Low back pain treatment

- Evaluation of Paraspinal Muscle Epimuscular Fat in Subjects With Low Back Pain in a Tertiary Care Setting
- Lumbar Radiofrequency Ablation (LRFA)- Myths and Facts: A Narrative Review of the Literature
- Nonspecific low back pain : a new paradigm for better care
- Personalizing treatment for low back pain according to pain type
- Investigation of the validity and reliability of the Turkish version of Back-Health-Related postural habits in daily activities questionnaire
- Preventing the transition from acute to chronic low back pain using home-based neuromodulation: protocol for a randomised, controlled study
- Long-term safety and effectiveness of evinacumab in people with homozygous familial hypercholesterolemia: a plain language summary
- Chronic coccygodynia

Low back pain treatment depends on the underlying cause and the severity of the pain. It's essential to note that while many cases of low back pain resolve on their own with time, persistent or severe pain may require medical attention. Treatment approaches often involve a combination of self-care, lifestyle modifications, and, in some cases, medical interventions.

Strategies for low back pain treatment

Self-Care and Lifestyle Modifications:

Rest and Activity Modification:

Short-term rest may be beneficial for acute back pain, but prolonged inactivity can lead to stiffness and muscle weakness. Gradual return to normal activities is generally recommended. Ice and Heat Therapy:

Applying ice packs or heat pads to the affected area may help alleviate pain and reduce inflammation. Cold therapy is often recommended in the first 48 hours, followed by heat therapy. Over-the-Counter Pain Medications:

Non-prescription pain relievers, such as acetaminophen, ibuprofen, or naproxen, can help manage pain and inflammation. Always follow the recommended dosage and guidelines. Maintain a Healthy Weight:

Excess body weight can contribute to back pain. Adopting a healthy diet and engaging in regular physical activity can help manage weight and reduce strain on the lower back. Exercise and Stretching:

Strengthening exercises for the core muscles can provide support to the lower back. Stretching exercises can improve flexibility and reduce muscle tension. Consult with a healthcare professional or a physical therapist for a personalized exercise plan. Medical Interventions: Physical Therapy:

A physical therapist can provide targeted exercises, stretches, and manual therapy to address muscle imbalances, improve flexibility, and promote proper posture. Medications:

In addition to over-the-counter medications, a healthcare provider may prescribe muscle relaxants, anti-inflammatory drugs, or other medications depending on the specific condition. Injections:

Epidural steroid injections or nerve block injections may be recommended for more severe pain or inflammation. These are administered directly into the affected area. Chiropractic Care:

Chiropractors use manual manipulation techniques to address spinal misalignments and alleviate pain. This approach may be beneficial for certain cases of low back pain. Acupuncture:

Acupuncture involves the insertion of thin needles into specific points on the body. Some people find relief from low back pain through acupuncture. Surgical Interventions: Surgery:

In cases where conservative treatments are ineffective, surgery may be considered. Common procedures include discectomy, laminectomy, or spinal fusion, depending on the underlying cause of the pain. Implantable Devices:

Some individuals with chronic low back pain may benefit from implantable devices such as spinal cord stimulators or intrathecal drug delivery systems.

General information

An initial period of nonsurgical management is indicated except in the following circumstances where urgent surgery is indicated:

Situations where conservative treatment is not indicated:

● symptoms of cauda equina syndrome: urinary retention, saddle anesthesia…

● progressive neurologic deficit, or profound motor weakness

● a relative indication for proceeding to urgent surgery without conservative management is severe pain that cannot be sufficiently controlled with adequate pain medication (rare)

If specific diagnoses such as herniated intervertebral lumbar disc or symptomatic lumbar spinal stenosis are made, surgical treatment for these conditions may be considered if the patient fails to improve satisfactorily. In cases where no specific diagnosis can be made, management consists of conservative treatment and following the patient to rule out the possible development of symptoms suggestive of a more serious diagnosis that may not have initially been evident.

Conservative treatment

see Back pain conservative treatment.

Acute Back Pain Treatment

Acute Back Pain Treatment.

