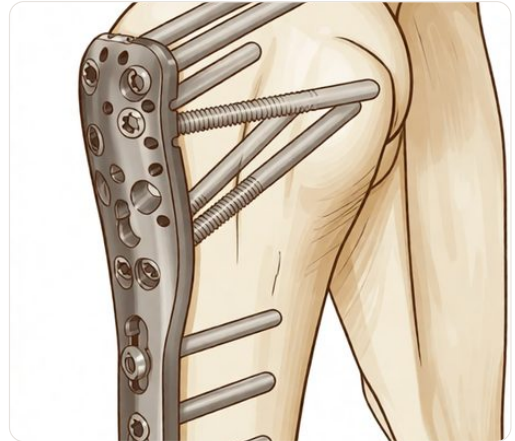


# Proximal Humerus Fixation (ORIF)

A fracture of the upper end of the arm bone, near the shoulder.

Kieran Hirpara 4.0



This protocol covers the rehabilitation after surgical fixation of a proximal humerus fracture – a break of the upper arm bone near the shoulder, repaired with a locking plate and screws (open reduction and internal fixation, ORIF) – with Dr Kieran Hirpara at Mater Private Hospital Rockhampton. Bring this page or its PDF to your first physiotherapy visit so your rehabilitation stays coordinated. Your rehabilitation is progressed individually by your physiotherapist through the phases below, depending on how your fracture heals.

If you have any concerns about your wound after surgery, get in touch with the rooms. It is often helpful to take a photo of the wound and email it for review.

## What to expect

Rehabilitation after a fracture fixation works differently from rehabilitation after most planned shoulder operations. The plate and screws hold the broken bone in position, but the bone itself still has to heal – and the speed of that healing varies considerably from person to person. For that reason, the timetable below is a typical guide rather than a fixed schedule: each step up in your program depends on **both** the number of weeks since surgery **and** on how the fracture is healing on your X-rays, as confirmed at your reviews with Dr Hirpara. Do not move yourself on to the next phase on the calendar alone – wait for your review.

There is one more thing that makes this operation different. The bony knobs at the top of the humerus (the **tuberosities**) are where the rotator cuff tendons attach, and in many proximal humerus fractures these fragments are part of the break and are fixed back with the plate or with stitches. Working the rotator cuff muscles too hard, too early can pull on those fragments before they have healed. With a modern locking plate the fixation is strong from day one, so gentle early movement is encouraged – you may move the shoulder actively-assisted and gently actively within comfort from early on, raising the arm in a pain-free range. The cautious element is rotator-cuff loading: where the tuberosity fragments are not part of the fracture, or are solidly fixed, your surgeon may clear you to begin active rotation and cuff work sooner; where the tuberosities are involved and healing, active rotator-cuff work and forced outward rotation are held back a little longer. Dr Hirpara will tell you which applies to you.

Your exercise program uses three kinds of movement, and your team will mark which apply to you:

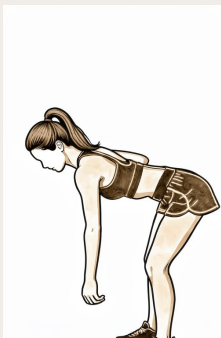
- **Active range of motion** – movement is allowed without aid or help.
- **Active-assisted range of motion** – using the other arm or an object to assist with moving the arm.
- **Passive range of motion** – completely relaxed, using the other arm or force to do 100% of the work.

