

# Case Study

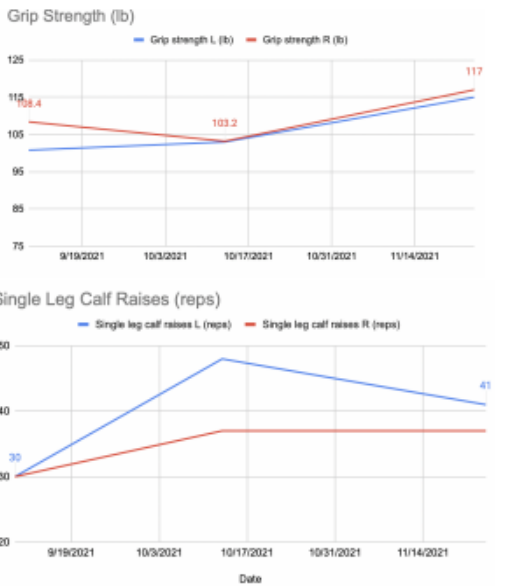
Using the Neubie - Pulsed DC Current Electrical Stimulation to Facilitate Muscular Strength and Hypertrophy

## PERFORMED AT:

*Recover Physical Therapy*

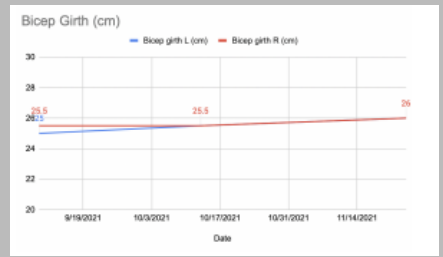
## DIAGNOSIS:

The patient was a healthy 22 year old male seeking to improve his strength, muscle endurance, and muscle mass. He had not been consistently exercising for several months at the beginning of the study, but did have a past history of weight lifting, distance running, and playing basketball. He felt like he was “out of shape” due to being heavily involved in his college studies and not having much time to exercise.



## TREATMENT AND OUTCOME:

He completed a 6-week strengthening course while using the Neubie machine on several major muscle groups on only the left side of his body, while exercises were the same on both left and right sides of his body. Strength tests and girth measurements were taken before and after interventions. The subject generally showed improved muscle strength, muscular endurance, and hypertrophy in the left side of his body where neubie electrodes were applied, in comparison to the right side where he exercised without the neubie electric stimulation.



## DISCUSSION:

For most of the muscular strength and endurance tests, the subject made more improvement on the left side of his body where the Neubie electrodes were applied than he did on the right side of his body without the Neubie electrodes. It is also noteworthy that the mid-intervention tests showed faster improvements in the left intervention side, suggesting the Neubie may help accelerate neurological adaptations at the beginning phases of strengthening and improve muscle motor unit recruitment. Of note, the subject's post intervention strength and girth tests and measurements were delayed by 10 days because he was ill with the common cold, and he was more sedentary and not exercising for almost 2 weeks from the end of intervention to the final testing. This may have contributed to lack of progress with the 1-rep max on the leg press and the plateau in progress with the single-leg calf raise endurance test, as well as overall progress with all the post-intervention results. Despite being ill for nearly 2 weeks before the final testing he still showed good overall improvement with results supporting the use of the Neubie e-stim application to accelerate strength gains, neurological adaptations, and muscle hypertrophy over the control side - traditional resistance training without the Neubie. This patient also showed increased girth measurements in his calf and bicep on the left intervention sides more than he did on the control side suggesting the Neubie may accelerate the hypertrophy process. The results of this case report support the use of implementing the Neubie electrical stimulation to enhance strengthening programs. Further research is needed to determine the long-term effects of exercising with the Neubie machine for strength gains and hypertrophy.

## PATIENT PERSPECTIVE:

"I feel the Neubie really helped to engage the muscles in the left side of my body, and I can feel the girth in my left calf is increased compared to the right side that exercised without the Neubie. Now that this study is concluded I am excited to use the Neubie on both sides of my body and continue strengthening. I really like being able to work out and get the intense muscle fatigue while lifting with lighter weights. I have felt more delayed-onset muscle soreness using the Neubie than I have with any other previous workout. The soreness in the left side of my body the day or two after working out was pretty intense, where I really didn't feel any soreness in the R side of my body, even though the exercises were the same."