

Critical Thinking Skills: Ambulation

Watch

Watch the following video:

- **Early Gait Training: Patient Observations Inside the Parallel Bars**

1. What level of assist did the patient in the video require for static standing? How much verbal cueing did the patient require for the task? Practice your documentation skills below, using professional and skilled terminology:

The patient requires minimal assist for static standing, min verbal cues for upright posture. Therapist provides tactile facilitation to anterior chest for upright trunk and on gait belt for safety. The therapist could have provided facilitation to the pelvis, left lower extremity, or trunk that could have been more effective to improve muscle facilitation.

2. What level of assist did the patient require for ambulation? Did you notice differences in assist needed for swing versus stance phase of gait? Practice your documentation skills below, using professional and skilled terminology:

The patient requires minimal to moderate assist to ambulate 10 feet in parallel bars using L AFO and moderate verbal cues with tactile facilitation to prevent loss of L knee control. It appears the patient requires more assist for the stance phase of gait: the therapist is blocking the left knee to prevent buckling at times, although the patient tends to hyperextend the knee. The patient actually advances his left foot in swing without any assist although the foot placement is unpredictable and his mechanics are impaired.

3. What assistive and supportive devices are used with the patient for ambulation?

The patient is using parallel bars as a support for ambulation. He has been fitted with what appears to be an off the shelf L AFO (posterior leaf spring type). He is being followed during ambulation with a wheelchair for safety in the event of a sudden need to sit.

4. As the patient transitions away from use of the parallel bars in the near future, what assistive device would you anticipate would be most beneficial for him at the present stage of recovery? Defend your answer.

Parallel bars are useful for individuals who require a heavy amount of assist for ambulation as they provide maximal safety for patient and therapist. However, since patients tend to pull rather than push on parallel bars, their use should be weaned quickly. At the next stage of ambulation training a single sided device will be most beneficial, such as a large base quad cane or a hemiwalker. This is due to the dense weakness of the left upper extremity which would prevent the patient from using a walker or forearm crutches. Axillary crutches are almost never beneficial to

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neurologic patients. A platform rolling walker would also be beneficial as it would provide support for the hemiparetic arm during ambulation.

5. What are the indications for use of an ankle foot orthosis (AFO) for a patient like Henry? Comment on your observations of the AFO and how it is assisting him with ambulation.

An AFO is used for several reasons. In swing it assists with foot clearance that is typically caused by dorsiflexor weakness and it prepares the foot to contact the ground with a proper heel strike at initial contact. In stance, a well fitted AFO can improve patient safety as it prevents injury to the ankle in the event of poor motor control and/or poor sensation. The AFO can also prevent knee hyperextension and knee buckling depending on the way the AFO is fabricated, thereby improving knee stability and ultimately, patient safety.

6. Describe the ways in which the L AFO is not working to assist in Henry's recovery.

This AFO is too flexible and not supportive enough for Henry at this stage of recovery. His weakness at this point will require the use of a solid AFO that controls ankle movement to promote stability at the ankle and improve stability at the knee. The AFO could be hinged or unhinged. This decision is best made after trials of ambulation with both brace types.

7. What are the considerations for using an AFO in a patient like Henry who has diabetes mellitus and other medical co-morbidities?

Therapists must weigh the options for bracing even more carefully in patients with diabetes and other co-morbidities due to the increased risk of sensory deficits, poor circulation, and decreased tissue healing which could lead to skin breakdown. Therapists need to make clinical decisions regarding the material the brace is made of, where the brace trim lines will be, and establish an initial wearing schedule. Therapists need to be knowledgeable and refer their patients to qualified orthotists to collaborate on a bracing solution that will work for each individual patient. After the brace is fabricated and issued, careful monitoring of skin condition in collaboration with nursing or family caregivers is needed. Therapists must also instruct patient and/or caregivers in application and removal of the brace. Braces can be modified to be less supportive as the patient regains motor control.

8. What does the therapist in the video do to develop a therapeutic alliance with Henry? What could she do to improve communication with him?

The therapist provides a safe environment and provides Henry with verbal cues and encouragement. She smiles brightly when Henry stands up with little to no assist. The therapist could have directed her excitement more at Henry so he feels a sense of accomplishment. She also could have provided more clear expectations of the task,

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provided a demonstration of the task, and/or asked the patient if he was clear on the instructions prior to having him stand up. Intentional use of knowledge of performance and knowledge of results may have a positive effect on his motor learning.

9. Using your observational skills and the outline below, determine deviations in swing and stance as well as those present in both phases of gait for this patient. Hypothesize which impairments may be causing these deviations and functional limitations.

Phase of gait	Deviations noted	Possible impairments
Swing	<p><i>Decreased push off L ankle initial swing</i></p> <p><i>Decreased L hip flexion moment initial swing</i></p> <p><i>Decreased L knee flexion moment initial swing</i></p> <p><i>Decreased L knee deceleration terminal swing</i></p> <p><i>Increased external rotation LLE</i></p>	<p><i>L ankle PF weakness, decreased L hip extension PROM</i></p> <p><i>L hip flexor weakness</i></p> <p><i>L knee flexor weakness</i></p> <p><i>Weakness L hip internal rotators</i></p> <p><i>Decreased sensation and proprioception LLE</i></p> <p><i>Tone abnormalities LLE</i></p> <p><i>Decreased coordination LLE</i></p> <p><i>Pain</i></p> <p><i>Fatigue</i></p> <p><i>Decreased attention to task</i></p>
Stance	<p><i>L hip flexion/retraction throughout</i></p> <p><i>L knee hyperextension midstance</i></p> <p><i>L ankle plantarflexion midstance despite AFO</i></p> <p><i>Decreased weight acceptance on LLE</i></p>	<p><i>L hip extensor weakness</i> <i>L hip PROM limitations</i></p> <p><i>L knee extensor weakness</i> <i>L knee PROM limitations</i></p> <p><i>L ankle PROM limitations</i> <i>L ankle DF weakness</i> <i>L ankle PF spasticity</i></p> <p><i>Fear</i> <i>Pain</i> <i>Decreased sensation and proprioception LLE</i></p>