

recommended for ALBP can be useful for patients with CLBP. In this setting, however, the long-term benefit of opioid therapy or muscle relaxants is less clear.

Evidence supports the use of exercise therapy, and this can be one of the mainstays of treatment for CLBP. Effective regimens have generally included a combination of gradually increasing aerobic exercise, strengthening exercises, and stretching exercises. Motivating patients is sometimes challenging, and in this setting, a program of supervised exercise can improve compliance. In general, activity tolerance is the primary goal, while pain relief is secondary. Supervised intensive physical exercise or “work hardening” regimens have been effective in returning some patients to work, improving walking distance, and reducing pain. In addition, some forms of yoga have been evaluated in randomized trials and may be helpful for patients who are interested. A long-term benefit of spinal manipulation or massage for CLBP is unproven.

Medications for CLBP may include acetaminophen, NSAIDs, and tricyclic antidepressants. Trials of tricyclics suggest benefit even for patients without evidence of depression. Trials do not support the efficacy of selective serotonin reuptake inhibitors (SSRIs) for CLBP. However, depression is common among patients with chronic pain and should be appropriately treated.

Cognitive-behavioral therapy is based on evidence that psychological and social factors, as well as somatic pathology, are important in the genesis of chronic pain and disability. Cognitive-behavioral therapy includes efforts to identify and modify patients’ thinking about their pain and disability. A systematic review concluded that such treatments are more effective than a waiting list control group for short-term pain relief; however, long-term results remain unclear. Behavioral treatments may have effects similar in magnitude to exercise therapy.

Back pain is the most frequent reason for seeking complementary and alternative treatments. The most common of these for back pain are spinal manipulation, acupuncture, and massage. The role of most complementary and alternative medicine approaches remains unclear. Biofeedback has not been studied rigorously. There is no convincing evidence that either spinal manipulation or transcutaneous electrical nerve stimulation (TENS) is effective in treating CLBP. Rigorous recent trials of acupuncture suggest that true acupuncture is not superior to sham acupuncture, but that both may offer an advantage over routine care. Whether this is due entirely to placebo effects provided even by sham acupuncture is uncertain. Some trials of massage therapy have been encouraging, but this has been less well studied than spinal manipulation or acupuncture.

Various injections, including epidural glucocorticoid injections, facet joint injections, and trigger point injections, have been used for treating CLBP. However, in the absence of radiculopathy, there is no evidence that these approaches are effective.

Injection studies are sometimes used diagnostically to help determine the anatomic source of back pain. The use of discography to provide evidence that a specific disk is the pain generator is not recommended. Pain relief following a glucocorticoid injection into a facet is commonly used as evidence that the facet joint is the pain source; however, the possibility that the response was a placebo effect or due to systemic absorption of the glucocorticoids is difficult to exclude.

Another category of intervention for chronic back pain is electrothermal and radiofrequency therapy. Intradiskal therapy has been proposed using both types of energy to thermocoagulate and destroy nerves in the intervertebral disk, using specially designed catheters or electrodes. Current evidence does not support the use of these intradiskal therapies.

Radiofrequency denervation is sometimes used to destroy nerves that are thought to mediate pain, and this technique has been used for facet joint pain (with the target nerve being the medial branch of the primary dorsal ramus), for back pain thought to arise from the intervertebral disk (ramus communicans), and radicular back pain (dorsal root ganglia). A few small trials have produced conflicting results for facet joint and diskogenic pain. A trial in patients with chronic radicular pain found no difference between radiofrequency

denervation of the dorsal root ganglia and sham treatment. These interventional therapies have not been studied in sufficient detail to draw conclusions of their value for CLBP.

Surgical intervention for CLBP without radiculopathy has been evaluated in a small number of randomized trials, all conducted in Europe. Each of these studies included patients with back pain and a degenerative disk, but no sciatica. Three of the four trials concluded that lumbar fusion surgery was no more effective than highly structured, rigorous rehabilitation combined with cognitive-behavioral therapy. The fourth trial found an advantage of fusion surgery over haphazard “usual care,” which appeared to be less effective than the structured rehabilitation in other trials. Given conflicting evidence, indications for surgery for CLBP without radiculopathy have remained controversial. Both U.S. and British guidelines suggest considering referral for an opinion on spinal fusion for people who have completed an optimal nonsurgical treatment program (including combined physical and psychological treatment) and who have persistent severe back pain for which they would consider surgery.

Lumbar disk replacement with prosthetic disks is U.S. Food and Drug Administration approved for uncomplicated patients needing single-level surgery at the L3-S1 levels. The disks are generally designed as metal plates with a polyethylene cushion sandwiched in between. The trials that led to approval of these devices compared them to spine fusion and concluded that the artificial disks were “not inferior.” Serious complications are somewhat more likely with the artificial disk. This treatment remains controversial for CLBP.

Intensive multidisciplinary rehabilitation programs may involve daily or frequent physical therapy, exercise, cognitive-behavioral therapy, a workplace evaluation, and other interventions. For patients who have not responded to other approaches, such programs appear to offer some benefit. Systematic reviews suggest that the evidence is limited and benefits are incremental.

Some observers have raised concern that CLBP may often be overtreated. For CLBP without radiculopathy, new British guidelines explicitly recommend against use of SSRIs, any type of injection, TENS, lumbar supports, traction, radiofrequency facet joint denervation, intradiskal electrothermal therapy, or intradiskal radiofrequency thermocoagulation. These treatments are also not recommended in guidelines from the American College of Physicians and the American Pain Society. On the other hand, exercise therapy and treatment of depression appear to be useful and underused.

LOW BACK PAIN WITH RADICULOPATHY

A common cause of back pain with radiculopathy is a herniated disk with nerve root impingement, resulting in back pain with radiation down the leg. The term sciatica is used when the leg pain radiates posteriorly in a sciatic or L5/S1 distribution. The prognosis for acute low back and leg pain with radiculopathy due to disk herniation is generally favorable, with most patients showing substantial improvement over months. Serial imaging studies suggest spontaneous regression of the herniated portion of the disk in two-thirds of patients over 6 months. Nonetheless, there are several important treatment options to provide symptomatic relief while this natural healing process unfolds.

Resumption of normal activity is recommended. Randomized trial evidence suggests that bed rest is ineffective for treating sciatica as well as back pain alone. Acetaminophen and NSAIDs are useful for pain relief, although severe pain may require short courses of opioid analgesics.

Epidural glucocorticoid injections have a role in providing temporary symptom relief for sciatica due to a herniated disk. However, there does not appear to be a benefit in terms of reducing subsequent surgical interventions. Diagnostic nerve root blocks have been advocated to determine if pain originates from a specific nerve root. However, improvement may result even when the nerve root is not responsible for the pain; this may occur as a placebo effect, from a pain-generating lesion located distally along the peripheral nerve, or from effects of systemic absorption. The utility of diagnostic nerve root blocks remains a subject of debate.