

ORTHO PRECISION · GP HUB GUIDE · DR YAS EDIRISINGHE

Pain at the Front of the Knee

The one that walks in as “*chondromalacia*” on a scan report, or as “my kneecap grinds”, or “I just can’t squat any more”. A working guide for South Australian general practice: how to make the diagnosis in five minutes, what the evidence supports treating it with, the timeframes that decide whether it settles or becomes a five-year problem, and when it needs my number.

HOW IT ACTUALLY PRESENTS IN YOUR ROOM

“The scan says *chondromalacia patellae*.”

“My kneecap grinds.”

“Can you feel that grinding?”

“I can’t squat any more.”

“Steps and stairs are the worst.”

“It’s right at the front, on the kneecap.”

1 • The patient this guide is about

Adolescent to about forty. Often a young woman. Often an athlete, or someone who has just changed their training, their job, or their footwear. The knee examines more or less normally. The X-ray is normal. If a scan has been done it says something about cartilage, which frightens them. And there is no obvious next move.

This group falls through the gaps in a way that is worth naming plainly:

- **The national standard for knee pain doesn't cover them.** The Commission's *Osteoarthritis of the Knee Clinical Care Standard* applies to patients aged 45 and over, and lists as explicitly out of scope: "Management of knee pain in people aged under 45 years."^{G1}
- **The referral criteria don't name their condition.** SA Health's Clinical Prioritisation Criteria for adult knee pain list "patella instability" as a Category 2 referral, but patellofemoral or anterior knee pain appears nowhere as a category.^{G2} Queensland's are the same.
- **Medicare won't fund the scan.** GP-referred knee MRI is rebatable only after acute trauma, in 16–49 year olds, with an extension block or clinical ACL findings.^{G3}
- **And there is no RACGP or AJGP article on the condition itself** — the College's substantive output on it is a single HANDI entry, which we come to in section 5.

So the young patient with a sore kneecap gets reassurance, sometimes an anti-inflammatory, sometimes a scan that muddies things, and no clear pathway.

When an appropriate rehabilitation program has not changed the trajectory, the working diagnosis deserves review. Persistent pain is not proof of a surgical problem. In my clinical experience, however, more often than not there is a specific contributor that can be identified and addressed — frequently without an operation — rather than a reason to repeat the same treatment indefinitely.

2 • Why this guide exists

Pain at the front of the knee — patellofemoral pain — accounts for **11–17% of knee presentations in general practice** and 25–40% of knee problems in sports clinics.¹ For knee pain of all causes in this state, 30–35% of South Australian adults report it; a third take it to their GP, one in eight to a physiotherapist.² And South Australia has *the highest rate of knee arthroscopy use of any state in Australia*, with the authors of that population study concluding there is **"underuse of non-pharmacological treatments and high use of specialist referral."**²

Despite all that, the College's material on the condition amounts to one HANDI entry — an excellent one, which section 5 quotes in full — and there is no AJGP review of it. Most of the rest sits in sports-medicine journals that none of us read on a Tuesday afternoon. This page is an attempt to put that literature next to the guidance you already have, rather than in competition with it.

3 • Getting the name right (it matters more than it sounds)

“Anterior knee pain”, “patellofemoral pain syndrome”, “chondromalacia patellae”, “runner’s knee” — the 2016 international consensus settled this. **Patellofemoral pain is the preferred term, and the others are synonyms for it.**³ Chondromalacia in particular is a description of cartilage appearance, not a separate disease, and treating it as a diagnosis sends the consultation down the wrong road.

The reason: the cartilage finding and the pain barely correlate.

23% vs 21%

patellar cartilage defects on 3-T MRI in painful vs pain-free knees — no association after adjustment⁴

57%

of completely asymptomatic adult knees show patellofemoral cartilage lesions⁵

~60%

sensitivity of MRI for true chondromalacia against arthroscopy (84% specific) — it misses two in five⁶

Cartilage is aneural. When the report says chondromalacia and the knee hurts, the pain is coming from somewhere — but not usually from that line of the report.

4 • The five-minute diagnosis



IN THE ROOM

A double-leg squat is the clearest practical provocation test for a typical patellofemoral pain presentation.

The core criterion: pain around or behind the patella, aggravated by at least one activity that loads the patellofemoral joint through a flexed, weight-bearing knee — squatting, stairs, running, hopping, jumping.³

The single best test is a squat. The consensus calls it “the best available test”; pain is reproduced in about 80% of people with patellofemoral pain.³ Ask them to squat in the room. Conventional supporting features: crepitus, patellar facet tenderness, and pain on prolonged sitting and on standing up from it. An effusion is *not* a feature of this condition — see the box below.

