

Radial Tunnel Release

The radial nerve wraps around the outside of the elbow and divides in the forearm. Radial tunnel release frees the deep branch where it gets pinched between the supinator muscle layers.

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At-a-glance recovery. Pooled from 125 published studies — your own pace will vary.

LIGHT DUTIES desk work, driving, daily tasks	MOST EVERYDAY ACTIVITIES manual work, sport, gym	FINAL OUTCOME PLATEAU pain and strength
2-6 weeks Return to light activities and desk work typically occurs within 2 to 6 weeks, with pain relief often noted early.	3-6 months Full functional recovery and return to manual work or sports typically occurs within 3 to 6 months.	12 months Maximum improvement and plateau of pain/strength are typically observed by 12 months post-operatively.

Why this operation has been suggested

Dr Kieran Hirpara, an upper-limb surgeon at Mater Private Hospital Rockhampton, starts with the least invasive options that suit your condition. Patients are generally referred to our clinic by their GP; if a physiotherapist has suggested you see us, you will still need a referral from your GP in order to be eligible for the Medicare rebate. Our assessment, based on your history, examination and imaging where needed, establishes the diagnosis.

Radial tunnel syndrome causes pain on the outer part of your elbow and forearm. The radial nerve runs down your forearm, and several separate structures along its path can press on it. These may include the edge of a muscle, a fibrous band, or small blood vessels crossing the nerve. We usually begin with non-operative care such as activity change, physiotherapy or hand therapy, splinting, or injections. Surgery is considered when that has not given enough improvement. The operation, called a radial tunnel release, eases the pressure on the nerve at each of these points. We recommend it for people whose pain has continued despite other treatment. The main aim is to relieve your pain and help your forearm and wrist work normally again.

Before the operation

You will need to stop eating and drinking seven hours before your operation. We ask for a little longer than some other practices so your surgery can be brought forward if the theatre list runs early. Your surgeon will tell you which of your usual medicines to skip on the day, and which to take as normal. Please bring a written list of everything you take, including tablets, injections and any drops or creams. Arrange for someone to drive you home afterwards, as you will not be in a fit state to drive yourself. Wear loose, comfortable clothing with sleeves that are easy to slide over your arm. Some imaging, such as X-rays, an MRI or an ultrasound scan, helps us plan the operation. If you have other medical conditions, you may need blood tests or a review with the anaesthetist.

On the day

You will arrive at the hospital's surgical admissions unit, where you are checked in and prepared for theatre. You will meet the anaesthetist, the doctor who looks after your sleep and pain control during the operation. This operation is done under general anaesthetic. You will be fully asleep for the operation. Some patients may also have a regional nerve block for post-operative pain relief; the anaesthetist decides on the day based on your individual circumstances. You are then taken into the operating theatre, where the operation is performed.

When the operation is finished, you will wake up in the recovery area. Nurses will monitor you there while the anaesthetic wears off. Once you are stable, you will either move to a ward or go home the same day, depending on the procedure and how your recovery is going. If you are going home, the person you arranged to drive you will take you there.

What the operation involves

The operation is called a radial tunnel release. It is done through one cut over the front of your forearm, just below the crease of your elbow. Your surgeon works through this single opening to reach the radial nerve.

Along the nerve's path, several separate structures can press on it. These may include the edge of a muscle, a fibrous band, or small blood vessels crossing the nerve. Your surgeon finds each of these pressure points and releases them, easing the squeeze on the nerve. The surrounding tissue is left as undisturbed as possible, and the blood supply to the nerve is preserved.

Once the pressure points have been released, your surgeon closes the cut. A fine self-adhesive mesh is laid over the closed wound first, holding the skin edges together. A liquid skin adhesive is then painted over the mesh, where it sets to seal the whole thing. This stays on for roughly one to two weeks and then lifts and peels away by itself, so there is nothing to be taken out.

After the operation

You will wake up in the recovery area with nurses nearby while the anaesthetic wears off. Your arm will have a soft dressing over the wound, and pain relief will be arranged so you stay comfortable. You can move around as soon as you feel ready, and you will use your hand for light tasks straight away. This is usually a day case, so you can expect to go home the same day, although occasionally patients stay overnight. Someone should stay with you for the first 24 hours after you get home. We leave the dressing on for about 10 days; please do not take it off before then unless we tell you to. We change or remove it when we see you.

Recovery

Your arm will have a soft dressing on when you go home. Some soreness and swelling around the wound is normal in the first days. Rest your arm when you can, keep it raised when sitting, and take the pain relief that has been arranged for you. Most people find the discomfort settles steadily as the days pass.

