VA/DoD CLINICAL PRACTICE GUIDELINE FOR DIAGNOSIS AND TREATMENT OF LOW BACK PAIN

Department of Veterans Affairs

Department of Defense

Pocket Card

QUALIFYING STATEMENTS

The Department of Veterans Affairs and the Department of Defense guidelines are based upon the best information available at the time of publication. They are designed to provide information and assist decision making. They are not intended to define a standard of care and should not be construed as one. Neither should they be interpreted as prescribing an exclusive course of management.

This Clinical Practice Guideline is based on a systematic review of both clinical and epidemiological evidence. Developed by a panel of multidisciplinary experts, it provides a clear explanation of the logical relationships between various care options and health outcomes while rating both the quality of the evidence and the strength of the recommendation.

Variations in practice will inevitably and appropriately occur when clinicians take into account the needs of individual patients, available resources, and limitations unique to an institution or type of practice. Every healthcare professional making use of these guidelines is responsible for evaluating the appropriateness of applying them in the setting of any particular clinical situation.

These guidelines are not intended to represent TRICARE policy. Further, inclusion of recommendations for specific testing and/or therapeutic interventions within these guidelines does not guarantee coverage of civilian sector care. Additional information on current TRICARE benefits may be found at www.tricare.mil or by contacting your regional TRICARE Managed Care Support Contractor.

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I. Summary of Recommendations

Recommendations were made using a systematic approach considering multiple domains: the confidence in the quality of the evidence, balance of desirable and undesirable outcomes, patient or provider values and preferences, and other implications, as appropriate (e.g., resource use, equity, acceptability).

Diagnostic Approach

We recommend:
- Clinicians conduct a history and physical examination, that should include identifying and evaluating neurologic deficits (e.g., radiculopathy, neurogenic claudication), red flag symptoms associated with serious underlying pathology (e.g., malignancy, fracture, infection), and psychosocial factors
- Diagnostic imaging and appropriate laboratory testing when neurologic deficits are serious or progressive or when red flag symptoms are present

We suggest:
- Performing a mental health screening as part of the low back pain evaluation and taking results into consideration during selection of treatment

We recommend against:
- Routinely obtaining imaging studies or invasive diagnostic tests for patients with acute axial low back pain (i.e., localized, non-radiating)

There is inconclusive evidence to recommend for or against:
- Any diagnostic imaging for patients with low back pain greater than one month who have not improved or responded to initial treatments

Education and Self-care

We recommend:
- For chronic low back pain:
  - Providing evidence-based information with regard to their expected course, advising patients to remain active, and providing information about self-care options

We suggest:
- For chronic low back pain:
  - Adding a structured education component, including pain neurophysiology, as part of a multicomponent self-management intervention

Non-pharmacologic and Non-invasive Therapy

We recommend:
- For chronic low back pain:
  - Cognitive behavioral therapy

We suggest:
- For acute low back pain:
  - Offering spinal mobilization/manipulation as part of a multimodal program

- For chronic low back pain:
  - Mindfulness-based stress reduction
  - Offering clinician-directed exercises
  - Offering spinal mobilization/manipulation as part of a multimodal program
  - Offering acupuncture
  - Offering an exercise program, which may include Pilates, yoga, and tai chi

There is insufficient evidence to support:
- For acute low back pain:
  - The use of specific clinician-directed exercise
  - The use of acupuncture
• For acute or chronic low back pain:
  o The use of lumbar supports
  o The use of ultrasound
  o The use of lumbar traction
  o The use of electrical muscle stimulation

There is inconclusive evidence to support:
  o The use of transcutaneous electrical nerve stimulation (TENS)

**Pharmacologic Therapy**

**We recommend:**
• For acute or chronic low back pain:
  o Treating with nonsteroidal anti-inflammatory drugs (NSAIDs), with consideration of patient-specific risks

**We suggest:**
• For acute low back pain or acute exacerbations of chronic low back pain:
  o Offering a non-benzodiazepine muscle relaxant for short-term use
• For chronic low back pain:
  o Offering treatment with duloxetine, with consideration of patient-specific risks

**We recommend against:**
• For acute or chronic low back pain:
  o Treatment with benzodiazepines
  o The use of systemic corticosteroids (oral or intramuscular injection) for low back pain with or without radiculopathy
  o Initiating long-term opioid therapy (for patients who are already prescribed long-term opioid therapy, refer to the VA/DoD CPG for the Management of Opioid Therapy for Chronic Pain

