Neufit System and the Neubie Device

The Muscular Response to the Neubie Device VS. Traditional Resistance Exercise

The Study

The Neubie device is FDA-cleared for indications such as maintaining and increasing range of motion, increasing local blood flow, and neuromuscular re-education. Since neuromuscular re-education is directly related to muscle recruitment, the Neubie is hypothesized to have a potential effect on muscle strength and hypertrophy. In this study, we compared acute changes in muscle thickness, isometric torque, and soreness before and up to 48 hours following no load resistance training with the Neubie vs. traditional high load resistance training.

**Location**: University of South Florida Muscle Laboratory | **Director**: Professor of Exercise Science, Dr. Samuel Buckner, PhD

Why Examine No-Load Training?

Rather than the amount of load on muscles, the most important factor in muscle growth is actually sufficient activation of muscle fibers. Growing evidence suggests that muscle growth can occur across a variety of intensities and training modalities. For example, 3 sets of 80% intensity or 3 sets of 30% intensity (3x/week) resulted in a similar muscle growth following 10 weeks of resistance exercise. Neuromuscular electrical stimulation like that of the Neubie is an attractive alternative to high-load training, as it has been shown to enhance muscle fiber activation, while also beneficially accelerating recovery in tissues by stimulating muscle protein synthesis and suppressing muscle protein breakdown.

**Training Visit:**

- **PRE-Measurements**:
  - Blood Pressure
  - Feelings
  - Soreness
  - Muscle Thickness
  - Maximum Voluntary Contraction (MVC)

- **Exercise Bout**:
  - Neubie or TRAD

- **Immediately POST**:
  - MVC
  - Blood Pressure
  - Muscle Thickness
  - Feelings
  - Soreness

- **Repeat Process**:
  - Other Condition

1. Muscle Thickness

Neubie and traditional training both led to significantly increased muscle thickness compared to pre-training. The amount of increased thickness was not significantly different between the two groups. This is important because fluid shifting into muscle cells is a precursor to hypertrophy.

2. Isometric Torque (Fatigue)

There was a significant decrease in torque immediately after training for both Neubie and traditional training, and the amount of decrease was very similar for both types of training at all times measured. This is important because fatigue is typically a precursor to improvements in strength and hypertrophy.

3. Soreness

Neubie resulted in significantly greater levels of delayed onset muscle soreness compared to traditional training.

4. Rated Perceived Exertion (RPE) Scale

For all training sets, participants rated RPE significantly lower with the Neubie than with traditional training.

CONCLUSION

Short-term training with the Neubie results in similar acute responses as traditional high load training in areas of increased muscle thickness, fatigue, and soreness, but with lower perceived exertion. These acute effects may indicate that the same amount of muscle growth or strength improvements can be achieved without the additional strain on joints, making it a safe, effective, and viable alternative to traditional training.

REFERENCES: