ProCare

Module One - MRI Knee Injury

Knee Assessment for the MRI Service:

1. Overview of the Knee Assessment
2. Clinical Pathway Knee Assessment
3. Video of Knee Assessment
4. Ordering a Knee MRI Referral via PMS
5. Knee Assessment Quiz

Overview of the Knee Assessment

This guideline was formulated from a combination of the New South Wales Diagnostic Imaging pathways and ACC guidelines. These have been contextualised for the use in a primary care setting. The guidelines have been designed for common clinical conditions seen in primary care in which additional MRI imaging may alter patient management and outcomes. These should not replace usual care for conditions that fall outside of the intended guidelines.

The knee assessment is primarily aimed to detect the following pathology:

1. Ligament pathology - anterior cruciate and lateral collateral ligament
2. Meniscal pathology - causing functional disability and pain (in the absence of clinical or radiological osteoarthritis (OA)), AFTER a period of rehabilitation (6 weeks)
3. Meniscal pathology - causing functional disability due to acute mechanical symptoms (true locking) irrespective of clinical or radiological signs of OA

Clinical Pathway Knee Assessment

To download the pathway, click here.

The below information breaks down the clinical pathway and explains the logical order and critical thinking. The full pathway is available for download at the end of the page.

Indications look for: (see screenshot below)

- Trauma related knee pain
- Ottawa rules negative
- Negative x-ray for acute fracture (if indicated)

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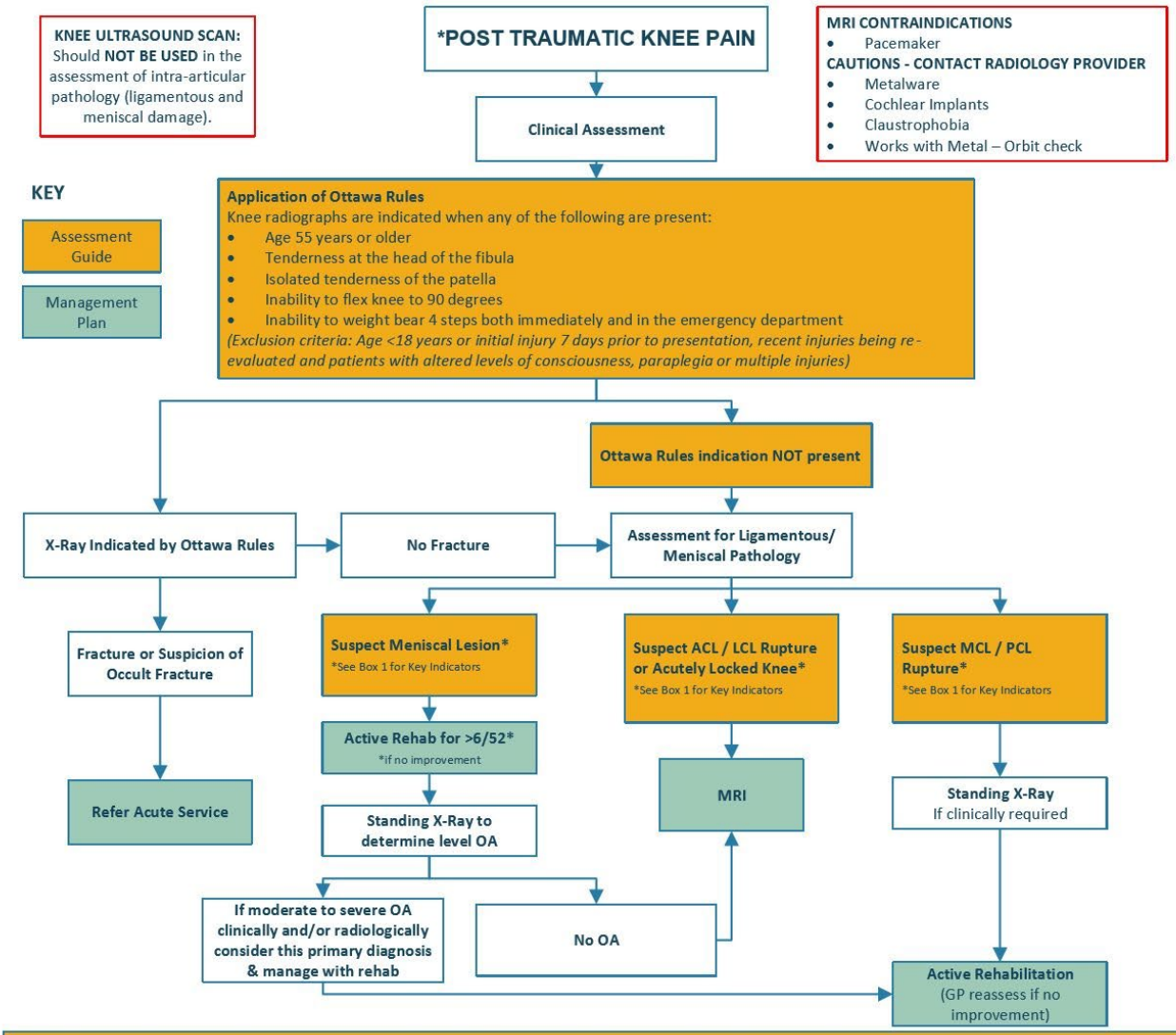
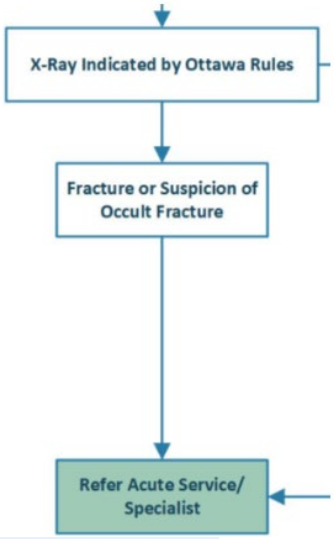


