Healthy Blue

Clinical UM Guideline

Subject:	Wheeled Mobility Devices: Manual Wheelchairs-Ultra-Lightweight		
Guideline#:	CG-DME-33	**Publish Date:**	01/30/2025
Status:	Revised	**Last Review Date:**	11/14/2024

Description

This document addresses criteria for ultra-lightweight wheelchairs. Manual wheeled mobility devices or wheelchairs are generally used by individuals with neurological, orthopedic, or cardiopulmonary conditions who cannot achieve independent or assisted movement with devices such as canes and walkers. The appropriate type of wheelchair is determined by assessment and evaluation of body size, medical needs and physical deficits. An ultra-lightweight manual wheelchair is constructed of high strength materials and weighs less than 30 lbs.

Note: Please see the following related documents for additional information:

- CG-DME-24 Wheeled Mobility Devices: Manual Wheelchairs–Standard, Heavy Duty and Lightweight
- CG-DME-31 Powered Wheeled Mobility Devices
- CG-DME-34 Wheeled Mobility Devices: Wheelchair Accessories

Note: For information regarding modifications to the structure of the home environment to accommodate a device, please see: CG-DME-10 Durable Medical Equipment

Clinical Indications

Medically Necessary:

An ultra-lightweight manual wheelchair is considered **medically necessary** when **all** of the following are met:

A. A written assessment by a physician or other appropriate clinician which demonstrates criteria **1, 2, and 3** below:
   1. The individual lacks the functional mobility to safely and efficiently move about to complete activities of daily living (ADLs) in the home setting; **and**
   2. The individual's living environment must support the use of an ultra-lightweight manual wheelchair; **and**
   3. The individual is willing and able to consistently operate the ultra-lightweight manual wheelchair safely **or** a caretaker has been trained and is willing and able to assist with or operate the ultra-lightweight manual wheelchair when the individual's condition precludes self-operation of the lightweight manual wheelchair;
      and

B. The individual has a severe medical condition that prevents self-propulsion in a standard or lightweight manual wheelchair; **and**
C. The ultra-lightweight type of manual wheelchair prescribed is based upon the individual's physical/functional assessment and body size.

Repair and replacement of an ultra-lightweight manual wheelchair is considered **medically necessary** when needed for normal wear or accidental damage.

Not Medically Necessary:

Ultra-lightweight manual wheelchairs are considered **not medically necessary** for any of the following:
A. When solely intended for use outdoors; **or**
B. When the device exceeds the basic device requirements for the individual's condition or needs; **or**
C. A backup ultra-lightweight manual wheelchair in case the primary device requires repair; **or**
D. The device is mainly to allow the member to perform leisure or recreational activities.

Coding

The following codes for treatments and procedures applicable to this document 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:

HCPCS

K0005	Ultralightweight wheelchair

ICD-10 Diagnosis

All diagnoses

When services are Not Medically Necessary:
For the procedure code listed above when criteria are not met or for situations designated in the Clinical Indications section as not medically necessary.

Discussion/General Information

The Centers for Medicare and Medicaid Services (CMS, 2005) Mobility Assistive Equipment National Coverage Decision (NCD), which considers the clinical indications for the appropriate types of mobility assistive devices, were utilized in the development of this document.

Mobility impairments include a broad range of disabilities that affect a person's independent movement and cause limited mobility. In 2022, the National Center for Medical Rehabilitation Research (NCMRR) Program, estimates that 31 million people have mobility impairments, which may take the form of paralysis, muscle weakness, nerve damage, stiffness of the joints, or balance/coordination deficits. According to the Centers for Disease Control and Prevention (2020) there are three dimensions of disability: impairment, activity limitations, and participation restrictions. In the Americans with Disabilities Act, the census estimated that over 4% of the United States population has moderate to severe disability necessitating the use of a wheelchair to assist with mobility. Nearly 4 million Americans aged 15 years and older have a disability that requires the use of a wheelchair (National Census Bureau, 2012).

Selection of an ultra-lightweight manual wheelchair is an individualized process that takes into consideration a user's level of function, medical condition, surrounding environment, activity level, and seating and positioning needs.

In 2009, Salminen and colleagues performed a systematic review of the literature to determine the effectiveness of mobility assistive devices. The review found that mobility devices improve users' participation and mobility. However, it was not possible to draw any general conclusions about the effectiveness of mobility device interventions. The authors emphasized that well-designed research is required to accurately assess the effectiveness of mobility assistive devices.

Souza and colleagues (2010) found that 68% of individuals with multiple sclerosis (MS) used wheelchairs for mobility assistance. MS may cause a wide variety of neurological deficits, with ambulatory impairment being the first symptom and most common form of disability. The authors found a limited number of articles with higher levels of evidence addressing mobility assistance specifically for persons with MS. They concluded that further research is necessary to develop an accurate assessment and measurable clinical performance model addressing the use of mobility assistive devices for the different aspects of MS-related motor impairments.

