SPORTS KNEE: REHABILITATION GUIDE

REHABILITATION AFTER PATELLOFEMORAL STABILISATION SURGERY

MPFL reconstruction, tibial tubercle osteotomy and trochleoplasty recovery: brace and crutches, running at 3–4 months, sport from 6 months.

PATIENT NAME _____

DATE OF SURGERY _____

WHAT IS INSIDE

- What was done, and what to expect week by week
- Weight bearing, walking aids and precautions
- Your exercises, with a diagram and a dosage for each
- Warning signs, and exactly who to call
- Getting back to driving, work and sport
- A progress chart to fill in and bring to appointments

28 minutes to read. Reviews: Wound review at about 2 weeks. Clinical review with an X-ray at 6 weeks, when the brace is reviewed and, after an osteotomy, unlocked. Then reviews at 3, 6 and 9 to 12 months.

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This is a general guide. Your operation record and the instructions you are given always take precedence over anything written here. Last reviewed 9 November 2026.

This guide is for surgery to stop the kneecap (patella) dislocating. The operation is built to order from up to three parts. One is a new medial patellofemoral ligament (an MPFL reconstruction). One moves the bony attachment of the patellar tendon (a tibial tubercle osteotomy). One reshapes the groove the kneecap runs in (a trochleoplasty). Your operation record says which of these you had. Most of the programme is the same for everyone. Where it differs, the guide says so. The big difference is an osteotomy. The bone must be protected while it heals, so the brace stays locked straight for six weeks before the bend is opened.

The kneecap dislocated because something let it. That may be a torn inner ligament, a shallow groove, a kneecap that sits too high, or a tendon that pulls too far to the outside. Surgery corrects what it can. Rehabilitation does the rest, and in this operation the rest is a great deal. The thigh and hip muscles are what hold the kneecap in its groove minute to minute. After years of instability and a dislocation or two, they are weak and switched off. Building them is the point of the next six months.

Every timeframe in this guide is typical, not a rule. Dr Broadhead’s instructions for you, and your discharge letter, always override the general figures here. If anything in this guide seems to disagree with what you were told, what you were told wins.

AT A GLANCE

WEIGHT BEARING

Full weight bearing as tolerated in the brace from day one, whichever parts of the operation you had. With a tibial tubercle osteotomy the brace stays locked straight for 6 weeks

WALKING AIDS

Crutches for balance, usually 1–2 weeks; often a little longer in the locked brace after an osteotomy

BRACE

Hinged knee brace. MPFL alone or with trochleoplasty: locked straight for walking at first, bend limited to 90 degrees for exercises, weaned by 6 weeks. With an osteotomy: locked straight for 6 weeks, then the bend is opened progressively

PRECAUTIONS

No loaded deep bending, lunging or kneeling for 3 months. No pivoting or twisting sport until cleared. With an osteotomy, the brace stays locked straight for 6 weeks and the knee is not bent until it is unlocked at review

DRIVING

Not while the brace limits movement or you are on crutches. Then the standard criteria apply: typically 6 weeks for a right knee, often earlier for a left knee in an automatic

DESK WORK

Typically 1–2 weeks, with the leg elevated and the brace on

PHYSICAL WORK

Typically 3 months; longer for kneeling, squatting or ladder work

SPORT & ACTIVITY

Straight-line running from 3–4 months if criteria are met. Pivoting and jumping sport not before 6 months, often 9 months after an osteotomy or trochleoplasty, and only after passing testing

REVIEWS

Wound review at about 2 weeks. Clinical review with an X-ray at 6 weeks, when the brace is reviewed and, after an osteotomy, unlocked. Then reviews at 3, 6 and 9 to 12 months

WHAT WAS DONE IN YOUR OPERATION

The medial patellofemoral ligament (MPFL) runs from the inner edge of the kneecap to the inner side of the thigh bone. It is the main soft-tissue check against the kneecap sliding outwards, and it tears in nearly every first dislocation. In an MPFL reconstruction it is replaced with a graft, usually a hamstring tendon from your own leg or a donor tendon. The graft is fixed to the kneecap and into a small tunnel in the thigh bone. The fixing is strong enough to move the knee from day one. The graft itself takes months to become a living ligament, and it is weaker than it feels for much of that time.

A tibial tubercle osteotomy moves the bump of bone below the kneecap where the patellar tendon attaches. It is done when the tendon pulls too far to the outside, or the kneecap sits too high. A sliver of bone carrying the attachment is cut, shifted inwards or downwards by about a centimetre, and fixed with two screws. Bone heals the way a fracture heals, over about six weeks. Until then the fixed fragment must be protected from the pull of the thigh muscle bending and straightening the knee under load. Walking on a straight, braced leg is allowed; bending it is not. The screws can usually be felt under the skin. If they are troublesome once the bone has healed they can be removed, usually after a year.

A trochleoplasty reshapes the groove at the end of the thigh bone when it is too flat to hold the kneecap. The cartilage and the bone beneath are lifted, the groove is deepened, and the surface is laid back down and fixed. It is reserved for the most severely shaped grooves. Because the joint surface itself has been worked on, early movement matters more than anything else after this part of the operation. A knee that is kept still stiffens.

At the same operation the joint was inspected and any loose fragments of cartilage or bone from the dislocations were removed or fixed. Your operation record lists the parts. If you are not sure which apply to you, call the rooms before you start.

THE IDEAS THAT MAKE EVERYTHING ELSE MAKE SENSE

1. Which parts you had decides the pace

An MPFL reconstruction alone can take weight straight away, loses the crutches in a week or two, and opens up the bend over six weeks. Add a tibial tubercle osteotomy and the bone needs about six weeks of protection. The brace stays locked straight and you walk on it as comfort allows. The bend is opened only after the six-week X-ray. Add a trochleoplasty and the priority flips to getting the knee moving early. The guide says which rule applies to which part. Your discharge letter says which parts you had.

2. The hip and thigh hold the kneecap, not the graft

The new ligament is a check-rein, not an engine. What keeps the kneecap tracking in its groove from moment to moment is muscle. The inner thigh muscle (vastus medialis) must switch on at the right time, and the hip muscles must keep the thigh from rolling inwards. Both are weak after years of instability. The strengthening in this guide is not an add-on to the operation; it is half of it.

3. Straight first, then bent

A fully straight knee in the first two weeks is the priority, as after any knee operation. The bend comes more slowly and on purpose. A brace limits it to about 90 degrees early, so the healing graft and, where it applies, the moved bone are not overloaded. The bend is then opened at review, not by feel.

4. Load the knee where the kneecap is comfortable

The kneecap is pressed hardest into its groove in a deep squat. It is loaded most when the thigh muscle straightens the knee against resistance from a bent position. Early strength work therefore lives in the comfortable middle: squats and leg presses to about 60 degrees, step-ups, bike, and hip work. Deep squats, lunges, kneeling and heavy leg extensions wait until about three months. Pain at the front of the knee the day after a session means the load was too high.

5. Swelling is the brake

A knee that is bigger the next morning did too much yesterday. Swelling switches the thigh muscle off, which is exactly the muscle you are trying to build. Let the knee’s response set the pace, not the calendar.

> **6. Dates are guides; tests are gates**
>
> Time sets the earliest date for each step. Healing sets a floor that cannot be hurried: about six weeks for bone, several months for the graft. Measured criteria decide whether you actually move. They are a quiet knee, full range, a straight leg raise without a lag, and strength and hop tests approaching the other side. Return to pivoting sport is decided at a testing visit, not by how the knee feels.

WEIGHT BEARING AND WALKING AIDS

WEIGHT BEARING

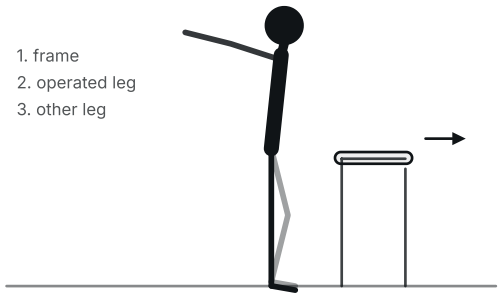
FULL WEIGHT BEARING AS TOLERATED IN THE BRACE FROM DAY ONE, WHICHEVER PARTS OF THE OPERATION YOU HAD. AFTER A TIBIAL TUBERCLE OSTEOTOMY THE BRACE STAYS LOCKED STRAIGHT FOR 6 WEEKS

Whichever parts of the operation you had, you can put as much weight through the leg as comfort allows from day one. The brace is locked straight for walking. The graft and the screws are fixed firmly enough to walk on. The crutches are for balance and a tidy walking pattern, and most people put them down between one and two weeks. In the locked brace after an osteotomy that often takes a little longer.

