

Spinal pain and physical therapy: Enhancing recovery through exercise and rehabilitation.

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Introduction

Spinal pain is a common and often debilitating condition that affects millions of people worldwide. Whether it's caused by a herniated disc, degenerative disc disease, spinal stenosis, or muscle strain, spinal pain can significantly impact one's quality of life. While medication and surgical options are traditional treatment routes, physical therapy has emerged as a cornerstone of effective spinal pain management. Through targeted exercises and rehabilitation techniques, physical therapy aims to alleviate pain, restore function, and prevent future injury. This article explores how physical therapy can enhance recovery from spinal pain and discusses various approaches to optimizing rehabilitation [1, 2].

Spinal pain can originate from various structures within the spine, including discs, nerves, muscles, and vertebrae. The pain can be acute or chronic, localized or radiating, and it often affects the cervical (neck), thoracic (mid-back), or lumbar (lower back) regions. When the soft inner core of a disc bulges through a tear in the outer layer, it can press on nearby nerves, causing pain, numbness, or weakness. As discs age, they lose hydration and elasticity, leading to reduced cushioning and increased friction between vertebrae. Narrowing of the spinal canal can compress the spinal cord or nerves, resulting in pain, numbness, or weakness, particularly in the legs. Overuse, poor posture, or sudden movements can strain muscles and ligaments, leading to acute pain and limited movement [3, 4].

Physical therapy focuses on treating spinal pain through a combination of exercises, manual techniques, and education. The primary goals are to alleviate pain, improve mobility, strengthen supporting muscles, and enhance overall function. Physical therapists employ various techniques to reduce pain and inflammation associated with spinal conditions. Modalities such as heat and cold therapy can provide temporary relief by reducing muscle spasms and inflammation. Heat therapy improves blood flow and relaxes tight muscles, while cold therapy reduces swelling and numbs the affected area [5, 6].

Manual therapy, including techniques like spinal manipulation and mobilization, can also be effective. Spinal manipulation involves applying controlled force to specific spinal joints to improve alignment and relieve pressure on nerves. Mobilization techniques use gentle, oscillatory movements to increase joint mobility and reduce stiffness. A crucial

component of physical therapy is strengthening the muscles that support the spine. Weak or imbalanced muscles can contribute to spinal pain and dysfunction. Physical therapists design customized exercise programs to target core muscles, including the abdominals, obliques, and lower back muscles. Strengthening these muscles helps support the spine, improve posture, and reduce strain on spinal structures [7, 8].

Flexibility and range of motion are critical for maintaining spinal health and preventing pain. Physical therapy includes stretching exercises to enhance flexibility in the spine and surrounding muscles. Improved flexibility can help reduce muscle tension, prevent injuries, and improve overall movement quality. Increases flexibility in the spine and relieves tension in the back and neck. Improves flexibility in the hamstrings, which can affect lower back tension. Targets the mid-back to improve mobility and reduce stiffness [9, 10].

Conclusion

Physical therapy plays a crucial role in the management of spinal pain, offering a non-invasive and holistic approach to treatment. Through targeted exercises, manual techniques, and education, physical therapy aims to alleviate pain, improve function, and enhance overall quality of life. Innovations in physical therapy, such as teletherapy, robotic-assisted therapy, and biofeedback, continue to advance the field and provide new opportunities for effective pain management.

References

1. Kirshblum S. New rehabilitation interventions in spinal cord injury. *J Spinal Cord Med.* 2004;27(4):342-50.
2. Fritz JM, Sharpe JA, Lane E, et al. Optimizing treatment protocols for spinal manipulative therapy: study protocol for a randomized trial. *Trials.* 2018;19:1-2.
3. Sánchez-Ventura J, Gimenez-Llort L, Penas C, et al. Voluntary wheel running preserves lumbar perineuronal nets, enhances motor functions and prevents hyperreflexia after spinal cord injury. *Exp Neurol.* 2021;336:113533.
4. Rushton A, Jadhakhan F, Masson A, et al. Patient journey following lumbar spinal fusion surgery (FuJourn): A multicentre exploration of the immediate post-operative period using qualitative patient diaries. *PLoS One.* 2020;15(12):e0241931.

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5. Gonzenbach RR, Gasser P, Zörner B, et al. Nogo- A antibodies and training reduce muscle spasms in spinal cord- injured rats. *Ann Neurol.* 2010;68(1):48-57.
6. Rushton A, Elena B, Jadhakhan F, et al. Immediate patient perceptions following lumbar spinal fusion surgery: semi-structured multi-centre interviews exploring the patient journey and experiences of lumbar fusion surgery (FuJourn). *Eur Spine J.* 2022;31(12):3590-602.
7. Reid KF, Storer TW, Pencina KM, et al. A multimodality intervention to improve musculoskeletal health, function, metabolism, and well-being in spinal cord injury: study protocol for the FIT-SCI randomized controlled trial. *BMC Musculoskelet Disord.* 2022;23(1):493.
8. Bernaards CM, Ariëns GA, Hildebrandt VH. The (cost-) effectiveness of a lifestyle physical activity intervention in addition to a work style intervention on the recovery from neck and upper limb symptoms in computer workers. *BMC Musculoskelet Disord.* 2006;7:1-1.
9. Liptak MG, Theodoulou A, Kaambwa B, et al. The safety, efficacy and cost-effectiveness of the Maxm Skate, a lower limb rehabilitation device for use following total knee arthroplasty: study protocol for a randomised controlled trial. *Trials.* 2019;20:1-1.
10. Naidu A, Peters DM, Tan AQ, et al. Daily acute intermittent hypoxia to improve walking function in persons with subacute spinal cord injury: a randomized clinical trial study protocol. *BMC Neurol.* 2020;20:1-1.