

Pediatric Gait Trainers

DME.WC.104.A

v1.0.2026

Introduction

Pediatric gait trainers are addressed by this guideline.

Health Equity Consideration

Health equity is the highest level of health for all individuals; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which individuals are born, grow, live, work, and age. Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include the following: safe housing, transportation, and neighborhoods; racism, discrimination, and violence; education, job opportunities, and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

Criteria

A pediatric gait trainer is considered medically necessary for a pediatric individual when **all** of the following are met:

- The individual requires assistance to walk due to an injury or a disease that affects the muscles and nerves.
- The individual has tried crutches and other less restrictive assistive aids, but they are not supportive enough for the individual to stand and take steps.
- The individual has tried a gait trainer, and with the device's specialized support, the individual is able to stand and take steps.
- The individual will use the gait trainer with an exercise program.

Definitions

The **Gross Motor Function Classification System (GMFCS)** was developed and validated for use in children with cerebral palsy (CP). Motor function is categorized into five (I-V) levels, with level I being the mildest and V being the most severe motor functional deficit.

- GMFCS Level I: The child walks without restrictions; however, more advanced gross motor skills may be limited.
- GMFCS Level II: The child walks without assist devices but may have limitations walking outdoors and in the community.
- GMFCS Level III: The child walks with assistive mobility devices and may have limitations walking outdoors and in the community.
- GMFCS Level IV: The child has severely limited walking ability even with the use of assistive devices. The child uses a wheelchair most of the time and may propel their own power wheelchair.
- GMFCS Level V: The child has severely limited self-mobility in all areas of motor function. The child has physical impairments that restrict voluntary movement control and the ability to maintain head and neck position against gravity. The child cannot sit or stand independently. The child may be able to use powered mobility.

Gait trainers may have an anterior or posterior orientation:

- **Anterior orientation** may facilitate ease of transfers.
- **Posterior orientation** have been noted to encourage more upright posture; however, these devices may make transfers more difficult.

Gait trainer features:

- **Frame style:** U-shaped frames are either in front, behind, or on the side. Sling, solid dynamic, or solid seats can be used with U-frames.
- **Wheel and caster options:** Two directionally fixed wheels and two swivel caster systems can either be rear, front, or midwheel drive.
- **Arm support options:** Vertical handles and arm gutters may assist with managing spasticity in children using handheld walkers. A hands-free gait trainer may promote upright posture.
- **Leg and thigh support systems:** Straddle type gait trainers typically have the option for solid adductor supports between the thighs and ankles. U-shaped frames typically have options for soft ankle cuffs, articulating leg cuffs, or an extended seat with an abduction skirt to limit adduction at the thighs.
- **Head support options:** A gait trainer may have the addition of neck or head supports mounted to the gait trainer.

Evidence Discussion

A 2024 randomized controlled trial by Choi et al. evaluated the effectiveness of overground robot-assisted gait training in 90 children with cerebral palsy who were classified within GMFCS levels II to IV. Participants were randomized to receive either 18 sessions of torque-assisted wearable exoskeleton training over 6 weeks or an equivalent schedule of conventional physical therapy. The authors reported that 78

children completed the intervention, and that the robot-assisted group demonstrated significantly greater improvements in Gross Motor Function Measure (GMFM), which is a standardized clinical assessment tool used to evaluate changes in gross motor abilities in children with motor impairments such as cerebral palsy. Additional gains were observed in GMFM scores with a mean difference of 2.70 as well as in GMFM 66 scores with a mean difference of 1.31. Improvements were also noted in Pediatric Evaluation of Disability Inventory Computer Adaptive Test responsibility domain scores with a mean difference of 2.52. These results suggested that overground wearable robot training produced measurable functional benefits in balance control, gait pattern, and independence in daily living when compared with conventional therapy in children with cerebral palsy.

Manikowska et al. (2021) evaluated the effects of a 10-week robot assisted therapy program on gait parameters in 26 children with bilateral spastic cerebral palsy. Participants completed 30 training sessions followed by gait analysis at baseline, immediately after therapy, and 6 weeks later. Double support symmetry significantly improved ($p=0.03$) and walking speed symmetry improved in the assisted ambulator group ($p=0.02$). However, the intervention did not produce significant changes in overall spatiotemporal parameters or gait deviation index. The findings suggested that robot assisted therapy produced limited but measurable improvements in specific aspects of gait symmetry while not altering broader gait mechanics across functional subgroups.

Booth et al. (2018) performed a systematic review including 41 studies and 11 randomized controlled trials to investigate the effects of functional gait training in individuals with CP. The authors found strong evidence that functional gait training results in clinically important benefits for children and young adults with CP, with a therapeutic goal of improved walking speed. In addition, the authors acknowledged weaker evidence that functional gait training can also benefit walking endurance and gait-related gross motor function.

Gharib et al. (2019) conducted a randomized controlled trial which assessed the effects of gait trainer assisted exercises on walking performance in children with CP. Participants in the experimental and control groups received a traditional physical therapy exercise program. In addition, the experimental group received gait trainer based exercises which aimed to improve walking performance. Treatment was provided three times per week for three successive months. The participants received baseline and post-treatment assessments to evaluate gait parameters including: average step length, walking speed, time on each foot (percentage of gait cycle), and ambulation index. At the three month follow-up, the authors found that the use of the gait trainer was associated with an improved ambulation index and time of support on each foot. Thus, the investigators concluded that a gait trainer combined with traditional physical therapy increases the chance of improving gait performance in children with spastic hemiparetic CP.

Codes addressed in this guideline

The inclusion of any code in this table does not imply that the code is under management or requires prior authorization. Refer to the applicable health plan for management details. Prior authorization of a code listed in this table is not a guarantee of payment. The Certificate of Coverage or Evidence of Coverage policy outlines the terms and conditions of the member's health insurance policy.

HCPCS	Description
E8000	Gait trainer, pediatric size, posterior support, includes all accessories and components
E8001	Gait trainer, pediatric size, upright support, includes all accessories and components
E8002	Gait trainer, pediatric size, anterior support, includes all accessories and components

References

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