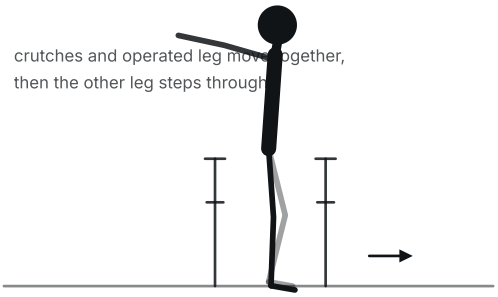
After a tibial tubercle osteotomy the difference is the bend, not the weight. The moved piece of bone is held by two screws. The pull of the whole thigh muscle goes through it every time the knee bends and straightens under load. So for six weeks the brace stays locked straight, for walking and for rest, and the knee is not bent. You walk on it as comfort allows. The bend is then opened progressively from the six-week review once the X-ray shows the bone healing, not by feel. A knee that feels fine at week three is not proof the bone has healed. A fracture through the osteotomy, or the screws pulling loose, is the complication this period exists to prevent.

Limping on a bent knee teaches a habit you will spend weeks unlearning. Short, frequent, tidy walks beat long ragged ones, whichever rule applies to you.

STAGE	TYPICAL TIMING	MOVE ON WHEN
Two crutches, brace locked straight for walking	Day 0 to about 1 week	Comfortable taking weight, knee fully straight as you stand on it
One crutch (opposite hand)	About week 1–2; a little later in the locked brace after an osteotomy	Level walking with a near-normal pattern
No aid	About 1–2 weeks; up to 3–4 weeks in the locked brace after an osteotomy	Walking without a limp; swelling not increasing with walking



Frame first, then the operated leg, then the other leg



Crutches and operated leg together, then step through

YOUR BRACE: HINGED KNEE BRACE WITH AN ADJUSTABLE RANGE-OF-MOTION DIAL

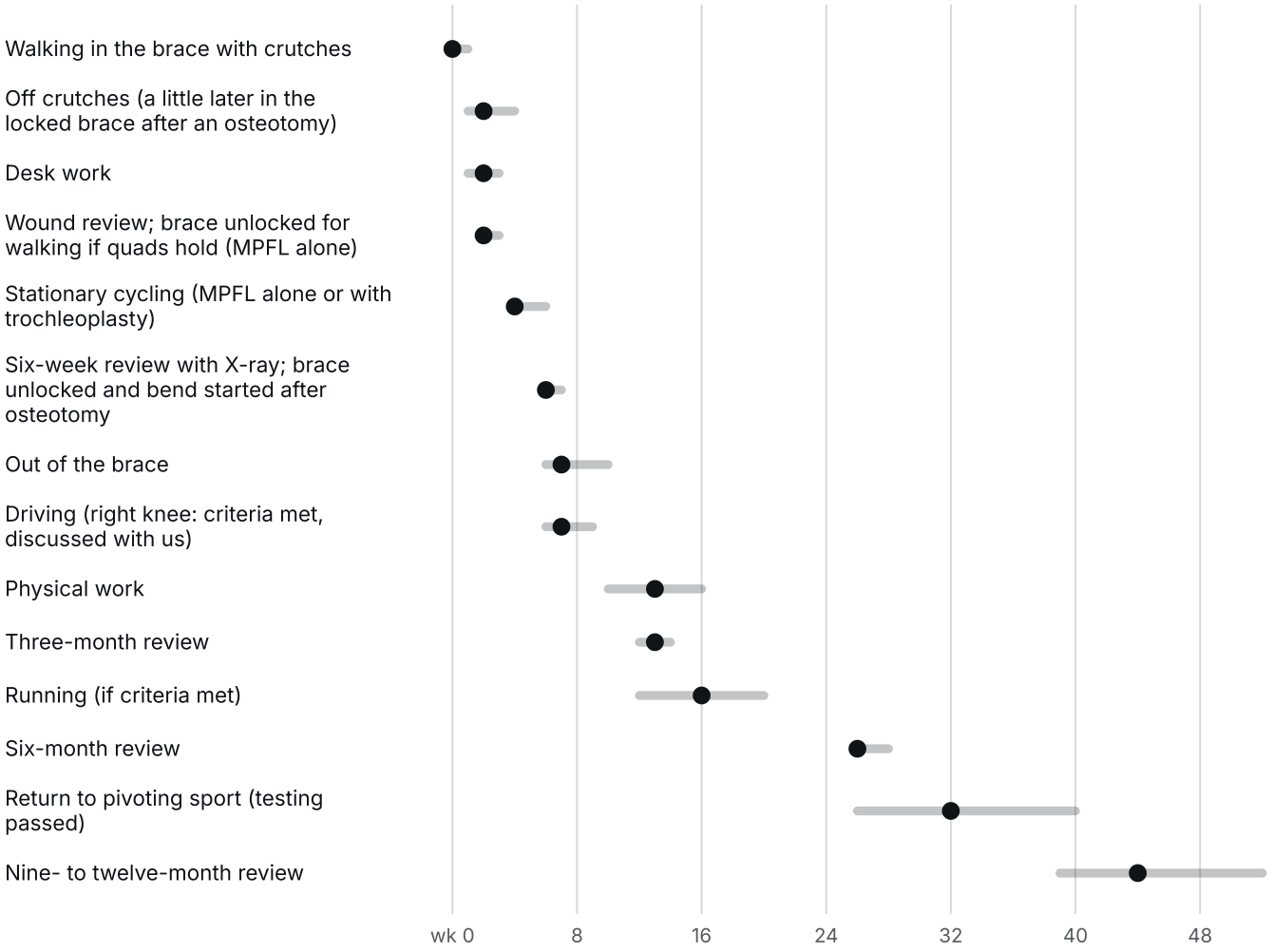
PERIOD	INSTRUCTION
Weeks 0–2	Worn locked straight whenever you are up on your feet, and for sleep unless you were told otherwise. MPFL alone or with trochleoplasty: taken off, or unlocked to the permitted range, for your exercises and for icing. With an osteotomy: stays locked, including for exercises; off only for icing and washing, with the leg kept straight.
Weeks 2–6	MPFL alone or with trochleoplasty: unlocked to the permitted range for walking once you can hold a straight leg raise without a lag. That is usually at the 2-week review. With an osteotomy: stays locked straight, for walking and for exercises, until the 6-week X-ray.

PERIOD	INSTRUCTION
From 6 weeks	MPFL alone or with trochleoplasty: weaned as advised at your review; most people are out of the brace by 6–8 weeks. With an osteotomy: unlocked at the 6-week review and the bend opened progressively over the following weeks, then weaned.

PERIOD	PERMITTED RANGE
Weeks 0–2	MPFL alone or with trochleoplasty: 0–90 degrees for exercises, set on the dial, locked straight for walking. With an osteotomy: locked straight at all times
Weeks 2–6	MPFL alone or with trochleoplasty: opened progressively at review towards full bend. After a trochleoplasty the bend is pushed on earlier, because stiffness is the main risk. With an osteotomy: still locked straight
From 6 weeks	Unlocked and weaned. With an osteotomy, the range is increased progressively from the 6-week review

- Never change the dial settings yourself. The range is part of the operation plan and is adjusted at your reviews.
- Straps snug but not tight: you should fit a finger under each strap. Numbness, pins and needles or colour change in the foot means loosen and re-check.
- Check the skin under the straps and hinges daily; call the rooms about any rubbing or pressure areas rather than padding it yourself.
- Check before each walk that the hinges sit level with the top of the kneecap crease and have not slid down the leg.

YOUR RECOVERY TIMELINE



Bars show the earliest-to-latest normal window; the dot is typical. Your own dates are set with us, not by this chart.

THE PHASES, ONE BY ONE

You move to the next phase by meeting its exit criteria, not by the calendar. The week numbers are typical, nothing more.

PHASE 1: PROTECT AND SETTLE

WEEKS 0–2

A fully straight knee, a thigh muscle that switches on, settling swelling and a healed wound, with the graft and any moved bone protected.

GOALS: TICK THEM OFF

- [ ] Extension (straightness) equal to the other side
- [ ] Bend to 90 degrees within the brace limit (MPFL alone or with trochleoplasty; the knee stays straight after an osteotomy)
- [ ] Straight leg raise with no lag (no sag at the knee), in the brace if needed
- [ ] Swelling settling rather than building
- [ ] Walking safely with crutches and the locked brace, taking weight as comfort allows
- [ ] Wound healed

DO THIS

- Heel props several times daily. A fully straight knee is the number one priority.
- Quadriceps sets, and straight leg raises in the locked brace until the leg lifts without a lag.
- MPFL alone or with trochleoplasty: heel slides to the brace limit, gently and often; after a trochleoplasty this is the most important exercise you have. With an osteotomy, no bending exercises until the brace is unlocked at 6 weeks.
- Ankle pumps every waking hour, and short frequent walks in the locked brace.
- Kneecap mobilisation up and down, and gently inwards, once the dressing allows. Do not push the kneecap outwards: that is the direction the operation was done to stop.
- Ice 15–20 minutes several times a day, and proper elevation: lying down, foot above heart.

