision aids
- No cosmetic treatment: avoids procedure-related risks but leaves the feature unchanged

When to call your healthcare team

Contact your treating team promptly for worsening pain, increasing redness or swelling, pus,

fever, new blisters, persistent bleeding, or symptoms that are not following the recovery plan. After eye treatment, report increasing eye pain, marked light sensitivity, or worsening vision urgently.

Seek emergency care for:

Routine redness, tenderness, and follow-up questions can usually be discussed during normal clinic hours unless your discharge instructions say otherwise.

- Trouble breathing or swelling of the face or throat
- Sudden loss of vision
- Heavy bleeding that does not stop with instructed pressure
- Chest pain, fainting, or severe confusion

Common questions

Will I be asleep?

Not always. Small surface treatments may need no anaesthetic or only numbing cream. Deeper, internal, or longer procedures may use local anaesthetic, sedation, or general anaesthesia.

Can I drive home?

Not after sedation or general anaesthesia. You may also need someone else to drive if treatment affects your eyesight, movement, or ability to concentrate.

How painful is laser therapy?

The sensation ranges from mild snapping or warmth to stronger burning or soreness. The treatment area and depth matter. Numbing medicine, cooling, sedation, or anaesthesia can reduce discomfort.

When will I know if it worked?

Some effects are immediate. Final skin, scar, or vision results may take weeks or months. If tissue was tested, the pathology result usually takes several days.

Will I need more than one session?

Possibly. Tattoos, hair, scars, pigment, blood vessels, and some tumours may require repeated treatment. Your clinician should explain the planned number and what improvement is realistic.

Will laser therapy leave a scar?

Scarring is possible, although lasers are often selected to limit damage to nearby tissue. The

risk is influenced by treatment depth, infection, healing, skin characteristics, and aftercare.

Sources

- MedlinePlus Medical Encyclopedia: Laser therapy , US National Library of Medicine
- Laser Products and Instruments , US Food and Drug Administration
- Lasers in Cancer Treatment , National Cancer Institute
- Laser/Light Therapy , American Society for Dermatologic Surgery