

## Clinical recommendations

### Current guidelines recommend:

Against routine use of plain X-rays (XR) or other imaging tests such as magnetic resonance imaging (MRI), or computerised tomography (CT) in the absence of red flags in non-specific LBP of less than 12 weeks duration.

### It is advised that imaging studies be performed to evaluate LBP when:

- > serious underlying conditions are suspected by the presence of clinical red flags or by other test results
- > neurologic deficits are severe or progressive
- > radicular symptoms consistent with a disc herniation have been present for more than 4-6 weeks and are severe enough to consider surgical intervention
- > the history and clinical signs suggest spinal/neurogenic claudication and symptoms are of sufficient duration (often several months) and severity to consider surgical intervention.

### The case to avoid unnecessary spinal imaging:

1. The majority of imaging tests for LBP presentations find no abnormalities or only minor changes. Imaging studies in patients without low back pain show a similar prevalence of degenerative changes to those found in patients with LBP.
2. Lumbar radiography is not associated with improved patient functioning or pain severity.

3. Unnecessary X-rays and CTs subject the patient to risks of radiation exposure.

- > A lumbar spine XR series delivers a radiation dose of approximately 1.3 millisievert (mSv), equivalent to 65 chest XR, while a CT of the lumbar spine (6.0 mSv) is equivalent to 300 chest XR.
- > Each lumbar CT exposes the individual to the equivalent of approximately 2.3 years worth of background radiation and carries a 1/3300 risk of developing a fatal cancer.

### CT or MRI?

MRI is widely considered to be the best test for most patients with lumbar disorders who require advanced imaging, although CT scan gives better definition of bony structures. Consideration needs to be given to costs, risks and contraindications.

### Counselling patients who request imaging

Patients with no red flags in their history or other clear indication for imaging should be advised that:

- > They are unlikely to have a serious underlying condition (less than 1% of patients in primary care have back pain due to neoplasm, spinal infection, or cauda equina syndrome).
- > Incidental imaging findings on XR, unrelated to their pain are common. Disc herniations are found in 22 to 40% of asymptomatic adults, and degenerative changes on plain films in 23%. These findings may lead to unnecessary further tests or interventions.
- > Improvement is expected. Imaging may become appropriate if symptoms do not resolve as anticipated.

References: Royal Australian and New Zealand College of Radiologists [www.ranzcr.edu.au](http://www.ranzcr.edu.au), Health Protection Agency [www.hpa.org.uk](http://www.hpa.org.uk)