**Specific Aim 1: Determine the influence of spasticity on volitional ankle control in individuals with SCI, and whether LT+TSS has a greater influence on volitional control than LT alone.**

**H1.1.** *Persons with higher spasticity, as measured by co-contraction of the tibialis anterior and soleus EMG signals when performing a volitional ankle task, will have a lower dorsiflexion angle during a volitional ankle dorsiflexion task, lower peak EMG, and slower activation (time-to-peak EMG) of the dorsiflexors in response to an auditory cue.*

**H1.2.** *Combined LT+TSS training will improve volitional control of the ankle dorsiflexor muscles to a greater extent than LT alone as evidenced by increased dorsiflexion angle, higher peak EMG, and faster activation of the dorsiflexors in response to an auditory cue during a volitional ankle dorsiflexion task.*

**Specific Aim 2: Determine the influence of volitional ankle control on dorsiflexion angle during over ground stepping in individuals with SCI, and whether LT+TSS has a greater influence on ankle angle during stepping than LT alone.**

**H2.1.** *Persons with greater volitional ankle control, as measured by higher volitional dorsiflexion angle, higher peak EMG, and faster activation in response to an auditory cue, will have a higher dorsiflexion angle during over ground stepping.*

**H2.2** *Combined LT+TSS will improve gait-related control of the ankle dorsiflexor muscles to a greater extent than LT alone as evidenced by greater increase in dorsiflexion angle during over ground stepping.*

**Data Analysis: XSENS and Spike files**

**XSENS.**

1. Dorsiflexion angle during volitional ankle dorsiflexion task
2. Dorsiflexion angle during swing phase of walking

**Spike.**

1. EMG of soleus and tibialis anterior during volitional ankle dorsiflexion task
2. Peak EMG of tibialis anterior during volitional ankle dorsiflexion task
3. Time to peak EMG of tibialis anterior during volitional ankle dorsiflexion task