Chronic Low Back Pain

Diagnosis/Condition:	Low back pain Lumbago Backache, unspecified Lumbosacral sprains and strains Lumbar sprain/strain
Discipline:	Integrated
ICD-10 Codes:	M54.5, M54.89, M54.9, S33.8XXA, S33.5XXA
Origination Date:	2006
Review/Revised Date:	07/2025
Next Review Date:	07/2027

Back problems rank among the second or third most common condition presenting to primary care physicians. Lower back pain in general is one of the most common condition that prompts patients to seek help from Integrative Health (IH) providers.[1] While not life-threatening, and often self-limiting, low back pain can also cause considerable disability.[2,4,5] There is a 60-80% lifetime prevalence of nonspecific lower back pain (LBP).[3] However some estimate that only about 25% of persons with LBP actually seek care from a professional.[4]

The World Health Organizations (WHO) June 2023 Low Back Pain paper states; Low back pain (LBP) has the highest prevalence globally among musculoskeletal conditions. An estimated 619 million people live with LBP, and it is the leading cause of disability worldwide. It is a major public health issue and is often associated with loss of work productivity and thus produces huge economic burden on individuals and on societies. Considering the high prevalence, LBP should be considered a global public health problem that requires an appropriate response.

According to the National Institute of Health approximately 26% of adults in the US experience low back pain at any given time. Estimates of the one-year incidence of a first-ever episode of low back pain range between 6.3% and 15.4%. Recurrence of LBP is common with estimates of recurrence within 1 year vary from 24% to 80% of LBP patients. Over a lifetime, LBP is most frequently experienced beginning in the third decade and is increasingly frequent until age 60-65 at which point LBP frequency gradually declines.[5] This is consistent with models of the degenerative cascade in the lumbar spine.

Clinical classification of LBP is not standardized in the literature.[6] For example, ICD-10 CM notes a number of "Approximate Synonyms" for LBP including acute, chronic, in pregnancy, without radiculopathy, and mechanical. This list in part suggests that a taxonomy of "low back pain" includes a wide range of clinical presentations. Identification of the pathoanatomical correlates of LBP vary widely. Joint dysfunction, intersegmental fixation, subluxation, sprain and strain, arthritis are just some of the explanations offered. Often there is no anatomical or pathological origin, so by default LBP is classified as "mechanical" or "non-specific" low back pain.

LBP is frequently cited as being "self-limiting" and that the vast majority of persons with LBP recover fully and the majority do so without seeking medical care. However, once the person seeks care, becomes a "patient", the course of LBP to full recovery is less clear

Terminology around the time course of LBP is not completely definitive. "Acute" LBP is usually considered for symptoms in the first month. "Subacute" LBP refers to persistent symptoms in a 1–3 month time frame. Beyond 3 months LBP is usually considered chronic. The transition from the acute to the subacute stage is not well defined, however it is of clinical importance to prevent the development of chronic symptoms and disability. Many factors are associated with the transition of acute LBP to more persistent symptoms

However, the actual time-sequence in chronic LBP is variable. Waxing and waning of symptoms of variable intensity and disability over time is common. Recurrent episodes are recognized as lasting more than 24 hours, preceded, and separated by a period of at least 1 month without LBP and having at least 2 episodes of LBP in the past 12 months.[7] Chronic LBP has been defined as pain persisting at least 3 months and/or present at least half of the days in the last 6 months, where patients can still function at work, school, home, and socially. Chronic pain can be characterized further as "high impact chronic LBP" when the pain is accompanied by at least one major activity restriction of activity such as work, school, or household tasks.[8]

While the understanding of the causes of LBP have improved[9,10] and evidence for conventional and integrative healthcare (IH) treatments accumulate,[11,12,13] precise diagnosis and definitive treatment remain elusive. The most current guideline, developed by the American College of Physicians in 2017, recommends nonpharmacologic treatments (e.g., acupuncture, multidisciplinary rehabilitation, or spinal manipulation) as the first line of treatment.[14]

The treatment of chronic pain, much like cLBP, advocates for an interdisciplinary approach to mitigate symptoms, decrease healthcare visits, and increase patient function.[15],[16] In support of this recommendation, an analysis of US National Health data cohort trial found suggests that use of IH (CIH, e.g., acupuncture, Chiropractic, massage) was associated with overall lower health care expenditures among adults with cLBP; this was "driven primarily by lower prescription and outpatient expenditures".[17]

