VA/DoD Clinical Practice Guideline for the Diagnosis and Treatment of Low Back Pain*

PROVIDER REFERENCE CARDS

Low Back Pain

(Update 2007)

*Developed by the American College of Physicians and the American Pain Society with VA/DoD working group members
Key Recommendations

1. Clinicians should conduct a focused history and physical examination to help place patients with low back pain into one of three broad categories: non-specific low back pain, back pain potentially associated with radiculopathy or spinal stenosis, or back pain associated with another specific spinal cause. The history should include assessment of psychosocial risk factors, which predict risk for chronic disabling back pain.
   (strong recommendation, moderate-quality evidence)

2. Clinicians should not routinely obtain imaging or other diagnostic tests in patients with non-specific low back pain.
   (strong recommendation, moderate-quality evidence)

3. Clinicians should perform diagnostic imaging and testing for patients with low back pain when severe or progressive neurologic deficits are present or when serious underlying conditions are suspected on the basis of history and physical examination.
   (strong recommendation, moderate-quality evidence)

4. Clinicians should evaluate patients with persistent low back pain and signs or symptoms of radiculopathy or spinal stenosis with magnetic resonance imaging (preferred) or computed tomography only if they are potential candidates for surgery or epidural steroid injection (for suspected radiculopathy).
   (strong recommendation, moderate-quality evidence)

5. Clinicians should provide patients with low back pain evidence-based information about their expected course, advise patients to remain active, and provide information about effective self-care options.
   (strong recommendation, moderate-quality evidence)

6. For patients with low back pain, clinicians should consider the use of medications with proven benefits in conjunction with back care information and self care. Clinicians should assess the severity of baseline pain and functional deficits, potential benefits, risks, and relative lack of long-term efficacy and safety data before initiating therapy. (strong recommendation, moderate-quality evidence)
   For most patients, first-line medication options are acetaminophen or NSAIDs (Non Steroidal Anti-Inflammatory Drugs).

7. For patients who do not improve with self-care options, clinicians should consider the addition of non-pharmacologic therapy with proven benefits for low back pain. They are spinal manipulation for acute low back pain; and for chronic or sub-acute low back pain options include: intensive interdisciplinary rehabilitation, exercise therapy, acupuncture, massage therapy, spinal manipulation, yoga, cognitive-behavioral therapy, or progressive relaxation.
   (weak recommendation, moderate-quality evidence)
**DIAGNOSIS AND TREATMENT OF LOW BACK PAIN**

**Initial Evaluation of Low Back Pain**

1. **Adults with LBP**
   - Perform a focused history and physical examination, evaluating:
     - Duration of symptoms
     - Risk factors for potentially serious conditions
     - Symptoms suggesting radiculopathy or spinal stenosis
     - Presence and severity of neurologic deficits
     - Psychosocial risk factors
     (Recommendation 1)

2. **Are any potentially serious conditions strongly suspected?** (see insert) (Recommendation 2)
   - Y
     - Peform diagnostic studies to identify cause (see insert) (Recommendation 3)
   - N

3. **Specific cause identified?**
   - Y
     - Advise about self-care
     - Review indications for reassessment (Recommendation 5)
   - N

4. **Back pain is mild with no substantial functional impairment?**
   - Y
     - Advise about self-care
     - Review indications for reassessment (Recommendation 5)
   - N

5. **Advise about self-care (Recommendation 5)**
   - Discuss noninvasive treatment options:
     - Pharmacologic (Recommendation 6)
     - Nonpharmacologic (Recommendation 7)

6. **Arrive at shared decision regarding therapy trial**
   - Educate patient

7. **Patient accepts risks and benefits of therapy?**
   - Y
     - Treat specific cause as indicated, consider consultation
   - N

8. **Continue self-care**
   - Reasses in 1 month

9. **Possible cause**
   - Key features on history or physical examination
   - Imaging*
   - Additional studies*

   **Cancer**
   - History of cancer with new onset of LBP
   - Explaned weight loss
   - Failure to improve after 1 month
   - Age >50 years
   - MRI
   - Lumbosacral plain radiography
   - ESR