You will wake from surgery with your arm in a sling. Wear it full-time for the first **three weeks or so**, then wear out of it over the following weeks as comfort allows – published protocols average around three weeks of immobilisation, and the evidence supports earlier movement over longer time in the sling. You don't need to sleep in it. Take it off several times a day for your exercises and for washing and dressing, and when sitting quietly at home you may rest the arm out of the sling. **Do not drive while you are wearing the sling.**

The journey at a glance:

- **Phase I – Protection and early passive movement** – weeks 0–6
- **Phase II – Regaining active movement** – weeks 6–12
- **Phase III – Strengthening** – about months 3 to 4½
- **Phase IV – Return to full activity** – from about 4½–6 months

## Phase I – Protection and early passive movement (Weeks 0–6)

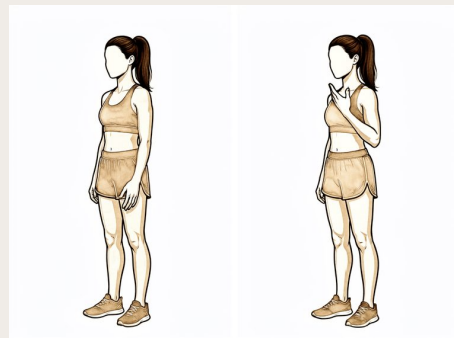


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### Pendulum exercises

Lean forward, supporting yourself on a table with your other hand, and let the operated arm hang relaxed. Make small circles – clockwise, then anticlockwise – by gently rocking your body. The arm swings passively; the movement comes from your body, not the shoulder muscles.

**Several times a day**

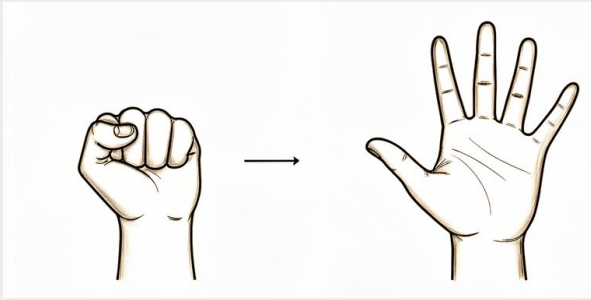


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### Active elbow bends

With the arm out of the sling and the upper arm resting by your side, bend the elbow as far as it will comfortably go, then straighten it fully. Only the elbow moves – keep the shoulder still and the arm by your side.

**Several times a day**

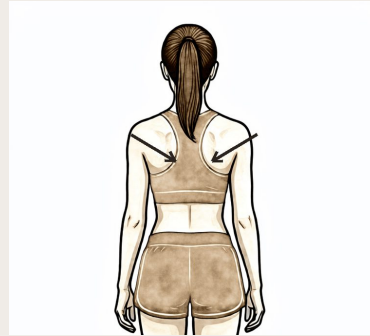


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### Ball squeezes

With the arm supported, squeeze a soft ball or make a tight fist, then open the hand fully. Keep the fingers, wrist and hand moving each time the arm is out of the sling.

**Several times a day**

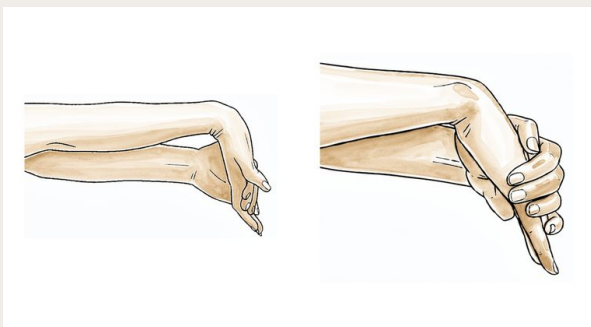


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### Scapular setting

Sitting or standing tall, gently draw your shoulder blades down and back together without moving the arms, hold for a few seconds, then relax. Keep your ears, shoulders and hips in line.

**As guided by your physiotherapist**

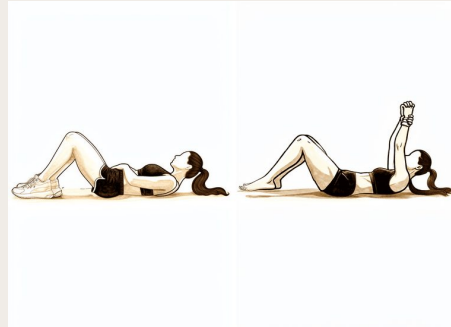


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### Wrist movements

With the arm out of the sling, keep the wrist moving by bending it forwards, backwards and gently side to side. This keeps the whole arm working while the shoulder is protected.

