

# Chronic Low Back Pain Treatment

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**Chronic back pain** treatment often involves a combination of approaches to address the underlying causes, manage symptoms, and improve the individual's overall quality of life. Since chronic back pain can result from various conditions, personalized treatment plans are essential. Here are common strategies for managing chronic back pain:

## 1. Medical Evaluation and Diagnosis: Comprehensive Assessment:

A thorough medical evaluation by a healthcare professional to identify the specific cause of chronic back pain. This may involve imaging studies, such as X-rays or MRI, and diagnostic tests. Specialist Consultation:

Depending on the suspected cause of chronic back pain, consultations with specialists such as orthopedic surgeons, neurologists, rheumatologists, or pain management specialists may be recommended. 2. Pain Management: Medications:

Nonsteroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, and certain antidepressants or anticonvulsants may be prescribed to manage pain, inflammation, and nerve-related symptoms. Opioid Medications (with caution):

Opioids may be considered in some cases, but their use is generally limited due to the risk of dependency and side effects. They are usually prescribed when other options have been ineffective. Topical Analgesics:

Creams, gels, or patches containing analgesic or anti-inflammatory medications can be applied directly to the skin over the painful area. 3. Physical Therapy: Exercise Program:

A tailored exercise program designed by a physical therapist to improve flexibility, strengthen core muscles, and enhance overall spinal stability. Manual Therapy:

Hands-on techniques such as massage, joint mobilization, and manipulation performed by a physical

therapist or chiropractor to alleviate pain and improve mobility. 4. Interventional Procedures: Epidural Steroid Injections:

Injections of corticosteroids into the epidural space to reduce inflammation and alleviate pain, particularly for conditions like herniated discs or spinal stenosis. Facet Joint Injections:

Injections into the facet joints to reduce pain and inflammation associated with conditions like osteoarthritis. Radiofrequency Ablation:

A procedure that uses heat to interrupt pain signals from specific nerves, providing relief for certain chronic back pain conditions. 5. Behavioral and Psychological Approaches: Cognitive Behavioral Therapy (CBT):

CBT can help individuals manage chronic pain by addressing negative thought patterns and promoting healthier coping mechanisms. Mindfulness-Based Stress Reduction (MBSR):

Mindfulness practices, such as meditation and deep breathing, can help individuals manage pain and reduce stress. 6. Lifestyle Modifications: Posture and Ergonomics:

Education on maintaining proper posture and ergonomic principles, especially during activities that may contribute to back pain. Weight Management:

Maintaining a healthy weight to reduce stress on the spine and associated structures. 7. Surgical Options: Surgery: In some cases, surgery may be considered if conservative treatments are ineffective. Surgical options vary depending on the specific condition and may include discectomy, spinal fusion, or decompression procedures. 8. Alternative and Complementary Therapies: Acupuncture:

Some individuals find relief from chronic back pain through acupuncture, which involves the insertion of thin needles into specific points on the body. Chiropractic Care:

Chiropractic adjustments may be beneficial for certain individuals with chronic back pain, especially for issues related to spinal alignment. It's crucial for individuals with chronic back pain to work closely with healthcare professionals to develop a comprehensive and personalized treatment plan. Treatment effectiveness may vary, and ongoing communication with healthcare providers helps to adjust the approach based on the individual's response and needs.

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Chronic low back pain treatments typically focus on biomedical [treatment](#) approaches. While psychosocial treatments exist, multiple barriers prevent broad access. There is a significant unmet need for integrative, easily accessible, non-opioid solutions for chronic [pain](#) <sup>1)</sup>.

## Current Clinical Practice Guidelines

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No uniform initial treatment pathway exists for these patients. Depending on the comfort and experiences of the primary care provider, some patients may be started on a conservative plan with oral nonsteroidal anti-inflammatory drugs, muscle relaxants, oral steroids, and physical therapy,

whereas others may undergo spinal imaging immediately and have rapid referral to a spine surgeon.