In 2011 Conger and Basset published the Wheelchair Compendium of Physical Activities (PA) for individuals who routinely use a manual wheelchair. Eleven studies that evaluated 63 different wheelchair activities were identified, energy expenditures were measured by indirect calorimetry expressed as METs or VO_2. The energy requirements for some activities differed between individuals who use wheelchairs and those who do not. The goal of the compendium was to enhance scoring of PA surveys and promote the benefits of activity.

Cherubini and colleagues (2012) conducted an observational study of 150 wheelchair users with an average age of 46.7 ± 17.3 years. They analyzed the congruence of the prescribed wheelchair and the individual's mobility needs. Study participants had a wide variety of disabilities, including spinal cord injury 24%, multiple sclerosis 18%, cerebral infantile paralysis 18% and skull trauma 10%. The authors found that 68% of the prescribed wheelchairs were not suitable in reference to the wheelchair and accessories. After finding a correlation between the prescription sources and the suitability of the wheelchair for the individual, they concluded that wheelchair

prescriptions should be based on careful assessment of mobility needs and improved collaboration between physicians and technicians.

In 2012 The Rehabilitation Engineering & Assistive Technology Society of North America (RESNA) published a position paper regarding the application of ultralight manual wheelchairs. RESNA opined that ergonomics require that devices match the individual's level of ability, environment and activity, and must have features that can be specified to match both their anatomical dimensions and functional ability. A subsequent update was published in 2023 to reflect current technology. The document defines ultralight manual wheelchairs as a "… highly adjustable and configurable wheelchair that is as light as possible to meet the unique requirements of the individual today and in the future." The 2023 RESNA position statement includes the following:

> Ultralight wheelchairs (ULWCs), which are customizable, including configuration and adjustability while minimizing overall weight, are the only acceptable choice for individuals who rely on manual wheelchairs for independent manual mobility, regardless of propulsion method and across multiple care settings and diagnoses.
>
> The design and construction of ULWCs should use the most current technology to provide fully customizable wheelchairs made of materials that minimize weight, including but not limited to aluminum, titanium, magnesium, and carbon fiber. Various seat configurations are available with ULWCs, and they can accept external positioning devices such as cushions, back supports, and postural support accessories.

Preserving upper limb function in people who self-propel is imperative. Risks for repetitive stress injuries include intrinsic factors such as the age when a person first starts propelling, current chronological age, total duration of time propelling, nature and duration of illness or injury, extent of muscular imbalance, amount of narrowing of the acromiohumeral space, and body weight. Extrinsic risks include the biomechanics of overhead reaching, type and number of daily tasks, number and technique of transfers, pressure management, propulsion force and frequency, chair configuration including postural supports, and rolling resistance. Critical measurements identified by RESNA applicable to customization include seat width, seat depth, seat-to-floor height, seat slope, leg rest and footplate support position, back support height, back support angle, horizontal position of the rear wheel axle, vertical position of the rear wheel axel, camber, and rear wheel alignment. Customizable ULWCs specifically address upper extremity pain, repetitive stress injury prevention, and act as an orthotic device that provides individualized postural support.

Tefertiller and colleagues (2023), published a single center, randomized crossover study of 18 individuals diagnosed with brain injury resulting in hemiplegia to evaluate independence and exertion using a lightweight wheelchair in comparison with ULWCs (rigid and folding). Inclusion criteria were individuals with brain injury that used hemipropulsion technique to mobilize in a manual wheelchair for at least 4 hours per day. Participants completed skills and endurance testing in 3 different wheelchair configurations over a 3-week period: lightweight wheelchair; ultra-lightweight folding wheelchair; and ultra-lightweight rigid wheelchair. The outcomes measured

were the percentage capacity score from the modified Wheelchair Skills Test 4.1. Secondary outcomes included the Wheelchair Propulsion Test (100-m Push Test), heart rate, and rate of perceived exertion. The results demonstrated differences in the Wheelchair Skills Test (total score, low rolling resistance score, and the goal attainment score) favoring the ultra-lightweight wheelchairs over the lightweight wheelchair (p=0.002, p=0.001, and p=0.016, respectively). Time to complete the 100-m push test was faster for the ultra-lightweight rigid frame in comparison with the lightweight frame (p=0.001; 30.89 seconds faster). No significant differences were seen with the propulsion test measures across any of the wheelchair frames. Heart rate change and perceived exertion were both lower for the ultra-lightweight rigid group in comparison with the lightweight group (p=0.006 and p=0.013, respectively). The authors concluded that using an ULWC may lead to improved ability to complete wheelchair skills needed for successful mobility as well as a decrease in the actual and perceived burden associated with propulsion in comparison to a lightweight wheelchair.

In 2024 Conger and colleagues updated the Wheelchair Compendium to further curate understanding of energy expenditures. A systematic review completed from 2011-2023 analyzed 47 studies that summarized the energy expenditure of 124 specific activities into a single resource. The authors concluded the compendium may reduce barriers to PA, including a lack of knowledge about suitable exercises, fosters inclusivity in fitness, and promotes regular exercise to improve health, physical adaptations, and disease prevention.

Definitions

Activities of daily living (ADLs): Self-care activities such as transfers, toileting, grooming and hygiene, dressing, bathing, and eating.

