

Transcranial direct current stimulation as a tool for postoperative pain management: a review of the current clinical evidence.

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Running title: tDCS and postoperative pain

Abstract

Adequate control of acute postoperative pain remains a challenge, and many patients still experience moderate to severe pain. Surgery is also a major cause of chronic pain, which cannot reliably be prevented with available interventions. Current analgesic regimens are also associated with severe side-effects. Consequently, we are in need of new techniques to better manage pain in the perioperative period. Transcranial direct current stimulation (tDCS)—a non-invasive neuromodulation technique—affects pain perception and modulation in human volunteers. Its ease of use, relatively low cost and absence of serious side effects make it an ideal candidate for clinical practice and a recent review concluded that it reduces pain intensity and improves quality of life of chronic pain patients. This article aims to review the clinical evidence for its use as a tool for postoperative pain management. In summary, seven randomized controlled trials have included over 310 patients and report encouraging results, most notably a considerable reduction in postoperative opioid use. More studies are needed to better establish the place of tDCS in this setting and to determine the optimal stimulation protocols.

Keywords

Postoperative pain, tDCS, analgesia

