Appendix 1: Guidelines for Progressing Participant in Exoskeleton Group
To standardize the rehabilitation received by participants in the Exoskeleton Group to a degree,
the following guidelines to progress a participant are provided:

Initial settings:

Walk Mode	First Step
Step Length	Individualized
Step Height	0.3-0.5"
Lateral Target	2
Side Assisted	Bilateral
Level of Assistance	Adapt

Ideal target settings for hemiparetic stroke:

Walk Mode	Pro Step+
Step Length	Individualized
Step Height	0.1"
Lateral Target	-1, -2
Side Assisted	Free leg on strong side
Level of Assistance	Fixed 0-50

There may be participants who improve rapidly during the course of the intervention (whether
due to spontaneous recovery or from functional practice). If a participant is improving faster than
expected, i.e. is able to perform longer bouts of walking with the exoskeleton, achieving higher
steps, walking with minimal assistance with the device, it is permissible to advance the
participant faster than the provided guidelines. Certain progressions can be made simultaneously
(e.g. fixed assistance with longer duration of walking).

Definition of EksoGT settings:
Walk mode *(how each step is triggered)*
    First Step: Each step manually triggered by therapist by pressing a button
    Pro Step+: Steps are triggered by exoskeleton user (by weight shift onto stance side, hip
        flexion moment on swing side)
Step Length *(length of each assisted step)*
Step Height *(height of foot clearance during swing, in inches)*
Lateral Target (*amount of lateral weight shift, units set by manufacturer*)
Side Assisted (*side of assistance from robotics)*
    Bilateral: Both legs receiving assistance from robotics
    Free leg: Unilateral assistance from robotics
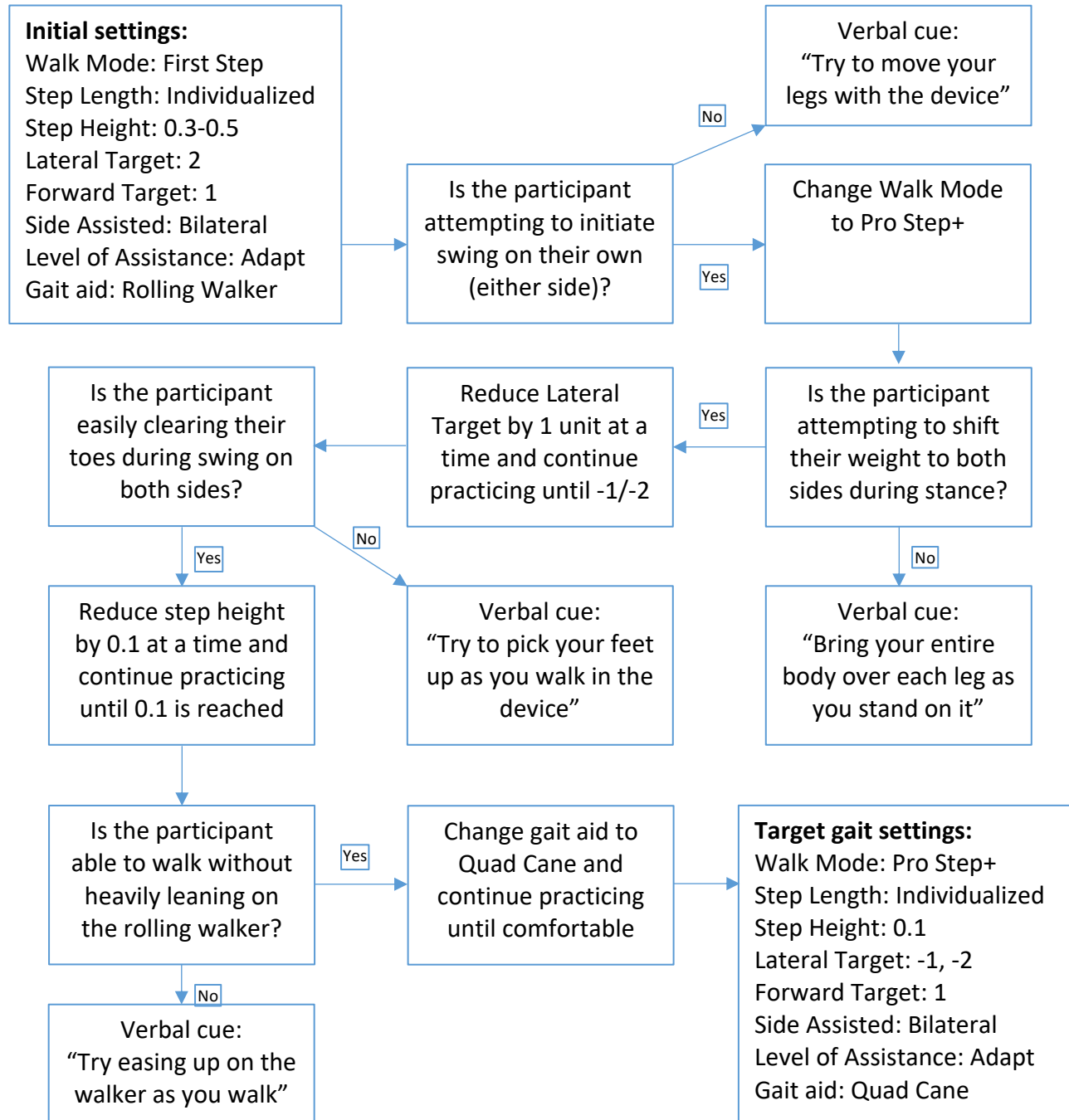Level of Assistance *(amount of assistance received from robotics)*
    Adapt: fluctuating assistance provided by robotics for each step as needed
    Fixed (0-100): set maximum of assistance provided by robotics for any given step (%)