Functional mobility: The ability to consistently move safely and efficiently, with or without the aid of appropriate assistive devices (such as prosthetics, orthotics, canes, walkers, wheelchairs, etc.), at a reasonable rate of speed to complete an individual's typical mobility-related activities of daily living. Functional mobility can be altered by deficits in strength, endurance sufficient to complete tasks, coordination, balance, speed of execution, pain, sensation, proprioception, range of motion, safety, shortness of breath, and fatigue.

References

Peer Reviewed Publications:

1. Cherubini M, Melchiorri G. Descriptive study about congruence in wheelchair prescription. Eur J Phys Rehabil Med. 2012; 48(2):217-222.
2. Conger SA, Bassett DR. A compendium of energy costs of physical activities for individuals who use manual wheelchairs. Adapt Phys Activ Q. 2011; 28(4):310-25.
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4. McLaurin CA, Axelson P. Wheelchair standards: an overview. J Rehabil Res Dev Clin Suppl. 1990; (2):100-103.

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7. Tefertiller C, Jones J, Sevigny M, et al. Configuration in unilateral upper- and lower-extremity propulsion: A randomized crossover study to assess effects of rear wheel axle position and frame type. Arch Phys Med Rehabil. 2023; 104(8):1188-1194.

Government Agency, Medical Society and Other Authoritative Publications:

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3. National Census Bureau. Facts for Features: Anniversary of Americans with Disabilities Act: July 26, 2021. Available at: Anniversary of Americans With Disabilities Act: July 26, 2021 (census.gov) Accessed on August 01, 2024.
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5. Rehabilitation Engineering & Assistive Technology Society of North America (RESNA) Position on the application of ultralight manual wheelchairs. March 27, 2012. Available at: https://www.resna.org/Portals/0/Documents/Position%20Papers/UltraLightweightManualWheelchairs.pdf. Accessed on August 12, 2024.
6. Worobey LA, Bernstein J, Ott J, et al. RESNA position on the application of ultralight manual wheelchairs. Assist Technol. 2023; 2:1-18.

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Ultra-Lightweight Wheelchair
Wheelchair

History

Status	Date	Action
Revised	11/14/2024	Medical Policy & Technology Assessment Committee (MPTAC) review. Reformatted Clinical Indications section. Moved content regarding home modifications to a Note. Added Note addressing home modifications. Removed

		NMN statement addressing home modifications. Revised Description, Discussion and References Sections.
Reviewed	11/09/2023	MPTAC review. Revised grammatical error in Definitions Section. Updated References Section.
Reviewed	11/10/2022	MPTAC review. Updated Description, Discussion and References sections.
Reviewed	11/11/2021	MPTAC review. Updated Discussion and References sections.
Reviewed	11/05/2020	MPTAC review. Updated References section. Reformatted Coding section.
Reviewed	11/07/2019	MPTAC review. Updated Discussion and References sections.
Reviewed	01/24/2019	MPTAC review. Updated References section.
Reviewed	02/27/2018	MPTAC review. The document header wording updated from "Current Effective Date" to "Publish Date." Updated grammatical error in discussion and ADLs definition. Updated Reference section.
Revised	02/02/2017	MPTAC review. Removed "Note" below medically necessary criteria for repairs and replacement for ultra-lightweight manual wheelchairs. Updated formatting in clinical indications section. Updated Discussion and Reference sections.
Revised	02/04/2016	MPTAC review. Clarified medically necessary criteria for ultra-lightweight manual wheelchairs. Reformatted clinical indication section. Added note to medically necessary criteria for repairs and replacement for ultra-lightweight manual wheelchairs. Updated References. Removed ICD-9 codes from Coding section.
Revised	02/05/2015	MPTAC review. Reformatted medically necessary and not medically necessary statements. Clarified medically necessary assessment criteria. Updated Description and References.
Reviewed	02/13/2014	MPTAC review. Updated Websites.
Revised	02/14/2013	MPTAC review. Reformatted not medically necessary statement. Updated Description, References and Websites.
Reviewed	02/16/2012	MPTAC review. Discussion and References updated.
Reviewed	02/17/2011	MPTAC review. Discussion and References updated.
New	02/25/2010	MPTAC. Initial document development to specifically address ultra-lightweight manual wheelchairs formerly contained in CG-DME-24.

Pre-Merger Organizations	**Last Review Date**	**Document Number**	**Title**
Anthem Virginia	06/28/2002	Memo 1103	Wheelchairs
Anthem CO/NV	10/29/2004	DME.205	Motorized/Power Wheelchair Bases
Anthem CO/NV	10/29/2004	DME.206	Wheelchair Options & Accessories

Anthem CO/NV	10/29/2004	DME.207	Wheelchair Seating
Anthem CO/NV	10/29/2004	DME.208	Power Operated Vehicles
Anthem Connecticut	09/2004	Guideline	DME Guidelines
Anthem Connecticut	11/2004	Guideline	DME Guidelines Summary
Anthem Midwest	05/27/2005	DME 006	Wheelchairs: Manual, Motorized Powered, And Accessories
Anthem Midwest	05/27/2005	DME 022	Power Operated Vehicles
WellPoint Health Networks, Inc.	09/23/2004	Guideline	Motorized Assistive Devices