

Beyond the Click: When a Routine Shoulder Injury Is Something More



Key data highlighting the impact of sports injuries in Australia (2023–24)



~62,100

**Sports injury
hospitalisations in
Australia in 2023–24¹**



>50%

**Fractures represented more
than half of soccer injury
hospitalisations²**



**Rugby
& AFL**

**Among the highest injury
hospitalisation rates by
participation³**

Most shoulder injuries improve with rest, rehabilitation, and a gradual return to activity. However, when pain, stiffness, and loss of movement persist beyond the expected recovery period, clinicians should consider a structural injury — and whether the right imaging has been ordered.

1. X-ray Is Undervalued

X-ray is an undervalued and under-utilised resource. It is a cheap, readily available test that requires no appointment at the vast majority of radiological sites. It is good for assessing bone, joints, soft tissue calcification, and subacromial spurs. Not every patient with shoulder pain has bursitis or capsulitis — X-ray provides a safety net to exclude other pathologies, including metastases.

2. The Advantage of Ultrasound

Ultrasound is extremely useful for superficial structures around the shoulder — tendons, the acromioclavicular joint, and the bursa. The great advantage ultrasound has over other modalities is its ability to provide a dynamic assessment. It also allows direct comparison with the contralateral shoulder at the same sitting.

3. The Importance of MRI

MRI is the single best overview of the shoulder. It is particularly useful when X-ray and ultrasound are unhelpful, and is the modality of choice for assessing intra-articular structures — the cartilage and the labrum. In the context of a suspected dislocation, there is no place for ultrasound: plain films and MRI are the appropriate investigations. MRI also provides the opportunity to determine whether a rotator cuff tear is repairable.

Looking Beyond the Initial Diagnosis

When a patient presents with progressive shoulder stiffness, night pain, and loss of movement over several months, frozen shoulder should be high on the differential. Imaging helps exclude coexisting pathology and guide treatment. The question may not be how long the shoulder will take to heal — but whether its stabilising structures remain intact.

¹ <https://www.aihw.gov.au/reports/sports-injury/sports-injury-in-australia/data> Table 9.

² <https://www.aihw.gov.au/reports/sports-injury/sports-injury-in-australia/contents/featured-sports/soccer>.

³ <https://www.aihw.gov.au/reports/sports-injury/sports-injury-in-australia/data> Table 4_Activity.





Imaging Pathway: Shoulder

For most shoulder pain:

X-ray → Ultrasound → MRI (if required)

When symptoms are disproportionate to the original injury, or recovery is not progressing as expected, further investigation should be considered. MRI is reserved for cases where X-ray and ultrasound are unhelpful, or where intra-articular assessment is required.

Suspected dislocation

No role for ultrasound

Plain films first, then MRI to assess labrum and associated injury.

Progressive stiffness and night pain

Consider frozen shoulder

MRI to exclude coexisting pathology and guide management.

Suspected rotator cuff tear

Ultrasound first, MRI if tear repairability unclear

It defines tear extent and helps determine surgical candidacy.

Referring for shoulder imaging

- State the clinical question clearly in the request form.
- Include duration, mechanism of injury, and any red flags.
- X-ray should precede MRI for most non-acute shoulder presentations.
- Ultrasound is preferred for tendon and bursal pathology; MRI for intra-articular structures.
- In suspected dislocation, plain films and MRI are the appropriate investigations.

Imaging recommendations are a guide only. Clinical judgement should inform the final investigation pathway.

Shoulder

MRI

- Single best overview of the shoulder
- Cartilage and labrum assessment
- Rotator cuff tear repairability
- Intra-articular pathology
- Unhelpful X-ray or ultrasound
- Suspected dislocation (with plain films)

CT

- Pre and post-op assessments
- Complex fracture characterisation
- Glenoid bone loss quantification

Ultrasound

- Tendons — rotator cuff tears and tendinopathy
- Acromioclavicular joint
- Bursal pathology
- Dynamic assessment and contralateral comparison
- Not suitable for intra-articular assessment

X-ray

- First test for any shoulder pain
- Dislocation and fracture screening
- Subacromial spurs and calcification
- AC joint assessment
- Post-operative review



Which shoulder scan should I order first?

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Test your knowledge: a shoulder injury we see often

Presented by: **Dr Justin Roebert**
BHB MBChB FRANZCR
I-MED Radiologist



How can earlier imaging improve patient outcomes?

Presented by: **Dr Justin Roebert**
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Acute Imaging Reference

Scan to view the full webinar:
I-MED MSK Tri-Series Part 3 — Shoulder

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