PROCEDURE

Head and face reconstruction

Head and face reconstruction uses surgery to restore appearance, protection, or function after tissue has been damaged or removed.

PURPOSE
Restoring facial structure, appearance, protection, or function

PROCEDURE TYPE
Therapeutic; surgical repair using grafts, flaps, implants, or prostheses

WHERE IT IS DONE
Operating theatre

ANAESTHESIA
General, with local anaesthesia for some smaller repairs

HOW LONG IT TAKES
Two to twelve hours; some repairs require staged operations

PREPARATION
Fasting, medication review, scans, and donor-site planning

RECOVERY
Several hospital days; no driving until medically cleared

MAIN RISKS
Bleeding, infection, poor healing, and flap blood-flow failure

RESULTS
Initial shape immediately; function assessed over weeks to months

Overview

Head and face reconstruction is surgery to rebuild areas such as the scalp, forehead, eyelids, nose, cheeks, lips, jaw, mouth, or ears. The goal may be to restore appearance, protect important structures, or improve functions such as speaking, chewing, swallowing, breathing, and closing the eyes.

Reconstruction may be needed after cancer surgery, injury, burns, infection, or an earlier operation. It can also correct a difference present from birth. It may be performed at the same time as another operation or later, after the area has healed.

The surgeon may close a small wound directly or use a skin graft. A graft is tissue moved without its own blood supply. It relies on the new area to develop a blood supply.

Larger defects may need a flap. A flap is skin, fat, muscle, or bone moved with a blood supply. A nearby flap remains connected to its original blood vessels. A free flap is completely detached, moved from another part of the body, and connected to blood vessels in the head or neck using microsurgery.

Implants, bone grafts, and removable facial prostheses may also be used. Complex reconstruction often involves plastic, head and neck, oral and maxillofacial, eye, or ear surgeons.

Why the procedure is performed

Your team may recommend reconstruction when a defect affects more than appearance. Missing or damaged tissue can expose the brain, eye, major blood vessels, or bone. It can also affect facial movement, speech, eating, swallowing, breathing, vision, or saliva control.

After cancer removal, reconstruction can fill the space left by surgery while helping preserve function. After an injury, it may restore the shape and strength of facial bones or cover exposed structures.

The exact aim should be clear before you consent. Complete symmetry is not always possible. The planned result may instead focus on protecting the area, closing a wound, supporting an eye, rebuilding a jaw, or making eating and speaking easier.

Who should and should not have it

Reconstruction may be suitable if damaged or missing tissue is unlikely to heal acceptably on its own or if simpler closure would not provide enough protection or function. Your general health, the size and location of the defect, previous surgery or radiation treatment, and the available donor tissue all affect the plan.

Elective reconstruction may be delayed if you have an uncontrolled infection, unstable heart or lung disease, severe nutritional problems, or another condition that makes anaesthesia or healing unsafe. Poor blood flow in the proposed donor or reconstruction area may rule out certain flaps.

Smoking and nicotine can reduce blood flow and interfere with healing. Your team may require a period without nicotine before and after an elective operation. Cancer treatment, urgent wound coverage, or serious trauma may affect whether delaying surgery is reasonable.

Previous operations or radiation do not automatically prevent reconstruction, but they may limit the available blood vessels and tissue. A simpler operation, prosthesis, delayed

reconstruction, or no reconstruction may sometimes be safer or better aligned with your goals.

How to prepare

Your treating facility's own instructions take priority because preparation differs according to the operation, anaesthetic, and donor site.

You may have photographs, blood tests, scans, or checks of blood vessels in the face, neck, arms, or legs. Dental assessment may be needed when surgery involves the mouth or jaw. Your team should explain where donor tissue may come from and how that area could look and function afterward.

Give the team a complete list of medicines, supplements, allergies, and previous reactions to anaesthesia. Blood thinners and some diabetes medicines may need a specific plan. Do not stop prescribed medicine unless the treating team tells you to do so.

Follow the facility's fasting instructions. Arrange help with transport, daily tasks, wound care, and dependants. For a major reconstruction, pack for a hospital stay rather than expecting to go home on the day of surgery.

What happens during the procedure

After general anaesthesia, the surgical team cleans and covers the operating areas. If another operation is creating the defect, such as removal of a tumour, reconstruction may begin during the same anaesthetic.

The surgeon measures the missing tissue and selects the most appropriate repair. Small defects may be closed directly or covered with a skin graft. Larger defects may require a local, regional, or free flap.

For a free flap, tissue is taken from an area such as the forearm, thigh, abdomen, back, or lower leg. The choice reflects whether skin, soft tissue, muscle, or bone is needed. Under a microscope, the surgeon connects the flap's small arteries and veins to vessels in the head or neck.

The donor area is then closed, sometimes with a skin graft. Drains may be placed to remove blood or fluid. Depending on the operation, you may temporarily need a breathing opening in the neck, called a tracheostomy, or a feeding tube while swelling settles and tissues heal.

