Guidelines for General Practitioners requesting MRI Knee Investigation
Introduction

In order to improve the patient journey, for patients with specific knee symptoms, NHS Fife is opening direct access to MRI. The purpose of the system is to pick out those patients who would benefit from an early MRI scan, to assist with orthopaedic management. This will reduce the time taken to get a scan in appropriate patients.

Aim: To ensure MRI scans are requested in line with clinical signs and symptoms for the benefit of the patient.

Scope of guidelines: These guidelines apply to all general practitioners employed by the NHS in Fife.

Patients covered: Patients with specific knee symptoms seen within General Practice.

General considerations

Referral for Knee MRI is generally only indicated in patients over 15 and less than 45 years of age with a BMI of less than 40.

MRI is of no benefit to patients included in appendix 1

<table>
<thead>
<tr>
<th>Referral criteria for MRI Referral for knee pain</th>
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<td>The patient must have the following signs and symptoms for direct access to MRI.</td>
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1) **SUSPECTED MENISCAL TEAR**

Acute injury within 3 months and has;

a) medial joint line tenderness and pain worsened by either external rotation at 90 degrees knee flexion or lateral joint line tenderness and pain worsened by internal rotation at 90 degrees knee flexion

OR

b) locking – failure to achieve full knee extension, with loss of the last 10-20 degrees of extension. Not all patients have locking on presentation but may give a history of intermittent locking or knee giving way. Occasionally knees lock at 90 degrees but this is rare and would normally precipitate an acute referral.

An effusion may be present.

2) **INSTABILITY**

Previous injury with painless knee instability - Knee gives way during rotation or pivoting without warning i.e. turning quickly whilst playing football, squash or turning suddenly in the street.

All other patients who have symptoms or signs out with the guidelines will require referral to the orthopaedic or physiotherapy department in the normal manner.
Knee assessment

Joint Line Tenderness

Palpate up the anteromedial surface of the tibia until you feel your finger drop into the joint space, then palpate backwards along the joint line looking for localised tenderness. A meniscal tear is often associated with point tenderness on the joint line. Generalised joint line tenderness may be more associated with degenerative change.

Duck' waddle

Patient squats down and walks in this position. This action compresses the posterior horns of the menisci but can also cause patellofemoral pain.

A less specific test is to ask the patient to squat down fully with no assistance.
Contraindications for MRI

The following general contraindications should be considered before requesting an MRI scan.

- Patients who have a heart pacemaker or replacement valves or cardiac stents
- Patients who have internal hearing devices
- Patients who have a neuro-stimulator or programmable intra-cerebral shunt
- Patients who have a metallic foreign body in their eye or who have an aneurysm clip in their brain
- First trimester pregnancy
- Patients with severe claustrophobia may not be able to tolerate an MRI scan
- Weight >190kg are too heavy for NHS Fife scanners

Process

1. If the patient satisfies the referral criteria then direct MRI is indicated. A short history and examination findings must be documented on the MRI request form, including details of how the patient fulfils the criteria.

2. The safety checklist requires to be filled out to ensure that the patient has no contraindications to scanning. If the request form or checklist fails to provide adequate information then the form will be sent back to the referring practitioner. Please include the patient’s weight as this information is required, even if it is within normal limits.

3. All MRI examinations will be reported by a Radiologist, and the report made available on Sci-Store. The radiologist will comment on whether the findings warrant orthopaedic referral.

4. It is the responsibility of the general practitioner to follow up scan reports and implement management.
Appendix 1

KNEE MRI IS NOT INDICATED

1. PATIENTS AGED UNDER 15 OR OVER 45

2. LOCKED KNEE

- symptoms are continuous, not momentary or intermittent
- a locked knee lacks at least 15 degrees of extension and cannot flex to 90 degrees (such patients need urgent orthopaedic referral with a view to arthroscopy (MRI is unnecessary and delays treatment)

3. PSEUDOLOCKING

- not to be confused with locking, this is momentary stiffness following a period of immobility – typically in obese people with patella-femoral OA

4. KNEE DISLOCATION OR OTHER SEVERE ACUTE INJURY

- such patients are orthopaedic emergencies and should be dealt with by secondary care

5. ANY OSTEOARTHRITIS ON AN X-RAY

6. ANTERIOR KNEE PAIN

- usually due to patella-femoral OA, chondromalacia patellae or tendon problem which may benefit from physiotherapy

7. HIGH BMI PATIENTS WITH ANY CLINICAL OR RADIOGRAPHIC EVIDENCE OF OA

- OA is very common in larger people – MRI in knees with OA often shows meniscal damage that is not treatable by arthroscopy

8. ANY PREVIOUS MENISCAL SURGERY

- post-operative menisci simulate meniscal tears on MRI – direct orthopaedic clinic referral is appropriate in such patients

9. ACTIVE KNEE INFLAMMATORY ARTHRITIS

- unless symptoms relate to a recent injury