Medical Policy

Northwood

Myoelectric Upper Limb Prostheses

Description

The need for a prosthesis can occur for a number of reasons, including trauma, surgery, or congenital anomalies.

The Myoelectric prostheses uses muscle activity from the remaining limb for control of joint movement. Electromyographic signals from the limb stump are detected by surface electrodes, amplified, and then processed by a controller to drive battery-powered motors that move the hand, wrist, or elbow. Although upper-arm movement may be slow and limited to 1 joint at a time, myoelectric control of movement may be considered the most physiologically natural.

Myoelectric hand attachments are similar in form to those offered with the body-powered prosthesis but are battery-powered.

A hybrid system, a combination of body-powered and myoelectric components, may be used for high-level amputations (at or above the elbow). Hybrid systems allow for control of 2 joints at once (i.e., 1 body-powered, 1 myoelectric) and are generally lighter and less expensive than a prosthesis composed entirely of myoelectric components.

Technology in this area is rapidly changing, driven by advances in biomedical engineering and by the U.S. Department of Defense Advanced Research Projects Agency, which is funding a public and private collaborative effort on prosthetic research and development. Areas of development include the use of skin-like silicone elastomer gloves, “artificial muscles,” and sensory feedback. Smaller motors, 5 microcontrollers, implantable myoelectric sensors, and reinnervation of remaining muscle fibers are being developed to allow fine movement control. Lighter batteries and newer materials are being incorporated into myoelectric prostheses to improve comfort.

The LUKE Arm (previously known as the DEKA Arm System) was developed in a joint effort between DEKA Research & Development and the U.S. Department of Defense Advanced Research Projects Agency program. It is the first commercially available myoelectric upper-limb that can perform complex tasks with multiple simultaneous powered movements (e.g., movement of the elbow, wrist, and hand at the same time). In addition to the electromyographic electrodes, the LUKE Arm contains a combination of mechanisms, including switches, movement sensors, and force sensors. The primary control resides with inertial measurement sensors on top of the feet. The prosthesis includes vibration pressure and grip sensors.

Medical Policy

Myoelectric Upper Limb Prostheses

Policy

For WellSense NH Commercial Members (NH Clarity members under 19 years of age), see "Special Coverage" box below on page 8. Effective 1/1/25.

Myoelectric upper limb prosthetic components may be Medically Necessary when **all** of the following conditions are met:

- The patient has an amputation or missing limb at the wrist or above (e.g., forearm, elbow), and
- Standard body-powered prosthetic devices cannot be used or are insufficient to meet the functional needs of the individual in performing activities of daily living, and
- The remaining musculature of the arm(s) contains the minimum microvolt threshold to allow operation of a myoelectric prosthetic device, and

- The patient has demonstrated sufficient neurological and cognitive function to operate the prosthesis effectively, and

- The patient is free of comorbidities that could interfere with function of the prosthesis (e.g., neuromuscular disease), and

- Functional evaluation indicates that with training, use of a myoelectric prosthesis is likely to meet the functional needs of the individual (e.g., gripping, releasing, holding, coordinating movement of the prosthesis) when performing activities of daily living. This evaluation should consider the patient's needs for control, durability (maintenance), function (speed, work capability), and usability, and

- The amputee has been evaluated by an independent qualified professional to determine the most appropriate prosthetic components and control mechanism (e.g., body-powered, myoelectric, or combination of body-powered and myoelectric). The independent qualified professional has verified that the amputee meets all the medical necessity criteria for the device.

Advanced upper-limb prosthetic components with both sensor and myoelectric control (e.g., LUKE Arm) are considered **investigational**.

A prosthesis with individually powered digits, including but not limited to a partial hand prosthesis, is considered **investigational**.

Myoelectric controlled upper-limb ***orthoses*** are considered **investigational**.

Myoelectric Upper Limb Prostheses

Myoelectric upper limb prosthetic components are **NOT MEDICALLY NECESSARY** under all other conditions.

