PROCEDURE

Peripheral artery bypass - leg

Leg artery bypass is surgery that creates a new route around a blocked artery to improve blood flow.

PURPOSE
Restore blood flow around a blocked leg artery

PROCEDURE TYPE
Therapeutic surgery using a vein or synthetic graft

WHERE IT IS DONE
Operating theatre

ANAESTHESIA
General anaesthesia

HOW LONG IT TAKES
About 3 to 4 hours

PREPARATION
Fasting and an individual medication and blood-thinner plan

RECOVERY
Several hospital days; no driving until cleared

MAIN RISKS
Bleeding, infection, graft blockage, heart complications

RESULTS
Blood flow checked immediately; healing assessed over weeks

Overview

Peripheral artery bypass is an operation to improve blood flow through your leg. It creates a new route around a narrowed or blocked artery.

The surgeon connects a tube, called a graft, above and below the blockage. Blood can then flow through the graft instead of the damaged part of the artery. The graft may be one of your own veins or a manufactured tube.

The bypass may run between arteries in the groin, thigh, knee, or lower leg. Its name usually describes the arteries it connects. For example, a femoral-popliteal bypass carries blood from the femoral artery in the thigh to the popliteal artery near the knee.

This is open vascular surgery. It treats poor circulation but does not remove the underlying

tendency for arteries to become narrowed. Medicines and measures such as stopping smoking remain important afterward.

Why the procedure is performed

Leg bypass is usually considered when reduced blood flow is threatening the health of your leg or seriously limiting daily life.

Reasons may include:

Before offering surgery, your vascular team usually examines your circulation and reviews imaging of the arteries. Tests may include ultrasound, CT angiography, MR angiography, or a catheter angiogram. These show where the blockage is and whether there are suitable arteries for attaching a graft.

- Pain in the foot or leg while resting, especially at night
- A foot or toe wound that is not healing
- Tissue damage caused by severely reduced blood flow
- Leg pain during walking that remains disabling despite exercise and medical treatment
- A sudden blocked artery when bypass is the most suitable way to restore circulation
- A previous angioplasty or stent that has not worked or is no longer open

Who should and should not have it

Bypass may be appropriate if your symptoms or tissue damage are serious enough to justify an operation and the surgeon can create a useful route for blood flow. Your general health, mobility, goals, artery anatomy, and available vein all affect the decision.

It is not automatically the best treatment for every blocked leg artery. Surgery may be avoided or delayed when:

Age alone does not decide whether you can have bypass surgery. Your team should explain the expected benefit, the chance that the graft will remain open, and how the options fit your priorities.

- Symptoms are manageable with walking therapy, medicines, and risk-factor treatment
- Angioplasty or another less invasive treatment is likely to provide enough benefit
- There is no suitable artery below the blockage for attaching the graft

- Heart, lung, kidney, or other illness makes major surgery unusually risky
- An acute medical problem needs treatment first
- An uncontrolled infection could affect the operation or graft
- Extensive tissue damage means restoring blood flow is unlikely to save a useful limb
- The likely benefit does not match your health goals or expected recovery

How to prepare

Follow the treating facility's own instructions first, because its fasting and medication plans take priority over general advice.

Tell the surgical team about all prescription medicines, over-the-counter products, vitamins, and supplements you take. Medicines that affect clotting-including anticoagulants and antiplatelet medicines-need an individual plan. Do not stop them unless the team performing your procedure tells you to.

You may be asked to:

If your own vein may be used, an ultrasound can map suitable veins before surgery. Smoking increases the risks of wound problems and graft failure. If you smoke, ask for practical support to stop.

Contact the facility before the operation if you become unwell, develop an infection, or have a new wound near the planned incision.

- Stop eating and drinking at a stated time
- Have blood tests, heart testing, or updated artery imaging
- Wash with a special antiseptic product
- Arrange transport home and help during early recovery
- Bring a current medication list

What happens during the procedure

You will usually have general anaesthesia, so you are unconscious and do not feel the operation. In some situations, regional anaesthesia that numbs the lower body may be considered.

The surgeon makes one or more cuts over the arteries that will be connected. If your own vein

is used, it may be removed through separate cuts in the same or opposite leg. The vein is prepared so it can carry blood under arterial pressure.

One end of the graft is sewn to an artery above the blockage. The other end is sewn to an open artery below it. Blood is directed through this new route.

The team checks circulation through the graft, often using a handheld Doppler ultrasound or imaging. The incisions are then closed and covered with dressings. You may have temporary drains, intravenous lines, and a urinary catheter.