***BOX ONE:** Key factors in the history and clinical examination for the following conditions that would elicit an MRI referral under ligamentous and meniscal injuries:

1. **Meniscal**
   Injury mechanism – rotational element, squatting, cutting or twisting in younger population
   Symptoms - Pain, swelling and mechanical symptoms (catching, locking)
   Signs - Acutely locked knee, Effusion, joint line tenderness – posterior more clinically relevant (variable sensitivity 55 – 85% depending on site of meniscal pathology)
   Loss of end range extension or flexion
   Thessaly Test / McMurray's Test
2. **Anterior Cruciate Ligament (ACL) Tear**
   Injury mechanism – deceleration, change of direction on a fixed foot, rotational, twisting
   Symptoms - Rapid onset of swelling within hours, Audible 'pop' or noise within the knee at the time of injury, Feeling of instability
   Signs - Effusion often large within 2-3 hours
   Loss of end range extension
   Lachman's test positive (high sensitivity and high specificity)
   Anterior Draw test positive (high specificity and low sensitivity)
3. **Posterior Cruciate Ligament (PCL) Tear**
   Injury mechanism – posteriorly directed force to the proximal tibia (e.g. dashboard injury or fall onto flexed knee or tackle from the front)
   Symptoms – Pain swelling and feeling of instability
   Signs – Effusion, Posterior Draw test positive (high sensitivity), PCL sag sign (late sign)
4. **Postero-Lateral Complex (PLC) Injury**
   Rare but associated with other ligamentous injuries in particular LCL rupture – needs referral
5. **Medial Collateral Ligament (MCL) Injury**
   Injury mechanism – valgus stress, often from a lateral force to the knee
   Symptoms – Pain, swelling and feeling of instability
   Signs - Effusion, Laxity on valgus stress test in 30* knee flexion,
   Laxity on valgus stress test in extension indicates higher degree of injury
6. **Lateral Collateral Ligament (LCL) Injury**
   Rare in isolation
   Laxity on varus stress in extension and in 30* knee flexion

Contraindications look for: (see screenshot below)

- Acute fracture
- Suspicion of non-trauma related pathology (example metabolic bone disease or tumour



Assessment

- History
    - mechanism of injury
    - onset of swelling (<1 - 2 hours = haemarthrosis)*
    - mechanical symptoms
    - added sounds (pop = ACL rupture or patella dislocation)
    - instability or giving way

*NOTE — the most common causes of haemarthrosis are ACL rupture, patella dislocation, or an intra-articular fracture so if patients present with this you can narrow diagnosis down fairly quickly.