AVOID THIS

- A pillow under the knee: comfortable now, costly later. It teaches the knee to rest bent.
- Walking with the brace unlocked, or without it, before you are told to.
- With an osteotomy: unlocking the brace or bending the knee before the 6-week review. Also any straightening of the knee against resistance, such as kicking out against a weight. Falls in the first six weeks are the main cause of the fixation failing, so clear the floors and take the stairs slowly.
- Forcing the bend past the dial setting or through sharp pain.
- Prolonged sitting with the leg hanging down.

READY FOR THE NEXT PHASE WHEN…

- Full extension, matching the other side
- Bend to 90 degrees (MPFL alone or with trochleoplasty)
- Straight leg raise with no lag
- Effusion (fluid in the knee) settling
- Wound healed and reviewed

PHASE 2: OPEN THE BEND, BUILD THE BASE

WEEKS 2–6

Progress the bend as the brace is opened, and start the hip and thigh strengthening that will hold the kneecap. After an osteotomy the brace stays locked through this phase, so the work is straight-leg strength and walking.

GOALS: TICK THEM OFF

- [ ] Full extension maintained every single day
- [ ] MPFL alone or with trochleoplasty: bend of 120 degrees or more by 6 weeks; normal walking pattern without crutches, brace unlocked
- [ ] With an osteotomy: walking well in the locked brace, straight leg raise strong, knee kept straight until the 6-week review
- [ ] Hip abductor and gluteal work established, lying and then standing on the good leg
- [ ] Stationary cycling once the bend allows a full turn of the pedals (MPFL alone, from about 4 weeks)

DO THIS

- Keep the daily extension work: it still leads.
- Heel slides and seated assisted bends to the new dial setting after each review.
- Hip abduction lying, static glutes and bridging: the hip muscles are what stop the thigh rolling inwards and the kneecap drifting out.
- MPFL alone or with trochleoplasty: sit-to-stands and mini squats to about 45–60 degrees, and the stationary bike from about 4 weeks, saddle high.
- With an osteotomy: quadriceps sets, straight leg raises, calf and hip work in the locked brace. No bending exercises, no squats and no bike until the brace is unlocked at the 6-week X-ray.
- Start scar massage once the wound is fully healed and dry.

AVOID THIS

- Squatting or lunging past 60 degrees, and any kneeling.
- Resisted leg extensions on a machine (kicking a weight out from a bent knee). They load the kneecap and, after an osteotomy, pull hard on the healing bone.
- Twisting on the planted foot.
- Letting the knee drift inwards over the foot on every squat and step: film yourself, and keep the kneecap over the second toe.

READY FOR THE NEXT PHASE WHEN…

- Full extension

- MPFL alone or with trochleoplasty: bend of at least 120 degrees, no crutches, no limp, brace weaned
- With an osteotomy: 6-week X-ray shows the bone healing, and the brace has been unlocked at review
- Effusion trace or less

PHASE 3: STRENGTH AND CONTROL

WEEKS 6–12

Build real strength in the thigh and hip, teach the knee to track straight under load, and walk, climb and cycle normally.

GOALS: TICK THEM OFF

- [ ] Full, pain-free range of movement, matching the other side (after an osteotomy the bend is built progressively through this phase)
- [ ] No crutches and no brace, whatever the operation
- [ ] Step-ups and step-downs with the kneecap tracking over the second toe
- [ ] Single-leg balance of 30 seconds with good control
- [ ] Stationary cycling 20–30 minutes
- [ ] Thigh strength visibly returning: the inner thigh muscle (vastus medialis) firming when you tighten it

DO THIS

- Progress squats and leg press to about 60–90 degrees as comfort allows, with the kneecap tracking straight.
- Forward step-ups, then lateral step-downs, slowly and with control: this is the exercise that teaches the hip to hold the knee.
- Standing hip abduction, single-leg stance, and calf raises.
- Cycling on the bike with light resistance; swimming with a flutter kick once the wound is fully healed.
- With an osteotomy, once the brace is unlocked at 6 weeks: open the bend progressively with heel slides and seated bends over 2 to 4 weeks, as set at review. Then join the programme above.

AVOID THIS

- Deep squats, lunges past 90 degrees and kneeling until about 3 months.
- Running, jumping and hopping. The bone and the graft are not ready, and the quadriceps is not strong enough to protect the kneecap on landing.
- Pivoting, cutting and ball sports.
- Pushing through pain at the front of the knee the next day: it means the load was too high, not that you were too soft.

READY FOR THE NEXT PHASE WHEN…

- Full range of movement
- Normal walk on all surfaces, stairs alternating

- Single-leg stance 30 seconds, step-down with control
- Quadriceps strength at least 70% of the other side on testing
- Effusion trace or less

PHASE 4: RUNNING AND POWER

MONTHS 3–6

Return to running in a straight line, then to jumping and landing, as the strength gates are met.

GOALS: TICK THEM OFF

- [ ] Straight-line running, started on a walk-jog programme once the criteria are met
- [ ] Quadriceps and hip strength 80% or more of the other side
- [ ] Two-leg then single-leg hopping with a soft, straight landing
- [ ] Gym strength through full range, including controlled lunges and deeper squats

DO THIS

- Start running only when the criteria are met. They are a quiet knee, full range, quadriceps strength at least 70–80% of the other side, a single-leg squat with the knee tracking straight, and pain-free hopping. After an osteotomy, also a healed bone on X-ray.
- Build running by time and surface first, speed last.
- Two-leg jumping and landing, then single-leg hopping, watching the landing: knee over the foot, not collapsing inwards.
- Heavier strength work in the gym, now through range, with the kneecap tracking straight on every repetition.

AVOID THIS

- Running before the criteria are met. The date opens nothing on its own.
- Cutting, pivoting and sport-specific drills until Phase 5.
- Adding distance and speed in the same week.

READY FOR THE NEXT PHASE WHEN…

- Running 20–30 minutes without next-day swelling or kneecap pain
- Hop tests at 80% or more of the other side
- Strength 80% or more of the other side

PHASE 5: RETURN TO SPORT

FROM 6 MONTHS (OFTEN 9 MONTHS AFTER AN OSTEOTOMY OR TROCHLEOPLASTY)

Change of direction, sport-specific training and a return to pivoting sport once testing is passed.

GOALS: TICK THEM OFF

- [ ] Pre-planned then reactive change-of-direction drills
- [ ] Strength and hop tests 90% or more of the other side
- [ ] Sport-specific training with the team, non-contact before contact
- [ ] Confidence in the knee: the kneecap no longer the first thing you think about

DO THIS

- Agility work: pre-planned cutting first, then reactive drills, then drills under fatigue.
- Keep the hip and quadriceps strengthening going twice a week for at least the first year back.
- Return-to-sport testing at the rooms before the first match or competition.

AVOID THIS

- Going back to a pivoting or contact sport on a date rather than on a test result.
- Dropping the strength programme once you are playing. The muscles are what hold the kneecap; they need maintaining.

READY FOR THE NEXT PHASE WHEN…

- Return-to-sport test battery passed: strength and hop symmetry 90% or more, good movement quality under fatigue, and confidence
- Cleared at review

YOUR EXERCISES

Little and often beats one heroic session. Each exercise lists what you should feel, sharp pain that lingers afterwards means ease off and, if it persists, call.



Pull up and point away, from the ankle only

ANKLE PUMPS

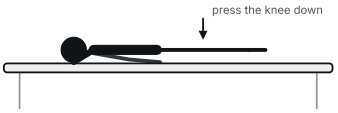
PHASE 1

Keep blood moving in the calf: your main clot-prevention exercise.

10 firm pumps, every waking hour, for the first 2 weeks

1. Lie or sit with the leg supported.
2. Pull your foot up towards you as far as it goes.
3. Point it away as far as it goes.
4. Repeat briskly.

Feel: You should feel the calf muscles working. Move through the full range each time; the brace does not get in the way.



Tighten the front of the thigh and hold 5 seconds

STATIC QUADRICEPS SETS

PHASE 1

Switch the thigh muscle back on. Swelling and years of instability have turned it down, and it is the muscle that holds the kneecap.

10 holds of 5 seconds, 3–4 times daily

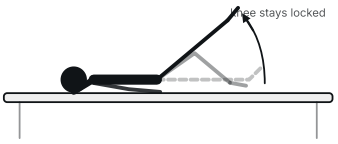
1. Lie with the leg straight.
2. Push the back of the knee down into the bed by tightening the front of the thigh.
3. Watch the kneecap draw upward slightly.
4. Hold, then fully relax.

