

EXAMINATION OF THE KNEE

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Subjective Examination

Duration of pain?

- ? <6/52

Where is the pain?

- **Anterior**
 - OA, Inflammatory arthritis (RA, Gout), Infection, PFJ, quadriceps, patella tendinopathy, Osgood Schlatter, pre-patella bursitis, fat pad.
- **Posterior**
 - Meniscal, OA, Popliteal Cyst, Hamstrings
- **Medial**
 - Medial Compartment OA, Medial collateral ligament, pes anserine bursitis
- **Lateral**
 - Lateral compartment OA, Lateral collateral ligament, Lateral meniscal tear, ITB
- **NB. Always consider referral from spine or hip**

History – Atraumatic or Traumatic?

- Atraumatic
 - Consider Infection, gout, tumour, inflammatory arthritis
 - Referral from Lx spine and hip
 - OA, PFJ pain, meniscal pathology etc.
- Traumatic
 - Fracture
 - Dislocation
 - Muscle/tendon injury rupture
 - Meniscal injuries
 - Ligament injuries

Mechanism of Injury?

Mechanism	Potential Structures Injured
Prolonged Flex/Hyperflexion	Posterior horn of medial or lateral meniscus, ACL
Hyperextension	Anterior tibial or femoral condyles, PCL, ACL, Posterior capsule, Fat Pad
Valgus +/- Flex rotation	Lateral tibial and/or femoral condyles, MCL, ACL, PCL, Posterolateral Corner, Medial and/or lateral menisci, Patella subluxation /dislocation
Varus	Medial tibial and/or femoral condyles, LCL, ITB
Flexion with posterior tibial translation (dashboard injury)	PCL, Posterior dislocation with severe force resulting in posterior instability +/- patella, proximal tibial or tibial plateau fracture

Aggravating factors egs.

Meniscal pathology

- Giving way
- Locking
- Persistent swelling (with one or both of the above)
- Pain specific to the joint line
- Pain with rotational movements (particularly into squatting)

PFJ Pain

- Pain on kneeling / squatting
- Pain on stairs (ascending or descending)
- Pain on sitting for long periods
- Crepitus

Aggravating factors cont.

OA

- Wt bearing
- Changing positions
- Stairs
- kneeling
- Stiffness AM and when moving from static position

Ligament pathology

- Pivoting
- Varus/valgus
- May give way with certain movements if mechanically unstable

Other important questions:

- **Did the knee swell? Was it immediate?** – immediate swelling indicates haemarthrosis. Sensitive for ACL.
- **Was there an associated pop/click?**
- **Does the knee give way?** NB is it pseudo giving way or true giving way?
- **Does the knee lock?** Again, pseudo-locking or true locking?
- **Morning stiffness?**
- **Clearing Questions** – wt loss, night pain, hx of serious pathology, systemically unwell, fevers, night sweats etc...

Physical Examination

- Observation
 - Alignment, swelling, atrophy etc.
- Joint effusion
 - Sweep
 - Patella tap
- ROM
 - ?pain ?stiffness ?click/clunk/catching
- Integrity tests
 - ACL – Lachman, Pivot shift
 - Collaterals – Varus/Valgus force
 - Posterior Draw
- Meniscal tests
 - Thessaly
 - McMurray
 - Joint line tenderness
- PFJ
 - Clarkes, palpation
- Functional testing
 - E.g. step, squat

Q's re. Referral Pathways

- When will x-ray imaging inform management?
 - X-ray
 - If # suspected > A&E, if not MRI might be a better option so refer MSK
 - If Non-traumatic, over 40, clinical OA suspected and not responded to conservative measures then consider WB x-ray.
 - Insidious joint line pain with kneeling, squatting, pivoting ?degenerative meniscal pathology – consider WB x-ray to rule out OA.

Time to stop meniscectomies for degenerative tears: Practice must catch up with evidence

15 Jun, 14 | by BJSM

By **Kay M Crossley (@KayMCrossley)**, **Joanne L Kemp (@JoanneLKemp)**, **Charles Ratzlaff**, and **Ewa M Roos (@Ewa_Roos)**



In 2002, a randomised controlled trial (RCT) in the *New England Journal of Medicine* [1] made us all sit up and take note. The trial was remarkable because participants were randomised to arthroscopic debridement (including chondroplasty, removal of debris and partial meniscectomy), arthroscopic lavage (sham surgery), or placebo surgery (skin incisions only).

Arthroscopic surgery is no better than sham

The intervention (arthroscopic treatment) group never reported less pain or better function than the placebo group at any follow-up time point. This contradicted contemporary practice, where arthroscopic debridement was commonplace for knee osteoarthritis, including in younger patients and in sports medicine settings. The sports medicine and orthopaedic community continued to promote knee arthroscopy, moving the focus from knee osteoarthritis to arthroscopic partial meniscectomy. Since degenerative meniscal tears are part of the knee osteoarthritis disease process [2], this re-branding ('meniscectomy' instead of 'debridement') allowed surgeons to continue performing essentially the same operation, but under a different guise.

