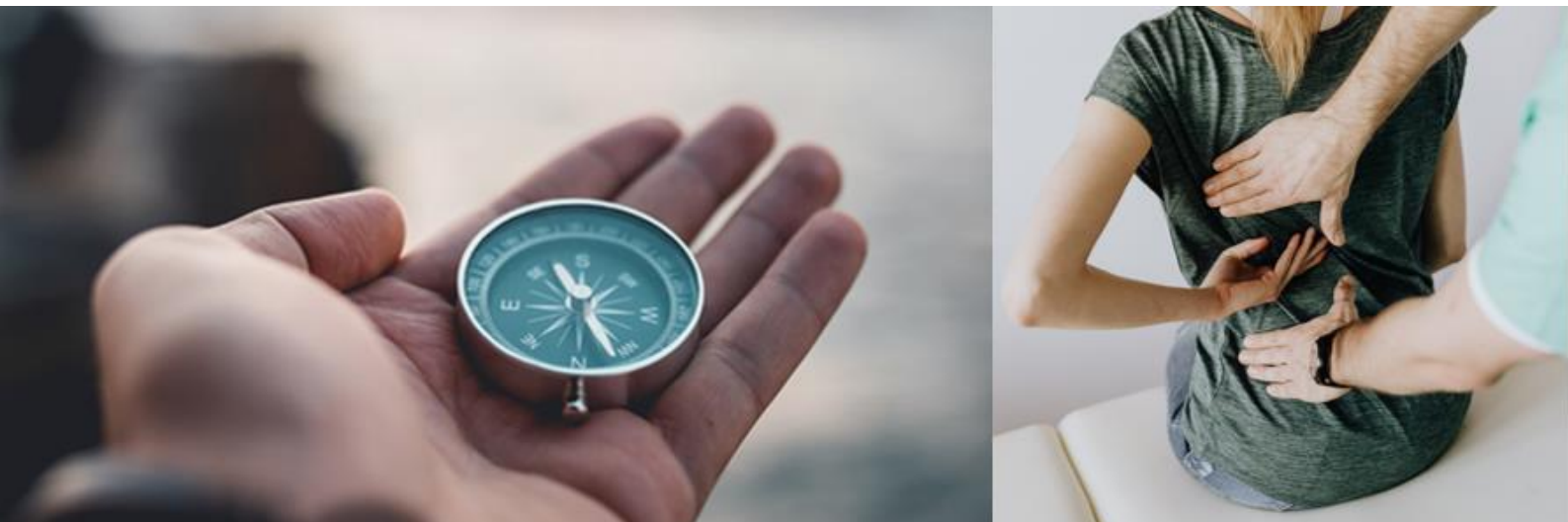


First do no harm: A guide to choosing wisely in general practice

For GPs – Imaging in adults with acute low back pain



The routine imaging of adult patients experiencing acute low back pain.

RACGP position

- Non-specific low back pain is a clinical diagnosis and no tests are required.^{1,2}
- Unnecessary diagnostic imaging causes more harm than benefit because it can result in increased costs, delays in appropriate treatment, exposure to ionising radiation and increased absence from work. It may also lead to unnecessary referrals, procedures and surgery,¹ and is associated with higher rates of prolonged disability.³
- Diagnostic imaging for acute low back pain in adults is only recommended after careful clinical assessment that results in a high suspicion that there is a serious cause.^{1,4,5}
- Non-specific low back pain has a good prognosis and usually improves within four weeks if the patient uses simple pain strategies, avoids bed rest and maintains their usual activities.^{4,6}

Traffic lights

RED

Do not take this action

- Do not request imaging for acute low back pain unless you suspect a serious cause.^{1,2,5}

ORANGE

**Under specified circumstances,
take this action**

- If, after clinical assessment, you suspect cauda equina syndrome, spinal infection, an acute high-impact fracture or severe neurological deficit, you must immediately refer the patient to an emergency department for review. Do not delay this by arranging imaging.¹

- If, after clinical assessment, you suspect a serious cause, choose the imaging appropriate to the suspected pathology^{1,5} and discuss the costs of imaging. There is no Medicare rebate for a lumbar spine magnetic resonance imaging (MRI).

GREEN

Take this action

- Take a careful history and perform a clinical examination.^{1,2,4}
- Educate the patient by explaining why you are not recommending imaging and reassure the patient by explaining the natural history of non-specific low back pain recovery.
- Encourage the patient to maintain their usual activities.⁴

Patient harms and risks

Unnecessary imaging causes harm, such as ionising radiation exposure, increased work absence and delay in starting appropriate treatment. Incidental findings can lead to a cascade of non-beneficial investigations, referrals, interventions and surgery, with their associated costs and harms. Incorrect interpretation of asymptomatic changes in the spine can leave the patient worried and concerned.^{1,4}

MRI within 30 days of symptom onset when there is no clear indication associated with higher rates of prolonged disability.³

