**Live Long Walk Strong Interventions**

Exercises:

1. Treadmill-up to 15 min
2. Closed Chain Double leg/Single leg extension with weights using a commercially available device -Total Gym (Total Gym PowerTower®, San Diego, CA)
3. Trunk extension training using a commercially available table - Saunders table (Saunders Total Back Exercise Machine, Isokinetics Inc., De Queen, AR)
4. Weighted Vests- Participants performed functional exercises while wearing a weighted vest with an emphasis on fast concentric movements and slow, controlled eccentric motion

Note: Patients underwent only the combination of these exercise options that corresponded to the impairments and limitations observed by the PT on their initial assessment.

Exercise details

1. Treadmill
2. Once a patient achieved 15 minutes, begin adding interval training. Short episodes of increased speed every 60 seconds 30 sec duration/2 levels above comfortable walking speed
3. To enhance balance, the Treadmill speed can be reduced to focus on decreasing UE assistance first with 1 hand/then with 0 hands if safe
4. If a patient is unable to achieve a relatively stable gait pattern in 1-2 training sessions, utilize over ground walking sessions instead.
5. Once patient can achieve stable gait pattern on treadmill, to enhance dual task walking, use a portion of the treadmill time to engage participant in reviewing the patient specific goals, checking the exercise journal and discussing assigned checklist activities.
6. Closed Chain Leg extension exercises
   1. If a patient is able to complete 20 reps at the top level and achieve a squat position with 90 degrees of flexion as the knees and ankles, begin adding weight. Start with 10 lbs initially. If they can perform this without difficulty, add an additional 10 pounds in the first session.
   2. To optimize leg power output, emphasize quick “stand”, squeezing gluteal muscles followed by slow, controlled eccentric motion.
   3. Advance the weights each session if the patient does not report increased muscle soreness or joint pain between sessions.
7. Trunk extension exercises
8. Perform 2-3 sets of 10-15 reps with 3-5 seconds of sustained holds. The PT cued patient to focus on abdominal muscle activation, scapular positioning as well as maintaining a neutral head and neck position.
9. Weighted vest exercise:
10. Heel raises
11. Step ups
12. Sit to stands