**Several times a day**

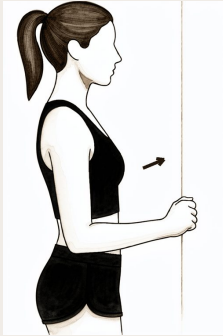


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### Assisted forward elevation (lying)

Lie on your back and use your good arm to help raise the operated arm up in front of you, then lower it gently with the good arm still helping. Starting on your back lets gravity help and makes early lifting easier. Keep within a comfortable, pain-free range and stop where it begins to pull – do not force it.

**Several times a day, within a pain-free range**



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### **Gentle forward-elevation isometric**

Stand facing a wall with the operated arm by your side and a soft fist against the wall in front of you. Gently press the hand forwards into the wall without letting the arm move, hold for a few seconds, then relax.

This wakes up the shoulder-lifting muscles without straining the healing fracture. Only if your physiotherapist has started you on it.

**As guided by your physiotherapist**

The first six weeks are about protecting the fixed fracture while keeping the rest of the arm – and the shoulder joint itself – from stiffening. Because the locking plate holds the bone securely from the start, gentle early movement is encouraged rather than waiting six weeks. A physiotherapist will start you on gentle exercises before you go home: pendulum exercises (letting the arm hang and swing gently by rocking your body), and keeping the elbow, wrist and hand moving out of the sling several times a day. From early on, and within a comfortable, pain-free range, you can begin to move the arm with help from your other hand (active-assisted) and gently under its own power (active) – raising it in front of you as comfort allows. The cautious part is rotator-cuff loading: avoid forcing the arm outwards (external rotation) and avoid resisted rotator-cuff work until your tuberosities have healed, as Dr Hirpara confirms. Use ice for pain relief, and take your painkillers before your exercises and physiotherapy appointments.

### **For your physiotherapist:**

#### **Goals**

- Protect the fixation and optimise bony healing
- Settle pain and swelling
- Establish early active-assisted progressing to active elevation within a pain-free range
- Maintain full motion of the neck, elbow, wrist and hand

#### **Management**

- Sling full-time for ~3 weeks, then weaned as comfort allows (literature convention); removed several times daily for exercises and hygiene; not required in bed
- Pendulum / Codman exercises several times daily

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- Early active-assisted and gentle active forward elevation within a comfortable, pain-free range from the outset for stable fixation – supine-start elevation progressing toward upright as control allows; advance the range as comfort permits
- Passive range of motion as needed where active is not yet tolerated: forward elevation in the scapular plane to about 90°, internal rotation to the belly (not behind the back)
- External rotation kept to a gentle early default of about 30–40° with the arm at the side; the surgeon may advance this where the tuberosities are uninvolved or solidly fixed
- Cervical, elbow, wrist and hand active range of motion out of the sling; ball squeezes for grip
- Scapular setting and scapular mobility work (elevation, depression, retraction, protraction)
- Gentle deltoid and periscapular isometrics may be introduced as comfort allows
- Cryotherapy and analgesia before sessions; scar mobilisation and desensitisation once the wound has healed

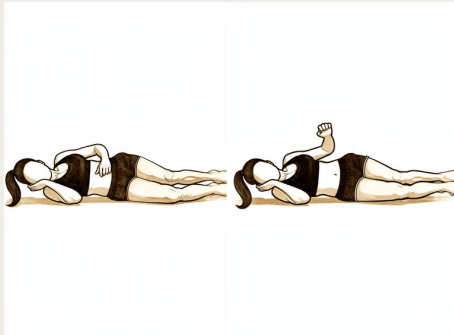
### **Precautions**

- Avoid forced or resisted external rotation and heavy rotator-cuff loading until tuberosity healing is confirmed – surgeon-guided; active elevation in a pain-free range is permitted
- No internal rotation behind the back; avoid abduction in the coronal plane
- Keep early movement pain-free – gentle and within comfort, not forced
- No lifting greater than about 0.5–1 kg with the operated arm
- No weight-bearing through the operated arm (no pushing up from a chair or bed)
- No driving while wearing the sling
- No forced or painful end-range movement