It is estimated that over 40% of patients with LBP use some form of IH and many report a great benefit.[18] It is crucial that medical providers and policymakers are prepared to discuss a range of IH treatments and be prepared to communicate and use these treatments safely and effectively.[19]

A recent analysis of US insurance data (~6.8million claims) reveals a meager ~2.5% of patients with cLBP use acupuncture.[20]

Subjective Findings and History

- Low Back Pain (LBP) is defined as pain inferior to the costal margin and superior to the inferior gluteal folds, with or without sciatica.
- Complete medical history and review of systems to assess for risk factors (see below) and possible underlying serious disease (e.g., cauda equina syndrome, fracture, cancer/metastases, infection).
- History of current onset, prior episode(s), prior treatment, and treatment response. Timing and duration of episodes i.e., first episode, recurrence, chronic, or high impact chronic.
- Pain characteristics include more precise identification of location (e.g., spinal level, laterality), intensity, exacerbating/palliating factors, and radiation of pain or sensory changes. LBP is sometimes accompanied by leg pain due to referred pain.
- Risk factors include**:** [21,22]
    - Smoking, obesity, genetic factors.
    - Older age, female gender, socioeconomic factors.
    - Physically strenuous work, sedentary work, psychologically strenuous work, job dissatisfaction.
    - Lack of exercise.
    - Psychological factors (fear avoidance behaviors, somatization disorder, anxiety, and depression).
    - Lifestyle and physical workload factors.

Traditional Chinese Medicine Syndrome Differentiation

From the perspective of TCM, low back pain has three primary etiological factors, each with unique pattern diagnoses: 1) external pathogens (e.g., wind-damp-cold); 2) internal disharmony (e.g., kidney *Qi* deficiency); or, 3) trauma (e.g. *Qi* & blood stagnation).[23,24] To understand these concepts it is imperative to understand *'syndrome differentiation,'* a theoretical construct that defines the TCM system of healthcare. Multiple syndromes can present at the same time. In essence, this means for each medical condition (such as chronic LBP) practitioners are trained to determine with what pattern patients' present. Based on this *pattern (*e.g., blockage of *Qi*, or a lack of kidney *Qi*), individualized treatments are created to maximize benefit.

Objective Findings

- Postural evaluation may reveal: Decrease of normal spinal curvature, and/or present with antalgic list (forward, laterally).
- Decrease/loss of normal spinal ROM.
- Palpation may include segmental joint dysfunction/subluxation, tenderness over involved tissues, muscle spasm or tautness, myofascial trigger points, and tenderness of acupuncture points.
- Orthopedic and neurological examination directed at differentiating neurogenic from other sources of pain.[25] These may include absence of nerve compression signs and provocative orthopedic tests that reproduce the pain (e.g., straight leg raise and other tests that cause spinal motion may increase back pain).
- Evaluation of peripheral pulses to rule out vascular claudication.

- Evaluate functional capacity using appropriate physical examinations (e.g., ROM) and self-reports (e.g., MYMOPS, functional rating index, etc.).
- Routine diagnostic imaging (CXR, CT, MRI) is not recommended in the absence of red flags during the first 6 weeks after onset.[26] Imaging may be indicated depending on age, history of prior episodes and signs of underlying systemic disease. Correlation of diagnostic imaging findings and the cause of low back pain remain weak.[27] Imaging may be appropriate if the patient has progressive neurologic deficits or signs or symptoms that suggest a serious underlying condition (after 4-6 weeks).[28]

Assessment

- Assess for "red flags" (refer to Heraya's Orthopedic Red Flags pathway).
- Only about 0.7% of patients with low back pain in primary care settings have metastatic cancer, 0.01% have spinal infection, and 0.04% have the cauda equina syndrome. Vertebral compression fractures (4%) and inflammatory back disease (≤5%) may also cause back pain, but these conditions typically carry lower diagnostic urgency.[29,30,31]
- Assess for "yellow flags". Identify factors that may be obstacles to recovery or promote prolonged disability[32,33] Use the Keele STarT Back Screening Tool.[34]
- Clinical prediction rules may assist in forming a prognosis.
- Nonorganic signs (Waddell's signs) — psychological distress may amplify low back symptoms and may be associated with anatomically "inappropriate" physical signs.[35,36,37]
- The clinical impression should indicate the specific anatomical structures and acupuncture channels involved, and clinically correlate them with the mechanism of injury, history, subjective complaints, and objective findings.
- Diagnoses can include mechanical or non-specific, spondylosis, spondylolisthesis, anterolisthesis, retrolisthesis, spondylolysis, spinal stenosis, lordosis, kyphosis, scoliosis, neurogenic claudication, radiculopathy, sciatica, cauda equina syndrome, neoplasm, infection, and inflammation.[38]

Plan

The trajectory from acute through to chronic LBP is highly variable and individual to each patient.[39] The plan of care must be appropriate for the clinical circumstances, i.e., first onset of acute LBP, subacute, recurrent, chronic, or high impact chronic LBP.