• For chronic low back pain:
  o The chronic use of oral acetaminophen

**We suggest against:**
• For chronic low back pain:
  o Offering a non-benzodiazepine muscle relaxant

There is insufficient evidence to recommend for or against:
• For acute low back pain or acute exacerbations of chronic low back pain:
  o The use of time-limited opioid therapy (given the significant risks and potential benefits of opioid therapy, patients should be evaluated individually, including consideration of psychosocial risks and alternative non-opioid treatments; any opioid therapy should be kept to the shortest duration and lowest dose possible)
• For acute or chronic low back pain:
  o The use of time-limited (less than seven days) acetaminophen therapy
  o The use of antiepileptics, including gabapentin and pregabalin (including patients with both radicular and non-radicular low back pain)

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1 See the VA/DoD Clinical Practice Guideline for the Management of Opioid Therapy for Chronic Pain. Available at: http://www.healthquality.va.gov/guidelines/Pain/cot/
The use of topical preparations

**Dietary Supplements:**
There is insufficient evidence to recommend for or against:
- Nutritional, herbal, and homeopathic supplements for low back pain

**Non-surgical Invasive Therapy:**
We suggest:
- Offering epidural steroid injections for the very short-term effect (less than or equal to two weeks) reduction of radicular low back pain

We recommend against:
- Offering spinal epidural steroid injections for the long-term reduction of radicular low back pain, non-radicular low back pain, or spinal stenosis

We suggest against:
- Offering intra-articular facet joint steroid injections for the treatment of low back pain

There is inconclusive evidence to recommend for or against:
- Medial branch blocks and radiofrequency ablative denervation

**Team Approach to Treatment of Chronic Low Back Pain:**
We suggest:
- For selected patients with chronic LBP not satisfactorily responding to more limited approaches, offering a multidisciplinary or interdisciplinary rehabilitation program which should include at least one physical component and at least one other component of the biopsychosocial model (psychological, social, occupational) used in an explicitly coordinated manner
### Table 1: Dosing for Select Pharmacologic Agents

<table>
<thead>
<tr>
<th>Generic</th>
<th>Starting Dose</th>
<th>Max/Day</th>
<th>Half-life (t½) (hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Muscle Relaxants</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIZANIDINE</td>
<td>2-4 mg TID</td>
<td>36 mg</td>
<td>2.5</td>
</tr>
<tr>
<td>BACLOFEN</td>
<td>5 mg TID</td>
<td>80 mg</td>
<td>~ 3.75</td>
</tr>
<tr>
<td>CYCLOBENZAPRINE(^2)</td>
<td>5 mg TID</td>
<td>30 mg</td>
<td>18</td>
</tr>
<tr>
<td>METAXALONE(^2)</td>
<td>800 mg TID</td>
<td>3,200 mg</td>
<td>~ 9</td>
</tr>
<tr>
<td>METHOCARBAMOL(^2)</td>
<td>1.5 gm QID</td>
<td>4.5 gm</td>
<td>1-2</td>
</tr>
<tr>
<td>ORPHENADRINE(^2)</td>
<td>100 mg BID</td>
<td>200 mg</td>
<td>14-16</td>
</tr>
<tr>
<td><strong>Antidepressants</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMITRIPTYLINE(^2)</td>
<td>10-25 mg QHS</td>
<td>150 mg</td>
<td>~ 13-36</td>
</tr>
<tr>
<td>DESPIRAMINE(^2)</td>
<td>10-25 mg QHS</td>
<td>150 mg</td>
<td>15-24</td>
</tr>
<tr>
<td>NORTRIPTYLINE(^2)</td>
<td>10-25 mg QHS</td>
<td>150 mg</td>
<td>14-51</td>
</tr>
<tr>
<td>DULOXETINE(^2)</td>
<td>30 mg QD</td>
<td>60 mg</td>
<td>~ 12</td>
</tr>
<tr>
<td>VENLAFAXINE ER</td>
<td>37.5 mg QD</td>
<td>225 mg</td>
<td>~ 11</td>
</tr>
<tr>
<td><strong>NSAIDs(^3)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KETOROLAC</td>
<td>10 mg q 4-6H</td>
<td>40 mg</td>
<td>~ 5</td>
</tr>
<tr>
<td>KEToprofen</td>
<td>50 mg QID</td>
<td>300 mg</td>
<td>2-4</td>
</tr>
<tr>
<td>INDOMETHACIN</td>
<td>25 mg q 8H</td>
<td>200 mg</td>
<td>2.6-11.2</td>
</tr>
<tr>
<td>NAPROXEN</td>
<td>250 mg BID</td>
<td>1500 mg</td>
<td>12-17</td>
</tr>
<tr>
<td>IBUPROFEN</td>
<td>400 mg q 4-6H</td>
<td>3200 mg</td>
<td>~ 2</td>
</tr>
<tr>
<td>NABUMETONE</td>
<td>1000 mg QD</td>
<td>2000 mg</td>
<td>~ 24</td>
</tr>
<tr>
<td>Piroxicam</td>
<td>20 mg QD</td>
<td>20 mg</td>
<td>50</td>
</tr>
<tr>
<td>Salsalate</td>
<td>1000 mg TID</td>
<td>3000 mg</td>
<td>~ 1</td>
</tr>
<tr>
<td>Sulindac</td>
<td>150mg BID</td>
<td>400 mg</td>
<td>7.8</td>
</tr>
<tr>
<td>DICLOFENAC NA</td>
<td>50-75 mg BID</td>
<td>150-200 mg</td>
<td>~ 2</td>
</tr>
<tr>
<td>Celecoxib</td>
<td>100 mg BID</td>
<td>400 mg</td>
<td>~ 11</td>
</tr>
<tr>
<td>MELoxicam</td>
<td>5–7.5 mg QD</td>
<td>15 mg</td>
<td>~ 15-22</td>
</tr>
<tr>
<td>Etodolac</td>
<td>200 mg q 8H</td>
<td>1000 mg</td>
<td>6.4</td>
</tr>
</tbody>
</table>