Algorithm for Progressing the Intervention:

Progression of settings to create best quality, fully-assisted gait in exoskeleton

This process may be completed as quickly as the first or second session with the participant in the device. Some of these target values may not need to be reached in order to create best quality gait, and will also be guided by the visual appearance of the gait cycle.

Initial settings:
Walk Mode: First Step
Step Length: Individualized
Step Height: 0.3-0.5
Lateral Target: 2
Forward Target: 1
Side Assisted: Bilateral
Level of Assistance: Adapt
Gait aid: Rolling Walker

Is the participant attempting to initiate swing on their own (either side)?

No → Verbal cue: "Try to move your legs with the device"

Yes → Change Walk Mode to Pro Step+

Is the participant attempting to shift their weight to both sides during stance?

No → Verbal cue: "Bring your entire body over each leg as you stand on it"

Yes → Reduce Lateral Target by 1 unit at a time and continue practicing until -1/-2

Is the participant easily clearing their toes during swing on both sides?

No → Verbal cue: "Try to pick your feet up as you walk in the device"

Yes → Reduce step height by 0.1 at a time and continue practicing until 0.1 is reached

Is the participant able to walk without heavily leaning on the rolling walker?

No → Verbal cue: "Try easing up on the walker as you walk"

Yes → Change gait aid to Quad Cane and continue practicing until comfortable

Target gait settings:
Walk Mode: Pro Step+
Step Length: Individualized
Step Height: 0.1
Lateral Target: -1, -2
Forward Target: 1
Side Assisted: Bilateral
Level of Assistance: Adapt
Gait aid: Quad Cane

Algorithm to increase active participation and challenge while walking in exoskeleton

This flow chart should be used once the participant is comfortable walking in the device, requiring minimal verbal and physical guidance to maintain their balance in the device, to shift weight onto each stance limb, and to complete a swing. It may be very challenging for a participant to reach the final settings.

Starting gait settings:
Walk Mode: Pro Step+
Step Length: Individualized
Step Height: 0.1
Lateral Target: -1, -2
Forward Target: 1
Side Assisted: Bilateral
Level of Assistance: Adapt
Gait aid: Quad Cane

Are the readings for R or L consistently around or below 75?

— No → Verbal cue: "Try to lead the device as you step"

— Yes → Switch to Fixed Assist and start at 75 or lowest consistent reading

Are the readings consistently lower than the current target value?

— Yes → Lower the Fixed Assist value to the lowest consistent reading

— No → Verbal cue: "Bring your heel towards your bottom then kick forward"

Is the stronger side reaching values lower than 20?

— Yes → Free the stronger leg, practice walking with one side free and the other side with assist

— No → Verbal cue: "Focus on how the device moves your leg, then lead it"

Is the participant actively swinging the paretic side with only one side assisted?

— Yes → Continue to lower the Fixed Assist value on the paretic side

— No → Verbal cue: "Stand tall on your stronger leg and kick your weaker side"

Ideal gait settings:
Walk Mode: Pro Step+
Step Length: Individualized
Step Height: 0.1
Lateral Target: -1, -2
Forward Target: 1
Side Assisted: Free Leg on strong side
Level of Assistance: Fixed 0–50
Gait aid: Quad Cane