

# The role of radiography in primary care patients with low back pain of at least 6 weeks duration: a randomised (unblinded) controlled trial

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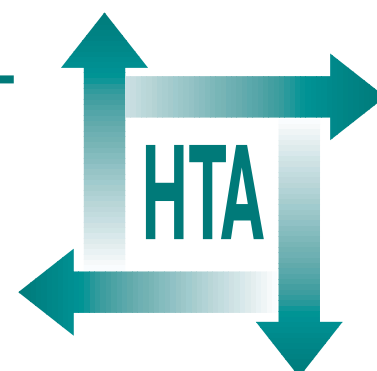
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## *Executive summary*

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NHS R&D HTA Programme**





## Executive summary

### Objectives

To test the hypotheses that:

- Lumbar spine radiography in primary care patients with low back pain is not associated with improved patient outcomes, including pain, disability, health status, sickness absence, reassurance, and patient satisfaction or belief in the value of radiography.
- Lumbar spine radiography in primary care patients with low back pain is not associated with changes in patient management, including medication use, and the use of primary and secondary care services, physical therapies and complementary therapies.
- Participants choosing their treatment group (i.e. radiography or no radiography) do not have better outcomes than those randomised to a treatment group.
- Lumbar spine radiography is not cost-effective compared with usual care without lumbar spine radiography.

### Design

A randomised unblinded controlled trial.

### Setting

Seventy-three general practices in Nottingham, North Nottinghamshire, Southern Derbyshire, North Lincolnshire and North Leicestershire. Fifty-two practices recruited participants to the trial.

### Subjects

Randomised arm: 421 participants with low back pain, with median duration of 10 weeks.

Patient preference arm: 55 participants with low back pain, with median duration of 11 weeks.

### Intervention

Lumbar spine radiography and usual care versus usual care without radiography.

### Main outcome measures

Roland adaptation of the Sickness Impact Profile, visual analogue pain scale, health status scale, EuroQol, use of primary and secondary care services, and physical and complementary therapies, sickness absence, medication use, patient satisfaction, reassurance and belief in value of radiography at 3 and 9 months post-randomisation.

### Results

Participants randomised to receive an X-ray were more likely to report low back pain at 3 months (odds ratio (OR) = 1.56; 95% confidence interval (CI), 1.02 to 2.40) and had a lower overall health status score ( $p = 0.02$ ). There were no differences in health or functional status at 9 months. A higher proportion of participants consulted the general practitioner (GP) in the 3 months following an X-ray (OR = 2.72; 95% CI, 1.80 to 4.10). There were no differences in use of any other services, medication use or sickness absence at 3 or 9 months. No serious spinal pathology was identified in either group. The commonest X-ray reports were of discovertebral degeneration and normal findings. Many patients did not perceive their information needs were met within the consultation. Satisfaction with care was greater in the group receiving radiography at 9 months. Participants randomised to receive an X-ray were not less worried, or more reassured about serious disease causing their low back pain. Satisfaction was associated with meeting participants' information needs and reduced belief in the necessity for investigations for low back pain, including X-rays and blood tests. In both groups, at 3 and 9 months 80% of participants would choose to have an X-ray if the choice was available. Participants in the patient preference group achieved marginally better outcomes than those randomised to a treatment group, but the clinical significance of these differences is unclear. Lumbar spine radiography was associated with a net economic loss at 3 and 9 months.

### Conclusions

Lumbar spine radiography in primary care patients with low back pain of at least 6 weeks duration is

not associated with improved functioning, severity of pain or overall health status, and is associated with an increase in GP workload. Participants receiving X-rays are more satisfied with their care, but are not less worried or more reassured about serious disease causing their low back pain.

### **Recommendations for further research**

Further work is required to develop and test an educational package that educates patients and GPs about the utility of radiography and provides strategies for identifying and meeting the information needs of patients, and the needs of patients and GPs to be reassured about missing serious disease. Guidelines on the management of low

back pain in primary care should be consistent about not recommending lumbar spine radiography in patients with low back pain in the absence of red flags for serious spinal pathology, even if the pain has persisted for at least 6 weeks.

### **Publication**

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This has meant that the HTA panels can now focus more explicitly on health technologies ('health technologies' are broadly defined to include all interventions used to promote health, prevent and treat disease, and improve rehabilitation and long-term care) rather than settings of care. Therefore the panel structure has been redefined and replaced by three new panels: Pharmaceuticals; Therapeutic Procedures (including devices and operations); and Diagnostic Technologies and Screening.

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