What you do *not* need: an MRI, in the typical presentation. Imaging does not make this diagnosis, and a scan report will very often hand the patient a frightening word that then has to be undone. The NHS Greater Glasgow & Clyde musculoskeletal pathway puts the trigger at a sensible place — image to exclude other pathology if the presentation is atypical, or if symptoms persist beyond three months despite rehabilitation.^{G7}

Not patellofemoral pain — think again if you see:

- **Large effusion, erythema, or warmth** — consider infection, acute trauma, inflammatory arthropathy.⁷
- **True locking, painful catching, or focal clicking** — consider a meniscal tear or loose body, but do not assume every click is meniscal: painful clicking or catching can also accompany patellar maltracking. Localise it, reproduce it, and examine the patellar track.⁷
- **A child or teenager with knee pain and a normal knee examination** — examine the hip. Slipped capital femoral epiphysis must be considered in any child or adolescent presenting with knee pain; classically the knee examines normally but hip pain is elicited on passive internal rotation or extension.⁸ Perthes disease refers the same way.⁹
- **Severe, unrelenting night or rest pain** — especially if progressive or accompanied by fever, malaise, warmth or swelling. Bone tumour and infection, including septic arthritis, are very rare in this setting, but this pattern is a red flag and should not be normalised as ordinary “night pain”. Positional discomfort at night that settles when the knee is moved is not the same presentation.^{7,9}
- **Giving way needs sorting, not labelling** — pain-related quadriceps inhibition can cause brief buckling in otherwise typical patellofemoral pain; recurrent true instability, apprehension or a J-sign suggests patellar maltracking/subluxation or ligament injury.^{7,8}
- **Deep central or popliteal-fossa ache in an atraumatic, stable knee,** particularly with painful loss of terminal flexion or extension — consider the uncommon but easily overlooked diagnosis of ACL mucoid degeneration.²⁵

A practical distinction: ordinary crepitus is common and often benign; a reproducible painful click, true mechanical block, recurrent instability, a hot swollen knee, or severe unremitting pain changes the differential and the urgency.

5 • What your own references already say

Almost nothing in this guide is news to general practice — it is mostly your own material, gathered in one place. The RACGP's *Handbook of Non-Drug Interventions* has carried an entry on this condition since 2021, and it is worth reading in full:^{G4}

"Patellofemoral pain (PFP) is common in adolescents and young adults, especially women. It is characterised by retropatellar or peripatellar pain with knee loading activities particularly stairs, squatting and prolonged sitting."

Intervention: *"Hip and knee strengthening exercises"* · **Indication:** *"To treat patellofemoral pain"* · **Precautions:** *"Other differential diagnoses of patellar pain"* · **Adverse effects:** *"None reported"*

"A network meta-analysis found the combination of exercise, education and patellar taping/mobilisation to be most effective... A 'wait and see' approach (no intervention) was the least effective approach."

"...the natural history of PFP can be one of chronicity or recurrence with about 60% of people with PFP for at least 6 weeks continuing to have symptoms after 2 years."

RACGP HANDI · EXERCISE FOR PATELLOFEMORAL PAIN SYNDROME · GRADED "MODERATE"

That entry does four things this guide simply agrees with. It names the same age group. It names the same three provoking activities. It prescribes **hip and knee** strengthening rather than quads alone. And it puts *"other differential diagnoses of patellar pain"* in the precautions box — which is, in one line, the entire argument for referring the ones who don't improve.

On imaging, we're aligned with your paperwork as well as the evidence

- The RACGP's own *Clinical guidance for MRI referral* does not list patellofemoral or anterior knee pain as an indication, and notes MRI is "not always necessary if the clinical diagnosis is clear".^{G3}
- Medicare agrees by omission: the GP-referred knee MRI item requires acute trauma plus an extension block or ACL findings, in 16–49 year olds.^{G3} There is no rebatable pathway for non-traumatic anterior knee pain — so this is a paperwork fact before it is a clinical opinion.
- Choosing Wisely's knee and ankle imaging resource puts it more bluntly: "history and physical examination by an experienced examiner can be as accurate as imaging", and "Unless surgery is being considered, referral or request for imaging ... may only add to cost".^{G6}

Where I'd gently disagree with a source you may have read. AJGP's 2020 knee imaging review states that "Internal derangement, such as chondral,

ligamentous or meniscal injury, can only be seen on MRI”, and names chondromalacia patellae alongside patellofemoral pain.^{G5} That is correct — MRI *is* what visualises chondral change. My point is a different one: in this condition, seeing it very rarely changes what we do, and the cartilage findings occur at the same rate in pain-free knees (section 3). The question isn't whether MRI can see it. It's whether seeing it changes the plan.

