

Transcutaneous neural stimulation use in postoperative knee rehabilitation

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Abstract

A prospective study of 100 patients who were operated on in 1979 and 1980 was performed to determine the effect of transcutaneous neural **stimulation** (TNS) on the patients' postoperative knee rehabilitation program. The patients were then divided into four study groups. Fifty patients had a single incision arthrotomy with a meniscectomy. Of these surgical patients, Group A included 25 patients who were treated with a TNS unit postoperatively, and Group B includes 25 patients who did not use TNS. Fifty other patients had a total condylar-total knee replacement. Of these surgical patients, Group C includes 25 patients who used TNS postoperatively and Group D includes 25 patients who did not use TNS. In the arthrotomy group the TNS patients (Group A) had a shorter average hospital stay (3.84 versus 5.40 days), initiated straight leg raises sooner (1.72 days versus 3.17 days) and began ambulation sooner (1.4 days versus 2.44 days) than the patients who did not use TNS (Group B). As compared to Group B, Group A had a reduction in number of meperidine injections of 42.75% and a reduction of meperidine dosage of 31.49%. In the total knee patients, the group treated with TNS (Group C) also had a shorter hospital stay (14.92 days versus 17.88 days) and performed straight leg raises sooner (4.92 days versus 7.54 days) than patients who did not use TNS (Group D). There was no difference in the ambulation times in Group C and Group D (4.96 days). There was a reduction of meperidine injections of 35.88% and a reduction of meperidine dosage of 44.48% in Group C.

The use of TNS in postoperative knee patients improved their rehabilitation performance and shortened their hospital stay. No side effects were noted.