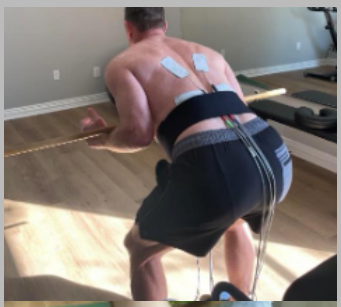
Case Study

Early Rehabilitation Outcomes Using the NEUBIE Electrical Stimulation Device After Arthroscopic Rotator Cuff Repair

PERFORMED AT:
Club NeuFit



DIAGNOSIS:

Patient is a healthy and active 51 y/o male who sustained partial-thickness tears at the distal portion of the supraspinatus, the proximal myotendinous junction of the infraspinatus and at the distal portion of the subscapularis. Patient also presented with a medial dislocation of the proximal long head of the biceps tendon interposed between the torn subscapularis fibers.

TREATMENT AND OUTCOME:

The purpose of this case report is to look at post-operative rehabilitation outcomes following arthroscopic repair of a rotator cuff tear using safe interventions with the NEUBIE earlier than traditional orthopedic protocols with in conjunction with therapeutic exercise, neuromuscular re-education, and manual therapy techniques. This article presents a case of an adult male with seen for occupational therapy beginning 3 days post-operatively a massive rotator cuff repair that that was managed promptly and safely with excellent outcomes. Results investigated include accelerated strength, ROM and scapular stability gains, pain management, atrophy prevention, and reduced muscular inhibition throughout recovery.

DISCUSSION:

The patient responded very positively to treatments achieved full recovery and the ability to return to recreational sports earlier than expected using safe therapeutic approach and milestones to achieve full



function while allowing appropriate tissue healing. NMES using the Neubie may be used safely in each rehabilitation phase of rotator cuff repair to promote healing, reduce inflammation, minimize inhibition of involved musculature, reduce pain, enhance force production, and normalize movement patterning.

It can be used concomitantly during standard rehab exercises as well as during manual and stabilization techniques to improve functional gains while safely respecting the integrity of the repair itself. It's also worth investigating early use of NMES and it's effects post-operatively on preventing atrophy quantitatively.The patient traumatically tore his opposite rotator cuff which had previous partial tears prior to injury and has pursued early therapeutic treatment following surgery using the Neubie with a similar protocol approved by his physician. His right shoulder remains fully functional without pain or restriction.

PATIENT PERSPECTIVE:

For pre-hab, Sara strategically utilized the technology to build muscles in my shoulder, for stabilization until my surgery date. Three days post-op we started our rehab schedule and attempted to meet three days weekly. She started with gentle therapy for muscle stimulation away from the surgical areas to minimize atrophy in the large muscles not affected by the surgery. Sessions grew to include stimulation around surgical areas all the while increasing the muscle mass. We kept this schedule until I was cleared for traditional physical therapy. At this point, both my surgeon and physical therapist commented I was three weeks ahead of normal recovery. Typical muscle atrophy had been eliminated. Over the next four weeks I utilized Neufit for normal workout routines to fully get fit, using PT for shoulder flexibility and strength. It was at this point I felt comfortable to hit a bucket of balls including my driver. Two weeks later I felt strong enough to play a full round of golf. As a side note, soon after this I felt strong enough to play volleyball using my right arm to hit as I did before the injury. I finished the match without damage to my right shoulder but I tore my left rotator cuff which already had previous damage in it after diving for a ball. Surgery was imminent; I started the process. I am pleased to report we have minimized shoulder muscle atrophy. I am 12 days post-op as I write this and feel as though I'll have similar results in the left shoulder.