Recovery and what to expect afterward

Pain is expected at both the reconstructed and donor areas. Medicines are given to keep it manageable. Swelling, bruising, tightness, numbness, and temporary facial imbalance are also common early on.

Eating depends on the area treated. After external facial or scalp surgery, you may be able to eat soon after anaesthesia. Mouth or jaw reconstruction may require tube feeding, followed by liquids and soft foods. A swallowing specialist may assess you before oral eating begins.

Activity starts gradually. Staff may help you sit, stand, and walk early, while protecting drains, grafts, and the donor area. Lifting, bending, exercise, and pressure on the reconstruction are restricted until healing is secure.

Do not drive home. Resume driving only when your surgeon permits it, you are no longer taking sedating pain medicine, and swelling or limited movement does not affect safe control of a vehicle.

Returning to work may take several weeks after major reconstruction. A desk-based role may be possible sooner than physical work. Further cancer treatment, wound healing, speech therapy, or staged surgery can extend recovery.

Risks and possible complications

Possible risks include bleeding, infection, fluid collection, wound separation, visible scarring, and delayed healing. There may be numbness, weakness, stiffness, asymmetry, or changes in speech, chewing, swallowing, or facial movement.

A graft may not fully attach. A flap can develop reduced blood flow because of a clot or pressure on its vessels. Close monitoring is especially important during the first days because prompt surgery may sometimes restore the blood supply.

The donor area can develop pain, weakness, altered sensation, scarring, or reduced movement. The specific effects depend on where tissue was taken.

General surgical risks include reactions to anaesthesia, blood clots, chest infection, and injury to nearby structures. Your surgeon should explain the risks most relevant to the planned reconstruction rather than only the risks of reconstruction in general.

Results and follow up

The basic shape of the reconstruction is visible immediately, but swelling and bruising can hide

the final appearance. Scars, firmness, colour, and facial balance usually continue changing over months.

Your team will check wounds, drains, blood flow, facial movement, eating, speech, and the donor area. Stitches, staples, drains, splints, or dressings are removed according to healing. Rehabilitation may involve speech and swallowing therapy, physiotherapy, dental care, or psychological support.

Some people later choose scar treatment, contouring, dental implants, tattooing, or another operation. These are usually considered after the first reconstruction has settled.

If tissue was removed because of possible cancer, the laboratory result is separate from the reconstruction result. Pathology usually takes several days or longer and guides any further treatment.

Alternatives

The realistic alternatives depend on why reconstruction has been proposed.

Leaving the area unreconstructed avoids another repair and donor-site surgery. However, it may leave an open wound, exposed structures, a greater functional problem, or a visible defect.

Direct closure or a skin graft is usually shorter than flap surgery and does not require microsurgical blood-vessel connections. It may not provide enough bulk, strength, lining, or bone, and grafts can contract as they heal.

A nearby flap avoids removing tissue from a distant part of the body. Its size and reach are limited, and it may create additional scarring close to the face or neck.

A removable prosthesis can replace structures such as an ear, nose, or eye area without transferring living tissue. It requires fitting, cleaning, maintenance, and sometimes adhesive or implants. It does not heal into the body like living tissue.

Delayed reconstruction provides time for recovery or treatment planning. The trade-off is living with the defect temporarily, and later surgery may be more difficult because of scarring or radiation changes.

When to call your healthcare team

Contact your surgical team urgently if you notice rapidly increasing swelling, worsening pain despite medicine, persistent fever, spreading redness, foul drainage, wound opening, or new

bleeding. Report a visible flap becoming unusually pale, blue, dark, cold, or suddenly more swollen.

Seek emergency help for trouble breathing, severe or uncontrolled bleeding, chest pain, fainting, or sudden weakness or difficulty speaking.

Expected swelling, bruising, numbness, and controlled discomfort can usually be discussed at routine follow-up. Contact the team sooner if these changes are worsening rather than gradually improving.

Common questions

Will I be asleep?

Most head and face reconstruction is performed under general anaesthesia, so you are unconscious. A small graft, scar revision, or minor repair may sometimes use local anaesthesia with or without sedation.

Can I drive home?

No. Major reconstruction requires a hospital stay, and you cannot drive after general anaesthesia or while taking sedating pain medicine. Arrange transport for discharge.

How painful is it?

Pain varies with the reconstruction and donor area. It is usually strongest during the first few days and should become easier to manage. Tell the team if pain suddenly increases.

When will I know if it worked?

Surgeons can assess the initial repair immediately, but they monitor graft or flap healing closely afterward. Appearance and function become clearer over weeks to months.

Will I look like myself?

The aim is to restore a natural shape while protecting function, but exact symmetry cannot be guaranteed. Swelling can make the early result look very different from the settled result.

Where will the replacement tissue come from?

It may come from nearby skin or from the forearm, thigh, abdomen, back, or lower leg. Your surgeon should explain why a particular donor site fits your needs.

Sources

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