

# Low back pain in adults: early management

Clinical guideline

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## Introduction

This guideline covers the early treatment and management of persistent or recurrent low back pain, defined as non-specific low back pain that has lasted for more than 6 weeks, but for less than 12 months. It does not address the management of severe disabling low back pain that has lasted over 12 months.

Non-specific low back pain is tension, soreness and/or stiffness in the lower back region for which it is not possible to identify a specific cause of the pain. Several structures in the back, including the joints, discs and connective tissues, may contribute to symptoms.

The lower back is commonly defined as the area between the bottom of the rib cage and the buttock creases. Some people with non-specific low back pain may also feel pain in their upper legs, but the low back pain usually predominates.

A clinician who suspects that there is a specific cause for their patient's low back pain (see box 1) should arrange the relevant investigations. However, the diagnosis of specific causes of low back pain is beyond the remit of this guideline.

### Box 1 Specific causes of low back pain (not covered in this guideline)

Malignancy
Infection
Fracture
Ankylosing spondylitis and other inflammatory disorders

The management of the following conditions is not covered by this guideline:

- radicular pain resulting from nerve root compression
- cauda equina syndrome (this should be treated as a surgical emergency requiring immediate referral).

Low back pain is a common disorder, affecting around one-third of the UK adult population each year. Around 20% of people with low back pain (that is, 1 in 15 of the population) will consult their GP about it.

There is a generally accepted approach to the management of back pain of less than 6 weeks' duration. What has been less clear is how low back pain should be managed in people whose pain and disability has lasted more than 6 weeks. Appropriate management has the potential to reduce the number of people with disabling long-term back pain, and so reduce the personal, social and economic impact of low back pain.

A key focus is helping people with persistent non-specific low back pain to self-manage their condition. Providing advice and information is an important part of this. The aim of the recommended treatments and management strategies is to reduce the pain and its impact on the person's day-to-day life, even if the pain cannot be cured completely.

The guideline will assume that prescribers will use a drug's summary of product characteristics to inform their decisions for individual patients. This guideline recommends some drugs for indications for which they do not have a UK marketing authorisation at the date of publication, if there is good evidence to support that use (see section 1.8).

## Patient-centred care

This guideline offers best practice advice on the care of people with non-specific low back pain.

Treatment and care should take into account patients' needs and preferences. People with non-specific low back pain should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. If patients do not have the capacity to make decisions, healthcare professionals should follow the [Department of Health's advice on consent](#) and the [code of practice that accompanies the Mental Capacity Act](#). In Wales, healthcare professionals should follow [advice on consent from the Welsh Government](#).

Good communication between healthcare professionals and patients is essential. It should be supported by evidence-based written information tailored to the patient's needs. Treatment and care, and the information patients are given about it, should be culturally appropriate. It should also be accessible to people with additional needs such as physical, sensory or learning disabilities, and to people who do not speak or read English.

If the patient agrees, families and carers should have the opportunity to be involved in decisions about treatment and care.

Families and carers should also be given the information and support they need.

## Key priorities for implementation

### Information, education and patient preferences

- Provide people with advice and information to promote self-management of their low back pain.
- Offer one of the following treatment options, taking into account patient preference: an exercise programme (see section 1.3.3), a course of manual therapy (see section 1.4.1) or a course of acupuncture (see section 1.6.1). Consider offering another of these options if the chosen treatment does not result in satisfactory improvement.

### Physical activity and exercise

- Consider offering a structured exercise programme tailored to the person:
  - This should comprise up to a maximum of eight sessions over a period of up to 12 weeks.
  - Offer a group supervised exercise programme, in a group of up to 10 people.
  - A one-to-one supervised exercise programme may be offered if a group programme is not suitable for a particular person.

### Manual therapy<sup>[1]</sup>

- Consider offering a course of manual therapy, including spinal manipulation, comprising up to a maximum of nine sessions over a period of up to 12 weeks.

### Invasive procedures

- Consider offering a course of acupuncture needling comprising up to a maximum of 10 sessions over a period of up to 12 weeks.
- Do not offer injections of therapeutic substances into the back for non-specific low back pain.

### Combined physical and psychological treatment programme

- Consider referral for a combined physical and psychological treatment programme, comprising around 100 hours over a maximum of 8 weeks, for people who:
  - have received at least one less intensive treatment (see section 1.2.5) and

- have high disability and/or significant psychological distress.

### Assessment and imaging

- Do not offer X-ray of the lumbar spine for the management of non-specific low back pain.
- Only offer an MRI scan for non-specific low back pain within the context of a referral for an opinion on spinal fusion (see section 1.9).

