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PURPOSE: To compare the patient's performance during gait training in therapy with 2 weeks of manual stretching prior to gait training and 2 weeks of using the Quadriciser prior to gait training.

INTRODUCTION: The patient is a 65 year old female with spastic hemiplegic cerebral palsy. She presents to therapy with concerns of general weakness, postural weakness and changes, and impaired standing balance/tolerance. The patient is a primary power wheelchair user, but has to ambulate a few feet into her bathroom for toileting and bathing. She also has to perform stand pivot transfers to

participate in community outings with friends. The patient lives alone in a first floor apartment and is independent with all ADLs. Patient has a history of a fall in the past year which resulted in her being stuck on the floor of her bathroom for several hours. The patient has a history of a thoracic compression fracture from pressure exerted during vomiting last year.

GOALS:

2 weeks

- Patient will be independent with HEP in order to assist in recovery and restoration of function.

12 weeks

- Patient will exhibit better upright posture when performing stand pivot transfers.
- Patient will be able to confidently ambulate from wheelchair to toilet in her home.
- Patient will increase L LE strength to at least 4/5 to assist with instrumental activities of daily living.
- Patient will be able to walk 600' in the Solo Step harness system with minimal assistance for improved ability to ambulate into home bathroom and participate in community activities.

History:

- Very forward flexed posture with standing
- Unsteady with walking from wheelchair to toilet in bathroom
- Increased time to complete sit to stand and bed to chair transfers
- Fear of falling
- Concern for postural changes
- Primary wheelchair user, was ambulatory until 2005

Objective Data at Evaluation:

- Knee flexion AROM: 35 degrees right; 112 degrees left
- Knee extension AROM: 0 degrees right; -5 degrees left
- Shoulder flexion AROM: 150 degrees right; 70 degrees left
- Shoulder abduction AROM: 140 degrees right; 90 degrees left
- LE strength:

Body Part	Right	Left
Ankle Dorsiflexion	2+/5	3-/5
Ankle Plantarflexion	3+/5	3+/5
Hip Flexion	3+/5	3-/5
Hip Abduction	3+/5	2+/5
Hip Internal Rotation	3+/5	2+/5
Hip External Rotation	3+/5	2+/5
Knee Flexion	3+/5	3-/5
Knee Extension	3+/5	3-/5

Treatment:

- 2 weeks of manual stretching prior to gait training in Solo Step harness system with hand-held assistance from therapist
- 2 weeks of 15 minutes on Quadriciser prior to gait training in Solo Step harness system with hand-held assistance from therapist

Date	Manual Stretching v. Quadriciser	Distance walked during gait training
4/30/2024	Manual stretching	600 feet
5/2/2024	Manual stretching	720 feet
5/7/2024	Manual stretching	600 feet
5/9/2024	Manual stretching	600 feet
5/14/2024	Quadriciser	600 feet
5/16/2024	Quadriciser	660 feet
5/21/2024	Quadriciser	720 feet
5/23/2024	Quadriciser	720 feet

Discussion: In comparing distance walked with manual stretching v. Quadriciser warm up, the patient consistently was able to travel a greater distance when warming up on the Quadriciser compared to manual stretching. From a therapist’s perspective, the Quadriciser allows all 4 of the patient’s extremities to be stretched in a more effective and efficient manner by performing PROM of all 4 extremities at once. The reciprocal patterning promoted by the Quadriciser

helps to better enhance neuromuscular coordination, which is crucial for effective and efficient gait. Reciprocal patterning assists in training the nervous system to coordinate the alternating movements of the limbs, which is essential for walking. Additionally, the Quadriciser can also aid in motor learning and memory by helping the patient to develop and retain the motor patterns necessary for walking.