

A Guide to Management of

2025 Update

Non-traumatic Low Back Pain in Adults

Low back pain (LBP) is the leading cause of disability and ranks among the most costly health conditions in the United States. Despite its prevalence, the overuse of low-value imaging and treatment strategies contributes to unnecessary healthcare spending, increased risk of chronic pain development, and poor patient outcomes.^{1,2}

The Neurosciences Clinical Program created this Care Process Model in collaboration with leaders from Emergency Medicine, Primary Care, Physical Medicine and Rehabilitation, Spine Surgery, Pain Management, Physical Therapy and others. It outlines evidence-based best practice to guide providers in effective management of low back pain in order to improve patient outcomes, reduce unnecessary treatment, and minimize avoidable costs.

This guideline applies to the following patient populations:

- Low / lumbar back pain (not cervical or thoracic) with or without radicular pain
- Non-traumatic LBP
- Acute episode of LBP, or acute flare of chronic LBP

Basic Principles of LBP management

- Evaluate for dangerous causes of low back pain that may require additional workup and/or urgent intervention by screening for red flags (see [pg 2](#)).
- For uncomplicated LBP patients (those with no red flags):
 - Avoid imaging.
 - Prioritize non-pharmacologic interventions, including activity-based care.
 - Avoid bed rest.
 - Avoid potentially harmful medications that provide little benefit.
 - Screen for psychosocial factors that may increase a patient's risk of developing chronic low back pain (see yellow flags, [pg 2](#)).
 - Engage patient in shared decision-making to develop an activity-based care plan that best supports their individual needs and preferences.

What's inside?

LBP Management Algorithm.....	2
Patient Education, Activity-based Care, and Medication.....	3
Specialty-based Care.....	4
References	5

Measurements

- Percentage of uncomplicated LBP patient's with no imaging
- Percentage of uncomplicated LBP patients not prescribed benzodiazepines, opioids, gabapentinoids, or steroids



Low Back Pain Management

Patient presents with complaint of low back pain (LBP)*

*This guideline applies only to

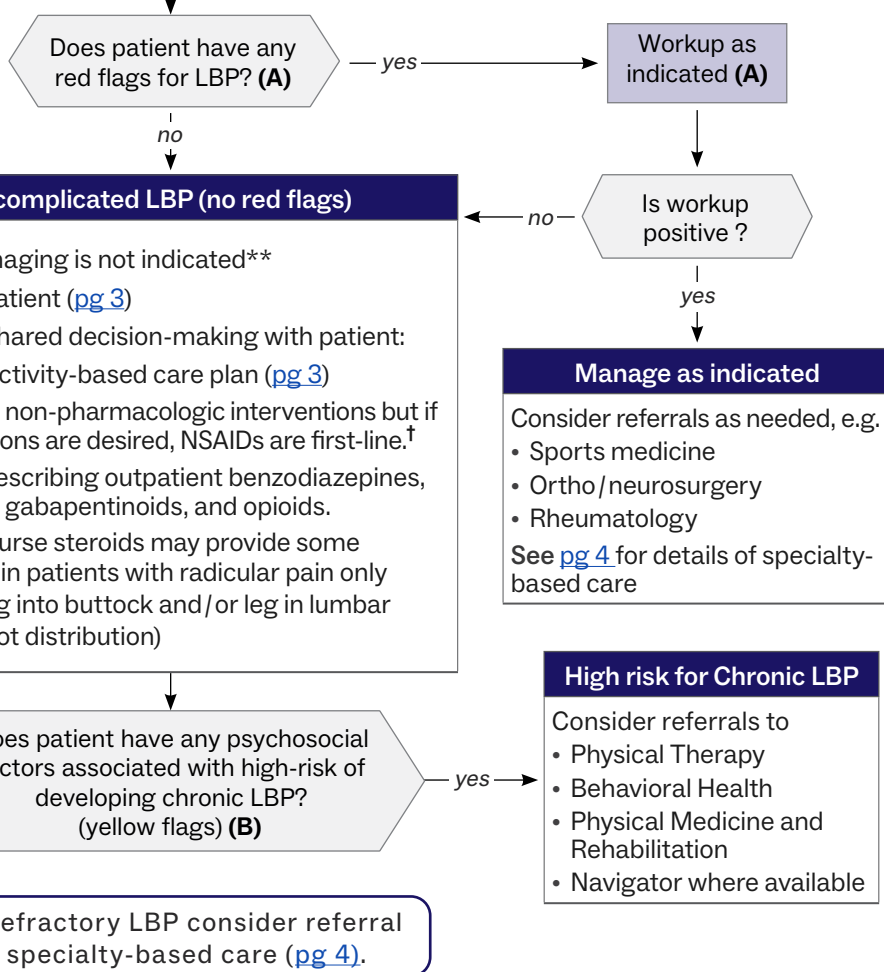
- Low/lumbar back pain (not cervical or thoracic), with or without radicular pain
- Non-traumatic LBP
- Acute episode of LBP, or acute flare of chronic LBP