### **Criteria to progress**

- Radiographic evidence of healing progressing, as confirmed at the review with Dr Hirpara at about 6 weeks
- Pain well controlled
- Full elbow, wrist and hand motion maintained
- Comfortable active-assisted to active elevation within a pain-free range

## Phase II – Regaining active movement (Weeks 6–12)

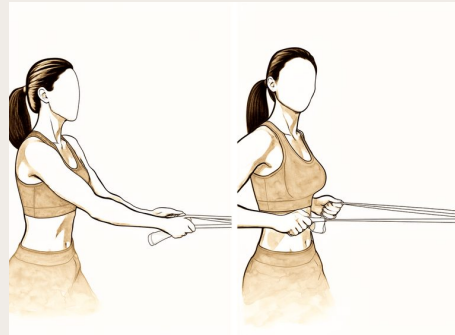


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### Side-lying external rotation

Lie on your non-operated side with the operated arm on top, elbow bent to 90 degrees and tucked against your body. Keeping the elbow in, rotate the forearm up away from your tummy as far as is comfortable, then lower with control. No added weight — the arm moves under its own power.

**As guided by your physiotherapist**

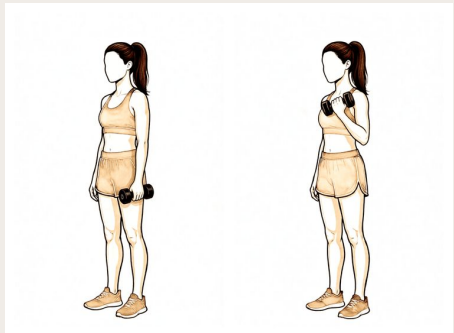


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### Low row with elastic band

Anchor an elastic band in front of you at waist height. Standing tall, pull the band towards you, drawing the shoulder blade gently down and back, then release with control. Keep the resistance light.

**As guided by your physiotherapist**

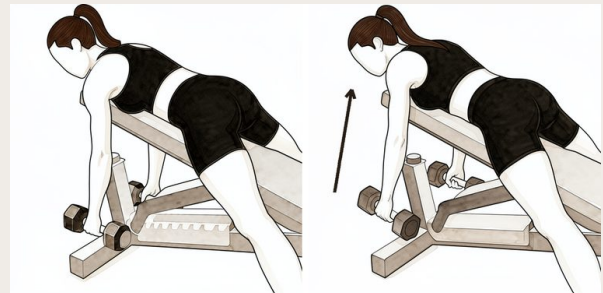


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### Biceps curls

Holding a light weight with the palm up, bend the elbow to bring the weight towards your shoulder, then lower it slowly. Keep the upper arm still by your side, and keep the weight light — no more than about 1–2 kg in this phase.

**As guided by your physiotherapist**



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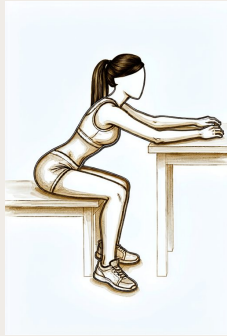
### Supported rows

Lean forward with your good arm supported on a table, letting the operated arm hang with a light weight. Draw the shoulder blade back and row the weight up toward your hip, then lower with control. Keep the trunk steady — the movement comes from the shoulder blade and arm, not the back.