Overview

Disease burden

- Acute low back pain, lasting four to six weeks, affects one in six Australians (16%),⁷ and is a frequent presentation in primary care.⁸

Clinical diagnosis

- Non-specific low back pain is a clinical diagnosis and no investigations are required. In approximately 90% of people presenting with acute low back pain, a clinical diagnosis of non-specific low back pain can be made after a history and physical examination.^{1,2}
- Five to 10 per cent of patients presenting with low back pain will have a clinical diagnosis of radicular syndrome. Indicators suggesting radicular syndrome include predominance of leg pain, progressive muscle weakness, neurogenic claudication, tingling or numbness or abnormal findings from a neurological examination of the lower limbs.²

Assessing for a serious underlying condition

- Serious causes are rare. Fewer than 1% of people presenting with acute low back pain will have a serious underlying condition such as spinal fracture, malignancy, infection or cauda equina syndrome.²
- Possible indications of a spinal fracture include older age, prolonged glucocorticosteroid use, significant trauma or the presence of a contusion or abrasion.^{1,9}
- Possible indications of a malignant cause include a history of malignancy or unintended weight loss.^{1,9}
- Possible indications of a spinal infection include fever or chills, immunocompromise, pain at rest or at night, intravenous drug use, a recent injury, or a recent dental or spine procedure.¹
- Possible indications of cauda equina syndrome include new dysfunction of the bowel or bladder, perineal numbness, altered saddle sensation, or persistent or progressive lower motor neuron changes.^{1,10}
- Possible indications of a severe neurological deficit include motor deficits at multiple levels or progressive lower limb weakness.¹ If a neurosurgical emergency is considered likely, refer the patient to an emergency department, instead of referring for imaging.

Diagnostic imaging

- Diagnostic imaging is not indicated in the vast majority of people with acute low back pain and may cause more harm than benefit.¹
- Imaging is only indicated if there is a strong clinical suspicion of a serious underlying cause.^{1,4,5}

- In radicular syndrome, imaging is not routinely indicated and should only be considered in the first six weeks if the symptoms are severe and not improving and surgery is being considered.^{1,4,5}
- If there is a strong clinical suspicion of a spinal fracture, consider a lumbar spine X-ray or a computed tomography (CT) scan.¹
- If there is a strong clinical suspicion of malignancy, infection, cauda equina syndrome or a severe neurological deficit, consider an MRI.^{1,5} The clinical situation will determine the urgency. CT is an alternative if MRI is contraindicated or unavailable.⁵
- If imaging is undertaken, avoid giving the patient an unhelpful diagnostic label when discussing the results.¹

Prognosis

- Most people, whether or not they have radiculopathy, experience substantial improvements in pain and function within four weeks.⁶

Alternatives – what can I do for the patient?

- Reassure the patient that, although their pain may be severe, non-specific low back pain is almost never caused by a serious condition and that their pain will almost certainly improve within four weeks.⁶
- Educate them about the importance of maintaining their usual activities, including work and physical activity.^{4,11}
- Advise them to not to rest in bed,⁴ as this can delay their recovery.
- Encourage them to return to work.¹¹
- Consider advising them to use superficial heat.⁴
- If analgesia is required, consider short-term non-steroidal anti-inflammatory drugs (NSAIDs).^{4,11}
- Although there is evidence that paracetamol is not effective in the management of non-specific low back pain, it can be offered if NSAIDs are not tolerated or are contraindicated.⁴
- Opioids have a very limited role in the management of acute low back pain, as there is no evidence of their efficacy, and they are associated with significant harms.^{4,11}
- Make a plan with the patient that you will reassess them if significant symptoms occur within the next four to six weeks.
- Reassess after four to six weeks.

Resources

- The RACGP, [First do no harm: A guide to choosing wisely in general practice, Imaging in adults with acute low back pain patient resource](#)
- The RACGP, [Handbook of non-drug interventions \(HANDI\), Staying active for acute low back pain patient resource](#)
- The RACGP, [Handbook of non-drug interventions \(HANDI\), Heat therapy for low back pain patient resource](#)
- The RACGP, [Handbook of non-drug interventions \(HANDI\), Exercise for acute lower back pain](#)
- NSW Government and Agency for Clinical Innovation, [Managing low back pain: Information for patients](#)
- NPS MedicineWise, [Why tackle acute non-specific low back pain now?](#)
- The Royal Australian and New Zealand College of Radiologists, [Educational modules for appropriate imaging referrals for acute low back pain](#)
- The Australian Commission on Safety and Quality in Health Care, [Low back pain clinical care standard](#)

Tools to screen for risk of chronic disability in acute low back pain

- Keele University, [Online STarTBack calculator](#)
- SA Health, [Yellow flag screening in lumbar disorders](#)

Screening questionnaire for patients with workplace injuries and to assess risk of chronicity

- [Neuroscience Research Australia](#)
- [NSW Government](#)

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We acknowledge the Traditional Custodians of the lands and seas on which we work and live, and pay our respects to Elders, past, present and future.

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