Exercise Name: “Thera-Band® Assist with Swing Phase of Gait”

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Summary: By wrapping a Thera-Band® resistive band around the leg and foot, therapists can help restore a normal gait pattern, particularly in patients suffering from a stroke. The unique wrapping of the band helps assist the foot to clear the floor during the swing phase, thus improving safety during ambulation re-training.

To the best of my knowledge this technique was initially developed by a colleague of mine, Jim Ferland, PT. The purpose of the technique is to facilitate gait. This technique works particularly well with the neurological patient population. Most therapists working with this clientele would agree that it is difficult to manually assist dorsiflexion during the normal gait cycle as it is a distal component. Furthermore, it is nearly impossible to simultaneously guard a patient and manually assist dorsiflexion during the swing phase of gait. There exist various techniques to address dorsiflexion during the swing phase of gait with the patient either in a non-weight bearing (sitting or supine) or weight-bearing position. At best, these techniques facilitate dorsiflexion during a single cycle of swing.

One of the key benefits of this technique is that it offers distal control of the lower extremity during the normal gait sequence without jeopardizing patient safety. In other words, it serves to function as an extension of the therapists hands. This technique allows for facilitation during normal timing/conditions of gait.

Typically, the green Thera-Band® resistive band is used, as it offers the proper tension. I have used this technique with moderate to minimal assist patients. The therapist has the ability to continue to guard the patient by holding the gait belt. The opposite hand of the therapist is free to manage/maneuver the resistive band. Refer to Figures 1 and 2 (note that the therapist is not shown in these photos) for the configuration of the resistive band. The resistive band becomes especially helpful during the unweighting phase of the limb by assisting swing and subsequent foot placement. When considering the benefits of neuromuscular facilitation, it would be best for the patient to ambulate in bare feet, but it is not essential. Therefore, this technique achieves three goals:

1. Assist swing phase of gait.
2. Assist with foot placement for stance phase.
3. Assist with dorsiflexion.

As inversion dominates both the flexor and extensor synergy patterns, the motion of eversion is one of the final components to return to the gait pattern post neurological insult. When considering this outcome, I further modified the technique to offer dorsiflexion with eversion assist. Refer to Figure 3 for the configuration of the modification. Essentially I double the pull of the resistive band towards eversion by wrapping the band twice around the lateral border of the foot. Tactile input on the lateral border of the foot is known to
facilitate dorsiflexion. Therefore, this modification further facilitates the return of a normalized gait pattern in the neurological patient by facilitating dorsiflexion with eversion during the swing phase of gait.

This technique is currently being taught at the University of Hartford and Quinnipiac University in Connecticut in the neurological rehabilitation lab classes in the physical therapy programs.

Figure 1: Wrap the middle of a long, green Thera-Band® resistive band around the distal foot, and cross over the top of the ankle. Bring the band up around the back of the lower leg.

Figure 2: Bring the ends of the band around the back of the knee and in front of the thigh

Figure 3: Full wrapping of lower extremity, including stimulation of eversion with foot wrap