

Flexor Tendon Repair

At-a-glance recovery. Pooled from 80 published studies — your own pace will vary.

LIGHT DUTIES	MOST EVERYDAY ACTIVITIES	FINAL OUTCOME PLATEAU
desk work, driving, daily tasks	manual work, sport, gym	pain and strength
2-6 weeks	3-6 months	6-12 months
Return to light activities and desk work typically occurs within 2 to 6 weeks as early motion protocols are initiated.	Return to manual work and full strength is generally achieved between 3 and 6 months post-repair.	Maximum functional recovery and plateau in range of motion are typically reached within 6 to 12 months.

Why this operation has been suggested

Dr Kieran Hirpara, an upper-limb surgeon at Mater Private Hospital Rockhampton, matches the treatment to your specific injury. 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. At your appointment we take a history, examine your hand, and arrange imaging if it is needed to work out what has been injured.

A flexor tendon repair means stitching together a tendon in your finger or thumb that has been cut. These tendons bend your fingers, and when one is cut the finger cannot bend on its own. Because this is an acute injury, surgery may be recommended straight away, without a trial of non-operative care first. A cut tendon will not heal back to full strength on its own, and without repair the finger is likely to stay stiff or weak.

The aim of the operation is to give the repair enough strength for you to start moving early, which helps stop the tendon sticking down inside its sheath. The goal is to restore normal range of motion and function to your finger.

Before the operation

Flexor tendon repair is usually done soon after the injury, so there is not much to organise. Your surgeon will tell you when to stop eating and drinking. We ask for seven hours of fasting so your operation can be brought forward if the theatre list runs early. You may need to pause some of your usual medications before surgery, and your surgeon will give you exact instructions about which ones and for how long. Bring a written list of everything you take. Arrange for someone to drive you home afterwards, and wear loose, comfortable clothing on the day. If you have other medical conditions, you may need blood tests or a review with the anaesthetist, but most people do not. Imaging such as an X-ray, ultrasound or MRI may already have been arranged to help plan the operation.

On the day

You arrive at the hospital's surgical admissions unit, where you are checked in and prepared for theatre. You meet the anaesthetist there. This operation is done under general anaesthetic. A regional nerve block is sometimes added for post-operative pain relief; the anaesthetist will discuss this with you on the day. You are then taken into the operating theatre, where the operation is performed.

You wake up in the recovery area, where nurses monitor you while the anaesthetic wears off. Once you are stable, you either go to the ward or go home, depending on the procedure and your recovery.

What the operation involves

Your surgeon makes a cut over the finger or palm to reach the torn tendon. The cut ends of the tendon are found and brought back together. The tendon is stitched with strong stitches that run through its core, plus fine stitches around the outside edge of the repair. The outer stitches add real strength to the repair. Several strands of stitch are used across the repair, because a repair with more strands is stronger than one with fewer.

The surgeon works carefully around the tendon and the delicate structures that surround it, because these allow the tendon to glide as your finger bends. How the repair is done depends on where along the tendon the cut happened. Some zones of the finger are harder to work in than others, and the technique chosen reflects this.

Once the tendon is repaired, the skin is closed with stitches and a dressing is applied. You will keep that dressing on for about 10 days, as described in the recovery section.

The aim throughout is a repair strong enough for you to start moving your finger early, which lowers the chance of the tendon sticking down inside its sheath.

After the operation

You wake up in the recovery area, where nurses watch you closely while the anaesthetic wears off. Your hand will be in a dressing and a splint that holds your finger still. Pain relief is planned with you before you leave

theatre, and you can ask for more at any time. Someone should stay with you for the first 24 hours. You can get up and walk around as soon as you feel steady, and you will be shown how to protect your hand while moving about. Your team will tell you whether you go home the same day or stay one night in hospital. 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

For the first few days your finger will be sore and swollen, and the discomfort is usually at its worst early on. Regular pain relief, keeping your hand raised on pillows when you sit or rest, and moving about gently all help settle it. The swelling eases gradually as the weeks pass.

Your hand will be in a splint that protects the repair. Hand therapy after surgery is with Ruby Doolan at Extend Rehabilitation. Ruby will direct your exercises and make any splint you need. You will start moving your finger early, because gentle movement helps stop the tendon sticking down inside its sheath. The exercises feel small at first, often just bending the finger a little within the limits your therapist sets. They matter as much as the operation itself, so doing them as instructed is important.

At home you can manage most daily tasks with your other hand. You will need to keep the splint dry and avoid lifting, gripping or carrying with the operated hand until your therapist clears you. Sleep can be awkward at first; resting your hand on a pillow often helps.

As movement returns, the exercises progress, and once the swelling settles you will find everyday tasks easier. Your surgeon and Ruby will tell you when the repair is strong enough for each new step, including when you can drive again; our guide to driving after upper-limb surgery covers the rules that apply.

Recovery varies between individuals, so your timeline may differ. Your surgeon and your therapist will guide you along the way.

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 repaired tendon can sometimes pull apart. You might feel a sudden pop or give way in the finger, or notice the finger that was bending during your exercises stops bending on its own again. If that happens, contact the clinic straight away rather than waiting for your next review.

Scar tissue can form around the repair and stick the tendon down inside its sheath. The finger may bend only part way, or feel stiff and caught when you try to move it. Sometimes this settles with therapy alone. If it does not, a small operation can release the scar tissue and free the tendon up. Mention any stiffness that is not improving at your review appointments.

Infection is uncommon but needs quick attention. Watch for pain that keeps getting worse instead of easing, redness spreading out from the wound, warmth, swelling, or fluid leaking from the wound. A deep infection in the tendon sheath can leave the finger stiff even when treated promptly, so early review matters. Call the clinic the same day, or go to the emergency department if you cannot reach anyone.