Feel: You should feel this in the front of the thigh, and particularly the teardrop of muscle on the inner side just above the kneecap. A hand on that inner muscle helps you find it.

Harder: Your physiotherapist may add muscle stimulation (NMES) over the quadriceps if activation is slow.

STRAIGHT LEG RAISE

PHASE 1



Lock the knee straight, lift, lower slowly

Quadriceps strength with the knee locked straight. The milestone is lifting without a lag, which is what earns the brace being unlocked.

10 lifts, hold 3 seconds, 3 times daily

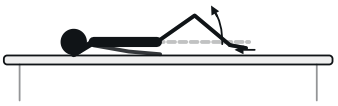
1. Lie on your back, other knee bent, foot flat.
2. Tighten the thigh and lock the knee straight.
3. Lift the whole leg about 30 centimetres.
4. Lower slowly.

Feel: The knee must stay locked; if it sags, do it in the locked brace until it does not. With an osteotomy this is allowed, because the knee does not move: the pull on the bone is steady, not a kick.

Easier: Do it in the brace locked straight.

HEEL SLIDES

PHASE 1



Slide the heel towards you so the knee bends up

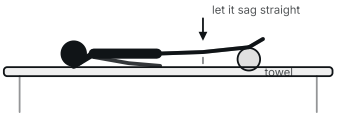
Restore the bend, gently and often, within the brace limit. After a trochleoplasty, this is the exercise that prevents stiffness.

10 slow slides, 3–4 times daily (hourly after a trochleoplasty, as instructed; not until the brace is unlocked at 6 weeks after an osteotomy)

1. Lie on your back with the brace unlocked to the permitted range, or off.
2. Slide the heel towards your bottom as far as comfortable, letting the knee bend.
3. Hold 5 seconds at the top of the bend.
4. Slide slowly back to straight.

Feel: A firm stretching feeling is right; sharp lingering pain means ease off. Stop at the dial setting: the limit is part of the operation plan.

Easier: Loop a towel around the ankle and assist the slide with your arms.



Nothing under the knee, 5 to 10 minutes

HEEL PROP EXTENSION STRETCH

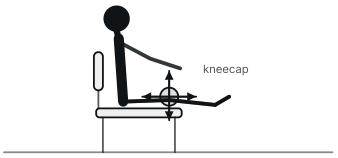
PHASE 1

A completely straight knee. Everything else depends on it.

5–10 minutes, 3 times daily

1. Lie on your back or sit with the leg out straight.
2. Rest the heel on a rolled towel so the knee is unsupported.
3. Relax and let gravity straighten the knee.
4. A small weight on the thigh can be added if advised.

Feel: Let the muscles go; this is a stretch, not an exercise. A fully straight knee is the first milestone at every review.



Gentle glides up, down and side to side

KNEECAP MOBILISATION

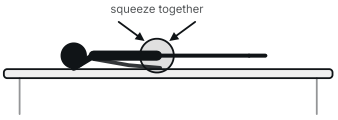
PHASE 1

Keep the kneecap gliding so the knee can bend, without stressing the new ligament.

2 minutes, 3 times daily, once the dressing allows

1. Sit with the leg straight and the thigh relaxed.
2. With the fingers of both hands, glide the kneecap gently up towards the hip, then down.
3. Glide it gently inwards (towards the other knee).
4. Hold each glide a few seconds.

Feel: Do not push the kneecap outwards. That is the direction the surgery was done to stop, and the new ligament is healing. Gentle: this is a glide, not a stretch.



Squeeze the buttocks together and hold 5 seconds

GLUTEAL SETS AND BRIDGING

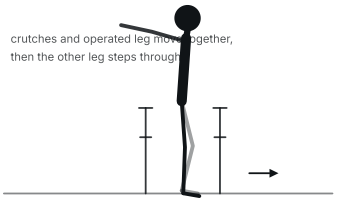
PHASE 1

Wake up the hip muscles that keep the thigh from rolling inwards, which is what lets the kneecap drift outwards.

10 holds of 5 seconds, then 10 bridges, 3 times daily

1. Lie on your back.
2. Squeeze the buttocks together and hold.
3. Progress to bridging: knees bent to the brace limit, feet flat, lift the hips so the body is a straight line from shoulders to knees.
4. Lower slowly.

Feel: You should feel the buttocks working, not the back. With an osteotomy, bridge with the brace locked and the operated leg straight, pushing through the other leg, until the brace is unlocked.



Crutches and operated leg together, then step through

WALKING WITH CRUTCHES

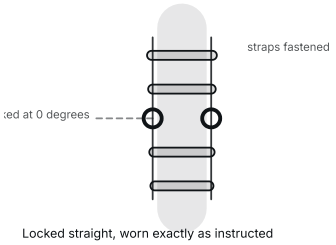
PHASE 1

A safe, even walk in the brace, at the weight you were told.

Every walk until you are cleared to drop a crutch

1. Brace locked straight for walking.
2. Move both crutches and the operated leg forward together.
3. Step the other leg through.
4. Keep the steps short and even.

Feel: Stand tall and look ahead, not at the floor. Take as much weight as comfort allows, whichever operation you had. The brace stays locked straight.



Locked straight, worn exactly as instructed

WEARING THE BRACE LOCKED

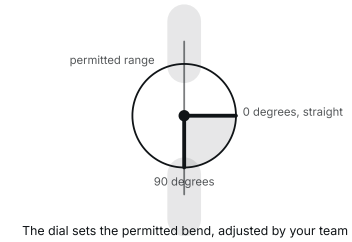
PHASE 1

Protect the graft and, where it applies, the moved bone while you are upright and the thigh muscle cannot yet protect the knee.

Locked straight for all walking in weeks 0–2 (to 6 weeks with an osteotomy), and for sleep unless told otherwise

1. Fit the brace with the hinges level with the top of the kneecap crease.
2. Fasten the straps snug, a finger's width of give in each.
3. Lock the hinge at 0 degrees before standing up.
4. Unlock or remove only for exercises and icing, as instructed.

Feel: Check the skin under the straps daily. The brace is unlocked for walking when the leg lifts straight without a lag, at a review, not when it starts to feel unnecessary.



The dial sets the permitted bend, adjusted by your team

THE RANGE DIAL

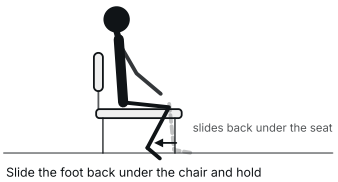
PHASE 1

Cap the bend at the limit set for your operation while the graft heals.

Set at 0–90 degrees for exercises in the first 2 weeks, then as adjusted at each review

1. Check the dial setting before each exercise session.
2. Bend only to where the brace stops you.
3. Do not adjust the dial yourself.

Feel: The setting is part of the operation plan and is opened at your reviews. After a trochleoplasty the range is usually opened sooner, because stiffness is the main risk. After an osteotomy the brace stays locked for 6 weeks and the range is then opened progressively.



Slide the foot back under the chair and hold

SEATED ASSISTED KNEE BEND

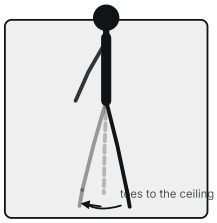
PHASE 2

Build the bend past 90 degrees as the brace is opened.

10 slow bends, hold 5 seconds, 3 times daily

1. Sit on a chair with the brace off or unlocked to the new setting.
2. Slide the operated foot back under the seat as far as comfortable.
3. Press it gently further with the other ankle.
4. Hold, then slide forward.

Feel: Firm stretch, not sharp pain. Measure your progress: a photo of the bend each week is motivating.



Slide out to the side and back, keep the toes up

HIP ABDUCTION, LYING

PHASE 2

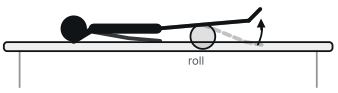
Strengthen the outer hip, which stops the thigh rolling inwards and the kneecap drifting outwards.

3 sets of 10, daily

1. Lie on your back, legs straight, toes to the ceiling.
2. Slide the operated leg out to the side, keeping it straight.
3. Slide back to the middle.
4. Progress to lying on the other side and lifting the leg.

Feel: Toes stay pointing up: do not let the leg roll outwards. You should feel this at the side of the hip.

Harder: Side-lying leg raises, then a band around the knees for clam shells and side-steps once cleared to stand on the leg.



Thigh stays on the roll, lift the heel until straight

INNER-RANGE QUADRICEPS OVER A ROLL

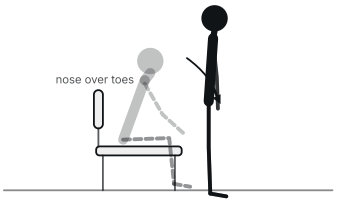
PHASE 2

Strengthen the last part of straightening, where the inner thigh muscle does its work, in a range that is comfortable for the kneecap.

