



Ekso Rounds



Patients with Hemiparesis:

This month we talk about how to progress your patients with hemiplegia or hemiparesis.

These are all ways you can reduce the assistance of the Ekso, and have your patient do more. Remember to reassess your patient. Knowing their strength values is imperative to success and safety with these added challenges. Please refer to the Ekso Clinical Progression for Beginner to Advanced Walking chart on page 74 in your training guide for full details. This list is not all inclusive and appropriate progression using the Ekso is based off of the trained therapist's clinical judgement

Assistive devices: Which assistive device to start with for a given patient will vary depending on the patient's presentation. It can often be helpful to start new Ekso users with the rolling walker, so that their primary focus can be on their weight shift and stepping, not the sequence of the cane. They can later progress to a unilateral device if appropriate.

Bilateral: The bilateral mode can be a helpful tool, even for the patients with unilateral weakness. Bilateral mode can be used to encourage and emphasize symmetry of stepping. When the robotic assistance is low, in either adaptive or fixed assistance, having the patient under a trajectory control can facilitate more even step lengths, symmetrical stance times, and specific swing phase movements to improve a compensatory strategy on the weaker side

Right and left affected: When appropriate, therapists can set the patient into right or left affected, freeing one leg from robotic control. In most cases, this is done with the stronger leg that may not need the robotic assistance for swing, and varying levels of assistance for stance. This setting is Ideal if symmetry is maintained. It allows for the patient to learn/make mistakes with the pattern while trying to return to reciprocal pattern. It may allow for increased variability of the step. The patient may benefit from return to bilateral if a step-to gait pattern or other poor gait asymmetries (high step, slow step) develop.

Pre-gait in unilateral; strong free: This allows practice with weight shifting onto the affected leg, by stepping with the unaffected leg. It can also be helpful to have the patient place their free leg on and off of a target or low step, encouraging them to place their weight on the affected side for longer periods of time.

Pre-gait in unilateral; weak free: If the patient is able to control their affected side against gravity, you may also try to free their affected side from robotic control. This affords them a controlled environment for weight shifting and stepping tasks with their free leg.

Walking with weak leg free: One way to increase the challenge to the affected side is to free it from robotic control for swing. It is imperative to assess your patient's strength prior to trying this progression. Generally, this may be trialed with a patient with significant quad/glute strength (>3+) in the free leg. Free Leg Stance Support may need to be Max/High. Recall that the stance support in bilateral is higher than in right or left affected, so if buckling of the stance leg is present, return to bilateral.

Any of these progressions may be trialed as intervals, or portions of primary gait sessions. Incorporating multiple treatment goals with various programming may help maximize treatment sessions.

At the end of the session, save some time to integrate all of the skills learned in Ekso, into over ground ambulation outside of the device. This is a key step in having the patient learn a new movement pattern.

Have clinical questions? Please reply to EksoRounds@eksobionics.com to communicate with an Ekso Bionics clinical team member.