PROCEDURE

Clubfoot repair

Clubfoot repair is surgery to improve the position and function of a rigid or recurrent clubfoot.

PURPOSE
Correct a rigid or recurrent clubfoot and improve function

PROCEDURE TYPE
Therapeutic surgery through one or more foot incisions

WHERE IT IS DONE
Operating theatre

ANAESTHESIA
General

HOW LONG IT TAKES
One to three hours, based on the operation

PREPARATION
Fasting, medicine review, skin check, and transport planning

RECOVERY
Same day or overnight; no driving after general anaesthesia

MAIN RISKS
Infection, stiffness, recurrence, nerve or blood-vessel injury

RESULTS
Correction seen immediately; function assessed during long-term follow-up

Overview

Clubfoot repair is surgery to improve the position of a foot affected by clubfoot, or congenital talipes equinovarus. In this condition, the foot points downward and turns inward.

Surgery is not usually the first treatment. Most babies are treated with the Ponseti method, which uses gentle repositioning and a series of casts. This is often followed by a small procedure to release the tight Achilles tendon and bracing to maintain correction.

More extensive surgery may be considered if the foot remains rigid, cannot be fully corrected with casting, or turns inward again. Clubfoot repair can describe several operations, so ask which procedure is planned and what it aims to correct.

Why the procedure is performed

The goal is to create a foot that sits flatter, fits into footwear, and supports comfortable standing and walking. Surgery may be offered when:

The operation depends on age, foot flexibility, previous treatment, and the remaining deformity.

- Casting and bracing have not produced or maintained enough correction
- A treated clubfoot has become rigid or turned inward again
- Tight tendons or unbalanced muscles pull the foot out of position
- Bone shape or joint position prevents correction
- Residual deformity affects walking, footwear, or foot use

Who should and should not have it

Surgery may be appropriate for a child or adult with a fixed, function-limiting clubfoot that cannot be managed adequately with less invasive treatment. It may also help selected children whose clubfoot has recurred.

It is not the usual first treatment for a baby whose foot can be managed with Ponseti casting.

An operation may be avoided or delayed when:

Previous surgery and nerve, muscle, or other medical conditions may change the operation and its goals.

- Casting, bracing, or a smaller procedure may still work
- There is an active skin infection, open sore, or significant skin damage near the site
- Fever or illness makes general anaesthesia less safe
- Swelling would interfere with wound closure or casting
- Another medical condition needs treatment first
- The likely benefit does not outweigh the risk of stiffness or pain

How to prepare

Follow the treating facility's instructions about fasting, medicines, arrival time, and cast care.

Tell the team about all medicines, supplements, allergies, bleeding problems, and previous reactions to anaesthesia. Do not stop any prescribed medicine, including a blood thinner like warfarin or apixaban , unless instructed.

Contact the facility before surgery if you or your child develops a fever, cough, vomiting, new rash, or damaged skin around the foot. Surgery may need to be delayed.

Arrange transport home. Bring loose clothing that fits over a cast, and ask whether crutches, a stroller, or another mobility aid will be needed.

What happens during the procedure

General anaesthesia keeps the person unconscious and unable to feel the operation. The surgeon confirms the correct foot and examines its movement.

Depending on the deformity, the surgeon may:

A more extensive release may use incisions around the back or inner side of the foot. A flexible recurrence may need only a tendon transfer, while a rigid deformity may require bone surgery.

The incisions are closed, and a cast usually holds the corrected position. Some people go home the same day; others stay overnight.

- Lengthen or release tight tendons and ligaments
- Move a tendon to improve muscle balance
- Reposition joints or bones
- Make controlled bone cuts to change alignment
- Insert temporary pins, screws, or other hardware

Recovery and what to expect afterward

Pain is expected for the first few days but should be manageable with advised medicine. Raising the foot can reduce swelling. Never put objects inside the cast to scratch the skin.

Eating can restart when the anaesthesia team says it is safe. Fluids and light food may be offered first because nausea can occur.

Follow the operation-specific weight-bearing instructions. The foot may need to stay completely off the ground, or limited weight-bearing may be allowed. Do not test it yourself. Keep the cast clean and dry.