### Referral for surgery

- Consider referral for an opinion on spinal fusion for people who:
  - have completed an optimal package of care, including a combined physical and psychological treatment programme (see section 1.7) and
  - still have severe non-specific low back pain for which they would consider surgery.

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<sup>[1]</sup>The manual therapies reviewed were spinal manipulation, spinal mobilisation and massage (see section 1.4 for further details). Collectively these are all manual therapy. Mobilisation and massage are performed by a wide variety of practitioners. Manipulation can be performed by chiropractors and osteopaths, as well as by doctors and physiotherapists who have undergone specialist postgraduate training in manipulation.

## 1 Guidance

The following guidance is based on the best available evidence. The [full guideline](#) gives details of the methods and the evidence used to develop the guidance.

### 1.1 *Assessment and imaging*

- 1.1.1 Keep diagnosis under review.
- 1.1.2 Do not offer X-ray of the lumbar spine for the management of non-specific low back pain.
- 1.1.3 Consider MRI (magnetic resonance imaging) when a diagnosis of spinal malignancy, infection, fracture, cauda equina syndrome or ankylosing spondylitis or another inflammatory disorder is suspected.
- 1.1.4 Only offer an MRI scan for non-specific low back pain within the context of a referral for an opinion on spinal fusion (see section 1.9).

### 1.2 *Information, education and patient preferences*

- 1.2.1 Provide people with advice and information to promote self-management of their low back pain.
- 1.2.2 Offer educational advice that:
  - includes information on the nature of non-specific low back pain
  - encourages the person to be physically active and continue with normal activities as far as possible.
- 1.2.3 Include an educational component consistent with this guideline as part of other interventions, but do not offer stand-alone formal education programmes.
- 1.2.4 Take into account the person's expectations and preferences when considering recommended treatments, but do not use their expectations and preferences to predict their response to treatments.

- 1.2.5 Offer one of the following treatment options, taking into account patient preference: an exercise programme (see section 1.3.3), a course of manual therapy (see section 1.4.1) or a course of acupuncture (see section 1.6.1). Consider offering another of these options if the chosen treatment does not result in satisfactory improvement.

### 1.3 *Physical activity and exercise*

- 1.3.1 Advise people with low back pain that staying physically active is likely to be beneficial.
- 1.3.2 Advise people with low back pain to exercise.
- 1.3.3 Consider offering a structured exercise programme tailored to the person:
- This should comprise up to a maximum of eight sessions over a period of up to 12 weeks.
  - Offer a group supervised exercise programme, in a group of up to 10 people.
  - A one-to-one supervised exercise programme may be offered if a group programme is not suitable for a particular person.
- 1.3.4 Exercise programmes may include the following elements:
- aerobic activity
  - movement instruction
  - muscle strengthening
  - postural control
  - stretching.

### 1.4 *Manual therapy*

The manual therapies reviewed were spinal manipulation (a low-amplitude, high-velocity movement at the limit of joint range that takes the joint beyond the passive range of movement), spinal mobilisation (joint movement within the normal range of motion) and massage (manual manipulation or mobilisation of soft tissues). Collectively these are all manual therapy. Mobilisation

and massage are performed by a wide variety of practitioners. Manipulation can be performed by chiropractors and osteopaths, as well as by doctors and physiotherapists who have undergone specialist postgraduate training in manipulation.

- 1.4.1 Consider offering a course of manual therapy, including spinal manipulation, comprising up to a maximum of nine sessions over a period of up to 12 weeks.

## 1.5 *Other non-pharmacological therapies*

### Electrotherapy modalities

- 1.5.1 Do not offer laser therapy.
- 1.5.2 Do not offer interferential therapy.
- 1.5.3 Do not offer therapeutic ultrasound.

### Transcutaneous nerve stimulation

- 1.5.4 Do not offer transcutaneous electrical nerve simulation (TENS).

### Lumbar supports

- 1.5.5 Do not offer lumbar supports.

### Traction

- 1.5.6 Do not offer traction.

## 1.6 *Invasive procedures*

- 1.6.1 Consider offering a course of acupuncture needling comprising up to a maximum of 10 sessions over a period of up to 12 weeks.
- 1.6.2 Do not offer injections of therapeutic substances into the back for non-specific low back pain.

## 1.7 *Combined physical and psychological treatment programme*

- 1.7.1 Consider referral for a combined physical and psychological treatment programme, comprising around 100 hours over a maximum of 8 weeks, for people who:
- have received at least one less intensive treatment (see section 1.2.5) and
  - have high disability and/or significant psychological distress.
- 1.7.2 Combined physical and psychological treatment programmes should include a cognitive behavioural approach and exercise.