Billing of more than one terminal device with HCPCS code L6026 is considered incorrect coding.

- HCPCS code L7499 (upper extremity prosthesis, not otherwise specified) must not be used for the billing of any additional features or components, programming, adjustment, etc. with HCPCS codes L6026, L6715, L6880, or L7007-L7009 as these codes are considered all inclusive. The use of HCPCS code L7499 on initial issue, with any of the above HCPCS codes, is considered unbundling.

- HCPCS L6895 (addition to upper extremity prosthesis, glove for terminal device, any material, custom fabricated) is the appropriate code to bill for a custom prosthetic cosmetic glove that includes matching color, hair, skin, and wrinkles. Custom gloves should not be billed using HCPCS L7499 for the cost of the additional cosmetic features. The long narrative description for the L6895 indicates "any material" and therefore includes all cosmetic features.

- HCPCS Code L6025 (transcarpal/metacarpal or partial hand disarticulation prosthesis, external power, self-suspended, inner socket with removable forearm section, electrodes and cables, two batteries, charger, myoelectric control of terminal device) describes a complete prosthesis. This base procedure code includes all necessary components. This base procedure code includes a custom fabricated socket. The use of L6715 on initial issue will be denied as unbundling.

- HCPCS code L6880 (Electric hand, switch or myoelectric controlled, independently articulating digits, any grasp pattern or combination of grasp patterns, includes motor(s)**)** describes a complete hand prosthesis, which consists of the terminal device, all articulating digits and motors. This base procedure code does not include a custom fabricated socket. This base procedure code includes all necessary components. The use of L6715 on initial issue will be denied as unbundling.

- All grasp patterns are included in the L6880 HCPCS code language. The use of HCPCS code L6881 (Automatic grasp feature, addition to upper limb electric prosthetic terminal device) with L6880 would be considered unbundling.

- I-Limb Hand should be coded L6880 only.

- HCPCS code L7499 (upper extremity prosthesis, not otherwise specified) must not be used for the billing of any additional features or components, programming, adjustment, etc. with L6025 or L6880 as these codes are considered all-inclusive. The use of L7499 on initial issue will be denied as unbundling.

- With the exception of items described by specific HCPCS codes, there should be no separate billing and there is no separate payment for a component or feature of a microprocessor terminal device, including but not limited to proportional /digital control; powered multi-positional thumb; grip patterns; coatings; titanium; sequential control; speed control; touch screen; communication; Bluetooth; app controls; switches and transducers.

- Suppliers should not bill HCPCS L7499, [upper extremity prosthesis, not otherwise specified] for upper limb prosthetic cosmetic features such as; coloring, veins, hair, etc. Suppliers should be billing L6895 [addition to upper extremity prosthesis, glove for terminal device, any material, custom fabricated].

- HCPCS L6895 is the appropriate code to bill for a prosthetic cosmetic glove including matching color, hair, skin, and wrinkles. Suppliers should not bill using HCPCS L7499 for the cost of the additional cosmetic features. The long narrative description for the L6895 indicates "any material" and therefore includes all of these cosmetic features.

HCPCS Level II Codes and Description

The above medical necessity criteria **MUST** be met for the following codes to be covered for Commercial Members:

L6026	Transcarpal/metacarpal or partial hand disarticulation prosthesis, external power, self-suspended, inner socket with removable forearm section, electrodes and cables, two batteries, charger, myoelectric control of terminal device, excludes terminal device(s)
L6715	Terminal device, multiple articulating digit, includes motor(s), initial issue or replacement
L6880	Electric hand, switch or myoelectric controlled, independently articulating digits, any grasp pattern or combination of grasp patterns, includes motor(s)
L6925	Wrist disarticulation, external power, self-suspended inner socket, removable forearm shell, Otto Bock or equal electrodes, cables, 2 batteries and one

