Learn the latest treatment strategies and multidisciplinary management options for patients with acute and chronic pain.
Low Back Pain: A Practical Approach

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Pain Medicine For The Non-Pain Specialist
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Disclosure Statement

• Nothing to disclose
Learning Objectives

After completion of this activity the participants will be able to:

• Identify common sources of low back pain.
• Identify “red flag” sources low back pain.
• Identify a general clinical framework in the assessment and conservative treatment for low back pain.
Low Back Pain is a common problem

- Today, back pain is the third largest reason patients seek medical attention\(^1\) (1. Skin Disorders 2. Osteoarthritis/Joint Problems)

- Sg2 (www.sg2.com), a national healthcare consulting firm, confirms that 80% of the US adult population will experience back pain at some point in their lifetimes and that it’s the third most expensive health problem

- Lack of consensus in the medical community for evidence based care pathways

Low Back Pain comes in different flavors

Axial | Spinal Stenosis | Limb
---|---|---
Discogenic | Sacroiliac | Radiculopathy
Bone | Facet | Myofascial

Cauda Equina Syndrome

RED FLAGS: CANCER, INFECTION, CERVICAL MYELOPATHY, FRACTURE, AUTOIMMUNE DZ, RADICULOPATHY
Axial Low Back Pain

- Myofascial
- Facet
- Sacroiliac
- Discogenic
- Bone pain
- Cauda Equina Syndrome
- Spinal Stenosis

An accurate diagnosis can be difficult

Diagnosis → Treatment → Preserved Functioning + Reduced Pain
Axial Low Back Pain
Which of these causes of low back pain have evidence based treatments available?

- Myofascial
- Facet
- Sacroiliac
- Discogenic
- Bone pain
- Cauda Equina Syndrome
- Spinal Stenosis
Limb Pain

- Radiculopathy
- Cauda Equina Syndrome
- Spinal Stenosis

An accurate diagnosis can be difficult

Preserved Functioning + Reduced Pain
Limb Pain
Which of these causes of low back pain have evidence based treatments available?

- Radiculopathy
- Cauda Equina Syndrome
- Spinal Stenosis
Back pain is complicated

Many Low Back Pain Treatment Guidelines refer to axial low back pain as “non-specific mechanical low back pain”

Table 2. *Patient Characteristic by Source of Chronic Low Back Pain*

<table>
<thead>
<tr>
<th></th>
<th>Overall</th>
<th>IDD</th>
<th>FJA</th>
<th>SIJ</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female, count (percent)</td>
<td>103 (65.6)</td>
<td>38 (55.9)</td>
<td>34 (69.4)</td>
<td>25 (89.3)</td>
<td>6 (50.0)</td>
</tr>
<tr>
<td>Duration (months), median (IQR)</td>
<td>12 (6 to 36)</td>
<td>12 (6 to 33)</td>
<td>17 (7 to 36)</td>
<td>12 (3 to 60)</td>
<td>10.5 (2 to 33)</td>
</tr>
<tr>
<td>Age (years) mean (SD)</td>
<td>54.1 (16.1)</td>
<td>43.7 (10.4)</td>
<td>59.8 (12.8)</td>
<td>62.3 (17.5)</td>
<td>70.8 (16.4)</td>
</tr>
<tr>
<td>Hip/Girdle Pain, count (percent)</td>
<td>70 (44.5)</td>
<td>29 (42.6)</td>
<td>25 (51.0)</td>
<td>14 (50.0)</td>
<td>2 (16.7)</td>
</tr>
<tr>
<td>Leg Pain, count (percent)</td>
<td>35 (21.38)</td>
<td>15 (22.6)</td>
<td>13 (27.1)</td>
<td>6 (21.4)</td>
<td>1 (8.3)</td>
</tr>
<tr>
<td>Thigh Pain, count (percent)</td>
<td>68 (43.9)</td>
<td>36 (53.9)</td>
<td>21 (42.9)</td>
<td>11 (39.3)</td>
<td>0 (0.0)</td>
</tr>
</tbody>
</table>


Image taken from Hall JA. The role of radiofrequency facet denervation in chronic low back pain. Jacksonville Medicine, Duval County Medical Society. October 1998.
Low Back Pain Red Flags