Chronic Back Pain Treatment

Chronic Back Pain Treatment

In the primary care setting many patients can be treated extremely effectively and economically from a cost perspective. In addition to the fastest possible pain relief, it is important to prevent the disease becoming chronic. A wide range of pharmacological treatment can be combined with non-pharmacological measures, such as early on exercises, promoting every day mobility, physiotherapy, manual therapy etc.. 20 % of patients with lower back pain have a determinable cause that needs to be rapidly identified. In addition to laboratory diagnostics, structured morphological imaging is necessary. In the further cause of treatment, it may be necessary to consult medical specialists in the fields of radiology, orthopedics, neurology, neurosurgery, rheumatology, psychotherapy, psychiatry, among others. Treatment is managed by the primary care provider, who should also receive and re-evaluate all findings during the course of the disease [1)].

see Back pain treatment.

Surgery

For degenerative spine disease, practice parameters have been developed. Pain associated with Modic type 1 changes (bone edema, see may respond to stabilization procedures, the other Modic types do not exhibit this association. A substantial number of patients with herniated lumbar disc and radiculopathy who also have LBP will have relief.

Level I: lumbar spinal fusion is recommended for carefully selected patients with disabling LBP due to one- or two-level degenerative disease without stenosis or spondylolisthesis (in the primary quoted study patients had chronic LBP for ≥ 2 years and had radiologic evidence of disc degeneration at L4–5, L5–1, or both, and had failed best medical management).

Level III: an intensive course of PT and cognitive therapy is recommended as an option for patients with LBP in whom conventional medical management has failed.

Low back pain improved after cervical laminoplasty in patients without lumbar stenosis. [2)].

Decision support systems

Decision support systems (DSSs) for suggesting optimal low back pain treatment (LBP) are currently insufficiently accurate for clinical application. Most of the input provided to train these systems is based on patient-reported outcome measures. However, with the appearance of electronic health records (EHRs), additional qualitative data on reasons for referrals and patients' goals become available for DSSs. Currently, no decision support tools cover a wide range of biopsychosocial factors, including referral letter information to help clinicians triage patients to the optimal LBP treatment.

The objective of the study was to investigate the added value of including qualitative data from EHRs and referral letters to the accuracy of a quantitative DSS for patients with LBP.

A retrospective study was conducted in a clinical cohort of Dutch patients with LBP. Patients filled out a baseline questionnaire about demographics, pain, disability, work status, quality of life, medication, psychosocial functioning, comorbidity, history, and duration of pain. Referral reasons and patient requests for help (patient goals) were extracted via natural language processing (NLP) and enriched in the data set. For decision support, these data were considered independent factors for triage to neurosurgery, anesthesiology, rehabilitation, or minimal intervention. Support vector machine, k-nearest neighbor, and multilayer perceptron models were trained for 2 conditions: with and without consideration of the referral letter content. The models' accuracies were evaluated via F1-scores, and confusion matrices were used to predict the treatment path (out of 4 paths) with and without additional referral parameters.

Results: Data from 1608 patients were evaluated. The evaluation indicated that 2 referral reasons from the referral letters (for anesthesiology and rehabilitation intervention) increased the F1-score accuracy by up to 19.5% for triaging. The confusion matrices confirmed the results.

This study indicates that data enriching by adding NLP-based extraction of the content of referral letters increases the model accuracy of DSSs in suggesting optimal treatments for individual patients with LBP. Overall model accuracies were considered low and insufficient for clinical application [3].

1)
Burchert D, Schwill C. Kreuzschmerzen aus hausärztlicher-internistischer Sicht [Lower back pain in the primary care setting - Non-specific and specific pain]. Dtsch Med Wochenschr. 2022 Apr;147(7):379-389. German. doi: 10.1055/a-1581-5510. Epub 2022 Mar 28. PMID: 35345044.
2)
Hayashi H, Hashikata H, Sawada M, Toda H. Low back pain improvement after cervical laminoplasty in patients without tandem lumbar stenosis. Eur Spine J. 2023 Sep 22. doi: 10.1007/s00586-023-07951-7. Epub ahead of print. PMID: 37736774.
3)
Fudickar S, Bantel C, Spieker J, Töpfer H, Stegeman P, Schiphorst Preuper HR, Reneman MF, Wolff AP, Soer R. Natural Language Processing of Referral Letters for Machine Learning-Based Triaging of Patients With Low Back Pain to the Most Appropriate Intervention: Retrospective Study. J Med Internet Res. 2024 Jan 30;26:e46857. doi: 10.2196/46857. PMID: 38289669.