	charger, myoelectronic control of terminal device
L6935	Below elbow, external power, self-suspended inner socket, removable forearm shell, Otto Block or equal electrodes, cables, 2 batteries and one charger, myoelectronic control of terminal device
L6945	Elbow disarticulation, external power, molded inner socket, removable humeral shell, outside locking hinges, forearm, Otto Bock or equal electrodes, cables, 2 batteries and one charger, myoelectronic control of terminal device
L6955	Above elbow, external power, molded inner socket, removable humeral shell, internal locking elbow, forearm, Otto Bock or equal electrodes, cables, two batteries and one charger, myoelectronic control of terminal device
L6965	Shoulder disarticulation, external power, molded inner socket, removable shoulder shell, shoulder bulkhead, humeral section, mechanical elbow, forearm, Otto Bock or equal electrodes, cables, two batteries and one charger, myoelectronic control of terminal device
L6975	Interscapular-thoracic, external power, molded inner socket, removable shoulder shell, shoulder bulkhead, humeral section, mechanical elbow, forearm, Otto bock or equal electrodes, cables, two batteries and one charger, myoelectronic control of terminal device
L7007	Electric hand, switch or myoelectric controlled, adult
L7008	Electric hand, switch or myoelectric controlled, pediatric
L7009	Electric hook, switch or myoelectric controlled, adult
L7045	Electric hook, switch or myoelectric controlled, pediatric
L7180	Electronic elbow, microprocessor sequential control of elbow and terminal device
L7181	Electronic elbow, microprocessor simultaneous control of elbow and terminal device
L7190	Electronic elbow, adolescent, Variety Village or equal, myoelectronically controlled
L7191	Electronic elbow, child, Variety Village or equal, myoelectronically controlled

The following HCPCS codes are considered **investigational**:

L8701	Powered upper extremity range of motion assist device, elbow, wrist, hand with single or double upright(s), includes microprocessor, sensors, all components and accessories, custom fabricated
L8702	Powered upper extremity range of motion assist device, elbow, wrist, hand, finger, single or double upright(s), includes microprocessor, sensors, all components and accessories, custom fabricated

Myoelectric Upper Limb Prostheses

Important Note:

Northwood's Medical Policies are developed to assist Northwood in administering plan benefits and determining whether a particular DMEPOS product or service is reasonable and necessary. Equipment that is used primarily and customarily for a non-medical purpose is not considered durable medical equipment.

Coverage determinations are made on a case-by-case basis and are subject to all of the terms, conditions, limitations, and exclusions of the member's contract including medical necessity requirements.

The conclusion that a DMEPOS product or service is reasonable and necessary does not constitute coverage. The member's contract defines which DMEPOS product or service is covered, excluded or limited. The policies provide for clearly written, reasonable and current criteria that have been approved by Northwood's Medical Director.

The clinical criteria and medical policies provide guidelines for determining the medical necessity for specific DMEPOS products or services. In all cases, final benefit determinations are based on the applicable contract language. To the extent there are any conflicts between medical policy guidelines and applicable contract language, the contract language prevails. Medical policy is not intended to override the policy that defines the member's benefits, nor is it intended to dictate to providers how to direct care. Northwood Medical policies shall not be interpreted to limit the benefits afforded to Medicare or Medicaid members by law and regulation and Northwood will use the applicable state requirements to determine required quantity limit guidelines.

Northwood's policies do not constitute medical advice. Northwood does not provide or recommend treatment to members. Members should consult with their treating practitioner in connection with diagnosis and treatment decisions.

Northwood follows all CMS National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), as applicable.

References

1. Berke, Gary M., MS, CP and Caroline C. Nielsen, PhD, "Establishing Parameters Affecting the Use of Myoelectronic Prostheses in Children; a Preliminary Investigation," *Journal of Prosthetics and Orthotics,* Volume 3, Number 4, 1991, page 162.

2. Crandall, R. C., "Pediatric unilateral below-elbow amputees: retrospective analysis of 34 patients given multiple prosthetic options," *J Pediatr Orthop*, Volume 22, Number 3, May 1, 2002, pp. 380-383.

