Anthem

Clinical UM Guideline

Subject: Standing Frames
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Description

This document addresses the use of standing frames, which are assistive devices that provide an alternative position for individuals confined to supine, prone, or sitting positions. These devices allow the individual to achieve a standing position and then support the person in the standing position. Standers can be integrated to use with wheelchairs for those in a sitting position. Other types of standing frames are designed to aid those in a prone or supine position to achieve a standing position.

Clinical Indications

Medically Necessary:

A non-powered standing frame is considered **medically necessary** when a written assessment by a physician or other appropriate clinician demonstrates criteria 1, 2 and 3 are met:

1. The individual has a neuromuscular condition (such as multiple sclerosis, cerebral palsy, spinal cord injury or stroke) which impairs their ability to stand independently, but they are able to maintain a standing position due to residual strength in the hips, legs and lower body with the aid of a standing frame device; **and**
2. The individual has completed appropriate standing device training and has demonstrated an ability to safely use the device in the home setting; **and**
3. Use of the device can be reasonably expected to provide therapeutic benefits or enable the individual to perform certain tasks that he or she is unable to undertake otherwise due to the neuromuscular condition.

Replacement of a non-powered standing frame is considered **medically necessary** when *both* of the following criteria have been met:

1. The medically necessary criteria above have been met; **and**
2. The device is out of warranty and cannot be refurbished or adequately repaired.

Not Medically Necessary:

A non-powered standing frame is considered **not medically necessary** when the criteria above are not met and for all other indications.

Replacement of a non-powered standing frame is considered **not medically necessary** when the criteria above have not been met.

A powered standing frame is considered **not medically necessary.**

Coding

The following codes for treatments and procedures applicable to this guideline are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

When services may be Medically Necessary when criteria are met for non-powered systems:

HCPCS

E0637	Combination sit to stand frame/table system, any size including pediatric, with seat lift feature, with or without wheels [when specified as standing system]
E0638	Standing frame/table system, one position (e.g., upright, supine, or prone stander), any size including pediatric, with or without wheels
E0641	Standing frame/table system, multi-position (e.g., three-way stander), any size including pediatric, with or without wheels
E0642	Standing frame/table system, mobile (dynamic stander), any size including pediatric
E2230	Manual wheelchair accessory, manual standing system

ICD-10 Diagnosis

All diagnoses

Note: The following HCPCS modifier related to replacement is for informational purposes:

RA	Replacement of a DME, orthotic or prosthetic item

When services are Not Medically Necessary:
For the procedure codes listed above when criteria are not met for initial or replacement or when specified as powered, and for the following code:

HCPCS

E2301	Wheelchair accessory, power standing system, any type

ICD-10 Diagnosis

All diagnoses

Discussion/General Information

General Considerations

Impaired mobility is associated with multiple secondary complications including muscle wasting, decreased bone density, reduced skin integrity, spasms, constipation, depression, lowered self-esteem as well as an increased risk of mortality. Therapies such as passive standing have been used to improve motor function and minimize the detrimental effects of immobility, and to enhance hip alignment, bone mineralization, urinary function, respiratory functioning and psychosocial functioning.

A sit-to-stand device allows the individual with upper body strength to achieve a standing position from a sitting position without assistance. A sling is slipped behind the buttocks and hooked onto the frame of the standing device. The person's legs and feet are placed in supports on the frame. The person lifts themselves to a standing position, either manually or by use of a motor. A back support is rotated in place to support the individual's back.

A prone or supine stander is positioned next to the individual, usually next to a bed. The individual is either rolled or transferred to the device with the help of a sling lift. Once positioned on the device, the person's extremities are secured, and the device is changed to a vertical (standing) position. These devices provide varying levels of support to the user which is dependent upon an individual's level of head and trunk control.

Standing frames can be categorized by types:

- Passive (static) stander: A passive stander remains in one place, sometimes has casters but cannot be self-propelled.
- Mobile (dynamic) stander: User can self-propel a mobile stander if they have upper body strength to push a manual wheelchair.
- Active stander: An active stander creates reciprocal movement of the arms and legs while standing.
- Powered Stander: A stander that includes a motorized, power operated component to assist in the transfer of an individual to and from the device or to allow for powered mobility once an individual is in the stander.