One of the problems with initial management of low back pain has been the appropriate [triage](#) of these patients to the provider best equipped to deal with their problem in a cost-effective manner. This problem has been cofounded by the ubiquity of back pain, its heterogeneous causes, and the fact that it may represent a sign of a serious underlying condition.

Surgical treatment is indicated in case of inefficient medical treatment or if there is a risk of neurologic compromise or instability.

Implementation of interventional pain procedures in the treatment framework of LBP has resulted in improvement of pain intensity in at least the short and medium terms, but equivocal results have been observed in functional improvement <sup>12)</sup>.

The most frequently used treatment for [chronic low back pain](#) is [radiofrequency denervation](#).

However, different clinical studies could only show a limited to no improvement regarding the decrease of pain intensity and duration of the effect. The main reasons for these limited effects seem to be due to the size of the lesion and difficulties in locating the exact placement of the cannula near the medial branch as well as or additional pathologies. Using an [endoscope](#), it is possible to coagulate the [facet joints](#) and the medial branch under visual control and consider other pathologies such as extraspinal synovial cysts.

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Effective intervention for the treatment of chronic [low back pain](#) remains elusive despite extensive research into the area.

Treatment for low back pain generally depends on whether the pain is acute or chronic. In general, surgery is recommended only if there is evidence of worsening nerve damage and when diagnostic tests indicate structural changes for which corrective surgical procedures have been developed.

Conventionally used treatments and their level of supportive evidence include:

Hot or cold packs have never been proven to quickly resolve low back injury; however, they may help ease pain and reduce inflammation for people with acute, subacute, or chronic pain, allowing for greater mobility among some individuals.

## Chronic low back pain medical treatment

see [Chronic low back pain medical treatment](#).

## Spinal manipulation

Spinal manipulation and spinal mobilization are approaches in which professionally licensed specialists (doctors of chiropractic care) use their hands to mobilize, adjust, massage, or stimulate the spine and the surrounding tissues. Manipulation involves a rapid movement over which the individual has no control; mobilization involves slower adjustment movements. The techniques have been

shown to provide small to moderate short-term benefits in people with chronic low back pain. Evidence supporting their use for acute or subacute low back pain is generally of low quality. Neither technique is appropriate when a person has an underlying medical cause for the back pain such as osteoporosis, spinal cord compression, or arthritis.

Traction involves the use of weights and pulleys to apply constant or intermittent force to gradually “pull” the skeletal structure into better alignment. Some people experience pain relief while in traction, but that relief is usually temporary. Once traction is released the back pain tends to return. There is no evidence that traction provides any longterm benefits for people with low back pain.

## Acupuncture

Acupuncture is moderately effective for chronic low back pain. It involves the insertion of thin needles into precise points throughout the body. Some practitioners believe this process helps clear away blockages in the body’s life force known as Qi (pronounced chee). Others who may not believe in the concept of Qi theorize that when the needles are inserted and then stimulated (by twisting or passing a low-voltage electrical current through them) naturally occurring painkilling chemicals such as endorphins, serotonin, and acetylcholine are released. Evidence of acupuncture’s benefit for acute low back pain is conflicting and clinical studies continue to investigate its benefits.

Biofeedback is used to treat many acute pain problems, most notably back pain and headache. The therapy involves the attachment of electrodes to the skin and the use of an electromyography machine that allows people to become aware of and selfregulate their breathing, muscle tension, heart rate, and skin temperature. People regulate their response to pain by using relaxation techniques. Biofeedback is often used in combination with other treatment methods, generally without side effects. Evidence is lacking that biofeedback provides a clear benefit for low back pain.

Nerve block therapies aim to relieve chronic pain by blocking nerve conduction from specific areas of the body. Nerve block approaches range from injections of local anesthetics, botulinum toxin, or steroids into affected soft tissues or joints to more complex nerve root blocks and spinal cord stimulation. When extreme pain is involved, low doses of drugs may be administered by catheter directly into the spinal cord. The success of a nerve block approach depends on the ability of a practitioner to locate and inject precisely the correct nerve. Chronic use of steroid injections may lead to increased functional impairment.