An adult who has received general anaesthesia must not drive home or drive during the

restriction period given by the facility. A child needs a responsible adult for transport and supervision.

Return to school or work depends on pain, mobility, and whether the foot can be protected and raised. Sport and high-impact activity remain restricted until the surgeon confirms adequate healing.

Risks and possible complications

Possible risks include:

Extensive releases may improve alignment but can make the foot stiffer. The surgeon should explain how the proposed operation balances correction and movement.

- Infection, bleeding, or delayed wound healing
- Problems related to general anaesthesia
- Pressure, rubbing, or skin injury beneath the cast
- Nerve or blood-vessel injury
- Persistent numbness, weakness, swelling, or pain
- Undercorrection or overcorrection
- Recurrence as a child grows
- Stiffness, reduced movement, or later arthritis
- Hardware moving, breaking, or requiring removal

Results and follow up

The surgeon can assess the foot's new position during surgery, but long-term results take time to judge. Swelling must settle, tissues must heal, and a growing child's foot can change.

Follow-up visits are used to inspect the cast and skin, assess healing, and remove or replace casts. Pins may be removed later, and imaging may be needed after bone surgery.

Bracing, special footwear, stretching, or physiotherapy may be recommended after cast removal. Follow-up through growth is important because clubfoot can recur. Contact the team if a brace no longer fits, the foot gradually turns inward, or walking becomes less comfortable.

Alternatives

Alternatives depend on foot flexibility and previous treatment.

- Ponseti casting: Usually the first treatment for babies. It avoids extensive surgery but requires repeated casts and prolonged brace use.
- Repeat casting: May improve some recurrences but may not correct a fixed deformity.
- Achilles tenotomy: A small heel-cord release that can correct persistent downward pointing after casting.
- Tendon transfer: Can rebalance a flexible foot that turns inward during walking but is unsuitable if the foot cannot first be corrected manually.
- Physiotherapy-based treatment: Stretching, taping, and splinting may be available but can still lead to casting or surgery.
- Supportive footwear or orthoses: May improve comfort and stability but do not straighten a fixed deformity.
- No operation for now: Observation may be reasonable if function is acceptable, although footwear or walking problems may continue.

When to call your healthcare team

Contact the surgical team urgently if:

Call emergency services for trouble breathing, blue lips, collapse, inability to wake normally, or uncontrolled bleeding.

Routine questions about cast care, brace fit, activity, school, or gradual changes in foot position can usually be discussed during normal office hours.

- Pain is severe, increasing, or not relieved by advised medicine
- Toes become pale, blue, unusually cold, very swollen, or difficult to move
- New numbness or loss of feeling develops
- The cast becomes extremely tight, wet, cracked, loose, or unpleasant-smelling
- Blood or fluid soaks through the dressing or cast
- Fever, increasing redness, pus, or worsening wound pain develops
- A pin appears loose or changes position

Common questions

Will I be asleep?

Yes. Clubfoot repair is normally performed under general anaesthesia. A small Achilles tenotomy may use another type of anaesthesia in some centres.

Can I drive home?

No. Another responsible adult must take the person home after general anaesthesia. Follow the facility's instructions about when driving can restart.

How painful is clubfoot repair?

Pain is common for the first few days but should gradually improve. Increasing pain, particularly with cast tightness or toe colour changes, needs urgent assessment.

When will we know if it worked?

The surgeon sees the immediate correction during surgery. Function, movement, and whether correction lasts are assessed over months and during growth.

How long will the cast stay on?

Usually several weeks, depending on the operation and healing. It may be changed during follow-up.

Can clubfoot come back after surgery?

Yes, particularly while a child is growing. Bracing, stretching, physiotherapy, and scheduled follow-up may help maintain correction.

Sources

- American Academy of Orthopaedic Surgeons, OrthoInfo: Clubfoot
- National Health Service: Club foot
- Pediatric Orthopaedic Society of North America: Clubfoot Study Guide
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- Zionts LE, Ebramzadeh E, Morgan RD, Sangiorgio SN. Sixty years on: Ponseti method for clubfoot treatment produces high satisfaction despite inherent tendency to relapse. Journal of Bone and Joint Surgery American . 2018;100:721-728.