Dosing recommendations obtained from the FDA individual product prescribing information.
Listed in order of increased COX-2 Selectivity:

- More COX 1 Selective
- < 5-fold COX-2 Selective
- 5-50 fold COX-2 Selective

1 Consult full prescribing information for individual drugs; dosing and half-life may be altered by patient age, renal and hepatic function, and product formulation; consider reduced dosing and/or frequency in the elderly.

2 Use not recommended in patients > 65 years of age per American Geriatrics Society 2015 Updated Beers Criteria.

3 Avoid chronic use in the elderly, unless other alternatives are not effective and patient can take a gastroprotective agent (proton pump inhibitor or misoprostol).

Abbreviations: BID: twice a day; COX-2: cyclooxygenase-2; gm: gram; hrs: hours; max: maximum; mg: milligram; NSAIDs: nonsteroidal anti-inflammatory drug; q 4-6H: every 4-6 hours; q 8H: every 8 hours; QD: one a day; QID: four times a day; QHS: nightly at bedtime; TID: three times a day
Module A: Initial Evaluation of Low Back Pain

1. Adults with LBP

2. Perform a focused history and physical examination, evaluating:
   - Duration of symptoms
   - Red flags/risk factors for potentially serious conditions
   - Presence and severity of radiculopathy or neurologic deficits
   - Psychosocial risk factors

3. Are any potentially serious conditions strongly suspected? (see Sidebar A)
   - Yes → Perform diagnostic studies to identify cause (see Sidebar A)
   - No → Serious condition identified?
     - Yes → Treat specific cause as indicated
       Consider consultation
     - No → Back pain presenting < 3 months?

4. Has the patient had appropriate therapy?
   - Yes → Go to Module B
   - No → Does the patient choose pharmacologic or non-pharmacologic treatment?

5. Engage the patient in a shared decision making process to develop individualized treatment plan
   - Advise about self-care
   - Discuss noninvasive treatment options:
     - Pharmacologic
     - Non-pharmacologic
   - Arrive at shared decision regarding therapy