- **Cancer**
  - Persistent/worsening pain > 1 month
  - Unexplained weight loss
  - Previous history of non-skin cancer (positive likelihood ratio 14.7)
  - Age > 50 years
  - No relief with bedrest

- **Infection**
  - History of IV drug use, urinary tract infection or skin infection

- **Cauda Equina Syndrome**
  - Urinary retention

- **Fracture**
  - Corticosteroid use
  - Age > 50 years
  - Trauma

- **Ankylosing Spondylitis**
  - Age < 40 years
  - Chronic onset, duration > 3 months
  - Morning stiffness > 30 minutes
  - Improvement with exercise but not rest
  - Awakening during second half of night only
  - Alternating buttock pain

- **Herniated Disc or Radiculopathy**
  - Positive straight leg test and crossed straight leg test
  - Motor/sensory deficit, DTR changes

- **Spinal Stenosis**
  - Radiating leg pain
  - Changing symptoms with downhill treadmill test
  - Age > 65 years

Health Care Guideline:
Adult Acute and Subacute Low Back Pain

Core Treatment Plan
- Reassure
- Educate
- Consider acetaminophen and NSAID medications
- Rare use of opioids may be considered
- Heat
- Encourage activity, bed rest is not recommended
- Address fear-avoidance beliefs (fear of activity)
- Return-to-work assessment
- No imaging

Reassure and Educate

• Reassure
  • The prognosis is excellent for acute low back pain. Most patients will get better within two weeks, and most experience a dramatic improvement within 1 month (Hayden, 2010; Kent, 2005; Atlas, 2001).
  • About 2/3 of patients with acute low back pain will have another episode within the next year. Unless the presentation is dramatically different from the first episode or the patient has a new medical condition, recovery should be similar for each episode (Hestbaek, 2003; Pengel, 2003).

• Educate
  • Remain active
  • Normal light activity is the key to recovery, and the key to long term management of low back pain

Facet Joint Pain

• Pearls
  • More likely with increased age

• Physical Examination
  • Lumbar extension and rotation
  • Neuro WNL

• Testing
  • Lumbar x-ray if pain > 6 wks or if red flags (+)

• Treatment
  • Core treatment plan*
  • PT: DLS, core strengthening
  • Radiofrequency ablation

*Core Treatment Plan
- Reassure
- Educate
- Consider acetaminophen and NSAID medications
- Rare use of opioids may be considered
- Heat
- Encourage activity, bed rest is not recommended
- Address fear-avoidance beliefs (fear of activity)
- Return-to-work assessment
- No imaging

Sacroiliac Joint Pain

**Pearls**
- May be associated with HLA-B27 syndromes
- Ask about morning stiffness, nocturnal pain

**Physical Examination**
- FABER (flexion abduction external rotation of ipsi hip)
- Neuro WNL

**Testing**
- Lumbar/pelvic xray if pain > 6 wks or if red flags (+)

**Treatment**
- Core treatment plan*
- PT: DLS, core strengthening, pelvis stretch/mobilization
- Cooled Radiofrequency ablation

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*Core Treatment Plan*
- Reassure
- Educate
- Consider acetaminophen and NSAID medications
- Rare use of opioids may be considered
- Heat
- Encourage activity, bed rest is not recommended
- Address fear-avoidance beliefs (fear of activity)
- Return-to-work assessment
- No imaging

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Myofascial Low Back Pain

• Pearls
  • May have spasms or “knots” in tissue

• Physical Examination
  • Pain distribution is along muscle/trigger point patterns*
  • Neuro WNL

• Testing
  • Lumbar xray if pain > 6 wks or if red flags (+)

• Treatment
  • Core treatment plan*
  • PT: DLS, core strengthening
  • Trigger point injections

*Core Treatment Plan
• Reassure
• Educate
• Consider acetaminophen and NSAID medications
• Rare use of opioids may be considered
• Heat
• Encourage activity, bed rest is not recommended
• Address fear-avoidance beliefs (fear of activity)
• Return-to-work assessment
• No imaging

Discogenic Low Back Pain

• Pearls
  • More likely with younger patients

• Physical Examination
  • Patients may stand during office visit
  • Pain reproduced with axial loading, lumbar flexion
  • Neuro WNL

• Testing
  • Lumbar xray/MRI if pain > 6 wks or if red flags (+)