In the past 12 years, five more RCTs have evaluated knee arthroscopy: one examined debridement [3] and four specifically focussed on meniscectomy [4-7]. Of these, Sihvonen and colleagues [6] reported no benefits of partial meniscectomy over sham arthroscopy. Importantly, this study was done in those who we would have thought were *most likely to benefit* (ie. patients with a degenerative tear, but no radiographic osteoarthritis).

Thus, despite the difficulties inherent in conducting RCTs of surgical treatments, six high



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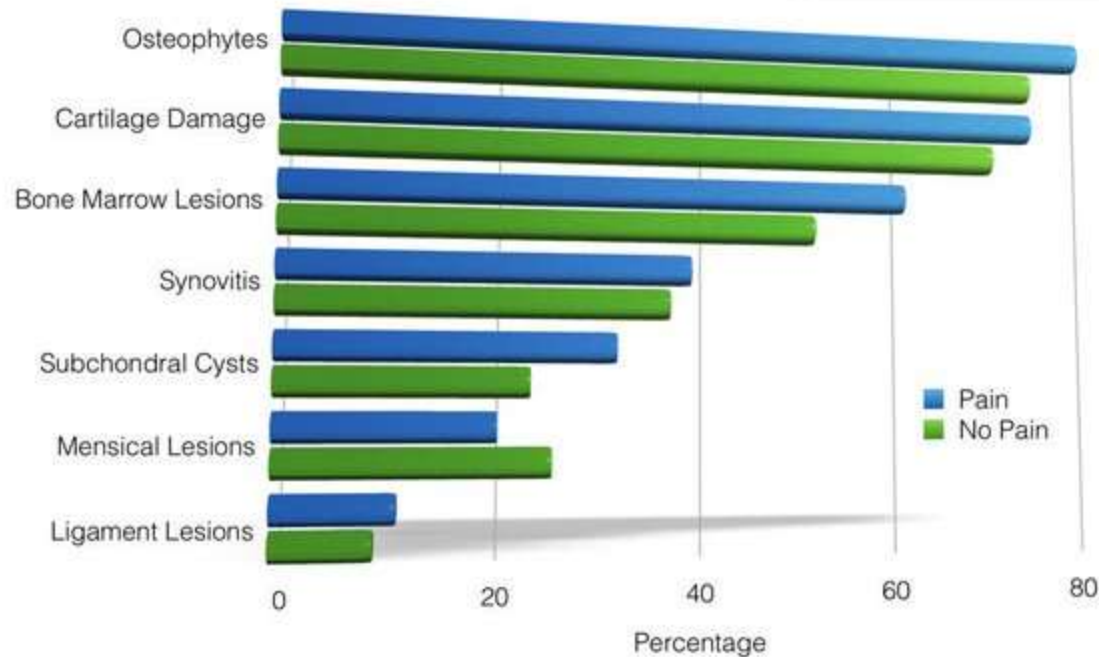
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Why does MRI inform management?

Prevalence of 'abnormal' findings seen on knee MRIs in those with & without pain

Guermazi et al : BMJ (2012)

@adammeakins The Sports Physio



MRI Indications

- Ligament
- Acute meniscal pathology
- Osteochondral defect/osteonecrosis
- Serious pathology
- Bony pathology
- Muscle/tendon pathology

Can physiotherapy help my patient with knee joint OA?

Review

Does exercise therapy improve the health-related quality of life of people with knee osteoarthritis? A systematic review and meta-analysis of randomized controlled trials

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Abstract. [Purpose] The aim of this study was to examine the effects of exercise therapy on the health-related QOL of people with knee osteoarthritis. [Subjects] Four databases (PubMed, Cochrane Central Register of Controlled Trials, the Physiotherapy Evidence Database, and the Cumulative Index to Nursing and Allied Health Literature) were searched for randomized controlled trials that evaluated the effects of exercise therapy on health-related QOL assessed by the SF-36 for inclusion in our systematic review. The methodological qualities of the trials were assessed independently by two reviewers using the PEDro scale. Pooled analyses with a random-effects model or a fixed-effects model were used in the meta-analyses to calculate the standardized mean differences and 95% confidence intervals. [Results] Twelve studies met the inclusion criteria. Our meta-analysis provides high-quality evidence that exercise therapy increases the summary score, physical functioning score, and role-physical score of knee osteoarthritis sufferers. Our meta-analysis also provides moderate-quality evidence that the physical component summary and mental component summary scores were improved to a greater extent by exercise therapy than by control interventions. [Conclusion] Exercise therapy can improve health-related QOL, as assessed by the SF-36, of knee osteoarthritis sufferers.

Key words: Knee osteoarthritis, Exercise, Health-related quality of life

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Thank you

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