3 sets of 10, hold 3 seconds, daily

1. Lie with a firm roll under the knee so it rests slightly bent.
2. Straighten the knee fully, lifting the heel.
3. Hold, then lower slowly.

Feel: Feel for the inner teardrop muscle switching on. With an osteotomy, wait until cleared at 6 weeks: this is a straightening exercise and pulls on the bone.



Nose over toes, push up evenly through both legs

SIT TO STAND

PHASE 2

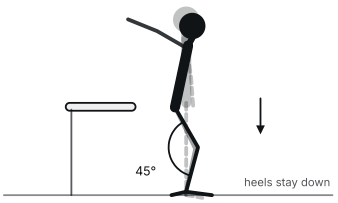
Thigh and hip strength in the range the kneecap is comfortable, with the knee tracking straight.

3 sets of 10, daily (MPFL alone or with trochleoplasty; after an osteotomy, once cleared at 6 weeks)

1. Sit on a firm chair, feet hip-width apart.
2. Lean forward and stand without using your hands.
3. Lower slowly, taking 3 seconds.

Feel: Keep the kneecap over the second toe throughout; do not let the knee drift inwards. Raise the seat height if the knee collapses or hurts.

Harder: Lower seat, then single-leg emphasis.



Bend to about 45 degrees, knees over toes, heels down

MINI SQUAT

PHASE 2

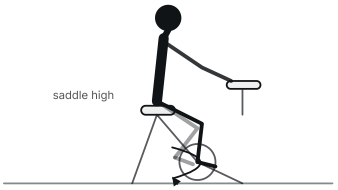
Two-leg strength to about 45–60 degrees, the depth that loads the thigh without overloading the kneecap.

3 sets of 10, daily

1. Stand with feet hip-width apart, hands on a bench if needed.
2. Bend both knees to about 45 degrees, then 60 as comfort allows.
3. Keep the heels down and the kneecaps over the second toes.
4. Stand tall.

Feel: No deeper than comfortable for the kneecap. Pain the next day means the squat was too deep or too many. Film yourself from the front: the knee must not fall inwards.

Harder: Deeper to 90 degrees from 6 weeks; add load from 3 months.



Saddle high at first, build time before resistance

STATIONARY CYCLING

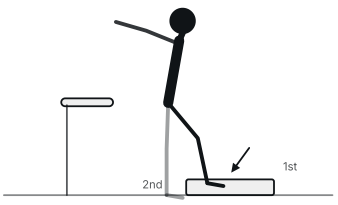
PHASE 2

Range of movement and endurance with little load on the kneecap.

10 minutes building to 30, daily, from about 4 weeks (MPFL alone or with trochleoplasty), or once the brace is unlocked and the bend allows after an osteotomy

1. Set the saddle high so the knee is nearly straight at the bottom of the stroke.
2. Rock back and forth until a full turn is possible.
3. Pedal with no resistance at first.

Feel: The bend needs to be about 110 degrees for a full turn. Lower the saddle gradually as the bend improves; add resistance only after 6 weeks.



Operated leg goes up first, the other foot joins it

FORWARD STEP-UP

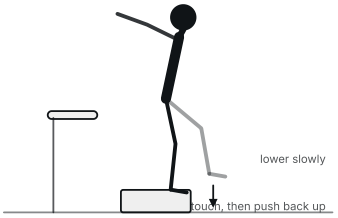
PHASE 3

Single-leg thigh strength with the knee tracking straight.

3 sets of 10, daily

1. Stand facing a low step.
2. Step up with the operated leg, driving through the heel.
3. Bring the other foot up, then step down slowly, operated leg last.

Feel: Kneecap over the second toe; hips level. Start with a low step and raise it as control improves.



Lower slowly with the operated leg, touch, return

LATERAL STEP-DOWN

PHASE 3

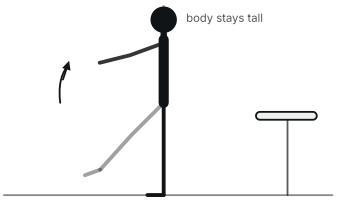
The key exercise: teach the hip and thigh to control the knee as it bends under body weight, so the kneecap tracks straight.

3 sets of 8–10 slow repetitions, daily

1. Stand sideways on a low step on the operated leg.
2. Lower the other heel slowly towards the floor by bending the operated knee, taking 3 seconds.
3. Touch the heel lightly and return.

Feel: The knee must stay over the foot. If it drops inwards, lower the step and slow down. Keep the pelvis level; a dropping hip means the hip muscles have given up.

Harder: Higher step, then a weight in the hands.



Leg out to the side, body stays tall

HIP ABDUCTION, STANDING

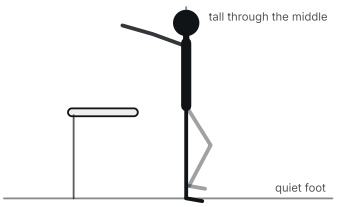
PHASE 3

Outer hip strength and single-leg stability together.

3 sets of 10 each side, daily

1. Stand tall, holding a bench if needed.
2. Lift one leg out to the side, toes forward.
3. Lower slowly.
4. Do both sides: the standing leg works as hard as the lifting leg.

Feel: Do not lean away from the lifting leg. Add a band around the ankles as it gets easier.



Quiet foot, tall posture, build to 30 seconds

SINGLE-LEG BALANCE

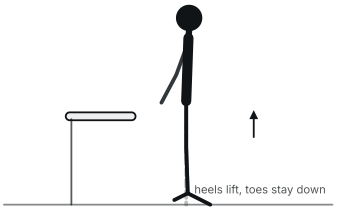
PHASE 3

Control of the knee over the foot, which is what keeps the kneecap in its groove when you land.

3 holds of 30 seconds, daily

1. Stand on the operated leg, knee slightly bent.
2. Hold still, then add small knee bends.
3. Progress to eyes closed, then an unstable surface.

Feel: Knee over the second toe, hips level. Progress only when 30 seconds is steady.



Up onto the balls of the feet, lower slowly

CALF RAISES

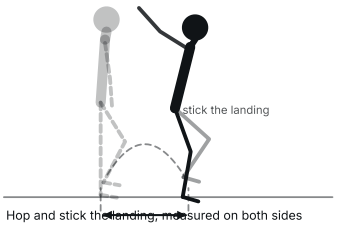
PHASE 3

Calf strength for walking, stairs and, later, running.

3 sets of 15, daily

1. Stand holding a bench.
2. Rise onto the toes of both feet, then lower slowly.
3. Progress to the operated leg alone.

Feel: Slow down, fast up. The knee stays straight: this is a calf exercise.



HOP TESTING PHASE 4

Measure whether the knee is ready for running and then for sport, against the other side.

At the 3-month, 6-month and return-to-sport reviews, with your physiotherapist

1. Single hop for distance, triple hop, crossover hop and a timed 6-metre hop, each leg.
2. Land softly with the knee over the foot and hold the landing.
3. Compare the operated leg with the other side.

Feel: 80% of the other side opens running; 90% opens pivoting sport. A landing where the knee collapses inwards is a fail regardless of the distance.

SWELLING, ICE AND ELEVATION

WHAT IS NORMAL

- Swelling is the single biggest brake on progress. It peaks about 6–8 days after surgery. Then it settles slowly.
- Most of the swelling settles over the first two to three months. After that, it is normal for the limb to puff up after a long day or a burst of activity. This can go on for some months. Most knee replacement patients still have measurable swelling at 7 weeks.
- If the limb is bigger the morning after activity, you did too much the day before. It does not mean something is wrong.
- Warmth and mild redness around the wound settle over weeks.