You can use your hand for light tasks straight away. There is no cast or routine splint after this operation, so your wrist and fingers are free to move. Gentle movement helps the nerve glide and keeps stiffness away. Your hand therapy after surgery is with Ruby Doolan at Extend Rehabilitation. Ruby is a hand therapist: she will guide your exercises and make any splint you need along the way. At home, keep the wound dry and leave the dressing alone until we review it.

As the swelling settles, you will notice your grip and forearm strength returning bit by bit. Everyday tasks such as dressing, eating and typing usually come back early on. Heavier lifting and firm gripping come later, once your hand feels strong and the tenderness has gone. When your therapist is happy with your movement and strength, you can build back to your normal activities.

You can usually drive once any splint is off and the pain has settled enough to hold the wheel and react quickly. Patients in a splint must not drive. See our page on [Driving after upper-limb surgery](#).

Recovery varies from person to person. Your timeline may differ, and your surgeon and therapist will guide you.

What can go wrong

Most patients do well, but problems can occasionally happen. Your surgeon and the team monitor you closely to spot any issue early.

The nerve being released runs close to the operating area, so it can be irritated or injured during surgery. If this happens, you might notice weakness when lifting your wrist or straightening your fingers, or numbness and tingling on the back of your forearm, wrist or hand. Some of these changes are temporary and settle on their own over weeks to months. If you notice new weakness or numbness after the operation, tell your surgeon at your next review, or call the clinic sooner if it comes on suddenly.

Sometimes scar tissue forms around the nerve as it heals. This can press on the nerve again and bring back the pain you had before, often weeks or months after things were going well. If your original pain returns, bring it up at your next appointment. Further surgery to release the scar tissue is possible if needed.

There is also a chance the first operation does not relieve your symptoms, or that they come back soon after. This can happen if a pressure point along the nerve was missed, or if the diagnosis was not quite right. If your pain continues or returns, tell your surgeon. They will reassess you and discuss what to do next, which may include further treatment.

Any operation on the forearm carries a small risk of problems with the wound itself. Watch for increasing redness spreading out from the cut, fluid or pus leaking from it, or a fever. If you see any of these, contact the clinic straight away, or go to the emergency department if you cannot reach us.

If you are ever worried about how your arm is healing, call the clinic rather than waiting for your next visit. The complications table on this page lists typical rates if you want the specifics.

When to call us

Call us if your pain suddenly gets much worse, or if new weakness or numbness comes on quickly. Call us if the wound becomes more red, leaks fluid or pus, or if you develop a fever. Go to emergency if you cannot reach us, or if you lose feeling in your arm or cannot move it. Go to emergency straight away for shortness of breath or calf swelling. If you are ever worried, call the clinic rather than waiting for your next visit.

Where to read more about the condition

This page is about the operation itself. The condition it treats, including what the evidence shows about when surgery helps and when it does not, is covered in more detail on the [Radial Tunnel Syndrome](#) page.

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Complication rates from published literature

Pooled from 125 published studies. These are population-level rates, not your individual risk — your surgeon will discuss what applies to you.

COMPLICATION	REPORTED RATE	NOTES
Incomplete pain relief or persistent symptoms	25.5%	Fair to poor outcomes occur in 29-33% of patients; pain may persist due to incorrect diagnosis, incomplete decompression, scar tissue formation, or co-existing conditions.
Stiffness or reduced range of motion	25.0%	Postoperative elbow and forearm stiffness can occur particularly if immobilized for prolonged periods; return to normal activities typically takes 3-4 months.
Bleeding or haematoma	10.0%	The radial recurrent vessels (leash of Henry) cross the posterior interosseous nerve and must be ligated; bleeding or haematoma formation can cause nerve compression.
Weakness or fatigue	10-20%	Forearm and grip weakness is common early; typically improves with strengthening exercises.
Injury to superficial radial nerve branches	4.5%	The superficial sensory branch and posterior cutaneous nerve of the forearm can be injured, causing numbness, painful neuroma, or hypersensitivity.
Revision surgery	2.1%	Approximately 2.1% of patients require revision surgery within 90 days for incomplete decompression, recurrent nerve compression from scar tissue, or incorrect diagnosis.
Iatrogenic nerve injury	1.05%	Injury to the posterior interosseous nerve or its branches during surgical decompression may cause weakness of finger/thumb/wrist extension or forearm supination.
Wound complications	0.5%	Wound infection, dehiscence, or delayed healing can occur; superficial infections respond to oral antibiotics.

COMPLICATION	REPORTED RATE	NOTES
Recurrent compression from scar tissue	Rare	Scar tissue may reform around the decompressed nerve, causing recurrent symptoms.

I have read this information and have had the opportunity to ask Dr Hirpara questions about the procedure, its expected recovery, and the complications listed above.

PATIENT – PRINT NAME

SIGNATURE

DATE