Mind-Body therapies:

- Behavioral therapy (Operant, Cognitive, Respondent).[40,41,42,43]
- Meditation: A 2023 systematic review (SR, n=12) suggests promising results, "*with regard to reducing short-term pain intensity in patients with LBP.*[44]
- Mindfulness-based stress reduction.[45] A 2024 SR (n=18) cautiously suggest positive effects of Mindfulness-based interventions in reducing pain intensity.[46]
- Findings indicate that virtual reality-based training can be used effectively for individuals with chronic low back pain in the immediate term, especially to reduce pain, alleviate pain-related fear, and improve disability.[47]

Diet modification*:*

- Anti-inflammatory diets.

Herbal Medicine (Western):

- Harpagophytum. procumbens (Devil's claw), Salix. alba (white willow), C. frutescens[48,49,50,51,] Symphytum officinale L. (comfrey), Solidago chilensis (Brazilian arnica), curcumin, and lavender essential oil.[52]

Homeopathy*:*

- Arnica, Rhus tox, Rumex, Mag phos, Calc fluor, Bryonia, et al as indicated for symptomatic treatment.

Supplements and Nutrients*:*

- Oral and intramuscular magnesium for muscle spasm, Proteolytic enzymes for inflammation including bromelain. L-serine (594 mg) and EPA 149 mg) were effective in an RCT in 2020 in reducing LBP over a few weeks.[53]

Acupuncture:

- Over 100 RCTs have been conducted on the benefits of acupuncture for the treatment of cLBP. With the exception of 5 recent and/or small trials (all n<150),[54,55,56,57,58] the RCTs have been summarized in several systematic reviews and meta-analyses. The most current policy guidelines from the WHO, American College of Physicians & VA/DoD, take a similar approach and suggest the inclusion of acupuncture as part of a multidisciplinary approach as a first-line treatment option.[59,60,61] These recommendations are bolstered when viewed through the US policy change when in 2020 Center for Medicare Services opted to cover acupuncture (12-20 treatments) for Medicare patients with cLBP.[62]
- The evidence supports the benefit of acupuncture for the treatment of chronic low back pain.
    - The most recent systematic reviews (2008-2022) conclude that acupuncture is beneficial as adjunctive treatment to usual care.[63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78]
- The evidence supports the cost-effectiveness of acupuncture for the treatment of low back pain.
    - A systematic review and meta-analysis (2014) concluded that acupuncture is cost-effective when included in addition to usual care.[79]
    - This is supported by two earlier large pragmatic trials.[80,81]
- Tai Chi/Qi gong
    - *A 2019 systematic review (n=11) cautiously suggests that either Tai Chi or Qi gong, "may have a positive effect on modulating pain intensity [and disability]…".*
    - A 2019 systematic review (n=10) cautiously suggests, *"Tai Chi alone or as additional therapy with routine PT may decrease pain and improve…disability..."* [82]
- Dry needling is an effective procedure for the treatment of myofascial pain in patients with acute and chronic low back pain.[83]

Manual Adjustments/Manipulation:

- Spinal manipulation/chiropractic combined with other therapies[84,,85,86,87,88,89]
    - A systematic review and meta-analysis published in 2018 showed that there is moderate-quality evidence indicating "manipulation and mobilization are likely to reduce pain and improve function for patients with chronic low back pain. Manipulation appears to produce a larger effect than mobilization."[90] They concluded that multi-modal programs may be a promising consideration for treatment.
    - Another study found use of prescription opioids was lower in a population of patients receiving chiropractic care.[91]

Immobilization/Bracing/Taping:

- Braces and supports.
- Shoe orthotics.[92]

Physical Modalities (Western):