Multiple Sclerosis (MS)

In a 2019 pragmatic, multicentre, superiority randomised controlled trial (RCT), Freeman and colleagues assessed the clinical effectiveness of a home-based, self-managed standing frame program. Individuals with MS and a severe mobility impairment were randomly assigned to either a standing frame plus usual care group (n=71) or usual care only (n=69). The individuals in the intervention group were asked to use the standing frame for 30 minutes, 3 times/week for 20 weeks. These individuals had two home-based physiotherapy sessions, six follow-up phone calls and access to paper-based, DVD and online resources. Participants in the control group received no additional interventions. Motor function, as assessed by the Amended Motor Club Assessment (AMCA), was measured in all participants at baseline, at 20 weeks and at 36 weeks. The primary clinical outcome was set as the AMCA score at 36 weeks, and a 9-point AMCA change was considered clinically meaningful a priori. At 36 weeks post-randomisation, the AMCA score was significantly higher in the standing group compared to the usual care group with a between-group mean difference of 4.7 points. While motor function, as measured by the AMCA score, was significantly improved in the intervention group, the improvement did not reach the predetermined minimal clinically meaningful level of improvement. The positive results of this study suggest that a modest improvement in one functional area is achievable.

Post-Stroke

In a pilot RCT, Allison and colleague (2007) studied 17 post-stroke individuals in a rehabilitation unit. Individuals were allocated to a control group (conventional physiotherapy) or a treatment group (conventional therapy plus an additional session of standing practice). Duration of study was variable depending upon the length of time the individual was inpatient, from 14 to 28 days. Balance, gross motor function and trunk control were assessed upon admission, weekly during the intervention stage and 12 weeks following discharge. At week 12, the treatment group reported a statistically significant improvement ($p<0.05$) in balance scores compared to the scores of the control group. The treatment group also reported an improvement in motor function scores over the control group, although that difference was not statistically significant. This small pilot study indicates that participants who received additional standing practice in addition to standard physiotherapy achieved higher median scores in motor function measures.

Cerebral palsy (CP)

Caulton and colleagues (2004) studied severely disabled children with CP to determine whether participation in 50% longer periods of standing (in either upright or semi-prone standing frames) would lead to an increase in the vertebral and proximal tibial volumetric trabecular bone mineral density (vTBMD), which affects low trauma fractures. A heterogeneous group of pre-pubertal children with CP (n=26) participated and were matched into pairs using baseline vertebral vTBMD standard deviation scores. Children within the pairs were randomly allocated to control (regular standing duration) or intervention (50% increase in the regular standing duration) groups. The median standing duration varied from 80.5% (range, 9.5%-102%) and 140.6% (range, 108.7%-152.2%) of the baseline standing duration in the control group and intervention group respectively. The mean vertebral vTBMD in the intervention group increased by 8.16 mg/cm^3, a 6% mean increase in vertebral vTBMD. There was no change in the mean proximal tibial vTBMD. The authors found that a longer period of standing in non-ambulant children with CP improves vertebral, but not proximal tibial vTBMD. The authors concluded that such an intervention might reduce the risk of vertebral fractures, although it is unlikely to reduce the risk of lower limb fractures in children with CP.

Hough and colleagues (2010) systematically reviewed the published literature addressing the efficacy of interventions, (for example, medical and physical) to improve low bone mineral density (LBMD) in children and adolescents with CP. Out of the eight studies included in the review, three studies included weight bearing interventions. The authors found that the most promising interventions for decreased BMD were weight bearing and bisphosphonates.

Duchenne Muscular Dystrophy (DMD)

In 2010, the DMD Care Considerations Working Group, a group of experts selected by the Centers for Disease Control and Prevention (CDC) developed a comprehensive set of management strategies for DMD. The report notes that passive standing devices in late ambulatory and early non-ambulatory stages is necessary when there are no or mild hip, knee or ankle contractures. In addition, the continued use of a passive device or a power device into the late non-ambulatory stage if the contractures are not too severe and devices are tolerated was advocated. This recommendation is based upon the collective judgment of the experts.

Additional Studies

There have been two systematic reviews assessing the available evidence and providing recommendations for supported standing programs. A 2010 systematic review by Glickman and colleagues included 39 studies, 10 studies related to pediatric and 29 studies to adult populations. The majority of the studies included less than 50 participants and described or compared supported standing to another intervention or took measurements prior to and following the interventions. Studies were grouped based upon outcomes in BMD, cardiopulmonary function, muscle strength/function and range of motion (ROM). The authors noted that for both pediatric and

adult populations, the available evidence moderately supports standing programs in BMD, ROM, spasticity and bowel function. For those with spinal cord injuries, there was a potentially negative cardiopulmonary side effect. The authors noted that conclusions were difficult to reach as the literature varied greatly in terms of design, intervention and outcome measures. The authors recommended that practicing therapists should combine the results of this systematic review with sound clinical judgement based on supported stander usage rationale in their specific setting.