## 1.8 *Pharmacological therapies*

Both weak opioids and strong opioids are discussed in the recommendations in this section. Examples of weak opioids are codeine and dihydrocodeine (these are sometimes combined with paracetamol as co-codamol or co-dydramol, respectively). Examples of strong opioids are buprenorphine, diamorphine, fentanyl and oxycodone. Some opioids, such as tramadol, are difficult to classify because they can act like a weak or strong opioid depending on the dose used and the circumstances.

No opioids, cyclooxygenase 2 (COX-2) inhibitors or tricyclic antidepressants and only some non-steroidal anti-inflammatory drugs (NSAIDs) have a UK marketing authorisation for treating low back pain. If a drug without a marketing authorisation for this indication is prescribed, informed consent should be obtained and documented.

1.8.1 Advise the person to take regular paracetamol as the first medication option.

1.8.2 When paracetamol alone provides insufficient pain relief, offer:

- non-steroidal anti-inflammatory drugs (NSAIDs) and/or
- weak opioids

Take into account the individual risk of side effects and patient preference.

1.8.3 Give due consideration to the risk of side effects from NSAIDs, especially in:

- older people

- other people at increased risk of experiencing side effects.

- 1.8.4 When offering treatment with an oral NSAID/COX-2 (cyclooxygenase 2) inhibitor, the first choice should be either a standard NSAID or a COX-2 inhibitor. In either case, for people over 45 these should be co-prescribed with a PPI (proton pump inhibitor), choosing the one with the lowest acquisition cost. [This recommendation is adapted from 'Osteoarthritis: the care and management of osteoarthritis in adults' (NICE clinical guideline 59).]
- 1.8.5 Consider offering tricyclic antidepressants if other medications provide insufficient pain relief. Start at a low dosage and increase up to the maximum antidepressant dosage until therapeutic effect is achieved or unacceptable side effects prevent further increase.
- 1.8.6 Consider offering strong opioids for short-term use to people in severe pain.
- 1.8.7 Consider referral for specialist assessment for people who may require prolonged use of strong opioids.
- 1.8.8 Give due consideration to the risk of opioid dependence and side effects for both strong and weak opioids.
- 1.8.9 Base decisions on continuation of medications on individual response.
- 1.8.10 Do not offer selective serotonin reuptake inhibitors (SSRIs) for treating pain.

## 1.9 *Referral for surgery*

- 1.9.1 Consider referral for an opinion on spinal fusion for people who:
- have completed an optimal package of care, including a combined physical and psychological treatment programme (see section 1.7) and
  - still have severe non-specific low back pain for which they would consider surgery.
- 1.9.2 Offer anyone with psychological distress appropriate treatment for this before referral for an opinion on spinal fusion.

1.9.3 Refer the patient to a specialist spinal surgical service if spinal fusion is being considered. Give due consideration to the possible risks for that patient.

1.9.4 Do not refer people for any of the following procedures:

- intradiscal electrothermal therapy (IDET)
- percutaneous intradiscal radiofrequency thermocoagulation (PIRFT)
- radiofrequency facet joint denervation.

## 2 Notes on the scope of the guidance

NICE guidelines are developed in accordance with a scope that defines what the guideline will and will not cover. The [scope](#) of this guideline is available.

### How this guideline was developed

NICE commissioned the National Collaborating Centre for Primary Care to develop this guideline. The Centre established a Guideline Development Group (see appendix A), which reviewed the evidence and developed the recommendations. An independent Guideline Review Panel oversaw the development of the guideline (see appendix B).

There is more information about [how NICE clinical guidelines are developed](#) on the NICE website. A booklet, 'How NICE clinical guidelines are developed: an overview for stakeholders, the public and the NHS' is [available](#).

### 3 Implementation

NICE has developed tools to help organisations implement this guidance (listed below). These are available on our [website](#).

- Slides highlighting key messages for local discussion.
- Costing tools:
  - costing report to estimate the national savings and costs associated with implementation
  - costing template to estimate the local costs and savings involved.
- Patient information leaflet.
- Factsheet for commissioners.
- Audit support for monitoring local practice.

## 4 Research recommendations

The Guideline Development Group has made the following recommendations for research, based on its review of evidence, to improve NICE guidance and patient care in the future.

### 4.1 *Screening protocols*

What is the clinical and cost effectiveness of using screening protocols to target treatments for people with persistent non-specific low back pain?

