

Post-operative rehabilitation protocol

Latissimus dorsi tendon transfer

Transfer of a back muscle tendon to the top of the shoulder, for a rotator cuff tear that cannot be repaired. For patients, physiotherapists, and GPs.

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The plan at a glance

The tendon is moved to do a new job: lifting and turning the arm outwards. It needs six weeks in a brace to heal to the bone. The muscle then has to learn its new job. That retraining is the longest part of recovery.

	Phase 1 Weeks 0 to 6	Phase 2 Weeks 6 to 12	Phase 3 Months 3 to 6	Phase 4 After 6 months
Brace	On day and night, arm held out and turned outwards	Wean off over 2 weeks	None	None
Movement	Passive only, above the level of the brace	Assisted, then active. Retraining starts	Active, building to full available range	Full available range
Load	None	A cup of tea	Light resistance, up to 2 kg	Progressive strengthening
Review	Wound check at 2 weeks. Clinic at 6 weeks	Clinic at 12 weeks	Clinic at 6 months	Clinic at 12 months

Darker shading means tighter restriction. Times are guides. Your surgeon's instructions take precedence where they differ.

Seek advice urgently if

- The wound becomes red, hot, or swollen, or it leaks or opens.
- You have a fever or feel unwell.
- You feel a pop, with sudden pain and loss of the movement you had gained.
- The brace rubs, or the skin under it becomes sore or broken.
- New numbness, tingling, or weakness develops in the arm or hand.
- The hand becomes cold, pale, or blue.

Call 999 or go to the Emergency Department for shortness of breath or chest pain.

For anything else on this list, contact your surgical team the same day. Out of hours, call NHS 111.

Phase 1

Protect in the brace: weeks 0 to 6

Aims: protect the transfer, control pain, keep the hand and elbow moving.

Do

- Wear the brace day and night. It is removed only by your therapist or as you have been shown.
- Move the fingers, wrist, and elbow fully, several times a day.
- Let your therapist lift and turn the arm outwards, above the level of the brace. You stay relaxed.
- Wash with help. Keep the arm supported out to the side on pillows.
- Sleep propped up, with the brace on.
- Keep both wounds dry until the wound check: one at the shoulder, one at the side of the chest.

Avoid

- Letting the arm drop to your side or across your body.
- Turning the arm inwards: hand to stomach, hand behind back.
- Lifting the arm under its own power.
- Using the hand to lift, push, or pull.
- Driving.

Expected in this phase

The wound at the side of the chest often collects fluid and bruises. The brace is awkward. Plan help at home for washing, dressing, and meals for six weeks.

Phase 2

Come out of the brace: weeks 6 to 12

Aims: wean the brace, start active movement, begin retraining the muscle.

Do

- Wean out of the brace over two weeks, as your therapist advises.
- Lift the arm with help from the other hand, then under its own power, lying down first.
- Bring the arm gradually down to your side.
- Start retraining: gently squeeze the elbow down and in while lifting or turning the arm out, as taught.
- Exercise in a pool once the wounds have healed.
- Use the hand for light tasks at waist level.

Avoid

- Lifting anything heavier than a cup of tea.
- Forcing the hand behind the back or across the body.
- Resistance exercise.
- Body weight through the arm.
- Any activity with a risk of falling.

Move on to Phase 3 when

Twelve weeks have passed and you can lift the arm unaided lying down.

Phase 3

Retrain and strengthen: months 3 to 6

Aims: active lift and outward turn in sitting and standing, light strength.

Do

- Continue retraining in sitting and standing. Biofeedback helps if available.
- Start light resistance bands for outward turning and lifting.
- Strengthen the deltoid and shoulder blade muscles.
- Stretch gently towards the hand-behind-back position.
- Use the arm for daily tasks at and above shoulder height.

Avoid

- Lifting more than 2 kg.
- Heavy pulling: rowing machine, pull-ups, starting a mower.
- Sudden or jerking movements.
- Heavy manual work and sport.

Move on to Phase 4 when

Six months have passed and the arm lifts and turns outwards in standing.

Phase 4

Return: after 6 months

Aims: best possible strength and function.

- Progress strengthening as the shoulder allows.
- Return to swimming, golf, and gardening in stages.
- Discuss heavy manual work with your surgeon before returning.

What to expect

Improvement continues for 12 to 18 months. The aim is less pain and a useful lift and outward turn for daily tasks. Strength does not return to normal.

Return to activity

Typical times from surgery. Each depends on comfort, movement, and healing.

Activity	From	Condition
Desk work	4 to 6 weeks	One-handed, in the brace, if you can travel safely
Driving	10 to 12 weeks	Out of the brace, able to control the wheel. Tell your insurer.
Light tasks at waist level	6 to 8 weeks	Out of the brace
Pool exercise	8 weeks	Wounds healed
Light manual work	4 months	Within the 2 kg limit, then building
Light gym resistance	4 months	As directed by your therapist
Swimming	4 to 6 months	Breaststroke first
Golf	6 months	Putting and chipping first
Heavy manual work	6 to 9 months	Discuss with your surgeon. It may not be advised.

When to slow the protocol

Some patients need more time. Your surgeon will tell you if any of these apply.

- **Transfer to the front of the shoulder, for a subscapularis tear.** The restrictions are reversed. A sling is used, not an outward brace. Outward turning is limited to neutral for six weeks. Your surgeon will give specific instructions.
- **Partial rotator cuff repair at the same operation.** The same phases apply.
- **Revision surgery, or a tendon lengthened with a graft.** The brace stays on for eight weeks. Each phase runs later.
- **Smoking and diabetes.** Both slow healing. Stop smoking and vaping nicotine. Keep blood sugar well controlled.

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This protocol is general guidance for uncomplicated latissimus dorsi tendon transfer for an irreparable tear of the top and back of the rotator cuff. It is not a substitute for individual medical advice. Instructions from your own surgeon and therapist take precedence.

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