

Module Three - MRI Cervical Spine Injury

Cervical Spine Assessment for the MRI Service:

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

Overview of the Cervical Spine 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 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 cervical spine assessment is primarily aimed to detect the following pathology:

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

Clinical Pathway Cervical Spine Assessment

Indications:

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

Contraindications look for:

- Red Flags
- Fracture (see Canadian C-Spine rules)
- 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](#))

KEY

Assessment
Guide

Management
Plan

MRI CONTRAINDICATIONS

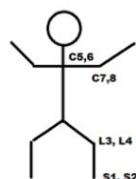
- Pacemaker
- Metalware
- Cochlear Implants
- Claustrophobia
- Works with Metal – Orbit check

CANADIAN C-SPINE RULE

- 1. High Risk**
Age <16yrs and >65yrs
Dangerous mechanism
Paraesthesia in the extremities
IF YES NEED IMAGING
IF NO THEN PROCEED TO 2
- 2. Low Risk**
Simple rear end MVC
Sitting upright in practice field
Ambulatory at any time
Absence of midline tenderness
IF NO THEN NEEDS IMAGING
IF YES THEN PROCEED TO 3
- 3. Able to actively rotate neck > 45°** to the left and the right & pain free flexion
IF ABLE TO NO IMAGING NEEDED
IF NOT ABLE TO FOR IMAGING

NOTE: Canadian C-Spine Rule not applicable if

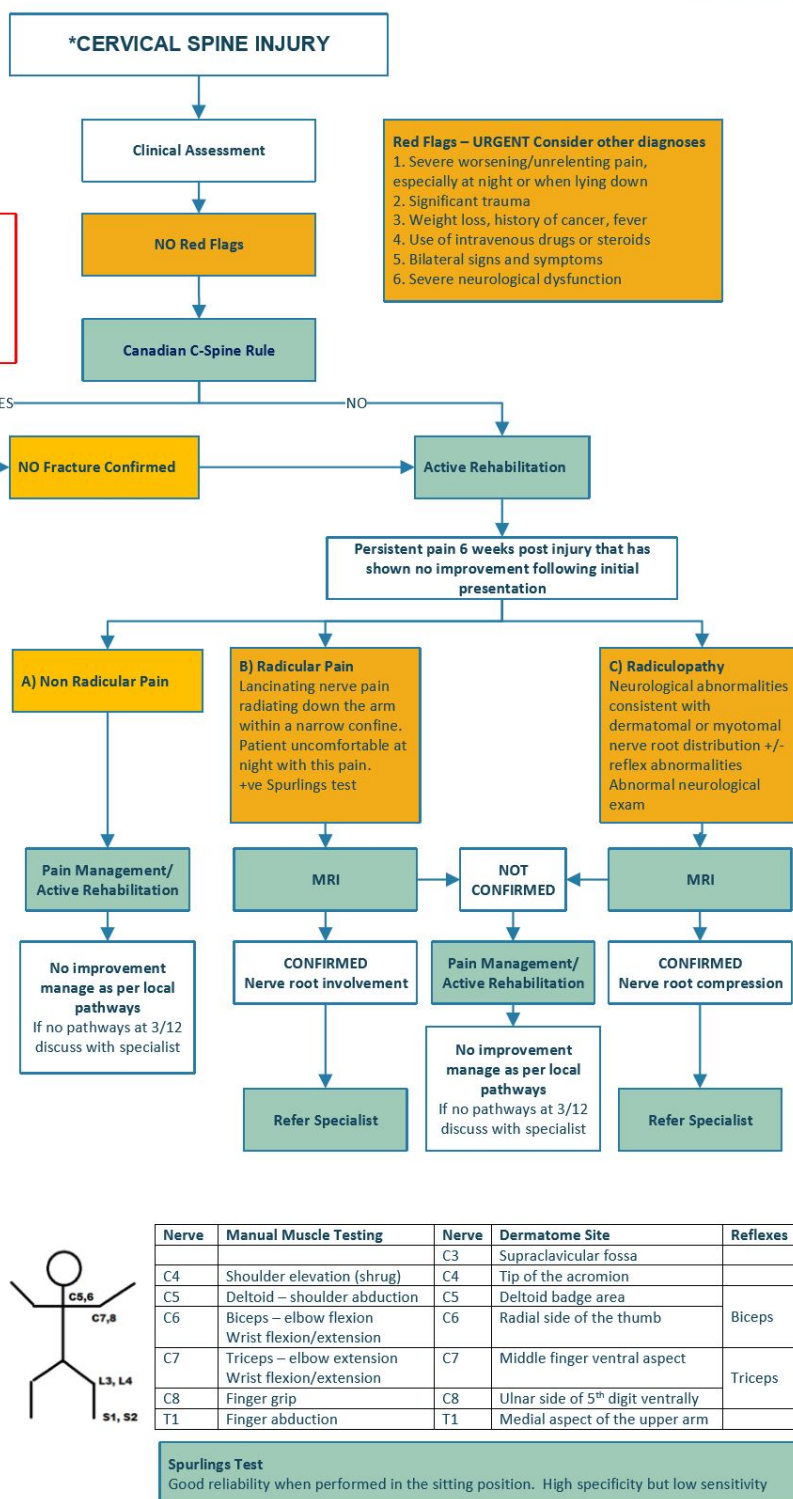
- Non-trauma case
- GCS<15
- Unstable vital signs
- Age <16 years
- Acute paralysis
- Known vertebral disease
- Previous C-Spine surgery



Nerve	Manual Muscle Testing	Nerve	Dermatome Site	Reflexes
C3		C3	Supraclavicular fossa	
C4	Shoulder elevation (shrug)	C4	Tip of the acromion	
C5	Deltoid – shoulder abduction	C5	Deltoid badge area	
C6	Biceps – elbow flexion Wrist flexion/extension	C6	Radial side of the thumb	Biceps
C7	Triceps – elbow extension Wrist flexion/extension	C7	Middle finger ventral aspect	Triceps
C8	Finger grip	C8	Ulnar side of 5 th digit ventrally	
T1	Finger abduction	T1	Medial aspect of the upper arm	

Spurlings Test

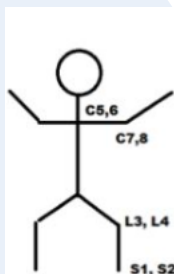
Good reliability when performed in the sitting position. High specificity but low sensitivity



Assessment

- History
 - Acute onset associated with an external force

- Cervical neck pain with radicular component - lancinating quality, travelling along the length of the upper 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
 - Cervical ROM (extension +/- lateral rotation to the symptomatic side limited and increase in pain)
 - Nerve root irritation signs - positive Spurling's Test
 - Nerve root compression signs - see radiculopathy above



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Spurlings Test

Good reliability when performed in the sitting position. High specificity but low sensitivity

Active Rehab Management

- Acute care involving RICE & analgesia
- Physiotherapist or allied health provider referral for functional based exercise therapy

MRI Pathology

Clinical suspicion from clinical history and examination

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

Video of Cervical Spine Assessment

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

Assessor: Dr Stephen Kara (Sports and Exercise Medicine)

Ordering a Cervical 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	<u>Click</u> on 'ProCare Services' OR select Profusion icon 	<u>Click</u> on 'Clinical Notes' <u>Click</u> 'Forms' <u>Click</u> 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 will appear. Click print on the	The voucher will appear. Click print on

	the voucher and give a copy to patient.	voucher and give a copy to patient.	the voucher and give a copy to patient.
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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.