   **Vertebral infection**
   - Fever
   - Intravenous drug use
   - Recent infection
   - MRI
   - ESR and/or CRP

   **Cauda equina syndrome**
   - Urinary retention
   - Motor deficits at multiple levels
   - Fecal incontinence
   - MRI
   - None

   **Vertebral compression fracture**
   - History of osteoporosis
   - Use of corticosteroids
   - Older age
   - Lumbosacral plain radiography
   - None

   **Ankylosing spondylitis**
   - Morning stiffness
   - Improvement with exercise
   - Alternating buttock pain
   - Awaking due to back pain during the second part of the night
   - Younger age
   - MRI
   - Anterior-posterior pelvis plain radiography
   - ESR and/or CRP
   - HLA-B27

   **Severe/progressive neurologic deficits**
   - Progressive motor weakness
   - MRI
   - Consider EMG/NCV

   **Herniated disc**
   - Back pain with leg pain in an L4, L5, or S1 nerve root distribution
   - Positive straight-leg-raise test or crossed straight-leg-raise test
   - None
   - None

   **Symptoms present >1 month**
   - MRI
   - Consider EMG/NCV

   **Spinal stenosis**
   - Radiating leg pain
   - Older age
   - (Pseudoclaudication a weak predictor)
   - None
   - None

   **Symptoms present > 1 month**
   - MRI
   - Consider EMG/NCV

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*Level of evidence for diagnostic evaluation is variable.

**WEB SITES:**
- VA: http://www.healthquality.va.gov
- DoD: https://www.QMO.amedd.army.mil

**CRP** - C-reactive protein
**EMG** - electromyography
**ESR** - erythocyte sedimentation rate
**MRI** - magnetic resonance imaging
**NCV** - nerve conduction velocity

VA/DoD Low Back Pain Clinical Practice Guideline - 2007
DIAGNOSIS AND TREATMENT OF LOW BACK PAIN
Initial Evaluation of Low Back Pain

16 LBP not on therapy

17 Initiate time-limited trial of therapy (see insert)

18 Follow-up within 4 weeks

19 LBP on therapy

20 Assess response to treatment

21 Back pain resolved or improved with no significant functional deficits?

Y: Continue self-care
Reassess in 1 month (Recommendation 5)

N: Signs or symptoms or radiculopathy or spinal stenosis?

Y: Consider diagnostic imaging (MRI) if not already done
Consider referral (Recommendation 4)

N: Significant (concordant) nerve root impingement or spinal stenosis present?

Y: Consider referral for consideration of surgery or other invasive procedures

N: Reassess symptoms and risk factors and reevaluate diagnosis
Consider imaging studies (Recommendations 1, 3, 4)

22

23 Y: Signs or symptoms or radiculopathy or spinal stenosis?

N: Reassess symptoms and risk factors and reevaluate diagnosis
Consider imaging studies (Recommendations 1, 3, 4)

24

25 Y: Significant (concordant) nerve root impingement or spinal stenosis present?

N: Consider alternative pharmacologic and nonpharmacologic interventions (see inset)
(Recommendations 6, 7)
For significant functional deficit, consider more intensive multidisciplinary approach or referral

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Interventions* (Recommendations 5, 6, 7)

<table>
<thead>
<tr>
<th>Low Back Pain</th>
<th>Acute &lt; 4 Weeks</th>
<th>Subacute or Chronic &gt; 4 Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-care</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advise to remain active</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Books, handouts</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Application of superficial heat</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td><strong>Pharmacologic therapy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetaminophen</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>NSAIDs</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Skeletal muscle relaxants</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Antidepressants (TCA)</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Tramadol, opioids</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Nonpharmacologic therapy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spinal manipulation</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Exercise therapy</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Massage</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Acupuncture</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Yoga</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Cognitive-behavioral therapy</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Progressive relaxation</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Intensive interdisciplinary rehabilitation</td>
<td>●</td>
<td></td>
</tr>
</tbody>
</table>

MRI - magnetic resonance imaging
NSAIDs - nonsteroidal anti-inflammatory drugs
TCA - tricyclic antidepressants

