Back problems rank among the second or third most common problem presenting to primary care physicians. While not life-threatening, and often self-limiting, low back pain can also cause considerable disability. There is a 60-80% lifetime prevalence of nonspecific lower back pain.

While the understanding of the causes of low back pain has improved and evidence for conventional and complementary and alternative medicine (CAM) treatments accumulates, precise diagnosis and definitive treatment remain elusive. Current evidence based clinical practice guidelines and systematic reviews provide support for spinal manipulation, “combined chiropractic interventions,” and exercise. Evidence of cost effectiveness of conservative interventions such as chiropractic has begun to demonstrate the value that these treatment strategies provide.

Given the relative equivalence in terms of effectiveness and efficacy of conventional and CAM treatments for low back pain, consideration of adverse effects and patient preference should guide treatment planning.

Subjective Findings and History
- Macro trauma: Onset of pain and paraspinal muscle spasm begins either immediately after the injury or gradually over the next 24 hours.
- Micro trauma: Repetitive traumatic events not singularly capable of producing injury
- Local pain, sometimes accompanied by referred pain, diffuse (scleratogenous pain distribution)
- Loss of flexibility
- Pain is usually relieved by rest and aggravated by motion
- Diagnoses can include: mechanical or non-specific, spondylosis, spondylolisthesis, spondylolysis, lumbar lordosis, kyphosis, scoliosis, neurogenic claudication, radiculopathy, sciatica, cauda equina syndrome, neoplasm, infection, inflammation
Risk factors include:
- smoking, obesity,
- older age, female gender, low educational attainment,
- physically strenuous work, sedentary work, psychologically strenuous work, job dissatisfaction
- Workers’ Compensation insurance
- psychological factors (somatization disorder, anxiety, and depression)

Objective Findings
- Postural evaluation reveals: Decrease of normal spinal curvature, may present with antalgic list (forward, laterally)
- Decrease/loss of normal spinal ROM
- Palpation for segmental joint dysfunction/subluxation, tenderness over involved tissues, muscle spasm or tautness, myofacial trigger points.
- Orthopedic and neurological examination directed at differentiating neurogenic from other sources of pain including absence of nerve compression signs (e.g. absence of muscle weakness) and provocative orthopedic tests may 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
- Diagnostic imaging (CXR, CT, MRI): 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. 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).
- Infectious risk such as injection drug use, immunosuppression, indwelling urinary catheter, prolonged steroid use, skin or urinary tract infection
- Osteoporosis

Assessment
- Assess for “red flags” (refer to Orthopedic Red Flags pathway)
- Identify factors that may be obstacles to recovery or promote prolonged disability
- The clinical impression should indicate the specific anatomical structures involved and clinically correlate them with the mechanism of injury, history, subjective complaints, and objective findings.
- 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.

Plan
Passive Care:
- Spinal manipulation
- Physical Therapy Modalities
- Medications: Analgesics, NSAIDS
- Supplementation
- Braces/supports
- Acupuncture
- Massage
• Prolotherapy\textsuperscript{32-33}
• Botanical Medicine - \textit{H. procumbens} (Devil’s claw), \textit{S. alba} (white willow), \textit{C. frutescens} \textsuperscript{34-35,36,37}

Active Care:
• Behavioral therapy (Operant, Cognitive, Respondant)\textsuperscript{38,39,40,41}
• Whole systems individual approach\textsuperscript{42}
• Rest from inciting activities, avoid bedrest
• Active exercises/stretches for mobility and strength
• Ice/heat application at home
• Posture training, ergonomic evaluation
• Activity/work restrictions, if appropriate

Length of Treatment
• Estimated duration of care: 1-6 weeks
• 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, deconditioning, age, socio-economic factors.

Outcome Assessment Tools
• Visual analog and numeric pain rating scale (VAS, NRS)
• Oswestry low back pain disability index
• Patient specific functional scale
• Measure Yourself Medical Outcome Profile (MYMOPS)
• Patients with high expectations of recovery have better outcomes\textsuperscript{43}
• 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)\textsuperscript{44}

Referral Criteria
• “Red flags” of serious disease
• 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


**Resources for Patients**


Simple steps can put an end to unnecessary suffering. TimesOnline. Sept 19, 2005. http://www.timesonline.co.uk/tol/life_and_style/health/expert_advice/article567626.ece

**The Evidence**


Massage for low-back pain (Cochrane Review)
Spinal manipulative therapy for low-back pain (Cochrane Review)

Exercise therapy for low-back pain (Cochrane Review)


Clinical Pathway Feedback
CHP desires to keep our clinical pathways customarily updated. If you wish to provide additional input, please use the e-mail address listed below and identify which clinical pathway you are referencing. Thank you for taking the time to give us your comments.

Chuck Simpson, DC, CHP Vice President, Clinical Affairs: csimpson@chpgroup.com

19 Wheeler SG, JE Wipf, Staiger TO Deyo, RA. Approach to the diagnosis and evaluation of low back pain in adults. Terminology Used In BackPain. Table 1.

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Low Back Pain (DC, ND) Clinical Pathway
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Chou R, Shekelle P. Will this patient develop persistent disabling low back pain? JAMA 2010; 303:1295.