**If history of prior lumbar fusion with new pain (not red flag)

- XR lateral flexion and extension to assess hardware
- Consider CT to assess fusion

† For acute management of LBP in the ED, consider a 1 time dose of:

- First-line: Oral NSAIDs; ketorolac; topical lidocaine
- Second-line (potential side-effects): muscle relaxants; corticosteroids
- Only for severe disabling pain: opioids



(A) Red Flags	
Screen For	Work-up
Trauma (fracture)	CT or X-ray
Osteoporosis	X-ray, CT, or MRI without contrast
Weakness (nerve impingement). "Are you unable to move your leg in a way that is new?" or weakness on neuro exam	MRI without contrast
New bowel or bladder incontinence or retention with other focal neurological deficits (cauda equina syndrome). If isolated bowel/bladder dysfunction, consider other etiologies	
Unexplained weight-loss, night pain, pain with rest, or history of cancer (malignancy)	Erythrocyte Sedimentation Rate (ESR)
Fever or infection, IV drug use, immunosuppression or corticosteroid use, alcohol abuse (epidural abscess)	C-reactive protein (CRP) MRI with and without contrast

(B) Yellow Flags (High-risk for chronic LBP)	
Topic	Characteristics
Pain history	<ul style="list-style-type: none"> • Chronic pain • Multi-site pain • Severe pain, distress, or disability without red flags
Work	<ul style="list-style-type: none"> • Heavy work • Workers comp. claims • Time-off work • Job dissatisfaction
Behavioral health history	<ul style="list-style-type: none"> • Low or negative moods • Substance use disorder • Social withdrawal • Worry, fear, or anxiety
Socioeconomic factors	<ul style="list-style-type: none"> • Overprotective family • Lack of support
Unhelpful beliefs about pain	<ul style="list-style-type: none"> • Belief that injury is uncontrollable or will worsen • Belief that pain and activity are harmful • Expectation of poor treatment outcome, delay in return to work or activity
Pain behavior	<ul style="list-style-type: none"> • Avoiding activities due to expectation of pain or possible injury • Over-reliance on passive treatments (cold/hot packs, analgesics) • Extended rest

Patient Education

- Give patient handout [Low Back Pain \(English\)](#)/[\(Spanish\)](#)
- Discuss back pain management with patient, emphasize the points below:
 - **Normalize their experience:** “Lower back pain is very common and the good news is that most people start to feel better without needing tests or medicine.”
 - **Clearly explain:** “We looked at your symptoms, history, and results (if testing done), and didn’t find any signs that your back pain is caused by something dangerous. The good news is that you don’t need more testing.”
 - **Communicate risks of unnecessary testing:** “Research shows that extra testing can lead to treatments that are not helpful and sometimes cause more problems. We avoid extra tests unless they are needed.”
 - **Use shared decision making to develop a clear plan of action.** (See details in Activity-Based Care). “Most people with back pain feel better by staying active. Let’s build a plan that helps you move safely and feel stronger.”
 - **Discuss other interventions:** “In addition to staying active, many people find relief from other approaches like using heat, trying acupuncture, massage, chiropractor, or mindfulness and stress reduction techniques.”
 - **Educate patient on warning signs:** “Contact us or come back right away if you notice any of the following:”
 - New weakness in legs or difficulty walking or changing positions.
 - New sensory loss that persists or nerve pain that is radiating into the groin or leg that doesn’t improve.
 - Decreased or painful sensation in groin, genital, or rectal area (saddle paresthesia).

Activity-Based Care

Staying active

- Avoid bed rest.
- Continue usual activity and/or regular home exercise routine like walking or stretching.
- General exercise is unlikely to make back pain worse, avoid the specific movements that may exacerbate pain.

Physical Therapy (PT)

- PT should be pursued prior to specialist referral if no red flags are present.
- PT prevents future issues through education, spinal manipulation, and strengthening exercises.
- Patients may benefit from PT if they have:
 - Functional impairments
 - Tailored exercise needs
 - Recurrent back pain
 - High risk for developing chronic back pain (positive yellow flags)
- Consider in-person, virtual, or hybrid care depending on patient’s needs and preferences

Physical Activities

While the evidence remains inconclusive, the activities below may offer benefits for certain patients and are associated with minimal side effects.

