Meniscus Root and Radial Repair Rehab Protocol

Rehabilitation after repair of a radial meniscal tear or meniscal root

Physiotherapy after repair of a radial meniscal tear or a meniscal root. Associate Professor Chinmay Gupte, PhD, FRCS (Tr & Orth). Version 2026. Last reviewed: [MONTH] 2026.

Radial and root repairs are the most protected of all meniscal repairs, with six weeks of strict non weight bearing. These tears break the ring of the meniscus, so it cannot carry load safely until it has healed. Half weight bearing follows for three weeks, then full. Deep loaded bending and twisting wait until three months.

Why the protocol depends on your tear. The meniscus works as a ring. Circumferential fibres run around it and convert the load passing through the knee into tension around that ring, which is called hoop stress. A simple longitudinal tear leaves the ring intact, so the meniscus still carries load and rehabilitation can move quickly. A radial tear or a root detachment breaks the ring, so load is no longer converted safely and the repair has to be protected from weight bearing for much longer. A bucket handle tear sits between the two.

[LIT] This is the biomechanical rationale set out in the published evidence based meniscal repair protocols, which recommend accelerated rehabilitation where hoop tensile stress is preserved and a restricted protocol where the circumferential fibres are disrupted.

This protocol is for a repaired radial tear or meniscal root. If you had a simple longitudinal tear repaired, see the accelerated protocol. If you had a bucket handle tear repaired, see the bucket handle protocol. Both are considerably less restrictive than this one.

Weight bearing and bracing

Timing	Weight bearing	Brace
Weeks 0 to 2	**Strict non weight bearing**	0 to 30 degrees
Weeks 2 to 4	**Strict non weight bearing**	0 to 60 degrees
At 4 weeks	Strict non weight bearing	**Brace reviewed**
Weeks 4 to 6	**Strict non weight bearing**	As reviewed
Weeks 6 to 9	50% with crutches	As reviewed
From 9 weeks	Full weight bearing, weaning crutches	None

Strict non weight bearing means no weight at all through the leg for six weeks. Not toe touching, not resting the foot down for balance. The repair cannot take load until the ring has healed, and this is the single most important instruction in the protocol.

Precautions for the first 3 months, whatever your tear

- **No deep loaded flexion.** Deep squatting, lunging below 90 degrees and kneeling into deep bend all compress the repair
- **No loaded twisting or torsion.** Pivoting on a planted foot is the movement that undoes meniscal repairs
- Full extension is a priority from the outset. If you have not achieved it by 4 weeks, tell your surgeon [LIT]
- Avoid weight bearing with the knee bent beyond 90 degrees in the early phases

Phase by phase

Weeks 0 to 6, non weight bearing

Goals: protect the repair absolutely, full extension, keep the quadriceps working, limit the muscle loss that comes with six weeks off the leg.

- Strict non weight bearing with crutches. Brace on for all transfers
- Ice, compression, elevation
- Patellar mobilisations
- Quadriceps sets and straight leg raise within the brace range
- Heel slides within the permitted range, non weight bearing
- Calf pumps and ankle mobility
- Side lying hip and core work
- Upper body conditioning to maintain fitness
- [LIT, CONFIRM] Some protocols restrict active hamstring contraction after root repair, because the hamstrings attach close to the posterior horn. Please confirm whether you want this restriction included
- [LIT, CONFIRM] Blood flow restriction training is used in some centres during this phase specifically to limit the muscle loss caused by prolonged non weight bearing. Please confirm whether to include it

Weeks 6 to 9, partial weight bearing

Goals: reintroduce load gradually, restore gait, begin rebuilding the quadriceps.

- 50% weight bearing with crutches
- Gait retraining, which after six weeks off the leg takes deliberate work
- Static bike, low resistance, as range allows
- Closed chain work within 90 degrees as weight bearing allows
- Progressive gluteal and calf strengthening

9 weeks to 3 months

Goals: full weight bearing without crutches, normal gait, progressive strength within the flexion and torsion restrictions.

- Wean crutches as gait normalises

- Progressive resistance training, staying above 90 degrees of flexion under load
- Single leg progression as control allows
- Swimming and cycling from 2 months. Avoid breaststroke
- Balance and proprioception

From 3 months

The restrictions on deep loaded flexion and loaded twisting lift. Rebuild deeper loading and rotation gradually. Expect strength to lag behind the other protocols, because of the six weeks spent off the leg.

For the national guidance on when meniscus surgery is recommended, see our summary of the BASK meniscal surgery guidelines.

Shared milestones

These apply to every meniscal repair, on top of the weight bearing and bracing specific to your tear.