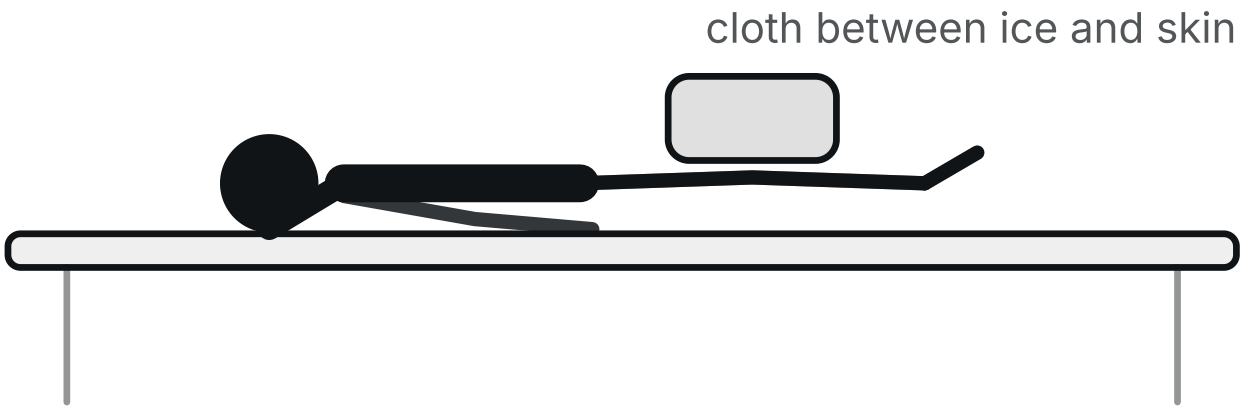
ICE

- Ice is safe, cheap and comfortable. It probably gives a small benefit for pain and swelling in the first few days.
- Use it for 15–20 minutes at a time, 4–6 times a day for the first 2 weeks. After that, use it as needed after activity and physiotherapy. It is most useful in the hour after exercise.
- Always put a thin cloth between the ice and your skin. Never sleep with ice on. Check with the rooms before you ice over numb skin or a fresh wound dressing.
- Stop and call the rooms if the skin turns white, blotchy or numb.

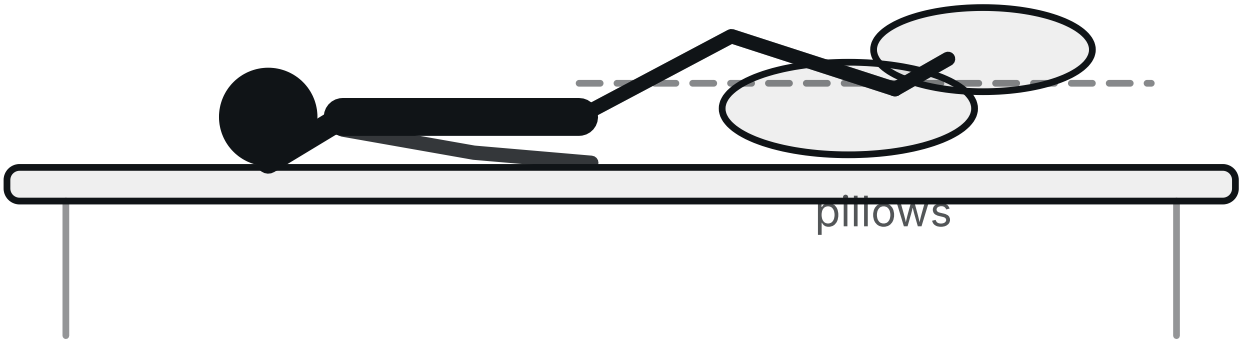
- An honest note about the evidence. The 2025 Cochrane review of icing after knee replacement (22 trials, 1,839 patients) found small improvements. Pain at 48 hours was better by 1.6 points out of 10. There was about 8 degrees more bend at discharge, and less blood loss. All of this was low-certainty evidence. The reviewers concluded the benefits may be too small to justify routine use. Use ice because it is harmless and makes you more comfortable, not because it changes the final result.
- There is no good evidence that expensive cold-compression machines work better than a bag of ice or a gel pack. The trials have never been analysed in a way that answers that question. Please do not spend money on one on our recommendation.

ELEVATION & COMPRESSION

- Raise the limb above the level of your heart for 20–30 minutes, several times a day. Keep the foot higher than the knee, the knee higher than the hip, and the hip higher than the heart.
- Lie down to do this. A recliner does not raise the leg above your heart.
- Avoid sitting with the leg hanging down for long periods.
- Wear your graduated compression stocking or sleeve as advised. It helps control swelling.



15 to 20 minutes, 4 to 6 times daily



Foot above knee, knee above hip, lying flat

WOUND AND SCAR CARE

- Keep the dressing dry and in place until it is checked. Most modern waterproof dressings let you shower. Do not soak or scrub the wound, and do not put soap directly on it.
- No baths, spas, pools or ocean swimming until the wound is fully healed and has been checked. That usually means at least 2–3 weeks.
- Do not put creams, powders or antiseptics on the wound unless you have been told to.
- Clips or stitches are removed or checked at your first appointment.
- Tell the rooms if the dressing becomes soaked, loose or dirty.
- There are usually two or three wounds. One is on the inner side of the kneecap and one on the inner side of the thigh where the graft was fixed. After an osteotomy there is one over the bump below the kneecap. A hamstring graft adds a small wound on the inner shin.
- From about 3 weeks, once the wound is fully healed and dry, start massaging the scar. Use a plain moisturiser and firm circular pressure, for 2–3 minutes, twice a day. This softens the scar and makes the skin around it less sensitive.
- Silicone gel or sheets can improve the look of prominent scars.

- Protect the scar from the sun for 12 months. It burns easily and can darken permanently.
- Scars take a full 12–18 months to fade and flatten.
- Numb skin around and below the scar is normal, and often permanent. Small skin nerves have to be cut during surgery, and this cannot be avoided.

SLEEP AND POSITIONING

Sleep in the brace, locked straight, for the first two weeks (six weeks after an osteotomy) unless you were told otherwise. After that, follow the advice at your review.

Never sleep with a pillow under the knee. If you want support, place a pillow under the whole lower leg from calf to heel, so the knee rests straight.

For the first week or two, many people sleep better on their back with the leg raised on pillows. It helps the morning swelling.

Getting in and out of bed: sit on the edge and swing the legs together, with the operated leg supported by the other. Keep the brace locked until you are standing with the crutches.

PAIN, MEDICATION AND WHAT TO EXPECT

Expect real pain for the first week or two, and take regular pain relief as prescribed and before exercise sessions, rather than chasing pain afterwards. An osteotomy is the most painful of the three parts, because it is a cut in bone.

As things settle, cut back the strongest medications first. Most people are down to simple pain relief within two to three weeks.

Aches, warmth, clicking and the odd twinge continue for months and are normal. Pain at the front of the knee the day after a session is a load message:

ease back a step. After an osteotomy, the screws can be felt and are often tender when kneeling for the first year.

Pain that is increasing week on week is not normal: call the rooms.

PREVENTING BLOOD CLOTS

- Get up and move at least once an hour while you are awake.
- Do ankle pumps: 10 firm up-and-down pumps of the ankles, every waking hour for the first 2 weeks.
- Drink plenty of fluids.
- Take any prescribed blood thinner exactly as directed. Wear stockings as advised.
- Avoid long-haul flights for 6 weeks after joint replacement. Talk to the rooms before any earlier travel.

DRIVING: THE CRITERIA THAT ACTUALLY MATTER

You may drive when **all** of the following are true:

- You are off opioid painkillers and any other medicine that can make you drowsy.
- You can sit comfortably in the driver's seat.
- You can do an emergency stop at full force, without hesitating and without pain.
- You are not using a walking aid in the car. You are not wearing a brace that limits the movement you need to work the pedals.
- You have practised the movements first in a parked car.

What the driving research does and doesn't show

What the research actually measures is braking reaction time on a driving simulator. Those studies show braking gets back to its pre-surgery level at about 2 weeks after a right hip replacement, and about 4 weeks after a right knee replacement. Movement time is back to normal by 6 weeks. After knee arthroscopy (keyhole surgery), the simulator evidence is more cautious than common practice. In the one study that measured it directly, braking was still slower one week after surgery than before it. It had recovered by four weeks. A 2021 review of eight studies put the average

return at about six weeks. Most people having a simple arthroscopy are driving well before that. That is why the criteria above matter more than the date. But these are averages. In one study, about one in three right-hip patients still could not meet an emergency-stop standard at six weeks. Treat the timeframes in this guide as targets to discuss with us, not as permissions.

No published study has compared automatic and manual cars. The logic is simple: a manual needs the left leg for the clutch. So in a manual, left-sided surgery is the one to be careful about. Advice about driving earlier after a left-leg operation in an automatic is clinical judgement, not trial evidence.

In Australia, your treating doctor’s advice is what counts. Under the Austroads "Assessing Fitness to Drive" standards, short-term impairment after surgery is a matter of clinical judgement. Commercial drivers are held to a higher standard. Driving while impaired may void your insurance, so check your insurer’s position. Do not drive for at least 24 hours after any general anaesthetic or sedation.