- Wet cupping.[93]
- Prolotherapy.[94,95]
- Low level laser therapy.[96,97]
- Massage therapy.[98,99]
- A systematic review and meta-analysis (n=632) found that Extracorporeal shock wave therapy (ESWT) provided better pain relief and improved lumbar dysfunction compared with the other interventions included, and no serious adverse effects were found.[100]

Pharmaceuticals (OTC):

- OTC and botanical analgesics.
- NSAIDS: They appear slightly more effective than placebo for short term pain reduction and disability in acute LBP in systematic review in 2020, but the difference is likely not clinically relevant.[101]
    - The most recent guidelines, from the American College of Physicians (ACP; 2017) and VA/DoD (2023), recommend nonpharmacologic options (e.g. acupuncture, multidisciplinary rehabilitation, or spinal manipulation) as the first-line of treatment.[102],[103] If there is an inadequate response to nonpharmacologic therapy, then second-line options include: NSAIDs.

Pharmaceuticals (Prescription):

- Steroids when appropriate.
- Various opioids.
    - According to systematic review, may provide safe and clinically relevant pain relief for acute LBP 4-15 weeks in highly selected patients.[104] Evidence lacking for long term results.[105,106]

Movement and Exercise:

- Isolated lumbar extension resistance training.[107]
- Based on the results of the present meta-analysis, pelvic floor muscle-strengthening exercises significantly reduce the low back pain intensity.[108]
- Compared with conventional rehabilitation and no intervention provided, tai chi, yoga, pilates exercise, sling exercise, motor control exercise, and core or stabilization exercises significantly improved CLBP in patients.[109]
- Segmental stabilization exercises (SSEs) and stretching of trunk and hamstrings muscles improved pain and reduced disability.,[110]
- Pilates exercise can decrease LBP compared to no exercise and non-specific exercise.,[111]
- Avoidance of inciting activities, avoid bed rest.
- Ice/heat application at home.

Length of Treatment

- Evaluate progress on an on-going basis.
- Risk factors for chronicity: Significant trauma, co-morbidity (degenerative disc disease, spondylolisthesis, segmental instability, osteoporosis, spine deformity), obesity, age, socio-economic factors.
- Patients with high expectations of recovery have better outcomes.[112]

Outcome Assessment Tools

- Visual analog and numeric pain rating scale (VAS, NRS).
- Oswestry low back pain disability index. https://eprovide.mapi-trust.org/ (A free account is required for download).
- Patient specific functional scale.
- Measure Yourself Medical Outcome Profile (MYMOPS). (http://www.bris.ac.uk/primaryhealthcare/resources/mymop/)
- Keele_STarT_Back, Brief Pain Inventory, Pain Catastrophizing Scale: Psychosocial variable are also strong predictors of outcomes (maladaptive pain coping behaviors, functional impairment, poor general health status, presence of psychiatric comorbidities, or nonorganic signs).[113]

Referral Criteria

- "Red flags" of serious disease (see Heraya's Red Flag Advisory).
- Referral to an appropriate specialist may be appropriate after 4-6 weeks of care without symptomatic or functional improvement or upon onset of (progressive) neurologic deficit.

Resources for Clinicians

NASS North American Spine Society (NASS) Clinical Guideline for the Diagnosis and Treatment of Low Back Pain. NASS 2020
https://www.spine.org/Portals/0/assets/downloads/ResearchClinicalCare/Guidelines/LowBackPain.pdf

Qaseem A, Wilt TJ, Mclean RM, Forciea MA. 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.

Globe G, Farabaugh RJ, Hawk C, et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. *J Manipulative Physiol Ther*. 2016 Jan;39(1):1-22.

Society for Acupuncture Research. Acupuncture for the Treatment of Low Back Pain: An Evidence-Based Assessment. Revised July 2021 www.AcupunctureResearch.org.

Wong JJ, Côté P, Sutton DA, et al. Clinical practice guidelines for the noninvasive management of low back pain: A systematic review by the Ontario Protocol for Traffic Injury Management (OPTIMa) Collaboration. *Eur J Pain*. 2017;21(2):201-216.

Resources for Patients

American Academy of Family Physicians. FamilyDoctor.org. "Low Back Pain". http://familydoctor.org/familydoctor/en/diseases-conditions/low-back-pain.printerview.all.html

National Institute of Arthritis and Musculoskeletal and Skin Diseases. "What is back pain?" http://www.niams.nih.gov/Health_Info/Back_Pain/back_pain_ff.asp

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