6. Patient on therapy?
   - Yes → Go to Module B, Box 16
   - No → Go to Module B, Box 18

7. Continue self-care
   Reassess in primary care as appropriate
### Sidebar A: Diagnostic Work-up

<table>
<thead>
<tr>
<th>Possible causes or conditions</th>
<th>Red flags or risk factors on history or physical examination</th>
<th>Suggested diagnostic imaging</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cancer</strong></td>
<td>History of cancer with new onset of LBP \ Unexplained weight loss \ Failure of LBP to improve after 1 month \ Age &gt; 50 years \ Multiple risk factors present</td>
<td>Lumbosacral plain radiography \ For inconclusive results, advanced imaging such as MRI with contrast* as appropriate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Infection</strong></td>
<td>Fever \ Intravenous drug use \ Recent infection \ Immunosuppression</td>
<td>MRI with contrast* \ ESR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fracture</strong></td>
<td>History of osteoporosis \ Chronic use of corticosteroids \ Older age (≥75 years old) \ Recent trauma \ Younger patients with overuse at risk for stress fracture</td>
<td>Lumbosacral plain radiography \ For inconclusive results, advanced imaging such as MRI*, CT, or SPECT as appropriate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ankylosing spondylitis</strong></td>
<td>Morning stiffness \ Improvement with exercise \ Alternating buttock pain \ Awakening due to low back pain back pain during the second part of the night (early morning awakening) \ Younger age</td>
<td>Anterior-posterior pelvis plain radiography</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Herniated disc</strong></td>
<td>Radicular back pain (e.g., sciatica) \ Lower extremity dysesthesia and/or paraesthesia \ Positive straight-leg-raise test or crossed straight-leg-raise test</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Severe/progressive lower extremity neurologic deficits \ Symptoms present &gt; 1 month</td>
<td>MRI*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spinal stenosis</strong></td>
<td>Radicular back pain (e.g., sciatica) \ Lower extremity dysesthesia and/or paraesthesia \ Neurogenic claudication \ Older age</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Severe/progressive lower extremity neurologic deficits \ Symptoms present &gt; 1 month</td>
<td>MRI*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cauda equina or conus medullaris syndrome</strong></td>
<td>Urinary retention \ Urinary or fecal incontinence \ Saddle anesthesia \ Changes in rectal tone \ Severe/progressive lower extremity neurologic deficits</td>
<td>Emergent MRI† (preferred)</td>
</tr>
</tbody>
</table>

Abbreviations: CT: computed tomography; ESR: electron spin resonance; LBP: low back pain; MRI: magnetic resonance imaging; SPECT: single-photon emission computed tomography

*MRI with contrast, except where contraindicated (e.g., renal insufficiency), otherwise MRI without contrast
†MRI, except where contraindicated, (e.g., patients with pacemakers), otherwise CT or CT myelogram
Module B: Management of Low Back Pain

16  LBP patient not on therapy

17  Initiate therapy (see Sidebar B)

18  Assess response within 4 weeks as appropriate

19  Back pain resolved or improved?  
    Yes 20  Continue self-care  
      Reassess in 1 month
    No

21  Are any potentially serious conditions strongly suspected?  
    Yes 22  Perform diagnostic studies to identify cause  
      (see Sidebar A)
    No 23  Serious condition identified?  
      Yes
      No

25  Are there significant functional deficits?  
    Yes 26  Engage patient in multi-disciplinary rehabilitation or refer to specialist
    No

27  Consider alternative pharmacologic and non-pharmacologic interventions

24  Treat specific cause as indicated  
    Consider consultation
## Sidebar B: Interventions

<table>
<thead>
<tr>
<th>Category</th>
<th>Intervention</th>
<th>Low Back Pain Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Acute &lt; 4 Weeks</td>
</tr>
<tr>
<td><strong>Self-care</strong></td>
<td>Advice to remain active</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Books, handout</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Application of superficial heat</td>
<td>X</td>
</tr>
<tr>
<td><strong>Non-pharmacologic therapy</strong></td>
<td>Spinal manipulation</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Clinician-guided exercise</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Acupuncture</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>CBT and/or mindfulness-based stress reduction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exercise which may include Pilates, tai chi, and/or yoga</td>
<td></td>
</tr>
<tr>
<td><strong>Pharmacologic therapy</strong></td>
<td>NSAIDs</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Non-benzodiazepine skeletal muscle relaxants</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Antidepressants (duloxetine)</td>
<td>X</td>
</tr>
<tr>
<td><strong>Other therapies</strong></td>
<td>Intensive interdisciplinary rehabilitation</td>
<td>X</td>
</tr>
</tbody>
</table>

Abbreviations: CBT: cognitive behavioral therapy; NSAIDs: nonsteroidal anti-inflammatory drugs