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# Impact of Transcranial Direct Current Stimulation (tDCS) on Neuropathic Pain in Patients with Incomplete Spinal Cord Injury: A Review

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## Abstract

**Introduction:** Neuropathic pain as defined by the International Association for the Study of Pain as “pain caused by a lesion or disease of the somatosensory nervous system,” and which can be further categorized into central or peripheral neuropathic pain. Neuropathic pain usually starts shortly after the injury and can persist for the rest of the life. It can occur below, at, or above the level of injury. There are mainly two type of neuropathic pain, one occurs in a segmental distribution and other in diffuse distribution. It is a common complication after Spinal Cord Injury (SCI). Transcranial Direct Current Stimulation (tDCS) is being explored as a potential therapeutic approach for spinal cord injury. It involves applying a low electrical current to the scalp, modulating neural activity and promote neuroplasticity with modification of the cortical activity in individual in SCI patients which lead to decrease in neuropathic pain.

**Methodology:** To construct a review on this topic, an extensive search on various databases was carried out including Ovid, Google Scholar, Medline, PubMed, Researchgate and available textbooks. Studies done in the last 15 years were included in the review.

**Conclusion:** Transcranial Direct Current Stimulation (tDCS) has been shown to have positive effects in decreasing Neuropathic Pain in patients suffering from incomplete spinal cord injury.

**Keywords:** *Transcranial direct current stimulation, spinal cord injury, neuropathic pain, tDCS, non-invasive brain stimulation.*