**As guided by your physiotherapist**

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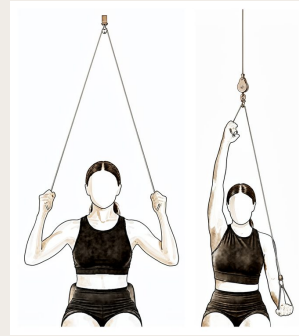


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### Table slides

Sit at a table with your hand resting on a towel or cloth. Lean forward and slide the hand away from you along the table, letting the arm reach further out in front, then slide it back. The table takes the weight of the arm, so this is a gentle way to regain forward movement.

**As guided by your physiotherapist**

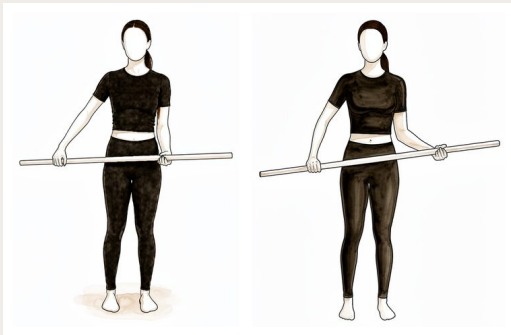


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### Over-door pulley

Sit under an over-door pulley with a handle in each hand. Pull down with your good arm to raise the operated arm as far as it comfortably goes, then lower it slowly. Let the good arm do the work and stay within a comfortable range.

**As guided by your physiotherapist**

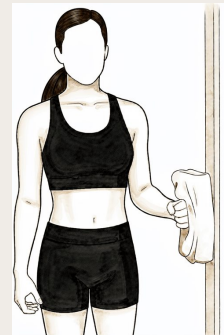


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### Assisted external rotation with a stick

Lie on your back with the elbow tucked by your side and bent to a right angle. Hold a stick in both hands and use your good arm to turn the operated hand outwards. Once your healing is confirmed, gently work the outward rotation a little further — but stay within the range your surgeon and physiotherapist have set.

**As guided by your physiotherapist**

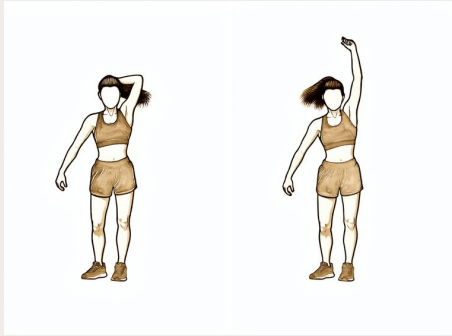


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### Isometric external rotation

Stand with your elbow tucked at your side and bent to a right angle, the back of your hand against a wall or doorframe. Gently press outwards into it without letting the arm move, hold a few seconds, then relax. This begins to wake up the rotator cuff with no movement — start it only once Dr Hirpara has confirmed your healing.

**As guided by your physiotherapist**

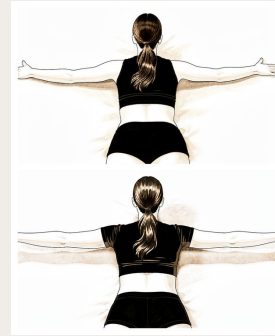


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### Triceps extensions

Holding a light weight, bend and then straighten the elbow to work the muscle at the back of the upper arm. Keep the upper arm steady and the weight light – no more than about 1–2 kg in this phase.

**As guided by your physiotherapist**



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### Prone scapular row

Lie face down with your arm hanging over the edge of a bed or bench. Draw the shoulder blade back and lift the arm out to the side a little way, squeezing the shoulder blades together, then lower with control. This strengthens the muscles that steady the shoulder blade.

