

Comparison of isometric muscle training and electrical stimulation supplementing isometric muscle training in the recovery after major knee ligament surgery

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A preliminary report

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Abstract

Eight patients undergoing reconstruction of the anterior cruciate ligament were randomly allocated into two groups. The control group received a standard plaster cast and isometric muscle training. The stimulated group received a standard plaster cast, isometric training, and percutaneous electrical stimulation during the recovery period. The patients were examined clinically and with repeated muscle biopsies before surgery, 1 week after surgery, and 5 weeks after surgery at the time of removal of the cast. The electrically stimulated group had better muscle function from a clinical point of view and their succinate dehydrogenase activities were significantly higher than those in the control group. Electrical stimulation thus could prevent the fall in oxidative enzyme activity which was noted in the control group. The results suggest that percutaneous electrical stimulation may be a way of preventing muscle atrophy after major knee ligament surgery in athletes.