Some fingers have other problems after healing. The finger may click or trigger as it bends, or one finger may not bend fully because its movement is linked to the others. The small finger can end up with less movement than the others. If you notice clicking, catching or uneven bending, bring it up at your next review.

A few patients need further surgery of some kind, whether for a pulled-apart repair, scar tissue, or another issue. Your surgeon will explain what is involved if that becomes necessary.

The complications table on this page lists typical rates if you want the specifics.

When to call us

Call us if you have a fever, or if the wound becomes more red, warm or swollen, or starts leaking fluid. Call us the same day for pain that keeps getting worse instead of easing. Go to emergency if you have sudden severe pain, a sudden pop in the finger that stops bending on its own, calf swelling or pain, or shortness of breath. Also go to emergency if your fingers lose feeling, or if you cannot move them at all. If you cannot reach anyone at the clinic, go to the emergency department.

In more depth

This section goes further than you need for your own treatment decisions. Flexor tendon repair is worth the extra reading because it is governed by a single unforgiving trade-off: the movement that stops the tendon sticking down is the same movement that can pull the repair apart. Almost every technical decision in this operation is an attempt to buy room between those two failures.

THE TRADE-OFF, MEASURED

A meta-analysis of **569** zone II repairs compared early active motion with early passive motion after surgery [1]. The early **active** group achieved greater total active motion, the outcome that determines whether the finger is useful [1].

The same analysis found the cost. A higher risk of rupture was observed in the group doing active flexion and extension **when the tendon had been repaired with a 2-strand core suture** [1].

That conditional is the whole point, and it is easy to miss. Early active motion is not inherently dangerous, and 2-strand repair is not inherently weak. The combination is the problem. The strength of the repair and the aggressiveness of the rehabilitation are a single decision made by two people, and they have to be made to match. If your hand therapist and your surgeon appear to be talking to each other about the specific suture used, that is the system working as intended.

WHY THE LITERATURE IS HARDER TO READ THAN IT SHOULD BE

A systematic review of **1,878** digital flexor tendon repairs set out to compare 2-strand against multistrand core suture techniques and could **not** definitively confirm its hypothesis, not because the answer was negative, but because of wide variation in how outcomes and study designs were reported [2].

This is a recurring problem in hand surgery. Different papers use different motion measurements, different definitions of a good result and different follow-up points, which makes pooling them close to meaningless. Where you see confident claims that one repair technique is superior, the honest position from the pooled evidence is that the reporting is not yet consistent enough to say.

SPLINTING IS MOVING, WITH THE EVIDENCE LAGGING

Relative motion orthoses, splints that hold the repaired finger slightly differently from its neighbours, so tendon glide is shared, have changed extensor tendon rehabilitation. A systematic review of **529** patients concluded there is now good evidence that the approach is **safe in zones V–VI extensor repairs**, but that evidence for **flexor** repairs remains limited [3].

So it is a promising direction rather than an established standard on the flexor side, and it is reasonable to ask what protocol is being used and why.

WHERE TECHNIQUE IS HEADING

One line of work accepts the trade-off and engineers around it. A zone II technique using an externalised detensioning suture, a temporary suture outside the skin that takes load off the repair, substantially strengthened the construct and allowed early active motion with reduced rupture risk, at the cost of limiting distal joint motion until the suture is removed [4].

That is a fair summary of the field: the fundamental tension has not been dissolved, only managed more cleverly.

WHAT THIS MEANS FOR YOUR RECOVERY

The therapy is not aftercare, it is part of the operation. Attendance, and doing exactly the prescribed amount rather than more, is what keeps you on the right side of the trade-off described above. A rupture in the first six weeks usually means a second operation with a worse starting point than the first.

CQ HAND + UPPER LIMB

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Flexor Tendon Repair

Complication rates from published literature

Pooled from 80 published studies. These are population-level rates, not your individual risk — your surgeon will discuss what applies to you.

COMPLICATION	REPORTED RATE	NOTES
repair rupture	4-10%	Rates range from 4% to 10% in finger flexors; 3% to 17% in thumb FPL. Recent strong repair techniques have reduced this to near zero in some series.
adhesions	4-6%	Tendon adhesions occur in approximately 4% to 6% of cases, potentially leading to reduced gliding amplitude and stiffness.
tenolysis	3.6-10%	The rate of tenolysis performed after repair is 3.6% in New York state data, with broader literature reporting rates up to 10%.
reoperation	6%	The overall rate of reoperation after flexor tendon repair is 6%, with a median time to reoperation of 140 days.
infection	—	Infection is uncommon in primary repair but more common in pulley reconstruction or delayed primary operations (2.8-4.9%).
stiffness	17%	Interphalangeal joint stiffness is reported in 17% of cases, often associated with adhesion formation or joint contractures.
pulley failure	—	Pulley failure can result in bowstringing and decreased range of motion; reconstruction is challenging and rarely yields pre-injury results.
quadriga	—	Quadriga deformity may occur as a complication of improper tensioning or adhesions limiting tendon excursion.
lumbrical plus deformity	—	Lumbrical plus deformity is a possible complication, often related to graft tensioning or FDS tendon absence.
nail deformity	35%	Nail deformity is a specific risk in Zone I repairs using pullout techniques, with rates up to 35% reported in some series.

COMPLICATION	REPORTED RATE	NOTES
extension deficit	11.3-31%	Extension deficits of 5-10 degrees occur in 11.3% of patients, and 10-20 degrees in 31% of patients in some Zone II series.

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