Paleg and colleagues (2013) addressed the use of standing support systems in the pediatric population. A total of 30 studies were reviewed, along with the authors' opinions, to obtain recommendations for minimal dosages needed to maintain body function and structures. These areas included, but were not limited to, mental, cardiovascular and respiratory, digestive and urinary functioning and structures of the bones. The evidence was evaluated and recommendations made based upon the Oxford Centre for Evidence-Based Medicine (CEBM) Levels of Evidence and the American Academy of Neurology (AAN) Levels of Evidence. Evidence levels range from the highest level (1: systematic review of randomized controlled trials) to lowest (5: expert opinion without critical appraisal). The authors noted that although none of the evidence was rated as level 1 evidence, the strongest available evidence-based literature supported the use of standing devices to positively affect BMD.

Standing frames are generally accepted as a standard of medical practice when used for individuals with neuromuscular conditions who have an impaired ability to stand independently. Powered standing frames are used primarily for the convenience of the individual or caregiver and have not been shown to provide additional clinical benefit.

Definitions

Amended Motor Club Assessment (AMCA): Tool used to measure motor function in multiple sclerosis. The tool is comprised of two sections, a functional activity subscore and a lower limb subscore. Scores range from 0 to 76 points, with higher scores denoting better motor function.

Bone mineral density (BMD): Term used to describe the amount of calcium present in bone.

Duchenne muscular dystrophy (DMD): A type of muscular dystrophy which results in progressive muscle degeneration and weakness. Onset of symptoms is generally in early childhood between the ages of 3 to 5.

Prone: Lying with the front or face downward.

Reciprocal movement: Alternate movements of arms and legs seen in walking and other normal movements.

Supine: Lying on the back or having the face upward.

References

Peer Reviewed Publications:

1. Allison R, Dennett R. Pilot randomized controlled trial to assess the impact of additional supported standing practice on functional ability post stroke. Clin Rehabil. 2007; 21(7):614-619.
2. Bagley P, Hudson M, Forster A, et al. A randomized trial evaluation of the Oswestry Standing Frame for patients after stroke. Clin Rehabil. 2005; 19(4):354-364.
3. Bushby K, Finkel R, Birnkrant DJ, et al.; DMD Care Considerations Working Group. Diagnosis and management of Duchenne muscular dystrophy, part 1: diagnosis, and pharmacological and psychosocial management. Lancet Neurol. 2010a; 9(1):77-93.
4. Bushby K, Finkel R, Birnkrant DJ, et al.; DMD Care Considerations Working Group. Diagnosis and management of Duchenne muscular dystrophy, part 2: implementation of multidisciplinary care. Lancet Neurol. 2010b; 9(2):177-189.
5. Caulton JM, Ward KA, Alsop CW, et al. A randomized controlled trial of standing program on bone mineral density in non-ambulant children with cerebral palsy. Arch Dis Child. 2004; 89(2):131-135.
6. Eng JJ, Levins SM, Townson AF, et al. Use of prolonged standing for individuals with spinal cord injuries. Phys Ther. 2001; 81(8):1392-1399.
7. Freeman J, Hendrie W, Jarrett L, et al. Assessment of a home-based standing frame programme in people with progressive multiple sclerosis (SUMS): a pragmatic, multi-centre, randomised, controlled trial and cost-effectiveness analysis. Lancet Neurol. 2019; 18(8):736-747.
8. Glickman LB, Geigle PR, Paleg GS. A systematic review of supported standing programs. J Pediatr Rehabil Med. 2010; 3(3):197-213.
9. Goktepe AS, Tugcu I, Yilmaz B, et al. Does standing protect bone density in patients with chronic spinal cord injury? J Spinal Cord Med. 2008; 31(2):197-201.
10. Gudjonsdottir B, Stemmons Mercer V. Effects of a dynamic versus a static prone stander on bone mineral density and behavior in four children with severe cerebral palsy. Pediatr Phys Ther. 2002; 14(1):38-46.
11. Hendrie WA, Watson MJ, McArthur MA. A pilot mixed methods investigation of the use of Oswestry standing frames in the homes of nine people with severe multiple sclerosis. Disabil Rehabil. 2015; 37(13):1178-1185.
12. Hough J, Boyd R, Keating J. Systematic review of interventions for low bone mineral density in children with cerebral palsy. Pediatrics. 2010; 125(3):670-678.
13. Kunkel CF, Scremin AM, Eisenberg B, et al. Effect of "standing" on spasticity, contracture, and osteoporosis in paralyzed males. Arch Phys Med Rehabil. 1993; 74(1):73-78.
14. Kwok S, Harvey L, Glinsky J, et al. Does regular standing improve bowel function in people with spinal cord injury? A randomised crossover trial. Spinal Cord. 2015; 53(1):36-41.
15. Macias-Merlo L, Bagur-Calafat C, Girabent-Farrés M, Stuberg WA. Standing programs to promote hip flexibility in children with spastic diplegic cerebral palsy. Pediatr Phys Ther. 2015; 27(3):243-249.
16. Mercuri E, Finkel RS, Muntoni F, et al; SMA Care Group. Diagnosis and management of spinal muscular atrophy: Part 1: Recommendations for diagnosis, rehabilitation, orthopedic and nutritional care. Neuromuscul Disord. 2018; 28(2):103-115.
17. Mergler S, Evenhuis H, Boot A, et al. Epidemiology of low bone mineral density and fractures in children with severe cerebral palsy: a systematic review. Develop Med & Child Neurol. 2009; 51(8):773-778.
18. Paleg G, Livingstone R. Systematic review and clinical recommendations for dosage of supported home-based standing programs for adults with stroke, spinal cord injury and other neurological conditions. BMC Musculoskelet Disord. 2015; 16:358.
19. Paleg GS, Smith BA, Glickman LB. Systematic review and evidence-based clinical recommendations for dosing of pediatric supported standing programs. Pediatr Phys Ther. 2013; 25(3):232-247.

