

## THE INTERRELATIONSHIP BETWEEN LOW BACK PAIN AND DEPRESSION: A BIOPSYCHOSOCIAL PERSPECTIVE

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**Abstract.** Low back pain (LBP) is a major global health issue, significantly impacting the quality of life of affected individuals. Recent studies suggest a strong bidirectional relationship between LBP and depression, highlighting common pathophysiological mechanisms and psychosocial factors. This article explores the biological, psychological, and social aspects that connect LBP and depression, emphasizing the need for an integrated, multidisciplinary approach to treatment.

**Introduction.** Low back pain (LBP) is one of the most common musculoskeletal disorders, leading to disability and reduced functional capacity. Depression, a prevalent mental health disorder, frequently coexists with chronic pain conditions, including LBP. The interplay between these conditions creates a cycle of pain, emotional distress, and disability, complicating treatment and prolonging recovery. Understanding this connection is essential for developing effective therapeutic interventions.

**Biological Mechanisms Linking LBP and Depression.** Both LBP and depression share common biological pathways, including neuroinflammation, dysregulation of neurotransmitters, and altered pain processing in the central nervous system. Increased levels of pro-inflammatory cytokines, such as IL-6 and TNF- $\alpha$ , have been observed in both conditions, suggesting a role for systemic inflammation. Furthermore, disruptions in serotonin and dopamine signaling contribute to both chronic pain and mood disorders.

**Psychological Factors.** Psychological distress plays a significant role in the experience and persistence of LBP. Individuals suffering from depression may perceive pain more intensely due to heightened pain sensitivity and maladaptive coping strategies. Pain catastrophizing, a cognitive distortion where individuals magnify their pain experience, is commonly observed in patients with both LBP and depression. Additionally, the presence of depression can lead to reduced physical activity, further exacerbating musculoskeletal dysfunction and pain.

**Social and Environmental Influences.** Social factors, including work-related stress, socioeconomic status, and lack of social support, contribute to the complex relationship between LBP and depression. Chronic pain can lead to job loss, financial strain, and social isolation, which in turn increase the risk of depression. Conversely, individuals with depression may struggle to maintain a healthy lifestyle and adhere to pain management treatments, worsening their condition.

**Treatment Strategies.** Given the intertwined nature of LBP and depression, a multidisciplinary treatment approach is recommended. Effective management should include:

1. **Pharmacological Treatments:** The use of antidepressants (e.g., SSRIs and SNRIs) alongside analgesics may provide relief for both conditions.
2. **Psychological Interventions:** Cognitive-behavioral therapy (CBT), mindfulness-based stress reduction (MBSR), and psychotherapy have shown efficacy in reducing both pain perception and depressive symptoms.
3. **Physical Therapy and Exercise:** Regular physical activity, including stretching, strength training, and aerobic exercises, can improve mobility and reduce symptoms of depression.
4. **Holistic and Integrative Approaches:** Techniques such as acupuncture, yoga, and meditation may offer additional benefits by addressing both physical and emotional well-being.

**Conclusion.** The relationship between LBP and depression is multifaceted, influenced by biological, psychological, and social factors. Recognizing this interconnection is crucial for developing comprehensive treatment strategies that address both conditions simultaneously. Future research should focus on personalized treatment approaches that integrate medical, psychological, and social interventions to improve patient outcomes.

#### **REFERENCES:**

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