#### **Why this is important**

People with poorer physical function and, in particular, those with psychological factors such as increased fear of activity, psychological distress, and negative feelings about back pain, are more disabled by their pain, and are more likely to have a poor outcome.

One randomised controlled trial has demonstrated the value of screening in improving outcome with respect to return to work. No UK study to date has demonstrated that targeting treatments based on a risk-factor profile leads to improved outcome or cost effectiveness.

Research into matching people with low back pain to the specific treatments recommended is needed. The role of both psychological and physical factors should be considered.

This should include studies to identify which people are likely to gain the greatest benefit from treatments that are recommended in this guideline, and studies to identify which people are likely to benefit from treatments that are not currently recommended.

### 4.2 *Delivery of patient education*

How can education be delivered effectively for people with persistent non-specific low back pain?

#### **Why this is important**

Improved understanding of low back pain and its management are identified as key components of care by both patients and healthcare professionals. This guideline emphasises the importance of patient choice, which can only be exercised effectively if people have an adequate understanding of the available options. Extensive research literature addresses the education of adults using a wide

variety of techniques, but studies of patient education for people with low back pain have focused almost exclusively on written information. Little evidence is available as to whether such materials are the most effective way to deliver educational goals. Interdisciplinary projects combining educational and healthcare research methodologies should:

- identify appropriate goals and techniques for the education of people with low back pain
- determine efficacy in achieving educational goals
- determine effects on clinical outcomes, including pain, distress and disability.

### 4.3 *Use of sequential therapies*

What is the effectiveness and cost effectiveness of sequential therapies (manual therapy, exercise and acupuncture) compared with single interventions with respect to pain, functional disability and psychological distress in people with persistent non-specific low back pain?

#### **Why this is important**

There is evidence that manual therapy, exercise and acupuncture individually are cost-effective management options compared with usual care for persistent non-specific low back pain. The cost implications of treating people who do not respond to initial therapy and so receive multiple back care interventions are substantial. It is unclear whether there is added health gain for this subgroup from either multiple or sequential use of therapies.

#### **Research should:**

- test the effect of providing a subsequent course of a different therapy (manual therapy, exercise or acupuncture) in the management of persistent non-specific low back pain, when the first-choice therapy has been inadequately effective.
- determine the cost effectiveness of providing more than one of these interventions to people with persistent non-specific low back pain.

### 4.4 *Psychological treatments*

What is the effectiveness and cost effectiveness of psychological treatments as monotherapy for persistent non-specific low back pain?

#### **Why this is important**

The effectiveness and cost effectiveness of psychological treatments for people with persistent non-specific low back pain is not known. Data from randomised controlled trials studying people with a mixture of painful disorders, and other research, suggest that such treatments may be helpful for non-specific low back pain, but there are few robust data relating specifically to back pain.

Research should:

- use randomised controlled trials to test the effect of adding psychological treatment to other treatments for non-specific low back pain
- test individual and/or group treatments
- clearly describe the psychological treatments tested and provide a robust theoretical justification for them.

If possible, the comparative effectiveness and cost effectiveness of different psychological treatments should be tested; for example, group compared with individual treatment, or treatment approaches based on different theories.

## 4.5 *Invasive procedures*

What is the effectiveness and cost-effectiveness of facet joint injections and radiofrequency lesioning for people with persistent non-specific low back pain?

### Why this is important

Many invasive procedures are performed on people with persistent non-specific low back pain. These are usually undertaken after the condition has lasted a long time (more than 12 months). Procedures such as facet joint injections and radiofrequency lesioning are performed regularly in specialist pain clinics. There is evidence that pain arising from the facet joints can be a cause of low back pain, but the role of specific therapeutic interventions remains unclear. Case studies provide some evidence for the effectiveness of facet joint injections and medial branch blocks, but randomised controlled trials give conflicting evidence.

Robust trials, including health economic evaluations, should be carried out to determine the effectiveness and cost effectiveness of invasive procedures – in particular, facet joint injections and radiofrequency lesioning. These should include the development of specific criteria for patient selection and a comparison with non-invasive therapies.

## 5 Other versions of this guideline

### 5.1 *Full guideline*

The full guideline, 'Low back pain: early management of persistent non-specific low back pain' contains details of the methods and evidence used to develop the guideline. It is published by the National Collaborating Centre for Primary Care and is available from our [website](#).

### 5.2 *Information for the public*

NICE has produced '[information for the public](#)' explaining this guideline..

We encourage NHS and voluntary sector organisations to use text from this information in their own materials about low back pain.

