



### **Spasticity (Through Reciprocal Inhibition)**

**Spasticity has been defined as an increase in muscle tone due to hyperexcitability of the stretch reflex. Clinically, patients exhibit stiffness and increased muscle tension and many times report symptoms of muscle and joint pain as well. The joints most often affected include the shoulder, elbow, wrist, hand, knee, and ankle.**

**NMES can be used in two different ways to reduce spasticity—creating muscle fatigue and utilizing reciprocal inhibition. Since the settings for each of these are different, you may want to test the effectiveness for each method on your patients. Begin rehabilitation directly after application of NMES as the reduction of spasticity is temporary.**

**When using Reciprocal Inhibition, place the electrode pads on the opposing or antagonistic muscles or muscle group from those you wish to stretch.**

### **Suggested Electrode Placements**

**2-pad placement of electrode pads over muscle(s) with spasticity**

**4-pad placement of electrode pads over muscle(s) or muscle group with spasticity**

### **Suggested Settings**

**Pulse rate: 50-65 Hz**

**Pulse width/duration: 250-300  $\mu$ s**

**On/Off times: 1:1 ratio (start with 5 sec ON, 5 sec OFF)**

**Ramp time: 1 sec**

**Amplitude: Maximally tolerated contraction**

**Treatment Time: 15-20 minutes**

**Sessions per day: 3-5 sessions per day (or as needed)**

