Low back pain etiology

- Not Always Crystal Clear: Pseudogout as a Cause of Lumbar Radicular Pain-A Case Report
- Prevalence of Myofascial Trigger Points in Patients with Radiating and Non-Radiating Low Back Pain: A Systematic Review
- Predictors of Low Back Pain Risk Among Farmers in Rural Communities of Loja, Ecuador
- Prevalence of lower back pain and its associations with lifestyle behaviors among university students in the West Bank, Palestine: a cross-sectional study
- A comprehensive mapping of stress system interactions with pain and their contribution to chronification of musculoskeletal pain: Protocol of the STRAIN study
- Chronic coccygodynia
- Early repetitive transcranial magnetic stimulation in the spinal cord region for the treatment of spinal cord injury: A case report
- Dumbbell-shaped angiolipoma at the lumbar spine

The association between chronic low back pain and morphologic, structural changes of the lumbar paravertebral muscles has been widely acknowledged.

Mechanical alterations of the spine, which can cause chronic low back pain (LBP), are a frequent indication for spinal fusion.

Facetogenic chronic low back pain.

Ankylosing spondylitis.

Infection

see Infectious origin of chronic low back pain

The etiology of low back pain is multifactorial and can include a variety of sources, often classified into mechanical, non-mechanical, and referred pain sources. Here's a breakdown of the common causes:

1. Mechanical Causes (most common)

1. **Muscle or ligament strain**: Often due to sudden movements, heavy lifting, or poor posture.
2. **Degenerative disc disease**: Age-related wear and tear on the intervertebral discs.
3. **Herniated or bulging discs**: Discs pressing on nerves can cause back pain and radicular symptoms.
4. **Spinal stenosis**: Narrowing of the spinal canal, which can compress spinal nerves.
5. **Spondylolisthesis**: A vertebra slipping over the one below it, often causing instability.
6. **Osteoarthritis**: Degeneration of the facet joints in the spine, leading to pain and stiffness.
7. **Facet joint dysfunction**: Arthritis or injury to the facet joints.

2. **Non-Mechanical Causes

1. **Inflammatory conditions**: Such as ankylosing spondylitis or other spondyloarthropathies.
2. **Infections**: Spinal infections like osteomyelitis, discitis, or epidural abscess.
3. **Neoplasms**: Primary or secondary spine tumors.

3. Referred Pain

1. **Renal issues**: Kidney stones or infections can cause referred pain to the lower back.
2. **Gynecological conditions**: Endometriosis or pelvic inflammatory disease can manifest as low back pain.
3. **Gastrointestinal issues**: Conditions like pancreatitis or ulcers can cause referred pain to the lumbar region.

Psychological Factors

1. **Stress and depression**: These can exacerbate the perception of pain and are common in chronic cases of low back pain.

Understanding the exact etiology often requires a thorough clinical examination and may include imaging or laboratory tests to rule out serious underlying causes.

Causes of specific back pain include: fractures, infections, radiculopathy, tumors, axial spondyloarthritis as well as extravertebral causes [1].

Up to half of the low back pain cases may be attributable to lumbar degenerative disc disease (DDD) [2].

Low back pain is an unspecific symptom caused by many diseases, such as neuralgia, inflammation, malignancy and infection, which may involve nerve, muscle, bone or organs in the retroperitoneal space.

There are numerous etiologies for low back pain. Although the degenerative origin is the most frequent one, other possible aetiologies must be considered.

Axial microinstability secondary to disc degeneration is a well-known pathological entity, usually responsible for low back pain (LBP). Because of asymmetrical load at the level of the local facets joints, abnormal degeneration of the articular cartilage and bone remodelling of the joints can occur [3].

Conventional wisdom purports that back pain arises from the disc discogenic pain or the facet joint and referred pain, predominantly from compression of the nerve. Aware state transforaminal endoscopy has reported that the exiting nerve is a major cause of both back pain and referred pain [4] [5]

Facet join arthritis is common and affects at least 50% of the population.

One of the major causes of LBP is lumbar disc degeneration [6].

Less than 5% of cLBP patients suffer from lumbar disc herniation (LDH).

Inflammatory low back pain is encountered in the young patient, appearing at night and can be associated with extra-spinal symptoms (e.g. psoriasis, M. Reiter, etc.).

The lumbar spine is rarely involved in chronic polyarthritis.

In case of tumors, the metastasis is the most frequent cause whereas the plasmacytoma is the most frequent primitive bone tumor of the spine.

Infectious diseases can be of hematogenous origin or by direct iatrogenic inoculation.

Low back pain of metabolic origin is related to osteoporosis. Pain is secondary to vertebral compression fractures which makes it come close to post-traumatic low back pain caused by static disorders.

In most cases low back pain is has a degenerative origin. The degenerative disease is dominated by the disc degeneration, primum movens of the degenerative disease. Alteration of the mechanical properties of the disc leads to degenerative arthritis in the intervertebral joints by modifying their motion pattern. These changes can lead to osteophytes which can, together with the narrowing of the disc space lead to a narrowing either of the intervertebral foramen or the spinal canal (acquired lumbar stenosis) [7].

Lumbar degenerative spondylolisthesis is one of the reasons of low back pain [8].

Sacroiliac joint pain

Sacroiliac joint pain

Superior cluneal nerve entrapment neuropathy

Superior cluneal nerve entrapment neuropathy.

Risk Factors

A study aimed to investigate the processes of a participatory ergonomics program among 594 eldercare workers with emphasis on identified risk factors for low back pain and solutions, and reveal barriers and facilitators for implementation. Sixty-nine per cent of the identified risk factors were physical ergonomic, 24% were organisational and 7% were psychosocial risk factors. Most solutions were organisational (55%), followed by physical (43%) and psychosocial solutions (2%). Internal factors (e.g. team or management) constituted 47% of the barriers and 75% of the facilitators. External factors (e.g. time, financial resources, collaboration with resident or relatives) constituted 53% of the barriers and 25% of the facilitators. This study revealed the processes and implementation of a participatory ergonomics program among eldercare workers. The findings can be transferred to workers, workplaces, health and safety professionals, and researchers to improve future participatory

ergonomics programs [9].

Standing

Occupations requiring prolonged periods of constrained standing are associated with the development of low back pain (LBP). Many workplaces use improvised standing aids aimed to reduce LBP. Unfortunately, there is little scientific evidence to support the use of such standing interventions in effectively reducing LBP. To assess some commonly implemented standing interventions, thirty-one participants stood in four different standing positions (Level Ground (control), Sloped, Elevated, and Staggered) for 5 min each. The use of an elevated surface changed the lumbar spine posture of participants such that participants stood in a more flexed lumbar spine posture. This change in lumbar spine posture may be an indication that the elevated standing aid intervention can positively impact lumbar spine posture in standing pain developers and potentially reduce LBP [10].

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