

Module Two - MRI Lumbar Spine Injury

Spine Assessment for the MRI Service:

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

Overview of the Lumbar Spine Assessment

This guideline was formulated from a combination of the New South Wales Diagnostic Imaging pathways and ACC guidelines. These have been contextualized for the use in a primary care setting. The guidelines reinforce the importance of using existing imaging modalities, namely x-ray and ultrasound scan, and the high sensitivity and specificity these provide especially around rotator cuff pathology. These should not replace usual care for conditions that fall outside of the intended guidelines.

The lumbar spine assessment is primarily aimed to detect the following pathology:

1. Lumbar disc pathology with nerve root irritation = radicular pain or nerve root compression/impingement = radiculopathy.

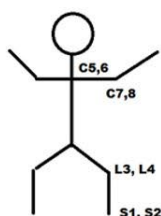
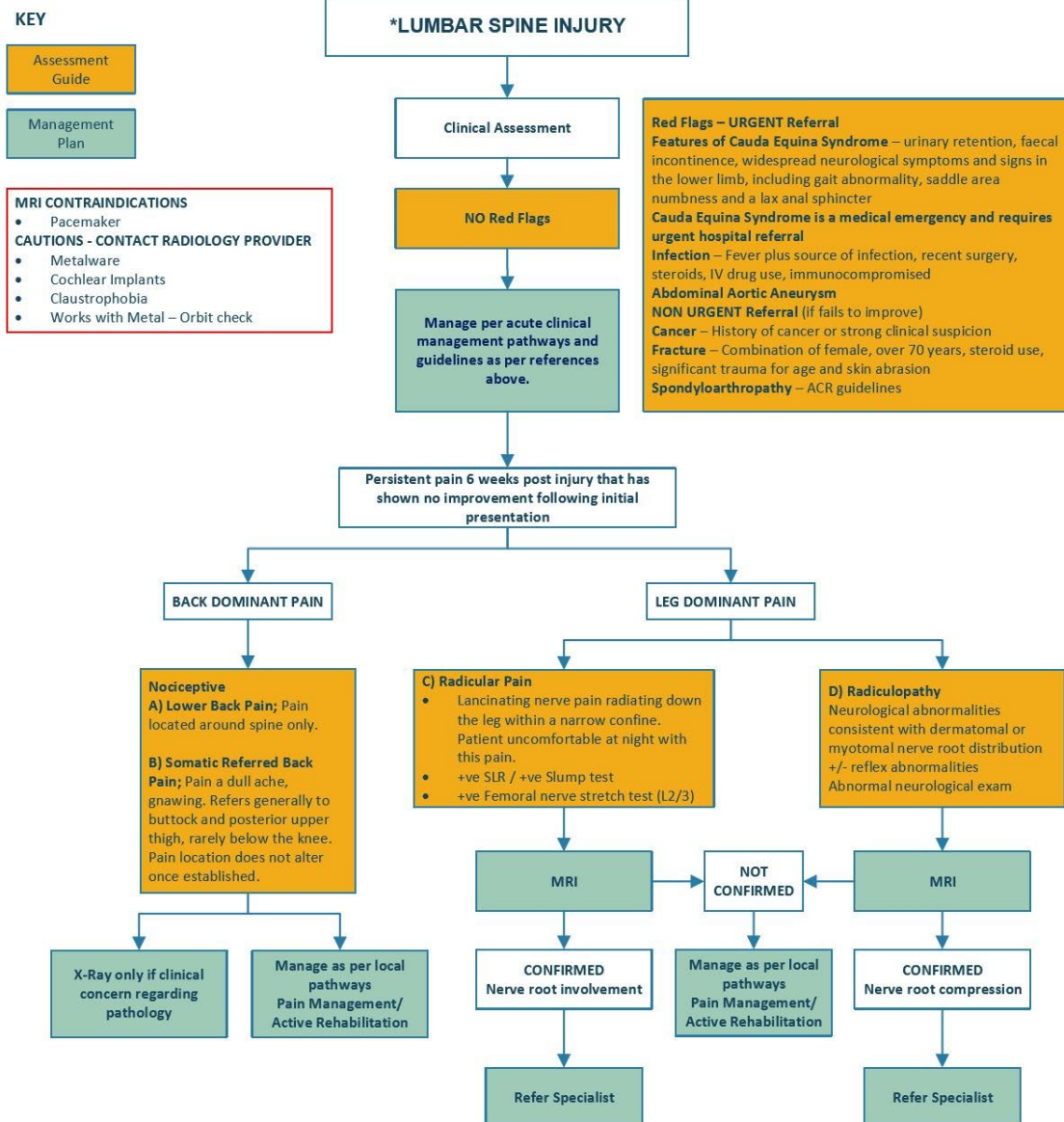
Clinical Pathway Lumbar Spine Assessment