• Treatment
  • Core treatment plan*
  • PT: DLS, core strengthening
  • Epidural steroid injections, provocative discography
  • Spine surgery

Bone Pain

- Pearls
  - More likely with osteoporosis, malignancy, steroid exposure, elderly

- Physical Examination
  - Focal pain over spine
  - Any movement of spine is severely painful
  - Spasms may be significant
  - Neuro WNL

- Testing
  - Lumbar x-ray if pain > 6 wks or if red flags (+)

- Treatment
  - Core treatment plan*
    - PT: DLS, core strengthening, bracing
    - Percutaneous Vertebral Augmentation (i.e. vertebroplasty, kyphoplasty)

Radiculopathy

• Pearls
  • Neuropathic descriptors: burning, tingly, electric shock

• Physical Examination
  • Neuro may reveal changed motor/sensory/DTR to L4, L5, or S1 spinal segments, (+) SLR

• Core Treatment Plan
  • Reassure
  • Educate
  • Consider acetaminophen and NSAID medications
  • Rare use of opioids may be considered
  • Heat
  • Encourage activity, bed rest is not recommended
  • Address fear-avoidance beliefs (fear of activity)
  • Return-to-work assessment
  • No imaging

• Testing
  • Lumbar MRI if pain > 6 wks or if red flags (+)

• Treatment
  • Core treatment plan*
  • PT: DLS, core strengthening; strength maintenance in affected region
  • Epidural steroid injection
  • Spine surgery

Cauda Equina Syndrome

• Pearls
  • May report saddle distribution numbness, loss of control of bowel/bladder function

• Physical Examination
  • Neuro: perineal sensory deficit, loss of anal sphincter tone, may have weakness/numbness of legs

• Testing
  • Emergent MRI

• Treatment
  • Emergent consultation from Spine Surgeon

Lumbar Spinal Stenosis

• Pearls
  • Intolerance to standing, walking; + shopping cart sign
  • May involve axial limb pain distributions
  • Due to facet joint arthritis, bulging discs, thickened ligamentum flavum – all are potential sources of pain in their own right

• Physical Examination
  • Neuro exam may be normal; little pain while sitting or with lumbar flexion

• Testing
  • Lumbar MRI if pain > 6 wks or if red flags (+)

• Treatment
  • Core treatment plan*
  • PT: DLS, core strengthening; strength maintenance in affected region
  • Epidural steroid injection
  • Spine surgery
  • ?MILD

Diagnosis and Treatment of Low Back Pain: A Joint Clinical Practice Guideline from the American College of Physicians and the American Pain Society

Roger Chou, MD; Amir Qaseem, MD, PhD, MHA; Vincenza Snow, MD; Donald Casey, MD, MPH, MBA; J. Thomas Cross Jr., MD, MPH; Paul Shekelle, MD, PhD; and Douglas K. Owens, MD, MS, for the Clinical Efficacy Assessment Subcommittee of the American College of Physicians and the American College of Physicians/American Pain Society Low Back Pain Guidelines Panel

Recommendation 1: Clinicians should conduct a focused history and physical examination to help place patients with low back pain into 1 of 3 broad categories: nonspecific low back pain, back pain potentially associated with radiculopathy or spinal stenosis, or back pain potentially 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).

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

Recommendation 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).

Recommendation 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).

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

Recommendation 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 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 nonsteroidal anti-inflammatory drugs.

Recommendation 7: For patients who do not improve with self-care options, clinicians should consider the addition of nonpharmacologic therapy with proven benefits—for acute low back pain, spinal manipulation; for chronic or subacute low back pain, intensive interdisciplinary rehabilitation, exercise therapy, acupuncture, massage therapy, spinal manipulation, yoga, cognitive-behavioral therapy, or progressive relaxation (weak recommendation, moderate-quality evidence).

For author affiliations, see end of text.
Summary: Low Back Pain

Axial  Spinal Stenosis  Limb
Discogenic  Sacroiliac  Radiculopathy
Bone  Facet  Myofascial  Cauda Equina Syndrome

RED FLAGS: CANCER, INFECTION, CERVICAL MYELOPATHY, FRACTURE, AUTOIMMUNE DZ, RADICULOPATHY
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Questions & Discussion