## Epidural Steroid Injection for chronic low back pain

[Epidural Steroid Injection for chronic low back pain](#)

## Exercise

see [Exercise for Chronic Low Back Pain Treatment](#).

## Electrostimulation

Electrostimulation to elicit episodic lumbar multifidus contraction is a new treatment option for CMLBP. Results demonstrate clinically important, statistically significant, and lasting improvement in pain, disability, and QoL <sup>13)</sup>.

## Patient led goal setting in chronic low back pain

see also [Patient led goal setting in chronic low back pain](#).

## Observational prospective cohort studies

Exploring factors linked to the outcomes of certain interventional [pain management techniques](#) may optimize the selection of [candidates](#) for those procedures. The hypothesis of Garcia-Hernandez et al. is that factors that influence responses to interventional therapies for [chronic low back pain](#) (CLBP) can be identified by analyzing a [prospective cohort](#).

The main aim was to identify the factors that may be associated with adult patients' responses to interventional therapies for the treatment of CLBP after 4 weeks of follow-up. Secondary objectives include the development of a [predictive model](#) and the establishment of a predictive score.

Study design: The PReTi-Back (Predicting REsponse to interventional Therapies In chronic BACK pain) study is an observational prospective single-center study, employing a nonprobability-sampling method.

The population consists of adult outpatients with CLBP in a chronic pain unit of a tertiary hospital. The procedures we evaluated included epidural steroid injections, medial branch blocks and denervations, dorsal root ganglion blocks, and [pulsed radiofrequency](#).

Methods: Ratings on the Numeric Pain Rating Scale (NPRS) and [Oswestry Disability Index](#) (ODI) were measured at the baseline and after 4 weeks of follow-up. The primary outcome of the study was composite and was evaluated at 4 weeks. A positive response to an intervention was defined as the simultaneous occurrence of a decrease of at least 2 points in the NPRS score and a decrease of at least 20% in the ODI score. A predictive model was constructed using logistic regression analysis, which incorporated 14 variables selected in advance. A predictive score was developed based on the odds ratios of the model variables.

Four hundred patients were recruited. Of these patients, 368 completed follow-up, 49 were excluded, and 319 were included in the analysis. The interventional therapies provided a positive response to 85 patients (26.6%) at 4 weeks. Listhesis, radicular compression, and satisfaction with previous interventional therapies were positively associated with the positive response, and their ORs were close to 2. Meanwhile, obesity and persistent spinal pain syndrome type 2 (PSPS-2) had negative associations with the outcome, presenting ORs close to 0.5. The models were statistically significant and exhibited satisfactory goodness of fit. The area under the curve was 0.67 (95% CI, 0.60-0.74). Both models exhibited low sensitivity but high specificity. The synthesis of the prediction score had little impact on its discriminatory capacity.

Limitations: The subgroup analysis revealed that both listhesis and radicular compression were associated with the response to epidural therapies but not with the response to medial branch therapies. The score was efficient in ruling out those who would not benefit from intervention (scores of 0 or one), but its main limitation was that it was less effective in identifying those who might respond favorably (scores  $\geq 2$ ).

Patients satisfied with previously performed interventional therapies or who exhibit findings of radicular compression or [listhesis](#) on imaging show approximately twice the likelihood of experiencing a positive response to short-term IMPT than do patients without those characteristics. Patients who are obese or have [PSPS-2](#) exhibit approximately a 50% lower likelihood of short-term response than do patients without these conditions <sup>14)</sup>

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The study provides actionable insights:

Patients with radicular [compression](#) or [listhesis](#) might be prioritized for certain [interventions](#). Obesity and PSPS-2 are red flags for poor outcomes, suggesting the need for alternative management strategies. However, the limited ability of the predictive score to identify responders diminishes its utility as a standalone tool. Its role might be more effective as part of a comprehensive, multidisciplinary assessment.

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