Two more places the GP-facing sources and I differ — worth saying out loud

- **Rest.** Several references a GP would reasonably reach for still open with relative rest or avoiding the trigger activity. I'd frame it slightly differently: *modify* the load as a bridge back into loading, rather than remove it as an endpoint. That is compatible with all of them, and it is what the load-management protocol in section 7 actually does.
- **Foot orthoses.** HANDI's tips note that “Foot orthoses did not appear to add benefit to education and exercise”.^{G4} The 2019 clinical practice guideline is more positive, giving prefabricated orthoses a Grade A *alongside* exercise in patients with greater-than-normal pronation, short term.¹³ Both can be true — they are a reasonable thing to try in the right foot, and not something to lead with.

The one thing I'd ask you to take from this section: **if you are already doing what HANDI says, you are doing it right.** This guide exists for the patients in whom that doesn't work.

6 • Prognosis — why “it'll settle” is the expensive answer

This is the part most of us were taught wrong. In a pooled cohort of 310 patients:¹⁰

55%

had an unfavourable recovery at 3 months¹⁰

40%

still had an unfavourable recovery at 12 months — irrespective of intervention¹⁰

>2 months

symptom duration before treatment is the most consistent predictor of a poor 12-month outcome¹⁰

In adolescents the picture is worse. Of 15–19 year olds with knee pain, **56% still had it two years later**,¹¹ and at five years **four in ten still had frequent, intense knee pain** — with 60% having stopped or reduced sport because of it and 15% saying it influenced their choice of job or career.¹²

The clinically useful version: the prognostic clock starts at symptom onset, not at first consultation. Duration >2 months and a baseline Anterior Knee Pain Scale score under 70/100 both predict a poor 12-month outcome.¹⁰ A patient who has had this for three months before they mention it to you is already in the harder group — which is an argument for starting the right treatment at the first visit rather than a review in six weeks.

7 • What actually works



ACTIVE REHABILITATION

Progressive hip-and-knee loading, with movement feedback — not passive treatment as a stand-alone intervention.

Exercise therapy — combined hip and knee, not knee alone

This is the strongest and most consistently replicated recommendation in the field. The 2019 clinical practice guideline gives it a **Grade A**: clinicians should include exercise therapy with *combined hip- and knee-targeted exercises* to reduce pain and improve function in the short, medium and long term.¹³ The Australian-hosted 2018 international consensus reached the same conclusion, singling out “the combination of hip-focused and knee-focused exercises.”¹⁴ A 2022 meta-analysis of 65 high-quality trials confirmed combined hip-and-knee work is *superior to knee-targeted exercise alone* for both pain and function — while noting that no intervention in this field has been adequately tested beyond three months.¹⁵

What to write on the referral: progressive hip- and knee-targeted loading, not quads-only, not a photocopied sheet of straight leg raises.

Education is a treatment, not a preamble

In a network meta-analysis of 22 randomised trials, **education alone** increased the odds of improvement at three months nearly tenfold against wait-and-see, and education combined with a physical treatment was the most effective package at three months.¹⁶ (Two honest caveats the authors carry: certainty is low, and on the secondary outcome of pain intensity in the previous week no treatment beat wait-and-see.) Notably, by twelve months education alone looked comparable to education plus physical treatment. Telling the patient what this is, that it is not arthritis, that hurting is not harming, and that improvement takes months — that conversation is doing work.

The timeframes that make referral decisions easy

The 2025 Dutch multidisciplinary guideline is the clearest published structure, and it maps neatly onto general practice:¹⁷

Milestone	Guideline position (verbatim)
Start	“PFP should be treated with quadriceps- and/or hip-focused exercise therapy for at least 6 to 12 weeks , preferably [partly] under the supervision of a physical therapist.”
6 weeks	“Additional conservative treatments should be considered when, after 6 weeks of exercise therapy, no clinically relevant changes occur.” — i.e. <i>add</i> taping or foot orthoses alongside. Do not stop the exercise. (The guideline also lists braces here; the 2019 CPG recommends against them, so I'd reach for taping or orthoses first.)