3. Hijjawi, J. B., "Improved myoelectric prosthesis control accomplished using multiple nerve transfers," *Plast Reconstr Surg*, Volume 118, Number 7, December 1, 2006, pp. 1573-1578.

4. Kilgore, K. L., "An implanted upper-extremity neuroprosthesis using myoelectric control," *J Hand Surg [Am]*, Volume 33, Number 4, April 1, 2008, pp. 539-550.

5. Lake, Christopher, CPO, FAAOP and John M. Miguelez, CP, FAAOP, "Comparative Analysis of Microprocessors in Upper Limb Prosthetics,' *Journal of Prosthetics and Orthotics,* Volume 15, Number 2, 2003, pp. 48-65.

6. Miguelez, John M. CP, FAAOP, "Critical Factors in Electrically Powered Upper-Extremity Prosthetics," *Journal of Prosthetics and Orthotics*, Volume 14, Number 1, 2002, pp. 36-38.

7. Routhier, F., et al., "Clinical results of an investigation of pediatric upper limb myoelectric prosthesis fitting at the Quebec Rehabilitation Institute," *Prosthetics and Orthotics International*, Volume 25, 2001, pp. 119-131.

8. Shaperman, Julie, MSPH, OTR, et al., "Early Upper Limb Prosthesis Fitting: When and What Do We Fit?," *Journal of Prosthetics and Orthotics,* Volume 15, Number 1, 2003, pp. 11-17.

9. Silcox, D. Hl, et al., "Myoelectric prostheses. A long-term follow-up and a study of the use of alternate prostheses," *The Journal of Bone and Joint Surgery*, Volume 75·A, Number 12, December 1993, pp. 1781-1789.

10. Blue Cross Blue Shield of Massachusetts: Myoelectric Prosthetic and Orthotic Components for the Upper Limb Policy Number: 227
https://www.bluecrossma.org/medical-policies/sites/g/files/csphws2091/files/acquiadam-assets/227%20Myoelectric%20Prosthetic%20and%20Components%20for%20the%20Upper%20Limb%20prn.pdf
Last accessed and reviewed December 12, 2024.

11. Aetna: Upper Limb Prosthesis, Policy 0339, *https://www.aetna.com/cpb/medical/data/300_399/0399.html* Last accessed/reviewed December 12, 2024.

12. New Hampshire Senate Bill 177-FN Chapter 144; *https://www.cms.gov/medicare/appeals-and-grievances/mmcag/downloads/parts-c-and-d-enrollee-grievances-organization-coverage-determinations-and-appeals-guidance.pdf* Accessed and reviewed 8/8/24.

SPECIAL COVERAGE INFORMATION PER PLAN:

For WellSense NH Commercial Members - NH Clarity (ACA) members under 19 years of age.	**EFFECTIVE 1/1/2025**: Prosthetic devices, including activity-specific devices, are covered for children under 19 years of age. Covered benefits shall include: (a) All materials and components necessary to use the device; (b) Instruction to the enrollee on using the device; and (c) The repair or replacement of a prosthetic device that is determined medically necessary or is necessary for maximizing the enrollee's ability to engage in the specific activity. The insurer may limit coverage for activity-specific prosthetic devices to **one activity-specific prosthetic device per plan year.** Medically necessary prosthetic devices shall not be subject to any annual limits. (a) "Prosthetic" means an artificial substitute for a body part for functional or therapeutic purposes. (b) "Activity-specific prosthetic device" means a prosthetic device designed to allow an individual to participate in a specific activity that could damage the residual limb or everyday prosthesis, or when the everyday prosthesis would not function effectively to perform that specified activity.

Medical Policy

Northwood

Myoelectric Upper Limb Prostheses

WellSense New Hampshire Medicaid Members ONLY	The myoelectric upper limb prostheses are only covered if there is not a least costly alternative available.