GETTING BACK TO WHAT YOU DO

ACTIVITY	TYPICAL	WHEN IT’S RIGHT	NOTES
Walking for exercise	From the outset in the brace, as comfort allows, whichever operation	No limp; swelling stable	Short and frequent at first; build distance gradually
Desk work	1–2 weeks	Comfortable sitting with the leg elevated; brace on; travel sorted	Get up and move hourly
Swimming (flutter kick)	From wound healing, about 3 weeks, once	Wounds fully healed and reviewed	No breaststroke kick until 3 months: it twists the knee and loads the kneecap

ACTIVITY	TYPICAL	WHEN IT'S RIGHT	NOTES
	allowed out of the brace		
Stationary cycling	About 4 weeks (MPFL alone or with trochleoplasty); once the bend allows after the brace is unlocked at 6 weeks with an osteotomy	Enough bend for a full revolution	Saddle high; resistance from 6 weeks
Driving	About 6 weeks for a right knee, once out of the locked brace and off crutches; often earlier for a left knee in an automatic	The standard driving criteria, discussed with us	Not while the brace is locked or you are on crutches. The left-knee-in-an-automatic advice is clinical judgement, not trial evidence
Physical work	About 3 months	Strength and endurance for the actual duties; kneeling tolerated if the job needs it	Modified duties in between where available: raise it at the 2-week review
Running (straight line)	From 3–4 months, if criteria are met	Pain-free quiet knee, full range, quadriceps strength 70–80% of the other side, good single-leg squat, pain-free hopping; healed bone on X-ray after an osteotomy	The criteria open the gate, not the date
Gym strength through full range, lunges, deeper squats	From 3 months	Full range, no next-day kneecap pain	Kneecap over the second toe on every repetition
Change of direction and sport-specific training	Months 5–7	Strength and hop symmetry approaching 90%	Pre-planned first, reactive later; non-contact before contact
Pivoting and jumping sport	Not before 6 months; often 9 months after an	Return-to-sport test battery passed: strength and hop	Time and testing together protect the knee far better

ACTIVITY	TYPICAL	WHEN IT'S RIGHT	NOTES
(netball, football, soccer, basketball, dance, skiing)	osteotomy or trochleoplasty	symmetry 90% or more, movement quality under fatigue, confidence	than either alone
Kneeling	From about 3 months, when comfortable	Wounds healed; tolerance built gradually on padding	After an osteotomy the screws may make kneeling uncomfortable for a year or more. They can be removed once the bone has healed if they are a problem

Flying after joint replacement: an honest note

You will often hear "no flying for six weeks" after joint replacement. This is a convention, not a proven rule. A 2025 review found only limited data. It showed no demonstrated difference in clot risk between people who flew soon after a hip or knee replacement, most of them within the first week, and people who did not fly.

The six-week convention is based on practical realities rather than trial evidence. These include coping with airports and cramped seating, and being past the highest-risk clot window while still on prevention. Long-haul flights over four hours also carry a higher clot risk in their own right. Airline and travel-insurance rules vary, so check both. Some airlines impose their own restrictions.

Talk to the rooms first if you need to travel long-haul in the first six weeks. Clot prevention, an aisle seat, stockings and moving about on board can then be planned.

WARNING SIGNS: ACT, DON’T WATCH

None of these should be watched overnight to see how they go. Early treatment of a problem is simple; late treatment is not.

EMERGENCY: 000 Emergency department / call 000

- Sudden shortness of breath
- Chest pain
- Coughing blood, or feeling faint

GP TODAY See your GP today

- New, one-sided calf pain, tenderness or firmness
- Calf or whole-leg swelling out of proportion to the rest of your recovery

CALL THE ROOMS Call the rooms: same day

- Pain that is getting worse, not better, after the first week
- New redness spreading out from the wound
- Wound discharge, particularly cloudy, thick or smelly fluid, or wound edges opening
- Fever of 38°C or higher, or shaking chills, or feeling generally unwell
- The kneecap slips, or the knee gives way with a new episode of swelling
- After an osteotomy: a sudden sharp pain or a crack below the kneecap, with new swelling or a change in how the leg takes weight
- The knee locks: gets stuck and will not fully straighten
- Knee not fully straight by the 2-week review; bend stuck below 90 degrees at 6 weeks (MPFL alone or with trochleoplasty); bend not progressing within 3 weeks of the brace being unlocked after an osteotomy
- Numbness or pins and needles in the foot, or the foot drifting pale or blue in the brace

If you have a joint replacement, never "wait and see" with a wound problem. Call the rooms the same day. Early treatment of an infected joint replacement works far better than late treatment.

ARRANGING PHYSIOTHERAPY IN AUSTRALIA

- Most privately insured patients pay for private physiotherapy themselves or use extras cover. A GP Chronic Disease Management plan helps pay for only five allied-health visits per calendar year. That is not enough for a major reconstruction, so plan for this.
- If your care is covered by workers compensation or CTP insurance, you follow a plan approved by the insurer.
- Tele-rehabilitation (rehab by video call) and app-based home programmes are reasonable additions. But a sports knee reconstruction still needs in-person, measured strength testing at intervals.

COMMON QUESTIONS

Which parts of the operation did I have, and does it matter?

It matters for the first six weeks. Your operation record lists the parts. An MPFL reconstruction alone, or with a trochleoplasty, can take full weight straight away and is usually off crutches in a week or two. If a tibial tubercle osteotomy was done, the moved piece of bone must be protected for about six weeks. You still walk on the leg as comfort allows. The brace stays locked straight, and the knee is not bent until the six-week X-ray shows the bone healing. The bend is then opened progressively. If you are not sure which applies to you, call the rooms before you start.

Why is there a brace, and when does it come off?

The brace does two jobs. Locked straight for walking, it stops the knee buckling while the thigh muscle is switched off by swelling and surgery. Set to a range for exercises, it caps the bend at about 90 degrees while the new ligament and any moved bone heal. After an MPFL reconstruction alone or with a trochleoplasty, it is unlocked for walking once you can lift a straight leg without a lag, usually at the two-week review. Most people are out of it by six to eight weeks. After an osteotomy it stays locked straight for six weeks, including for exercises, and the bend is then opened progressively.

Will my kneecap dislocate again?

It is much less likely than before. Pooled series of MPFL reconstruction report the kneecap dislocating again in about 1 to 5 patients in every 100. Without surgery, between about one in five and one in two people have another dislocation, depending on age and the shape of the knee. The risk is higher when the groove is very shallow or the kneecap sits very high. That is exactly when the osteotomy or trochleoplasty is added. The muscle work in this guide is part of keeping the kneecap where it belongs.

Why so much hip work for a kneecap problem?

Because the kneecap drifts outwards when the thigh rolls inwards, and the thigh rolls inwards when the outer hip muscles are weak. Strengthening the hip abductors and the gluteal muscles is as much a part of this operation as the stitches. So is training the knee to track over the foot on every squat and step.

What exercises should I avoid?

For the first three months: deep squats, lunges, kneeling and the leg-extension machine (kicking a weight out from a bent knee). They press the kneecap hard into its groove or pull hard on the healing tissues. Work in the comfortable middle range builds the same muscles without the cost. That means squats and leg presses to about 60 degrees, step-ups, the bike and hip work. After an osteotomy, also avoid straightening the knee against any resistance until the bone has healed.

How long will I be off work?

Desk work in one to two weeks, with the leg up and the brace on. Physical work around three months, longer if the job involves kneeling, squatting or ladders. After an osteotomy you are in a brace locked straight for six weeks, which rules out most physical work until after that. Modified duties help; raise it at the two-week review.

When can I drive?

Not while the brace is locked or you are using crutches. After that the standard criteria apply. You must be off strong pain relief, able to bend the knee enough to move between the pedals, and able to perform an emergency stop. That is typically about six weeks for a

right knee. For a left knee in an automatic it is often earlier, which is clinical judgement rather than trial evidence. Discuss it with us before you drive.

When can I run, and when can I play sport?

Running in a straight line from about three to four months, if the criteria are met. They are a quiet knee, full range, quadriceps strength at 70–80% of the other side, a good single-leg squat and pain-free hopping. After an osteotomy, the bone must also have healed on X-ray. Pivoting and jumping sport not before six months, and often nine months after an osteotomy or trochleoplasty, after passing testing. In pooled studies, about nine in ten people return to sport after an MPFL reconstruction, at an average of about seven months. About two-thirds return to the same level as before. Adding an osteotomy tends to push the return later.

Will the screws need to come out?

Often, but not always. The two screws holding the moved bone can be felt under the skin and may be tender when kneeling. If they remain troublesome once the bone has fully healed, usually after a year, they can be removed in a short day-surgery operation. In published series, between about a quarter and a half of patients have this done. It is the most common reason for a second operation after an osteotomy.

My knee is stiff. Is that normal?

Some stiffness is normal in the first weeks, and the brace deliberately limits the bend. A bend stuck below 90 degrees at six weeks despite doing the exercises is not normal after an MPFL reconstruction alone. After an osteotomy the bend only starts at six weeks, and it should then progress week by week. After a trochleoplasty, stiffness is the complication to watch for, which is why early movement is pushed harder after that part of the operation. Call the rooms rather than wait for the next review.

Does a trochleoplasty wear the joint out?