Milestone	Timing
Full weight bearing, no crutches, no brace	By 2 months. Full weight bearing is reached at 9 weeks after a radial or root repair, slightly later than the other meniscal protocols
Swimming and cycling	By 2 months. Avoid breaststroke
Deep loaded flexion, loaded twisting and torsion	Not before 3 months
Impact loading and treadmill running	When the limb symmetry criteria below are met, usually 4 to 6 months
Return to sport	On passing the return to sport battery

Return to impact and return to sport

Impact loading and treadmill running begin when the limb symmetry criteria are met, which is usually somewhere between four and six months. The date is the consequence of the testing, not the trigger for it.

Criteria to start impact loading and treadmill running

- Full pain free range of movement
- No effusion
- Quadriceps and hamstring strength at the required limb symmetry index [CONFIRM THRESHOLD]
- Good single leg control on squat and step down, with no knee collapsing inwards
- Past the 3 month restriction on deep loaded flexion and loaded torsion

Return to sport battery

- **Strength:** quadriceps and hamstrings at 90% or more of the other leg by dynamometry [CONFIRM THRESHOLD]
- **Hop tests:** 90% or more across single hop, triple hop, crossover hop and timed hop, with good landing mechanics
- **Balance:** Y-Balance composite, assessed for side to side difference
- **Clinical:** full range of movement, no effusion, no joint line pain on loading
- **Functional:** pivoting and cutting drills completed without pain or swelling
- **Surgeon clearance** before returning to pivoting or contact sport

Driving after surgery

Driving is self certified. There is no fixed date at which you are allowed to drive. You may drive when you can perform an emergency stop and any evasive manoeuvre without your operated knee hindering the movement. Only you can judge that, and it varies considerably between people.

As a guide:

- **Operated right knee:** we would not usually advise driving before 6 weeks
- **Manual car, either knee:** we would not usually advise driving before 6 weeks
- **Operated left knee in an automatic car:** often possible earlier, once you can meet the test above

In addition, you cannot drive while non weight bearing or at 50% weight bearing, so driving does not start before 9 weeks at the very earliest.

You should also be off opioid painkillers and anything else affecting your reactions, and able to get in and out of the car independently. Try the emergency stop in a stationary car first, then in a quiet car park before driving on the road.

Tell your insurer. Driving before you are medically fit can invalidate your policy if you are involved in an accident. **The DVLA usually does not need to be told** about recovery from surgery, unless you are still unable to drive three months afterwards or your surgeon advises it.

Frequently asked questions

Why do I have to be non weight bearing for six weeks after a root repair?

The meniscus works as a ring, converting load into tension around its circumference. A radial tear or a root detachment breaks that ring, so the meniscus cannot carry load safely until it has healed. Weight bearing early pulls the repair apart.

What does strict non weight bearing actually mean?

No weight at all through the leg. Not toe touching, not resting the foot down for balance. Six weeks, then half weight bearing for three weeks, then full.

How long does recovery take after a meniscus root repair?

Six weeks non weight bearing, three weeks at half weight, full weight bearing from nine weeks. Deep loaded bending and twisting wait until three months, and running and sport follow on testing, usually between four and six months.

How long do I wear a brace after a root or radial repair?

The brace is set at 0 to 30 degrees for the first two weeks and 0 to 60 degrees for the next two, then reviewed at four weeks.

Will my leg get weak during six weeks off it?

Yes, and that is expected. Quadriceps loss is the main cost of this protocol, which is why quadriceps sets, straight leg raises and hip work start immediately and continue throughout, and why rebuilding strength takes longer than after other meniscal repairs.

When can I run after a meniscus root repair?

Impact loading and treadmill running start when the limb symmetry criteria are met, usually between four and six months.

References

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4. Perkins B, Gronbeck KR, Yue RA, Tompkins MA. Similar failure rate in immediate post-operative weight bearing versus protected weight bearing following meniscal repair on peripheral, vertical meniscal tears. *Knee Surgery, Sports Traumatology, Arthroscopy* 2018;26(8):2245 to 2250.
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About this protocol

Rehabilitation protocol for repair of a radial meniscal tear or meniscal root, used by Associate Professor Chinmay Gupte, PhD, FRCS (Tr & Orth), MA (Oxon), BMBCh (Oxon), consultant knee and sports injury surgeon, London. Version 2026. Last reviewed [MONTH] 2026. Next review due [MONTH] 2027.

Weight bearing, bracing and range restrictions are set by the operating surgeon. Progression criteria and the return to sport battery draw on published meniscal repair rehabilitation literature.

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This protocol is a general guideline and does not replace the specific instructions given by your own surgeon and physiotherapist. If you are being treated elsewhere, please share this document with your physiotherapist together with your operation note.