*Interventions supported by grade B evidence (at least fair-quality evidence of moderate benefit, or small benefit but no significant harms, costs, or burdens). No intervention was supported by grade A evidence (good-quality evidence of substantial benefit).
### Pharmacotherapy for the Treatment of Low Back Pain

<table>
<thead>
<tr>
<th>DRUG</th>
<th>Usual Single Adult Analgesic Dose (mg)</th>
<th>Dose Interval (hours)</th>
<th>Max Daily Dose (mg)</th>
<th>Half-life (hours)</th>
<th>Contraindications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-Narcotic Analgesics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetaminophen</td>
<td>325-650 500-1000</td>
<td>Q4-6H Q6-8H</td>
<td>4000</td>
<td>2</td>
<td>G6PD deficiency</td>
</tr>
<tr>
<td>Aspirin</td>
<td>325-650 500-1000</td>
<td>Q4-6H</td>
<td>4000</td>
<td>6-12</td>
<td>Factor VII or IX deficiency, tartrazine dye hypersensitivity, asthma</td>
</tr>
<tr>
<td>Ibuprofen (Advil, Nuprin, Motrin, others)</td>
<td>200-800</td>
<td>Q4-6H</td>
<td>3200</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Ketoprofen OTC (Actron, Orudis-KT)</td>
<td>12.5-25</td>
<td>Q4-6H</td>
<td>75</td>
<td>2-4</td>
<td></td>
</tr>
<tr>
<td>Naproxen Na OTC (Aleve, others)</td>
<td>220-440 initial, then 220</td>
<td>Q8-12H</td>
<td>660</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Indomethacin IR (Indocin, others)</td>
<td>25-50</td>
<td>Q6-8H</td>
<td>150</td>
<td>4-5</td>
<td>Active GI bleeding, ulcer disease</td>
</tr>
<tr>
<td>Meloxicam (Mobic)</td>
<td>7.5 initial, then 7.5-15</td>
<td>Q24H</td>
<td>15</td>
<td>15-20</td>
<td></td>
</tr>
<tr>
<td>Naproxen (Naprosyn, others)</td>
<td>500 initial, then 250-500</td>
<td>Q6-8H Q12H</td>
<td>1250 on day 1, then 1000</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Salsalate (Disalcid, others)</td>
<td>1000</td>
<td>Q8-12H</td>
<td>4000</td>
<td>15</td>
<td>GI ulcer or bleeding</td>
</tr>
<tr>
<td>Choline Mg trisalicylate (Trilisate, others)</td>
<td>1000—1500</td>
<td>Q8-12H</td>
<td>3000</td>
<td>9-17</td>
<td>Bleeding disorders, tartrazine dye hypersensitivity, asthma</td>
</tr>
<tr>
<td>Diclofenac IR (Cataflam,) Delayed release (Voltaren) Extended release (Voltaren XR)</td>
<td>50 50-75 100</td>
<td>Q8H Q8-12H Q24H</td>
<td>150 200 200</td>
<td>1-2</td>
<td>Porphyria</td>
</tr>
<tr>
<td>Diflunisal (Dolobid, others)</td>
<td>1000 initial, then 500</td>
<td>Q8-12H</td>
<td>1500</td>
<td>8-12</td>
<td>Active GI bleeding</td>
</tr>
<tr>
<td>Etodolac (Lodine, others) Extended release (Lodine XL)</td>
<td>200-400 400-1000</td>
<td>Q6-8H Q24H</td>
<td>1200 1000</td>
<td>3-11</td>
<td></td>
</tr>
<tr>
<td>Flurbiprofen (Ansaid, others)</td>
<td>50-100</td>
<td>Q6-8H</td>
<td>300</td>
<td>5-7</td>
<td>Dendritic keratitis</td>
</tr>
<tr>
<td>Ketoprofen (Orudis, others) Extended release (Oruvail, others)</td>
<td>25-75 200</td>
<td>Q6-8H Q24H</td>
<td>300</td>
<td>2-4</td>
<td></td>
</tr>
</tbody>
</table>
Pharmacotherapy for the Treatment of Low Back Pain