It is the honest question about this part of the operation. Reshaping the groove means working on the joint surface. In long-term studies about six in ten knees show mild wear

on X-ray at about fifteen years. In those same studies the wear did not reduce knee scores or satisfaction. The knees that had the operation had already been damaged by repeated dislocations. Nobody has compared trochleoplasty against leaving a severely shaped groove alone, so the risk cannot be stated exactly. It is reserved for the knees in which the groove is too flat for the other parts of the operation to hold the kneecap.

What about the numb patch?

A numb patch on the outer side of the knee or shin below the scars is common after any operation on the front of the knee. Small skin nerves cross the incisions. It usually shrinks over a year and rarely matters. Mention it at review if it is spreading or painful.

THE EVIDENCE BEHIND THIS GUIDE 26 sourced statements

CLAIM	SOURCE
After a first dislocation treated without surgery, 17% had further instability over 2 to 5 years; with a prior history, 49%	Fithian et al., Am J Sports Med 2004 (PMID 15262631)
In skeletally immature first-time dislocators, recurrence reached 37% at 5 years and 54% at 15 years; patella alta, TT-TG 20 mm or more and trochlear dysplasia multiplied the risk	Sanders et al., Knee Surg Sports Traumatol Arthrosc 2018 (PMID 28299386)
Surgery after a first dislocation roughly halved recurrence at 2 to 5 years (RR 0.53, 95% CI 0.33 to 0.87), on very low quality evidence	Smith et al., Cochrane Database Syst Rev 2015 (PMID 25716704)
In recurrent dislocators without high-risk anatomy, persistent instability at 12 months was 6.7% after MPFL reconstruction against 41.9% with rehabilitation alone (RR 6.3)	Straume-Naesheim et al., Knee Surg Sports Traumatol Arthrosc 2022, randomised trial (PMID 35347375)
Isolated MPFL reconstruction: pooled recurrent instability 1.2% (95% CI 0.3 to 2.1%), return to sport 84.1%, Kujala 85.8	Schneider et al., Am J Sports Med 2016, meta-analysis of 14 studies (PMID 26872895)

CLAIM	SOURCE
Return to sport after MPFL reconstruction 92.8% at a mean of 6.7 months, 71.3% to the same or a higher level; a concomitant osteotomy did not change the rate; recurrence 1.9%	Platt et al., Am J Sports Med 2022, meta-analysis of 930 patients (PMID 33720789)
Return to play 85.1%, 68.3% to the same level, at an average of 7.0 months; recurrent instability 5.4%	Manjunath et al., Am J Sports Med 2021, systematic review of 1278 patients (PMID 32866030)
Return to sport 9.5 months after isolated MPFL reconstruction against 12.9 months with a tibial tubercle osteotomy; same-level return 85% against 66%	Kew et al., J Exp Orthop 2025 (PMID 41323540)
Complications in 26.1% of 629 knees after MPFL reconstruction, including patellar fracture, loss of flexion and recurrent instability; quadriceps dysfunction was the most frequent complication category in an earlier review	Shah et al., Am J Sports Med 2012 (PMID 22679297); Fisher et al., Arthroscopy 2010 (PMID 20887937)
Isolated MPFL reconstruction fails in high-grade trochlear dysplasia: all 7 patients with Dejour C or D dysplasia redislocated against 9.3% with mild dysplasia; a trochlear bump and patella alta predict recurrence	Hopper et al., Am J Sports Med 2014 (PMID 24458241); Dandu et al., Am J Sports Med 2025 (PMID 39763469)
Combined MPFL reconstruction and tubercle osteotomy gives similar scores and redislocation to isolated reconstruction (3.2% v 3.1%) when the tubercle is lateralised, at the cost of more secondary surgery, mostly screw removal	Vivekanantha et al., Knee Surg Sports Traumatol Arthrosc 2023 (PMID 36214831); Meng et al., J Orthop Surg Res 2024 (PMID 39465420)
Tibial tubercle osteotomy: overall complications 4.6%, major 3.0%; hardware removal 36.7% (26.8% to 49.0% by technique); complete detachment of the tubercle carries more complications than keeping a distal hinge	Payne et al., Arthroscopy 2015, systematic review of 787 osteotomies (PMID 25980400)
After tubercle osteotomy for instability: recurrent instability 3% within 2 years and 8% beyond; all-cause reoperation 16%, most for hardware removal	DeNovio et al., Orthop J Sports Med 2025, meta-analysis of 1733 knees (PMID 40995414)
Tibial fractures after tubercle osteotomy occurred at a mean of 11 weeks, at the lower end of the cut; running	Luhmann et al., J Child Orthop 2011 (PMID 22295046)

CLAIM	SOURCE
and sport should wait for cortical healing on the lateral X-ray	
Oblique tubercle osteotomies fail at lower loads in the laboratory than flat cuts, supporting brace protection and restricted weight bearing until healed	Cosgarea et al., Am J Sports Med 1999 (PMID 10424222)
With immediate weight bearing and no brace after tubercle distalisation, all three acute fixation failures followed a fall, slip or twist in the first 6 weeks; late stress fracture 2%	Rahnel et al., Orthop J Sports Med 2024 (PMID 39534396)
Trochleoplasty: recurrent dislocation 2.4% of 994 knees; stiffness 7% (95% CI 3 to 12%); patellofemoral osteoarthritis 27%; subsequent surgery 17%	Leclerc et al., Orthop Traumatol Surg Res 2021, meta-analysis of 1000 trochleoplasties (PMID 34365023)
In severe dysplasia, trochleoplasty plus balancing gave 2.1% redislocation or subluxation against 7% for MPFL reconstruction alone, with the same score improvement	Balcarek et al., Knee Surg Sports Traumatol Arthrosc 2017 (PMID 27796419)
Low-grade patellofemoral osteoarthritis on X-ray in 60.6% of knees at a mean of 15 years after sulcus-deepening trochleoplasty, without any loss of function or satisfaction; no study has a non-operative comparison arm	Pineda et al., Orthop J Sports Med 2026 (PMID 41536346); Tan et al., J Clin Med 2024 (PMID 38792556)
Two-thirds of trochleoplasty patients returned to their previous activity level; higher-level athletes were less likely to	Mengis et al., Am J Sports Med 2022 (PMID 35144479)
Published MPFL rehabilitation protocols: 97% brace immediately, 65% allow weight bearing as tolerated, and 90 degrees of flexion is targeted at a mean of 1.4 weeks; return to sport mostly at 6 months	Lightsey et al., Phys Sportsmed 2018 (PMID 29888637); Koshino et al., Int Orthop 2022 (PMID 35701590)
An accelerated protocol without a brace or weight-bearing restriction did not increase redislocation after isolated MPFL reconstruction	Magnussen et al., Knee 2022 (PMID 36063612)
At return to sport after MPFL reconstruction, quadriceps strength frequently remained below 90% of the other	Kang et al., Arthrosc Sports Med Rehabil 2026 (PMID 42876992);

CLAIM	SOURCE
side, and vastus medialis activation was 73% lower in the operated limb	Riesenberg et al., Orthop J Sports Med 2026 (PMID 42568778)
Return-to-sport criteria: no pain, no effusion, full range, near-symmetrical strength and dynamic stability; with or without surgery only two-thirds return to sport at the same level	Menetrey et al., Knee Surg Sports Traumatol Arthrosc 2014 (PMID 25047793)
ESSKA 2024 consensus: MPFL reconstruction preferred over repair; physiotherapy essential to operative and non-operative care; bracing offers no clear long-term benefit; thresholds for adding bony procedures remain debated	Balcarek et al., Knee Surg Sports Traumatol Arthrosc 2025 (PMID 40053919)
Expert panels reached no consensus on post-operative immobilisation or weight bearing after stabilisation surgery; the protocol in this guide is mainstream practice, not trial evidence	Hurley et al., Bone Joint J 2023, Delphi consensus part II (PMID 38035602)

This guide is general information for patients of Dr Matthew Broadhead (Harbour Orthopaedics & Sports Medicine). It does not replace the specific advice given to you by Dr Broadhead, your physiotherapist or your hospital team.

Surgical findings vary, so your protocol may differ from what is written here. Your operation record and your surgeon's instructions always come first.

If in doubt, call the rooms on (02) 9052 1883. In an emergency, call 000.

Last reviewed: 2026-11-09 by Dr Matthew Broadhead, FRACS (Orth).

YOUR PROGRESS TRACKER

Fill this in once a week: it shows your trend at a glance and makes reviews far more useful. Bring it to every appointment.

Week	1	2	3	4	5	6	7	8	9	10	11	12
Exercises done (sessions)												
Walking distance / time												
Pain score (0–10)												
Knee bend (degrees)												
Swelling (less / same / more)												

QUESTIONS FOR DR BROADHEAD