

ROUTINE IMAGING FOR UNCOMPLICATED, ACUTE LOW BACK PAIN: A LOW-VALUE INTERVENTION

QUALITY OF EVIDENCE: MODERATE ⊕ ⊕ ⊕ ○

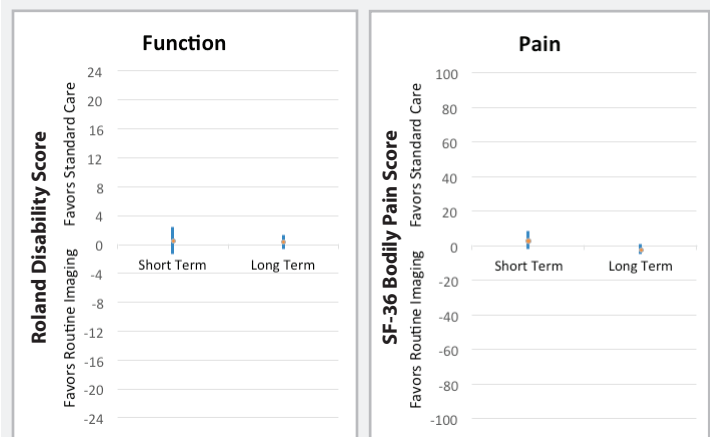
Why is this important?

Low back pain is the second most common reason for acute outpatient office visits in the United States. Three out of four adults will have at least one episode of low back pain during their lifetime. In spite of evidence-based recommendations from numerous professional societies,^{1,2} inappropriate imaging remains a common practice and contributes substantially to the growing cost of health care.

Facts

- Routine imaging (plain radiography, MRI, or CT) for low back pain is not indicated unless patients have “red flag” symptoms including major risk factors for cancer or spinal infection, signs/symptoms of cauda equina syndrome, or progressive neurologic symptoms.
- A systematic review and meta-analysis³ identified 6 randomized controlled trials with 1804 participants comparing immediate lumbar imaging (x-ray, MRI, CT) versus usual care without immediate imaging in patients with low-back pain and no “red flag” symptoms. Duration of follow-up ranged from 3 weeks to 2 years.
- Routine imaging did not improve patient-reported pain or functional status compared with usual care without imaging in either short-term (<3 months) or long-term (6-12 months) followup.
- Routine imaging found no cases of cancer, infection, cauda equina syndrome or other serious diseases in 4 trials (N = 399) with clinical follow-up ≥ 6 months.³
- Abnormal imaging correlates poorly with patient symptoms. In a study⁴ (n=67), supported by subsequent similar studies, 90% of patients over age 60 without back pain had degenerative or bulging discs on MRI.
- Routine imaging exposes patients to radiation without any benefit and is associated with increased rates of spinal surgery.²

Difference in Functional Assessments and Pain Scores from Randomized, Controlled Trials of Routine Imaging Versus Usual Care Without Routine Imaging for Low Back pain



Short term outcomes (<3 months); Long term outcomes(>6 months to ≤ 12 months)

Pain: assessed by Short Form-36 (Score range 0-100); short term outcomes summarize 2 trials; long term outcomes summarize 3 trials

Function: assessed by Roland Disability Questionnaire (Score range 0-24); short term outcomes summarize 3 trials; long term outcomes summarize 3 trials

THE BOTTOM LINE

Routine imaging for low back pain in the absence of progressive neurologic deficits or symptoms suggesting a serious underlying condition is not recommended. Moderate quality evidence indicates that routine imaging fails to improve patient outcomes, exposes patients to unnecessary harms, and increases healthcare costs.

Quality of Evidence

(Adapted from Guyatt G BMJ, 26 April 2008)

This refers to the degree to which the findings of this study are likely to be free of bias.

⊕ ⊕ ⊕ ⊕	High
⊕ ⊕ ⊕ ○	Moderate
⊕ ⊕ ○ ○	Low
⊕ ○ ○ ○	Very low

Tips for Discussion of Results with Patients

- Reassure patients that the absence of “red flag” symptoms is good news and means that their pain is likely to improve without imaging.
- Discuss the anticipated clinical course, duration of symptoms, and reasons to seek urgent care for acute low back pain with patients at their initial visit.
- Engage patients in brief, educational discussions about low back pain. Such discussions satisfy most patients even though they may expect routine low back imaging.
- Anticipate abnormal findings on imaging and recognize that they are often are not related to clinical symptoms.

References

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2. Chou R, Deyo RA, Jarvik JG. Appropriate use of lumbar imaging for evaluation of low back pain. *Radiologic clinics of North America.* 2012;50(4):569-85.
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4. Boden SD, Davis DO, Dina TS, Patronas NJ, Wiesel SW. Abnormal magnetic-resonance scans of the lumbar spine in asymptomatic subjects. A prospective investigation. *The Journal of Bone and Joint Surgery of America.* 1990;72(3):403-8.

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The Bottom Line summaries reflect the expertise and opinions of the SGIM EBM Task Force as of the date of release of this summary.



April 27, 2016 2