- Yoga
 - Tai Chi
- Pilates
 - Utilization of pool for walking or swimming
- Mild intensity walking

Medications

- Prioritize non-pharmacologic interventions but for some patients, medications may be desired.
- Avoid prescribing opioids, benzodiazepines, gabapentinoids, and corticosteroids when possible.

Setting	First Line	Second Line
Outpatient	<ul style="list-style-type: none">• NSAIDs: (e.g ibuprofen, naproxen). Duration 2–4 weeks	<ul style="list-style-type: none">• Muscle relaxants: (e.g tizanidine, cyclobenzaprine, baclofen). Evidence supports use for only two weeks for non-radicular low back pain with myofascial origin. Sedating side effects may affect activities such as driving and work and may increase the risk of falls.• Corticosteroids: Consider corticosteroids for radicular pain.
ED (one-time dose)	<ul style="list-style-type: none">• NSAIDs, ketorolac, topical lidocaine	<ul style="list-style-type: none">• Muscle relaxants, corticosteroids• Opioids for severe disabling pain only

Low Back Pain Specialty-based Care

Specialty-based Care		
Specialty	Description	When to Refer and other Notes
Physical Medicine and Rehabilitation	<ul style="list-style-type: none"> Act as a “quarterback” for complex back pain management, helping to navigate the appropriate next steps, whether it be further specialized PT, interventional procedures, or referrals to other specialists 	<p>Consider referral to PM&R when pain or loss of function persists despite appropriate conservative measures, including PT</p> <p>Notes: Some PM&R providers perform interventional procedures, some do not</p>
Pain Management Services	<p>Offers an interdisciplinary approach including:</p> <ul style="list-style-type: none"> pain-focused behavioral health physical therapy interventional procedures medication clinical pharmacy support nutrition counseling 	<p>Consider referral to pain management if:</p> <ul style="list-style-type: none"> conservative treatments including physical therapy are ineffective pain persists longer than 2-4 weeks PT is working and care is needed to address medications like opioids, benzodiazepines, gabapentinoids or other medications that a pain provider can help safely reduce, taper, or wean <p>Note: Interventional procedures are always completed only after conservative care has been trialed and optimized, aiming to improve movement, function, and activities of daily living, not just pain relief</p>
Sports Medicine	<p>Non-surgical interventions, including:</p> <ul style="list-style-type: none"> rehab optimization targeted interventions (e.g., trigger point injections, exercise prescription). ultrasound guided injections (non-axial spine) functional movement evaluations return-to-sport planning gait retraining programs 	<p>Consider referral to sports medicine if patient has:</p> <ul style="list-style-type: none"> activity-related injuries unclear sports-related diagnosis return to play/activity questions
Ortho/ Neurosurgery	<ul style="list-style-type: none"> Surgical intervention 	<p>Urgent Consultation</p> <ul style="list-style-type: none"> Positive red flags Acute onset isolated weakness
		<p>Evaluation within a week</p> <ul style="list-style-type: none"> New weakness developing gradually Myelopathic exam findings: up-going Babinski, hyperreflexia
		<p>Non-urgent consultation</p> <ul style="list-style-type: none"> Intractable pain that impacts quality of life and is not responsive to PT, injections, or NSAIDs
Behavioral Health/Cognitive Behavioral Therapy	<ul style="list-style-type: none"> Cognitive behavioral therapy Mindfulness-based stress reduction Collaboration with PT/Pain specialists for integrated care 	<p>Consider behavioral/cognitive therapy as adjunct to medical management for patients with:</p> <ul style="list-style-type: none"> chronic back pain >12 months psychosocial factors that increase risk of developing chronic back pain (positive yellow flag screen)
Rheumatology	<ul style="list-style-type: none"> Diagnosis and treatment of autoimmune disorders presenting with low back pain such as ankylosing spondylitis or psoriatic arthritis 	<p>Consider referral to rheumatology if patient has:</p> <ul style="list-style-type: none"> atraumatic, inflammatory low back pain (back pain which is worse with rest and improves with activity and morning stiffness > 30 minutes) occurring in an individual <35 years old, or with coexisting psoriasis or inflammatory bowel disease back pain occurring in the setting of coexisting synovitis (joint swelling) in other joints or enthesitis (tendon inflammation, Achilles tendinitis, plantar fasciitis, or epicondylitis)
If referring to Rheumatology consider:	<p>1. Starting following workup:</p> <ul style="list-style-type: none"> Sacroiliac joints X-rays (Ferguson view) Human leukocyte antigen B27 (HLA-B27) Cyclic citrullinated peptide (CCP) Rheumatoid Factor (RF) Erythrocyte Sedimentation Rate (ESR) C-reactive protein (CRP) 	<p>2. Placing patient on a high dose of NSAIDs (if not contraindicated), some examples are:</p> <ul style="list-style-type: none"> Meloxicam 15 mg daily Diclofenac 75mg BID Celecoxib 200 mg daily Ibuprofen 600mg TID Naproxen 500 mg BID