Other NSAIDs

<table>
<thead>
<tr>
<th>DRUG</th>
<th>Usual Single Adult Analgesic Dose (mg)</th>
<th>Dose Interval (hours)</th>
<th>Max Daily Dose (mg)</th>
<th>Half-life (hours)</th>
<th>Contraindications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ketorolac (Toradol) PO**</td>
<td>10</td>
<td>Q4-6H</td>
<td>40</td>
<td>4-7</td>
<td>**</td>
</tr>
<tr>
<td>Ketorolac (Toradol) IM/IV**</td>
<td>Pts&lt;65yrs: 30 Pts&gt;65yrs: 15</td>
<td>Q6H Q6H</td>
<td>120</td>
<td>4-7</td>
<td>**</td>
</tr>
<tr>
<td>Indomethacin sustained release</td>
<td>75</td>
<td>Q12H</td>
<td>150</td>
<td>4-5</td>
<td>Active GI bleeding, ulcer disease</td>
</tr>
<tr>
<td>Nabumetone (Relafen)</td>
<td>1000</td>
<td>Q12-24H</td>
<td>2000</td>
<td>24</td>
<td>Active peptic ulceration; severe hepatic impairment</td>
</tr>
<tr>
<td>Naproxen NA (Anaprox, others)</td>
<td>550 initial then 275 or 550 750-1000</td>
<td>Q6-8H Q12H Q24H</td>
<td>1375 on day 1, then 1100 ER: 1000</td>
<td>13</td>
<td>3rd trimester pregnancy; history of GI disease; renal or hepatic dysfunction; bleeding disorder; cardiac failure; elderly; debilitated; breastfeeding</td>
</tr>
<tr>
<td>Oxaprozin (Daypro)</td>
<td>1200</td>
<td>Q24H</td>
<td>1800</td>
<td>24</td>
<td>Active GI bleeding</td>
</tr>
<tr>
<td>Piroxicam (Feldene, others)</td>
<td>20</td>
<td>Q24H</td>
<td>20</td>
<td>50</td>
<td>Active GI bleeding</td>
</tr>
<tr>
<td>Sulindac (Clinoril, others)</td>
<td>150-200</td>
<td>Q12H</td>
<td>400</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Tolmentin (Tolectin, others)</td>
<td>200-600</td>
<td>Q6-8H</td>
<td>1800</td>
<td>1-2</td>
<td></td>
</tr>
</tbody>
</table>

● NSAID products with minimal usage in DoD omitted (fenoprofen, mefanamic acid, meclofenamate)

**Combined duration (injectable and oral) should not exceed 5 days; initial IM dose of 60mg (<65yrs) or 30mg (>65yrs) may be given

***Contraindications: Patients who have developed nasal polyps, angioedema or bronchospastic reactions to other NSAIDs; active or history of peptic ulcer disease; recent or history of GI bleeding or perforation; patients with advanced renal disease or risk of renal failure; labor and delivery; breastfeeding; prophylaxis before major surgery; suspected or confirmed cerebrovascular bleeding; hemorrhagic diathesis; concurrent ASA or other NSAIDs; epidural or intrathecal administration; concomitant probenecid.
# Commonly Prescribed Muscle Relaxants