Indications:

- Lumbar radicular pain
- Lumbar radiculopathy (sensory or motor neurological abnormalities)

Contraindications look for:

- Red Flags
- Less than 6 weeks from injury
- Non radicular pain (nociceptive pain, somatic referred lower back pain - see [Pain article: Bogduk, N. \(2009\). "On the definitions and physiology of back pain, referred pain, and radicular pain." Pain 147: 17-19](#))



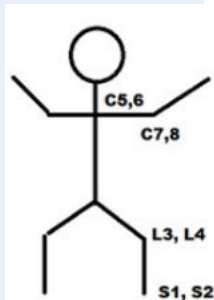
Nerve	Manual Muscle Testing	Nerve	Dermatome Site
L2/L3	Hip flexion	L2	Lateral aspect upper thigh anteriorly
L3/L4	Knee extension	L3	Medial thigh anteriorly above knee
L4/L5	Ankle dorsiflexion	L4	Medial side of the lower leg or ankle
L5/S1	Ankle plantarflexion	L5	1st web space
L5	Great toe extension	S1	Lateral aspect of the foot
		S2	Posterior aspect calf or thigh in the midline

SLR = Straight Leg Raise Test: positive <70° with high sensitivity. Limited by leg pain and not back pain.

Assessment

- History
 - Acute onset associated with an external loading force

- Lower back pain with radicular component - lancinating quality, travelling along the length of the lower limb, in a band no more than 2–3 inches wide
- Radiculopathy = conduction is blocked along a spinal nerve or its roots. When sensory fibers are blocked, numbness is the symptom and sign. When motor fibers are blocked weakness ensues. Diminished reflexes occur as a result of either sensory or motor block. The numbness is dermatomal in distribution and the weakness is myotomal. However, radiculopathy is not defined by pain. It is defined by objective neurological signs.
- Clinical Examination
 - Lumbar ROM (flexion predominantly limited, although can be extension, with associated pain)
 - Nerve root irritation signs - positive SLR <70° / positive Slump Test (radicular pain)
 - Nerve root compression signs - see radiculopathy above



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Active Rehab Management

- Acute care involving RICE & analgesia
- Physiotherapist or allied health provider referral for functional based exercise therapy
- Grade I – back pain / leg pain / positive SLR: need to manage pain with analgesia, physiotherapy, pool-based exercise, nerve mobilisation
- Grade II – grade I + sensory changes light touch: analgesia as above and consider short term oral steroids if not clinically contraindicated. Evidence for the use of oral steroids is conflicting but Goldberg et al 2015 did show an improvement with a reducing 15 day course in some patients, enough to consider especially as ongoing pain can lead to chronic symptoms.
- [Goldberg H, Firtch W, Tyburski M, et al.](#) Oral Steroids for Acute Radiculopathy Due to a Herniated Lumbar Disk: A Randomized Clinical Trial. JAMA 2015;313(19):1915-23

MRI Pathology

Clinical suspicion from clinical history and examination

- Lumbar disc pathology - disc herniation with neural compromise or irritation

- Grade III – grade II + hard sensory changes (pinprick / Monofilament tester / paper clip) with motor changes in the same nerve root -> MRI useful for treatment options: epidural steroid or non-operative management initially but may require surgical Rx
- Grade IV – grade III + new loss of matching reflex -> MRI useful for treatment options with surgical Rx likely especially if a new lesion (loss of reflex carries a poorer prognosis)
- Grade V – cauda equina type symptoms / signs -> acute referral

To download the pathway, [click here](#).

Video of Lumbar Spine Assessment

[This video](#) provides an overview of the clinical examination techniques useful in primary care for the detection of lumbar disc pathology in which MRI imaging may be indicated.

Assessor: Dr Stephen Kara (Sports and Exercise Medicine)

Ordering a Lumbar Spine 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.