**As guided by your physiotherapist**

At your review around six weeks, Dr Hirpara checks your X-rays. If healing is progressing as expected, any remaining sling use stops and you begin moving the arm yourself – first with assistance (using the other arm, a stick or a pulley), then actively. It usually works best to start active lifting of the arm while lying on your back, where gravity is less of an opponent, and progress to sitting and standing as control improves. Gentle muscle-setting (isometric) exercises for the rotator cuff begin in this phase once Dr Hirpara has confirmed healing; exercises against resistance come later. You may return to driving once you are out of the sling, have enough movement and control of the arm to drive safely, and are no longer taking strong painkillers – if in doubt, discuss it at your review.

### For your physiotherapist:

#### Goals

- Restore full passive range of motion
- Progress from active-assisted to active range of motion in all planes
- Re-establish normal scapulohumeral rhythm and minimise compensatory patterns
- Return to normal light daily activities

#### Management

- Sling fully discarded by the 6-week review at the latest
- Active-assisted range of motion: lawn-chair progression, table / wall slides, pulleys, stick exercises – progressing beyond the Phase I limits as comfort allows
- Active range of motion from about 6–8 weeks: supine flexion progressing to upright elevation; side-lying external rotation and flexion; low rows / low punch

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- Submaximal rotator cuff and deltoid isometrics from about 6–8 weeks, with the arm at the side, once healing is confirmed
- Light elbow isotonic (biceps curls, triceps extensions) and scapular strengthening (retraction, prone rows)
- Glenohumeral and scapulothoracic mobilisation as indicated, progressing grades with healing
- Postural correction; continue heat / ice and analgesia around sessions as preferred

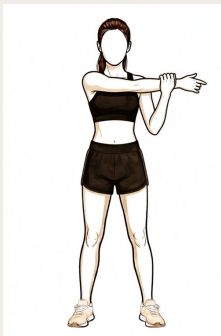
### Precautions

- No resisted (isotonic) rotator cuff strengthening until union is confirmed – typically not before 8–12 weeks
- No forceful end-range overpressure or aggressive passive stretching
- Lifting limited to about 1–2 kg with the operated arm
- Watch for and correct shoulder hitching and trunk-lean compensation with elevation

### Criteria to progress

- Full, or near-full, passive range of motion
- Active elevation with good mechanics, at least below shoulder height
- Isometrics well tolerated without a flare of pain
- Union progressing on X-ray, as confirmed at your review with Dr Hirpara

## Phase III – Strengthening (about Months 3 to 4½)

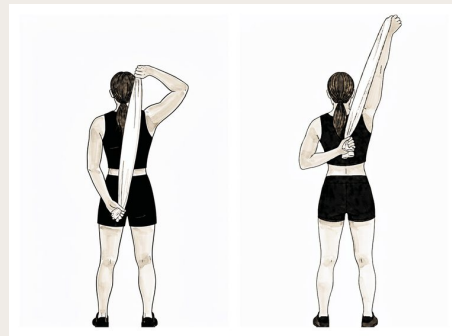


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#### Cross-body stretch

Use your other hand to draw the operated arm across your chest until you feel a stretch at the back of the shoulder. Hold briefly, then release. Stretch to firm discomfort only – never into sharp pain.

**As guided by your physiotherapist**



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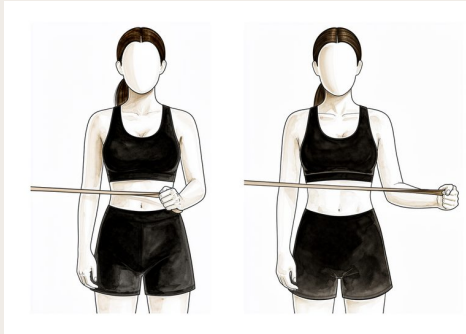
#### Behind-the-back stretch

Hold a towel behind your back with the good arm above and the operated arm below. Use the upper hand to gently draw the lower hand up your back until you feel a comfortable stretch, hold, then release. Build the range gradually – never force the stretch or push into sharp pain.