Recovery and what to expect afterward

Pain and tenderness are expected around the incisions. Your leg may also be swollen. Pain medicine is provided, and you should tell the hospital team if pain is not controlled or suddenly changes.

You will usually begin with fluids and then return to food as you feel able. Temporary nausea or constipation can occur after anaesthesia and opioid pain medicines.

Nurses will regularly check your foot's warmth, colour, pulse, movement, and feeling. You will be encouraged to get out of bed and walk with help. Follow instructions about raising the leg, caring for the wounds, and avoiding heavy lifting. Some swelling can continue for several weeks.

Do not drive home. After discharge, do not drive until you can safely control the vehicle, perform an emergency stop, and are no longer taking medicines that impair alertness. Your surgeon or facility may set a specific restriction.

Returning to work may take several weeks. Timing is often longer for work involving lifting, prolonged standing, or strenuous activity. Recovery also reflects the location of the bypass and your health before surgery.

Risks and possible complications

Your surgical team should discuss your personal risks before you consent. Possible complications include:

A graft can remain open for years, but it may narrow or block over time. Continuing prescribed medicines, avoiding tobacco, walking as advised, and attending surveillance visits can help protect your circulation.

- Bleeding or a collection of blood near the wound

- Wound or graft infection
- Blood clots in the graft, causing it to narrow or close
- Ongoing or returning circulation problems
- Swelling, numbness, or nerve injury near an incision
- Fluid leaking from damaged lymph vessels, particularly near the groin
- Heart attack, abnormal heart rhythm, stroke, or breathing problems
- Kidney injury, especially after serious illness or contrast imaging
- A need for another procedure or, in severe cases, amputation

Results and follow up

The team assesses blood flow during the operation and repeatedly checks your leg afterward. You may notice that your foot feels warmer. Rest pain may improve quickly, but wounds can take weeks or months to heal.

Follow-up usually includes an incision check and circulation assessment. Ultrasound may be used at planned intervals to look for graft narrowing before it causes symptoms. The schedule is based on the type and location of your bypass.

You may need ongoing treatment for peripheral artery disease, including cholesterol-lowering medicine, medicine to reduce blood clots, blood pressure or diabetes care, supervised or structured walking, and support to stop smoking. Take medicines exactly as prescribed.

Alternatives

The realistic alternatives depend on why blood flow needs to be improved and what your artery imaging shows.

Medical treatment and structured walking may be enough for stable walking pain. This avoids an operation, but it will not restore blood flow quickly and may not be suitable when there is rest pain, a nonhealing wound, or threatened tissue.

Angioplasty, sometimes with a stent, opens the artery using a balloon passed through a small puncture. Recovery is usually faster than after bypass. However, some long or heavily calcified blockages are difficult to treat, and the artery may narrow again or need another procedure.

Endarterectomy removes plaque directly from a short section of artery. It may work well for a suitable blockage, especially in the groin, but it cannot treat every pattern of disease.

Observation without a procedure may fit mild or manageable symptoms, serious competing illness, or a preference to avoid surgery. Symptoms and wounds require monitoring because circulation may worsen.

Amputation may be considered when tissue cannot be saved, infection cannot be controlled, or reconstruction is unlikely to provide a useful limb. It removes damaged tissue but permanently changes mobility and may require rehabilitation and a prosthesis.

When to call your healthcare team

For routine follow-up, contact your team about wound-care questions, ongoing swelling, medication concerns, or pain that is not gradually improving.

Seek urgent medical advice for:

Call emergency services for sudden severe leg pain with a cold or numb foot, heavy bleeding that does not stop with firm pressure, chest pain, severe breathing difficulty, fainting, or signs of stroke such as facial drooping, arm weakness, or difficulty speaking.

- Increasing redness, warmth, drainage, or opening of an incision
- Fever or chills
- New or worsening leg swelling
- Pain that suddenly becomes worse
- A foot that becomes cooler, paler, bluer, more numb, or weaker

Common questions

Will I be asleep?

Usually, yes. Most leg bypass operations use general anaesthesia. Your anaesthesia team will explain the plan and whether regional pain control is appropriate.

Can I drive home?

No. You will remain in hospital for monitoring and need someone else to take you home after discharge.

How painful is it?

Incision pain, tightness, and leg swelling are common at first. Pain medicine should make movement and rest manageable. Sudden or worsening pain needs prompt assessment.

When will I know if it worked?

Blood flow is checked during and immediately after surgery. Relief of rest pain may be noticed early, while healing of wounds takes longer.

How long will the bypass last?

Some grafts remain open for many years, but no graft is guaranteed to stay open. The location, graft material, artery condition, smoking, and follow-up care all affect durability.

Sources

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