- Clinical Examination
    - ROM (loss of extension consider ACL injury/meniscal pathology but also pain end range flexion or extension can be seen with meniscal pathology)
    - Effusion (brush test or swipe test = mild to moderate effusion/patella tap large effusion)
    - Patella and PFJ - tendon, patella, apprehension testing, PFJ compression tests especially over lateral facet
    - Ligaments stress testing

- ACL Lachman's test positive (high sensitivity and specificity)
- ACL Anterior Draw test positive (high specificity but low sensitivity so if negative cannot rule out ACL pathology)
- MCL stress test (extension and 30 degrees flexion)
- LCL stress test (extension and 30 degrees flexion)
- PCL Posterior Draw test (high sensitivity)

- Meniscal provocation tests (include McMurrays/Thessaly tests) aiming to reproduce the patients' pain with these tests

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Active Rehab Management

- Acute care involving RICE & analgesia
- Physiotherapist or allied health provider referral for functional based exercise therapy
- Exercycle or similar device (https://www.kmart.co.nz/product/mini-exercise for link) using low to no load 30mins per day 4-6 x per week at 80-90 RPM

MRI Pathology

Clinical suspicion from clinical history and examination

- ACL injury
- LCL injury (isolated injuries are rare and generally involves other important structures in the postero-lateral corner so detection and referral are critical in terms of management)
- Meniscal pathology (after 6 weeks rehab) in:

- EITHER a painful knee with no or mild OA radiologically +/- mechanical symptoms
- OR painful knee with moderate / severe OA with true mechanical symptoms

Video of Knee Assessment

This video provides an overview of the clinical examination techniques useful in primary care for the detection of structural knee pathology in which MRI imaging may be indicated.

Assessor: Dr Stephen Kara (Sports and Exercise Medicine)

Ordering a Knee MRI Referral via PMS

See handbook here.

You can also refer to the MRI Ordering Cheat Sheet below that you may wish to print and have at your desk.

MRI Ordering Cheat Sheet

MRI Ordering Cheat Sheet for ordering has now been installed on your PMS. Please contact **Help Desk (09) 374 6759 option 1** for support if you need assistance with using the form.

MRI Referral Steps

	MedTech	**MyPractice**	**Indici**
STEP 1	Shift F3	Shift F2	Select the patient and open the patient record
STEP 2	Click on 'ProCare Services' OR select Profusion icon 	Click on 'Clinical Notes' Click 'Forms' Click on 'ProCare Services' OR select Profusion icon 	Select Profusion icon 
STEP 3	Fill in ACC Number and X-Ray details	Fill in ACC Number and X-Ray details	Fill in ACC Number and X-Ray details

STEP 4	Then select body site and the relevant screen will show	Then select body site and the relevant screen will show	Then select body site and the relevant screen will show
STEP 5	Fill in information and submit request (Note: The referral is automatically sent to the selected Radiology provider for MRI referral). This is saved to the Patient Inbox.	Fill in information and submit request (Note: The referral is automatically sent to the selected Radiology for MRI referral). This is saved to the 'Notes' and 'Results' tab	Fill in information and submit request (Note: The referral is automatically sent to the selected Radiology for MRI referral). This is saved in the patient outbox and timeline.
STEP 6	The voucher will appear. Click print on the voucher and give a copy to patient.	The voucher will appear. Click print on the voucher and give a copy to patient.	The voucher will appear. Click print on the voucher and give a copy to patient.

MRI Follow-up Consultation Steps

	MedTech	MyPractice	Indici
STEP 1	Open Patient in PMS, reopen advanced form and follow-up consult form automatically appears, you need to be a GP to complete	Open Patient in PMS, reopen advanced form and follow-up consult form automatically appears, you need to be a GP to complete	Open Patient in PMS, reopen advanced form and follow-up consult form automatically appears, you need to be a GP to complete
STEP 2	Fill out information and record consult	Fill out information and record consult	Fill out information and record consult
STEP 3	The follow-up consult information claim is automatically sent to ProCare for processing. ProCare will raise a BCTI invoice automatically for the claim.	The follow-up consult information claim is automatically sent to ProCare for processing. ProCare will raise a BCTI invoice automatically for the claim.	The follow-up consult information claim is automatically sent to ProCare for processing. ProCare will raise a BCTI invoice automatically for the claim.