**As guided by your physiotherapist**

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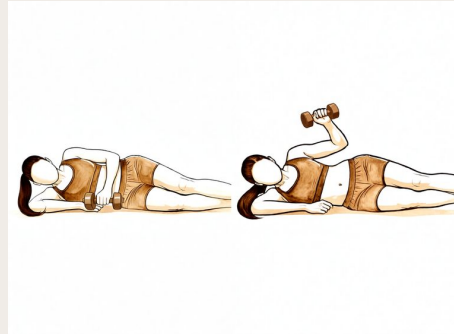


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### Band external rotation

Stand with your elbow tucked into your side and bent to a right angle, holding an elastic band anchored at waist height. Keeping the elbow at your side, rotate the forearm outwards against the band, then return slowly. This builds the rotator cuff with the arm at the side, the starting point for rotation strengthening.

**2 to 3 sets of 8 to 12, low resistance**

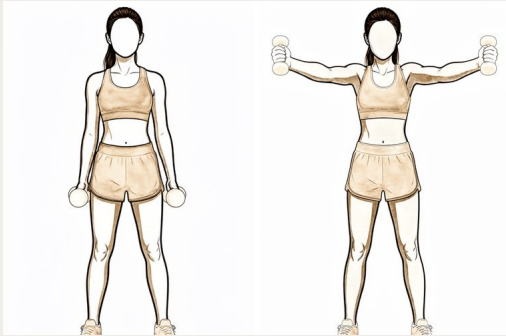


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### Side-lying external rotation with weight

Lie on your non-operated side with the top elbow bent to a right angle and tucked against your body. Holding a light weight, rotate the forearm up towards the ceiling, then lower slowly. Keep the load light and the repetitions higher as your rotator-cuff strength rebuilds.

**2 to 3 sets of 8 to 12, low load**

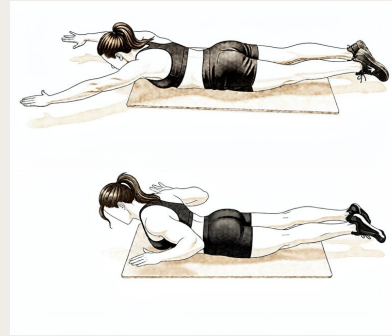


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### Full-can raise (scaption)

Holding a light weight with your thumb pointing up, raise the arm out to a forward-and-out diagonal — not straight to the side — to about shoulder height, then lower slowly. This works the front of the shoulder and the cuff together. Keep the weight light and stop if it provokes pain that lingers.

**2 to 3 sets of 8 to 12, low load**

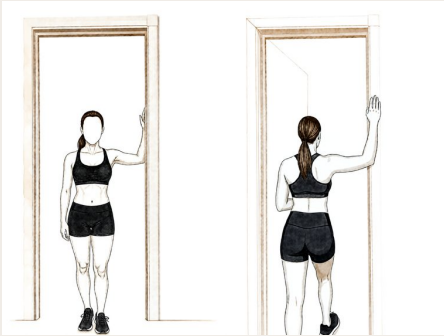


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### Prone row

Lie face down with the operated arm hanging down towards the floor. Draw your elbow up towards the ceiling, squeezing the shoulder blade in towards your spine, then lower slowly. Start with no weight and keep the movement controlled.

**As guided by your physiotherapist**



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### Doorway chest stretch

Stand in a doorway with your forearms resting on the frame and elbows at about shoulder height. Step one foot through and gently lean forwards until you feel a stretch across the front of your chest, then hold. Keep it gentle and never force it.

**Hold ~20–30 seconds, as guided by your physiotherapist**



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### Latissimus (side-of-back) stretch

Reach the operated arm overhead — use your good hand to guide it if needed — and gently lean to the opposite side until you feel a stretch down the side of your back, then hold. Keep it comfortable and within your range.

