Medicare Advantage Medical Policy

BlueCross BlueShield Nebraska

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MA: MYOELECTRIC UPPER LIMB PROSTHESIS

EFFECTIVE 01/01/2024

Description

A myoelectric upper limb prosthesis may be used by individuals who have a missing limb at the wrist or above. The joint movement of an upper limb prosthesis or orthosis (e.g., hand, wrist, and/or elbow) is driven by microchip processed electrical activity in the muscles of the remaining limb.

Examples of myoelectric prostheses and orthoses include but are not limited to the following: Utah Arm and Hand System, Otto Bock myoelectric prosthesis, LTI Boston Digital arm System, SensorHand™, ProDigits™ and i-LIMB™, LIVINGSKIN™, MyoPro™, MyoMo, Inc., LUKE™ arm, The Michelangelo Hand (Advanced Arm Dynamics), DEKA Gen 2 and DEKA Gen 3, Taska Hand™, individually articulating digits.

Policy

I. Myoelectric upper-limb prosthetic components may be considered **medically necessary** when the **ALL** the following conditions are met:

A. The prosthetic device is ordered or provided by a physician or under the direction of a physician, **AND**

B. Amputee is evaluated by an independent qualified professional (prosthetist/orthoptist) to determine the most appropriate prosthetic components and control mechanism (e.g., body-powered, myoelectric, or combination of body-powered and myoelectric), **AND**

C. The patient has an amputation or missing limb at the wrist or above (e.g., forearm, elbow) due to trauma or congenital absence, **AND**

D. 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 use of the limb for employment/school environment or extracurricular activities is not sufficient evidence for prescription of this device over standard prosthetic application, **AND**

E. The remaining musculature of the arm(s) contains the minimum microvolt threshold to allow operation of a myoelectric prosthetic device, **AND**

F. The patient has demonstrated sufficient neurologic and cognitive function to operate the prosthesis effectively, **AND**

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

H. 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.

II. Myoelectric prostheses are contraindicated, and therefore considered **not medically necessary** for:

A. ADLs that require frequent lifting of heavy objects (16lbs or greater), **OR**

B. Environments involve frequent contact with dirt, dust, grease, water, and solvent, **OR**

C. When neuromas and/or phantom limb pain are exacerbated with the use of the prosthesis.

III. High-definition silicone used to make a prosthesis resemble a patient's skin is considered **not medically necessary** and cosmetic.

IV. Upper-limb prosthetic components **investigational** under all other conditions because their effectiveness has not been established, including but not limited to:

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

B.A prosthesis with individually powered digits, including but not limited to a partial hand prosthesis (e.g., ProDigits).

C. Myoelectric controlled upper-limb orthoses.

D. Implantable myoelectric sensors for upper limb prostheses and hand prostheses.

E. Transcranial direct current stimulation for enhancing performance of myoelectric prostheses.

F. Adjustable click systems (e.g., Revo and Boa click systems).

G. Targeted muscle re-innervation for improved control of myoelectric upper limb prostheses and treatment of painful post-amputation **neuroma**.

H. Myo-electric hand prostheses.

V. The following supplies or accessories **may be medically necessary** for effective functioning of allowed equipment:

A. Prosthetic sheaths/socks, including a gel cushion layer (prosthetic gel stockings; 12 in 12 months).

B. No more than 2 socket inserts per individual prosthesis in 12 months. Any additional would be reviewed for medical necessity.

C. No more than two replacement liners per prosthesis in 12 months.

VI. One myoelectric prosthesis per limb per 5 (five) years is covered when medically indicated. Coverage will not be provided if the prosthesis is functioning properly and in good general condition.

VII. Evaluation of the member, measurement and/or casting, and fitting/adjustments of the prosthesis are included in the allowance for the prosthesis. There is no separate payment for these services. There is no separate payment if CAD-CAM technology is used to fabricate a prosthesis. Reimbursement is included in the allowance of the codes for a prosthesis.

VIII. Additional warranties and guarantees beyond the included base warranty or manufacturer warranty, are considered convenience items and are not medically necessary.