Government Agency, Medical Society, and Other Authoritative Publications:

1. Center for Medicare and Medicaid Services (CMS). National Coverage Determination for: Seat Lifts. NCD #280.4. Effective May 1, 1989. Available at: https://www.cms.gov/medicare-coverage-database/. Accessed on March 17, 2023.

2. Masselink C, Detterbeck A, LaBerge N, et al. Clinical Task Force and RESNA position on the application of supported standing devices: Current state of the literature. March 2023. Available at: https://www.resna.org/Resources/Position-Papers-and-Service-Provision-Guidelines. Accessed on March 17, 2023.
3. Pedlow K, McDonough S, Lennon S, et al. Assisted standing for Duchenne muscular dystrophy. Cochrane Database Syst Rev. 2019; 10:CD011550.
4. U.S. Food and Drug Administration 510(k) Premarket Notification Database. EasyStand Evolv™ (Ivacare Corp., Elyria, OH). No. K062402. Rockville, MD: FDA. September 21, 2006. Available at: http://www.accessdata.fda.gov/scripts/cdrh/devicesatfda/index.cfm?db=pmn&id=K062402. Accessed on March 17, 2023.
5. U.S. Food and Drug Administration 510(k) Premarket Notification Database. Rabbit Mobile Standing Frame™. No. K030882. Rockville, MD: FDA. April 4, 2003. Available at: http://www.accessdata.fda.gov/scripts/cdrh/devicesatfda/index.cfm?db=pmn&id=K030882. Accessed on March 17, 2023.
6. U.S. Food and Drug Administration 510(k) Premarket Notification Database. Rifton Mobile Prone Standers™. No. K921894. Rockville, MD: FDA. May 26, 1992. Available at: http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpmn/pmn.cfm?ID=K921894. Accessed on March 17, 2023.
7. Wang CH, Bonnemann CG, Rutkowski A, et al. Consensus statement on standard of care for congenital muscular dystrophies. J Child Neurol. 2010; 25(12):1559-1581.

Index

The use of specific product names is illustrative only. It is not intended to be a recommendation of one product over another, and is not intended to represent a complete listing of all products available.

History

Status	Date	Action
Reviewed	05/11/2023	Medical Policy & Technology Assessment Committee (MPTAC) review. Updated Discussion and References section.
Revised	05/12/2022	MPTAC review. Added medically necessary criteria for replacement of a non-powered standing frame. Added a not medically necessary statement regarding replacement of a non-powered standing frame. Updated References section. Added note to Coding section.
New	05/13/2021	MPTAC review. Initial document development. Moved content of DME.00034 Standing Frames to new clinical utilization management guideline document with the same title.