## 6 Related NICE guidance

### Published

- Managing long-term sickness absence and incapacity for work. [NICE public health guidance 19](#) (2009).
- Osteoarthritis. [NICE clinical guideline 59](#) (2008).
- Four commonly used methods to increase physical activity. [NICE public health guidance 2](#) (2006).

## 7 Updating the guideline

NICE clinical guidelines are updated so that recommendations take into account important new information. New evidence is checked 3 years after publication, and healthcare professionals and patients are asked for their views; we use this information to decide whether all or part of a guideline needs updating. If important new evidence is published at other times, we may decide to do a more rapid update of some recommendations.

## **Appendix A: The Guideline Development Group**

**Professor Martin Underwood (Chair)**

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**Professor Paul Watson (Clinical Advisor)**

Professor of Pain Management and Rehabilitation, Department of Health Sciences, University of Leicester

**Mrs Elaine Buchanan**

Consultant Physiotherapist, Nuffield Orthopaedic Centre, Oxford

**Dr Paul Coffey**

General Practitioner, Eynsham Medical Group, Witney, Oxon

**Mr Peter Dixon**

Chiropractor Chairman, General Chiropractic Council, London

**Mrs Christine Drummond**

Patient representative

**Mrs Margaret Flanagan**

Nurse Clinician, Western Avenue Medical Centre, Chester

**Professor Charles Greenough**

Consultant Spinal Surgeon, James Cook University, Middlesbrough

**Dr Mark Griffiths**

Consultant Clinical Psychologist, Halton and St Helens PCT

**Dr Jacqueline Halliday Bell**

Medical Inspector, Health and Safety Executive, Birmingham

**Dr Dries Hettinga**

Patient representative, Head of Research and Policy, BackCare

**Mr Steven Vogel**

Vice Principal (Research and Quality), British School of Osteopathy, London

**Dr David Walsh**

Associate Professor, Kings Mill Hospital, Sutton in Ashfield

*Co-opted GDG members*

The following people attended meetings at which their expertise was required.

**Dr Michael Cummings**

Medical Director, British Medical Acupuncture Society

**Mr Ray Langford**

Clinical Specialist Occupational Therapist, St Helens and Knowsley Teaching Hospitals NHS Trust

*National Collaborating Centre for Primary Care*

**Gill Ritchie**

Guideline Lead, National Collaborating Centre for Primary Care

**Pauline Savigny**

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**Nicola Brown**

Health Services Research Fellow, National Collaborating Centre for Primary Care (from May 2007 to October 2007)

**Stefanie Kuntze**

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**David Hill**

Project Manager, National Collaborating Centre for Primary Care

**Chris Rule**

Project Manager, National Collaborating Centre for Primary Care (from August 2006 to September 2007)

**Marian Cotterell**

Information Scientist, National Collaborating Centre for Primary Care

## **Appendix B: The Guideline Review Panel**

The Guideline Review Panel is an independent panel that oversees the development of the guideline and takes responsibility for monitoring adherence to NICE guideline development processes. In particular, the panel ensures that stakeholder comments have been adequately considered and responded to. The panel includes members from the following perspectives: primary care, secondary care, lay, public health and industry.

### **Professor Mike Drummond (Chair)**

Director, Centre for Health Economics, University of York

### **Dr Graham Archard**

General Practitioner, Dorset

### **Dr David Gillen**

Medical Director, Wyeth Pharmaceutical

### **Ms Catherine Arkley**

Lay member

## Appendix C: The algorithm

There is a care pathway for the management of persistent non-specific low back pain on page 22 of the [full guideline](#).

## About this guideline

NICE clinical guidelines are recommendations about the treatment and care of people with specific diseases and conditions in the NHS in England and Wales.

The guideline was developed by the National Collaborating Centre for Primary Care. The Collaborating Centre worked with a group of healthcare professionals (including consultants, GPs and nurses), patients and carers, and technical staff, who reviewed the evidence and drafted the recommendations. The recommendations were finalised after public consultation.

The methods and processes for developing NICE clinical guidelines are described in [The guidelines manual](#).

We have produced [information for the public](#) explaining this guideline. Tools to help you put the guideline into practice and information about the evidence it is based on are also [available](#).

### Changes after publication

January 2012: minor maintenance

August 2013: minor maintenance

October 2013: minor maintenance

September 2014: minor maintenance

### Your responsibility

This guidance represents the view of NICE, which was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer, and informed by the summary of product characteristics of any drugs they are considering.

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have

regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

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## Accreditation