12 weeks “The diagnosis of PFP should be reconsidered if no improvement in pain and function occurs after 12 weeks of structured... exercise therapy.” — this is the referral trigger.

Load management — the bit patients actually ask about

The most practical published protocol comes from a prospective cohort of 151 adolescents aged 10–14. It has not been tested in adults, but the structure adapts readily to adult practice:¹⁸

- **The pain rule:** a maximum of **2/10** during an activity, after it, and the following day. Inside that zone, keep going. Outside it, step back a level.
- **An activity ladder** rather than an on/off switch — six graded levels from the least to the most provocative activity.
- **Return to sport by the clock:** start with warm-up participation only, then **add 15 minutes per week**, governed by the pain rule.
- Only the first four weeks involved stepping out of sport; the remaining eight were progressive loading and graded return.

In that cohort 81% reported a successful outcome at twelve months and 81% were back playing sport — with only **four supervised physiotherapy sessions** in the whole twelve weeks. It was a single-arm study, so read it as a feasible protocol rather than proof of effect, but the structure is sound and it is cheap.

Adjuncts worth having in the drawer

- **Prefabricated foot orthoses** — Grade A *combined with exercise*, in those with greater-than-normal pronation, for short-term relief (up to about 6 weeks).¹³
- **Tailored patellar taping** — Grade B alongside exercise for immediate pain relief and short-term gains.¹³ In fairness, the 2018 consensus rates the taping evidence as uncertain;¹⁴ my read is that it is a reasonable adjunct if it lets the patient load the knee, not a treatment in itself.
- **Running retraining** for runners — increasing cadence by about 10%, or a forefoot-strike cue for rearfoot strikers. In 68 runners tested, 42% got immediate pain reduction from at least one modification.¹⁹ Low-risk and promising rather than established.

8 • What the evidence says not to do

Intervention	Evidence position
Dry needling	Grade A recommendation against ¹³
Manual therapy <i>in isolation</i> (patellofemoral, knee or lumbar mobilisation alone)	Grade A against ; ¹³ “not recommended” in consensus ¹⁴ – the distinction is “alone”, not “as part of a program”
Knee braces, sleeves, straps	Grade B against ; ¹³ have not shown benefit over exercise ⁷
Ultrasound, TENS, laser, iontophoresis, cryotherapy	Grade B against ; ¹³ electrophysical agents “not recommended” ¹⁴
Injection therapy of any kind	“PFP should not be treated with injection therapy.” ¹⁷ There is no randomised evidence for corticosteroid injection in this condition
Arthroscopy / chondroplasty	See below – a negative randomised trial ²⁰
Oral NSAIDs	Short-term relief only; overall pain did not improve beyond three months, on an evidence base of four trials totalling 163 people ²¹
Open-ended rest	No trial supports it; every guideline structure and cohort protocol moves in the opposite direction – modify load, don't remove it ^{17,18}

The arthroscopy trial worth knowing. 56 patients with chronic patellofemoral pain were randomised to arthroscopy plus an eight-week home exercise program, or the exercise program alone. The surgery was real, not sham – plica resection, chondral abrasion, synovial shaving, lateral capsular division as indicated. Both groups improved. There was **no significant difference between them on the Kujala score (95% CI -7.4 to 5.2)**, and the arthroscopy arm cost **€901 more per patient**. The authors' conclusion: arthroscopy “cannot be recommended for patients with chronic PFPs.”²⁰ I quote this to patients who arrive asking for a scope, and I will happily be the one to say no.

9 • When the diagnosis deserves reconsideration

A patient who has completed a credible course of progressive rehabilitation and is not improving should not simply continue the same treatment under the same label. **Persistent symptoms often have a reason.** In my clinical experience, more often than not a specific and treatable contributor is found when a genuinely stalled case is reassessed — such as maltracking or subtle instability, focal chondral or meniscal pathology, a symptomatic plica, a referred source, or a different diagnosis altogether. The purpose of specialist assessment is to identify what has been missed and redirect treatment; it is not to manufacture an indication for surgery. Most patients I assess for front-of-knee pain do not have an operation.