<table>
<thead>
<tr>
<th>DRUG</th>
<th>Usual Oral Adult Dosage</th>
<th>Contraindications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclobenzaprine (Flexeril, others)</td>
<td>10mg TID; not to exceed 60mg/day</td>
<td>Cardiac disease, hyperthyroidism, concomitant treatment with MAO inhibitors or within 14 days of discontinuation</td>
</tr>
<tr>
<td>Methocarbamol (Robaxin, others)</td>
<td>Initial 1500mg QID; Maintenance: 1000 QID or 1500 TID</td>
<td>Renal impairment</td>
</tr>
<tr>
<td>Carisoprodol (Soma, others)</td>
<td>350mg TID &amp; HS</td>
<td>Acute intermittent porphyria</td>
</tr>
<tr>
<td>Chlorzoxazone (Parafon Forte, others)</td>
<td>500-750mg TID-QID</td>
<td>Impaired liver function</td>
</tr>
<tr>
<td>Diazepam (Valium, others)</td>
<td>2-10mg TID-QID</td>
<td>Comatose patient; pre-existing CNS depression; respiratory depression; arrow-angle glaucoma; severe uncontrolled pain; pregnancy</td>
</tr>
<tr>
<td>Orphenadrine (Norflex, others)</td>
<td>100mg BID</td>
<td>Glaucoma; pyloric or duodenal obstruction; stenosing peptic ulcers; prostatic hypertrophy; bladder neck obstruction; cardiospasm (megaesophagus), myasthenia gravis</td>
</tr>
<tr>
<td>Metaxalone (Skelaxin)</td>
<td>800mg TID-QID</td>
<td>Known tendency to drug-induced hemolytic or other anemias; significantly impaired renal or hepatic function</td>
</tr>
<tr>
<td>Tizanidine (Zanaflex)</td>
<td>4mg initial; then 2-4mg TID; max 36mg/day</td>
<td></td>
</tr>
<tr>
<td>Tramadol (Ultram, others)</td>
<td>50-100mg Q4-6H; max 400mg/day</td>
<td>Opioid dependant patients; acute intoxication with alcohol, hypnotics, centrally-acting analgesics, opioids, or psychotropic agents</td>
</tr>
</tbody>
</table>

## Narcotic Analgesics

<table>
<thead>
<tr>
<th>Narcotic Analgesics</th>
<th>Usual Oral Adult Dosage</th>
<th>Contraindications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine sulfate extended release (MS Contin, others)</td>
<td>Titrate to patient effect</td>
<td>Increased intracranial pressure; severe respiratory depression</td>
</tr>
<tr>
<td>Morphine sulfate immediate release</td>
<td>Titrate to patient effect</td>
<td>Increased intracranial pressure; severe respiratory depression</td>
</tr>
<tr>
<td>Oxycodone/APAP 5mg/325mg (Percocet, others)</td>
<td>1-2 tabs Q4-6H; max 4000mg APAP/day</td>
<td>Severe respiratory depression</td>
</tr>
<tr>
<td>Hydrocodone/APAP 5mg/5mg (Vicodin, others)</td>
<td>1-2 tabs Q4-6H; max 4000mg APAP/day</td>
<td>CNS depression; severe respiratory depression</td>
</tr>
<tr>
<td>Codeine/APAP 30mg/300mg (Tylenol #3, Elixir 12mg/120mg/ 5ml, others)</td>
<td>1-2 tabs Q4-6H; max 4000mg APAP/day</td>
<td></td>
</tr>
</tbody>
</table>
### Tricyclic Antidepressants

<table>
<thead>
<tr>
<th>DRUG **</th>
<th>Contraindications</th>
</tr>
</thead>
</table>
| Amitriptyline (Elavil, others) | During or within 14 days of MAOIs  
Acute post MI  
Coadministration with cisapride; may cause QT interval prolongation and increase the risk of arrhythmia |
| Desipramine (Norpramin) | During or within 14 days of MAOIs  
Acute post MI  
Hypersensitivity to dibenzazepines; risk of cross-sensitivity reactions |
| Doxepin (Sinequan, others) | During or within 14 days of MAOIs  
Acute post MI  
Urinary retention. Glaucoma  
Hypersensitivity to dibenzazepines; risk of cross-sensitivity reactions |
| Imipramine (Tofranil) | During or within 14 days of MAOIs  
Acute post MI  
Hypersensitivity to dibenzazepines; risk of cross-sensitivity reactions |
| Nortriptyline (Pamelor, others) | During or within 14 days of MAOIs  
Acute post MI  
Hypersensitivity to dibenzazepines; risk of cross-sensitivity reactions |

**Use in low back pain is off-label**

All TCAs have a black box warning: Increased risk of suicidal thinking and behavior in children, adolescents, and young adults in short-term studies with major depressive disorder (MDD) and other psychiatric disorders.