**Hold ~20–30 seconds, as guided by your physiotherapist**

With the fracture united and your active movement returning, attention turns to rebuilding strength. Resistance work starts gently — elastic bands and light weights for the rotator cuff, deltoid and shoulder-blade muscles — and progresses gradually. Stretching continues alongside, working towards full movement in all directions, including reaching behind the back. Normal daily activities should be largely back to usual during this phase, and lighter recreational activities typically resume, as guided by your physiotherapist.

### For your physiotherapist:

#### Goals

- Full active range of motion in all planes with normal mechanics
- Graduated restoration of rotator cuff, deltoid and scapular strength and endurance

#### Management

- Progress from isometrics to elastic-band and then light free-weight strengthening (about 0.5–2 kg) for the cuff, deltoid and scapular stabilisers — low load, higher repetitions (for example 2–3 sets of 8–12), resistance sessions about 3 times per week to avoid overload
- Rotation strengthening initially with the arm at the side, below shoulder height
- Emphasise anterior deltoid and the trapezius–serratus anterior force couple for a stable scapular base
- Flexibility program for terminal range in all planes: posterior capsule (cross-body) stretch, behind-the-back internal rotation, anterior chest wall / pectoralis minor stretches, doorway stretch
- Begin internal rotation behind the back and grade III–IV mobilisations as range allows
- Upper-body ergometer with low resistance; general aerobic conditioning

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## Precautions

- Strengthening stays within the comfortable range and should not provoke pain that lingers
- No lifting greater than about 4–5 kg with the operated arm during this phase
- Avoid excessive weight-bearing through the arm (push-ups and similar come later)

## Criteria to progress

- Full active range of motion with no compensatory strategies
- Strengthening program tolerated without flare-up of pain or loss of range

## Phase IV – Return to full activity (from about 4½–6 months)

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The final phase is a graduated return to heavier lifting, manual work, overhead tasks and sport. Strength work advances to heavier resistance and compound movements, and – where it is relevant to your work or sport – to faster, more dynamic exercise. Most people are back to their usual activities by around six months, though strength and confidence typically keep improving for up to a year. The right finish line depends on what you need the arm to do, so the return to heavy manual work or contact and overhead sport is agreed with Dr Hirpara and your physiotherapist rather than set by the calendar.

### For your physiotherapist:

#### Goals

- Return to full work, recreational and sporting activity
- Strength of the operated arm approaching that of the other side

#### Management

- Progressive resistance through bands, free weights and gym-based compound movements
- Push-up progression (wall → bench → knees → full) and closed-chain stability work as tolerated
- From about 4½ months: eccentric loading, plyometrics (weighted-ball work), proprioceptive and rhythmic-stabilisation drills where relevant
- Resisted rotation at 90° of elevation, and interval sport-specific or vocation-specific programs as appropriate

## Precautions

- Progression remains symptom-guided – if pain or loss of range recurs, ease back and restore comfortable movement first

## Criteria to discharge

- Strength of the operated arm at least about 80% of the other side where measured
- No pain with progressive strengthening

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- Independent with a maintenance home program

## After your protocol

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The phases above are adapted from published rehabilitation protocols for proximal humerus fracture fixation – Massachusetts General Brigham Sports Medicine, Twin Cities Orthopedics, the UConn Musculoskeletal Institute, NYU Langone Orthopedic Center and South Bend Orthopaedics – together with a systematic review of rehabilitation after proximal humerus fracture. Published protocols for this operation vary more than for most shoulder surgery, because the right pace depends on how the individual fracture was fixed and how it heals; your progression through the phases is therefore directed by Dr Hirpara at your reviews and adjusted by your physiotherapist between them. This page works alongside the practice’s general recovery advice – see [managing post-operative pain](#) and [wound care](#). For the operation itself, see [proximal humerus fixation](#).

If you would like to read the evidence behind this protocol – the research on early versus delayed movement after plate fixation, the surgery-versus-sling debate, and the complications the staged progression is designed to avoid – a fully referenced evidence summary is available as a PDF alongside this page.