- **No meaningful improvement after 12 weeks** of structured, progressive hip- and knee-targeted rehabilitation the patient actually did — the guideline's own “reconsider the diagnosis” point¹⁷
- **Any instability feature** at any stage — apprehension, J-sign, recurrent giving way, or a dislocation ever, including one the patient reduced themselves
- **Recurrent effusion, locking, or a loose-body story**
- **Any red flag** from section 4 — same day, by phone, not by letter

- **An adolescent whose story doesn't fit**, or any knee pain with a normal knee examination
- **Imaging showing trochlear dysplasia, patella alta, an elevated TT–TG, or a focal chondral defect** — whatever the report's headline label says

What specialist assessment adds

Modern patellofemoral assessment is measurement, not labels. On a single MRI Dejour's current criteria quantify tibial tubercle–trochlear groove distance (≥ 14 mm on MRI), patellar height index (>1.16), sagittal patellofemoral engagement, and trochlear dysplasia on graded criteria.²² Around **30% of anterior knee pain patients with no instability symptoms have a TT–TG greater than 15 mm**²³ — a measurement almost nobody takes on a knee labelled chondromalacia. It is a measurement, not by itself an indication to operate: where pain rather than instability is the main complaint, conservative management remains the sensible course, and the randomised data say so explicitly.²⁴ Where instability and measured anatomy line up, stabilisation is planned anatomy–by–anatomy with medial patellofemoral ligament reconstruction as its cornerstone in carefully selected patients.²² Where it is not, the patient goes back to you and to their physiotherapist with a diagnosis that fits and a sharper program. In my practice, **most patients referred with front–of–knee pain never have an operation** — that is an observation from my own clinic rather than published data, but it is the honest expectation to set when you make the referral.

Four optional lines that make triage accurate first time: any prior imaging and where it was done (so we don't repeat it), what conservative treatment has already been tried and for how long, how urgent it feels to you in plain language, and the funding status so we can quote properly. Second opinions are welcome.



YOUR SPECIALIST REFERRAL PARTNER

Dr Yas Edirisinghe

Specialist Orthopaedic Surgeon · Hip & Knee · Adelaide

Advanced fellowship training in complex knee arthroscopy and arthroplasty, from sports knee injuries and reconstruction through to partial and total joint replacement. Director of Training for the Australian Orthopaedic Association in South Australia.

Send me the adolescent or active adult whose front-of-knee pain is not improving. Most will not need an operation; the value is a clearer diagnosis, measured anatomy and a rehabilitation plan with direction.

MBChB

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OTHER REFERRAL ROUTES

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SERVICE STANDARDS

Every referral acknowledged · letters aimed within two working days · privately referred patients usually offered an appointment within 1–2 weeks · every patient seen by me personally

PRACTICE LOCATIONS

Consulting at Ashford, Elizabeth Vale, Gawler and Magill · operating at Ashford, Burnside and Calvary Central Districts · public lists at Lyell McEwin and Modbury

THE ONE-LINE PATHWAY

Squat test → name it and educate → hip-and-knee rehabilitation for 6–12 weeks → add adjuncts at 6 weeks if flat → **if there is no meaningful improvement at 12 weeks, reconsider the diagnosis rather than continuing unchanged.**

Dr Yas Edirisinghe — Specialist Orthopaedic Surgeon · Hip & Knee · Adelaide · Ortho Precision

A patient version of this guide is available on the same page — print it and hand it over at the end of the consultation.

Guidance referenced (the GP-facing sources this guide aligns with) — G1. Australian Commission on Safety and Quality in Health Care. Osteoarthritis of the Knee Clinical Care Standard, 2024 (scope: patients aged 45+; explicitly excludes management of knee pain under 45). G2. SA Health. Clinical Prioritisation Criteria — Knee Pain (Acute and Chronic), Adult; and Queensland Health CPC — Knee pain (chronic). G3. RACGP. Clinical guidance for MRI referral, 2013; MBS knee MRI item criteria as summarised in Aust J Gen Pract 2020;49(6). G4. RACGP. Handbook of Non-Drug Interventions (HANDI) — Exercise for patellofemoral pain syndrome, first published August 2021. G5. Ridley U, Ridley L. Imaging of the knee: common acute presentations to general practice. Aust J Gen Pract 2020;49(6):344. G6. Choosing Wisely Australia. Ankle and knee imaging — resources for clinicians (RANZCR). G7. NHS Greater Glasgow & Clyde MSK pathway — Patellofemoral joint pain, Right Decision Service, reviewed April 2024.

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This guide is general clinical information for health practitioners and is not advice for an individual patient.