IX. Items billed for replacement that are still under manufacturer warranty are considered not medically necessary.
X. Custom fabricated socket inserts L6696 and L6697 are for atypical congenital or atypical traumatic amputations. These codes are for use only with the initial issue of a custom fabricated socket insert. Additional inserts (either custom fabricated or prefabricated) provided at the time of initial issue or replacement socket inserts are coded L6694, or L6695 whichever is applicable. There must be adequate documentation by the prosthetist of functional and/or physiological need for custom socket inserts. The simple entry of atypical amputation in those records is not sufficient.
XI. There is no separate payment for batteries (L7360, L7364, L7367, and L8505) and/or battery chargers (L7362, l7366, L7368) billed concurrently with a powered base item or associated add-ons.

Background

The primary goals of the upper limb prostheses are to restore natural appearance and function. Achieving these goals also requires sufficient comfort and ease of use for continued acceptance by the wearer. The difficulty of achieving these diverse goals with an upper limb prosthesis increases as the level of amputation (digits, hand, wrist, elbow, and shoulder), and thus the complexity of joint movement increases.

There are different types of prostheses available.

Passive Prostheses

The passive prostheses rely on manual repositioning, typically using the opposite arm and cannot restore function. This unit is the lightest of the 3 prosthetic types and is thus generally the most comfortable.

Body-Powered Prostheses

The body-powered prosthesis uses a body harness and cable system to provide functional manipulation of the elbow and hand. Voluntary movement of the shoulder and/or limb stump extends the cable and transmits the force to the terminal device. Prosthetic hand attachments, which may be claw-like devices that allow good grip strength and visual control of objects or latex-gloved devices that provide a more natural appearance at the expense of control, can be opened and closed by the cable system. Patient complaints with body-powered prostheses include harness discomfort, particularly the wear temperature, wire failure, and the unattractive appearance.

Myoelectric Prostheses

Myoelectric prostheses use muscle activity from the remaining limb for the control of joint movement. Electromyographic (EMG) 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 one 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 control of 2 joints at once (i.e., 1 body-powered and 1 myoelectric) and are generally lighter and less expensive than a prosthesis composed entirely of myoelectric components.
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 EMG 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.

Myoelectric Orthoses

The MyoPro (Myomo) is a myoelectric powered upper-extremity orthotic. This orthotic device has manual wrist articulation, and myoelectric initiated bi-directional elbow movement. The MyoPro detects weak muscle activity from the affected muscle groups. A therapist or prosthetist/orthoptist can adjust the gain (amount of assistance), signal boost, thresholds, and range of motion. Potential users include patients with traumatic brain injury, spinal cord injury, brachial plexus injury, amyotrophic lateral sclerosis, and multiple sclerosis. Use of robotic devices for therapy has been reported. The MyoPro is the first myoelectric orthotic available for home use.

Practice Guidelines and Position Statements

No guidelines or statements were identified.

- **Clinical Input from Physician Specialty Societies and Academic Medical Centers**

While the various physician specialty societies and academic medical centers may collaborate with and make recommendations, through the provision of appropriate reviewers, input received does not represent an endorsement or position statement by the physician specialty societies or academic medical centers, unless otherwise noted.

L6000	**L6010**	**L6020**	**L6026**	**L6050**	**L6055**	**L6100**	**L6110**	**L6120**	**L6130**
L6200	**L6205**	**L6250**	**L6300**	**L6310**	**L6320**	**L6621**	**L6629**	**L6632**	**L6680**
L6687	**L6694**	**L6695**	**L6696**	**L6697**	**L6703**	**L6704**	**L6706**	**L6707**	**L6708**
L6709	**L6711**	**L6712**	**L6713**	**L6714**	**L6715**	**L6721**	**L6722**	**L6810**	**L6880**
L6881	**L6882**	**L6890**	**L6895**	**L6925**	**L6935**	**L6945**	**L6955**	**L6965**	**L6975**
L7007	**L7008**	**L7009**	**L7045**	**L7180**	**L7181**	**L7190**	**L7191**	**L7259**	**L7360**
L7362	**L7364**	**L7366**	**L7367**	**L7368**	**L7400**	**L7403**	**L7499**	**L8465**	**L8701**
L8702									

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