Change/Authorization History

Revision Number	Date	Description of Change	Prepared/Reviewed by	Approved by	Review Date:	Effective Date:
A	Nov.2006	Initial Release	Rosanne Brugnoni	Ken Fasse	n/a	
01		Annual Review / no revisions	Susan Glomb	Ken Fasse	Dec.2008	
02	Dec.4, 2009	Annual Review/no changes	Susan Glomb	Ken Fasse	Dec. 2009	
03	12-03-10	Annual Review – policy updated .	Susan Glomb	Ken Fasse	Dec.2010	
04	07-20-11	Added Important Note to all Medical Policies	Susan Glomb	Dr. B. Almasri		
05	12-15-11	Annual Review. Added References to Policy.	Susan Glomb	Dr. B. Almasri	Dec. 2011	
06	04-04-12	Added reference to NH Medicaid	Susan Glomb	Dr. B. Almasri		
07	11-29-12	Added L6000. Partial Hand, thumb remaining. Added L6010 Partial Hand, little and/or ring	Susan Glomb	Dr. B. Almasri		

		finger remaining. Added L6020 Partial hand, no finger remaining. Added Code L6715: Terminal device, multiple articulating digit, includes motor(s), initial issue or replacement. Added code L6880 Electric hand, switch or myoelectric controlled, independently articulating digits, any grasp pattern or combination of grasp patterns, includes motor(s). Discontinued code: L7274				
08	11-30-12	Annual review. No changes	Susan Glomb	Dr. B. Almasri	Nov 12	
09	12-30-13	Annual review. No changes	Susan Glomb	Dr. B. Almasri		
10	12-29-14	Added Codes: L6026 – Transcarpal/metacarpal or partial hand disarticulation prosthesis, external power, self-suspended, inner socket with removable forearm section, electrodes and cables, two batteries, charger, myoelectric control of terminal. And L7259- Electronic wrist rotator, any type.	Susan Glomb	Dr. B. Almasri		
11	11-25-15	Annual Review. No Changes.	Lisa Wojno	Dr. B. Almasri	November 2015	
12	12-02-16	Annual Review. No Changes.	Lisa Wojno	Dr. B. Almasri	December 2016	
13	11-8-17	Added New Hampshire Medicaid policy change	Carol Dimech	Dr. C. Lerchin		

		which indicates that a myoelectric upper limb prosthesis is only covered if there is not a least costly alternative available.				
14	12-11-17	Annual review. No changes.	Carol Dimech	Dr. C. Lerchin	December 2017	
15	12-13-18	Annual review. No changes.	Carol Dimech	Dr. C. Lerchin	December 2018	
16	12-13-19	Annual review. No changes.	Carol Dimech	Dr. C. Lerchin	December 2019	December 2019
17	12-03-20	Annual Review. No Changes.	Lisa Wojno	Dr. C. Lerchin	December 2020	December 2020
18	01-07-2021	Added BCBSMA and Aetna reference and criteria information.	Carol Dimech	Dr. C. Lerchin	January 7, 2021	January 7, 2021
19	12-8-21	Annual review. Added NCD, LCD verbiage to “Important Note”.	Carol Dimech	Dr. C. Lerchin	December 8, 2021	
20	12-2-2022	Annual review. Added language to indicate that the Luke Arm and a prosthesis with individually powered digits are considered investigational. Updated BCBS MA and Aetna references.	Lisa Wojno	Dr. C. Lerchin	December 2, 2022	December 2022
21	12-6-23	Annual review. No changes.	Carol Dimech	Dr. C. Lerchin	December 6, 2023	December 6, 2023
22	8-12-24	Added “Special Coverage” box indicating new criteria for NH Clarity members. Added new reference.	Carol Dimech	Dr. Cheryl Lerchin	8-12-24	1-1-25
23	12-12-24	Annual review. No additional changes.	Carol Dimech	Dr. Cheryl Lerchin	12-12-24	12-12-24

Medical Policy

Myoelectric Upper Limb Prostheses