References

1. George SZ, Goertz C, Hastings SN, Fritz JM. Transforming low back pain care delivery in the United States. *Pain*. 2020;161(12):2667-2673. doi:10.1097/j.pain.0000000000001989
2. Dieleman JL, Beauchamp M, Crosby SW, et al. Tracking US Health Care Spending by Health Condition and County. *JAMA*. 2025;333(12):1051-1061. doi:10.1001/jama.2024.26790
3. Stochkendahl MJ, Kjaer P, Hartvigsen J, et al. National Clinical Guidelines for non-surgical treatment of patients with recent onset low back pain or lumbar radiculopathy. *Eur Spine J*. 2018;27(1):60-75. doi:10.1007/s00586-017-5099-2
4. VA/DoD Clinical Practice Guideline: The diagnosis and management of low back pain. Washington, DC, US Government printing office, 2022 Available at <https://www.healthquality.va.gov/guidelines/Pain/lbp/VADoDLBPCPGFinal508.pdf> Accessed 11/01/2025
5. Qaseem A, Wilt TJ, McLean RM, et al. Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians. *Ann Intern Med*. 2017;166(7):514-530. doi:10.7326/M16-2367
6. Stevans JM, Delitto A, Khoja SS, et al. Risk Factors Associated With Transition From Acute to Chronic Low Back Pain in US Patients Seeking Primary Care. *JAMA Netw Open*. 2021;4(2):e2037371. Published 2021 Feb 1. doi:10.1001/jamanetworkopen.2020.37371
7. Buchbinder R, van Tulder M, Öberg B, et al. Low back pain: a call for action. *Lancet*. 2018;391(10137):2384-2388. doi:10.1016/S0140-6736(18)30488-4
8. Washington Health Alliance. Avoiding low-value, ineffective care for acute low back pain. Low Back Pain Implementation Collaborative, 2022. Available at : https://wahealthalliance.org/wp-content/uploads/2023/08/WHA_LBPIC_PolicyBrief.pdf Accessed 11/03/25
9. Nicholas MK, Linton SJ, Watson PJ, Main CJ; "Decade of the Flags" Working Group. Early identification and management of psychological risk factors ("yellow flags") in patients with low back pain: a reappraisal. *Phys Ther*. 2011;91(5):737-753. doi:10.2522/ptj.20100224
10. Chou R, Pinto RZ, Fu R, et al. Systemic corticosteroids for radicular and non-radicular low back pain. *Cochrane Database Syst Rev*. 2022;10(10):CD012450. Published 2022 Oct 21. doi:10.1002/14651858.CD012450.pub2
11. Expert Panel on Neurological Imaging, Hutchins TA, Peckham M, et al. ACR Appropriateness Criteria® Low Back Pain: 2021 Update. *J Am Coll Radiol*. 2021;18(11S):S361-S379. doi:10.1016/j.jacr.2021.08.002
12. Strudwick K, McPhee M, Bell A, Martin-Khan M, Russell T. Review article: Best practice management of low back pain in the emergency department (part 1 of the musculoskeletal injuries rapid review series). *Emerg Med Australas*. 2018;30(1):18-35. doi:10.1111/1742-6723.12907
13. Oliveira CB, Maher CG, Pinto RZ, et al. Clinical practice guidelines for the management of non-specific low back pain in primary care: an updated overview. *Eur Spine J*. 2018;27(11):2791-2803. doi:10.1007/s00586-018-5673-2
14. Ashbrook J, Rogdakis N, Callaghan MJ, Yeowell G, Goodwin PC. The therapeutic management of back pain with and without sciatica in the emergency department: a systematic review. *Physiotherapy*. 2020;109:13-32. doi:10.1016/j.physio.2020.07.005



This CPM presents a model of best care based on the best available scientific evidence at the time of publication. It is not a prescription for every physician or every patient, nor does it replace clinical judgment. All statements, protocols, and recommendations herein are viewed as transitory and iterative. Although physicians are encouraged to follow the CPM to help focus on and measure quality, deviations are a means for discovering improvements in patient care and expanding the knowledge base. Send feedback to Kristy Veale, Intermountain Health, Executive Clinical Programs Director, Neurosciences Clinical Program; Kristy.Veale@imail.org