STATE OF IOWA DEPARTMENT OF
Health AND Human
SERVICES

Myoelectric Prosthesis Upper Extremity
DME-021

Iowa Medicaid Program:	Prior Authorization	**Effective Date:**	1/21/2022
Revision Number:	3	**Last Rev Date:**	1/19/2024
Reviewed By:	Medicaid Medical Director	**Next Rev Date:**	1/17/2025
Approved By:	Medicaid Clinical Advisory Committee	**Approved Date:**	1/21/2022

Descriptive Narrative

Myoelectric prostheses of the upper extremity are sophisticated alternatives to standard body-powered devices used for the replacement of upper extremities due to trauma, disease, or congenital causes. A myoelectric prosthetic is controlled by electromyographic (EMG) signals generated naturally by an individual's own muscles. This type of prosthesis uses an external battery pack to supply power to electric motors and microprocessors that enable movement of the prosthetic elbow, wrist, and/or fingers in several planes. Several benefits of myoelectric upper extremity prostheses have been proposed, including greater pinch and grip force over standard prosthetic devices and a more realistic appearance. A myoelectric device may be recommended if an individual is unable to use a body-powered device or requires improved grip function or motion for the performance of daily activities.

Myoelectric prosthetic devices operate using surface electrodes embedded in the socket of the prosthesis. When these electrodes meet the skin, they can detect and amplify the electrical activity of muscle groups in the residual limb. These potentials are translated though the microprocessor units into limb movement via the electric motors in the limb function (for instance, terminal device operation, wrist rotation, elbow flexion). The newest electronic control systems perform multiple functions and allow for sequential operation of elbow motion, wrist rotation and hand motion. Sensation cannot be attained by a myoelectric prosthesis.

Upper Limb Prosthetic Categories

Upper limb prostheses are classified into 3 categories depending on the means of generating movement at the joints: passive, body-powered, and electrically powered movement.

- **Body-powered prosthesis** utilizes 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.

- **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 two joints at once (i.e., one body-powered and one myoelectric) and are generally lighter and less expensive than a prosthesis composed entirely of myoelectric components.
- **Myoelectric prostheses** use muscle activity from the remaining limb for the control of joint movement. 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. Patient dissatisfaction with myoelectric prostheses includes the increased lack of proprioception, cost, maintenance (particularly for the glove), and weight.
- **Passive prosthesis** is the lightest of the three types and is described as the most comfortable. Since the passive prosthesis must be repositioned manually, typically by moving it with the opposite arm, it cannot restore function.

Criteria

Prior authorization is required.

A myoelectric prosthesis for the upper extremity is considered medically necessary when **ALL** the following are met:

1. Member has an amputation or congenital absence of a portion of the upper extremity; **AND**
2. Member has sufficient ability to effectively utilize this type of prosthesis; **AND**
3. The member's functional needs and activities of daily living cannot be met by a standard body powered prosthesis; **AND**
4. Myoelectric prosthesis is anticipated to meet the member's functional needs; **AND**
5. The remaining musculature of the affected arm contains the minimum microvolt threshold to allow operation of a myoelectric device; **AND**
6. Member must complete a multidisciplinary assessment, which includes evaluation by a trained prosthetic clinician and the evaluation must document that **ALL** criteria have been met.

Repair or Replacement

Repair or replacement of a myoelectric prosthesis of the upper extremity is medically necessary when anatomic changes or reasonable wear and tear renders the prosthesis unusable, and the device cannot be repaired.

Contraindications

1. Residual limb is too long to accommodate electronic parts; **OR**
2. Inadequate electrical impulse strength; **OR**
3. Inability to tolerate the added weight of the prosthetic; **OR**
4. Exposure of prosthesis to damp or dusty environments; **OR**
5. Lack of access to specialized service and repair.

Coding

The following list(s) of codes are provided for reference purposes only and may not be all inclusive. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment, nor does the exclusion of a code imply that its association to the HCPCS/CPT code is inappropriate.

HCPCS	Description
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).
L6925	Wrist disarticulation, external power, self-suspended inner socket, removable forearm shell, Otto Bock or equal electrodes, cables, two batteries and one charger, myoelectronic control of terminal device.
L6935	Below elbow, external power, self-suspended inner socket, removable forearm shell, Otto Bock or equal electrodes, cables, two 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, two 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.

HCPCS	Addition Description
L6611	Addition to upper extremity prosthesis, external powered, additional switch, any type.
L6677	Upper extremity addition, harness, triple control, simultaneous operation of terminal device and elbow.
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).
L6881	Automatic grasp feature, addition to upper limb electric prosthetic terminal device.
L6882	Microprocessor control feature, addition to upper limb prosthetic terminal device.
L7007	Electric hand, switch or myoelectric controlled, adult (when specified as myoelectric).
L7008	Electric hand, switch or myoelectric controlled, pediatric (when specified as myoelectric).
L7009	Electric hook, switch or myoelectric controlled, adult (when specified as myoelectric).
L7045	Electric hook, switch or myoelectric controlled, pediatric (when specified as myoelectric).
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.

ICD-10	Description
Q71.00-Q71.93	Reduction deformities of upper limb.
S48.011A-S48.929S	Traumatic amputation of shoulder and upper arm.
S58.011A-S58.929S	Traumatic amputation of elbow and forearm.
S68.011A-S68.729S	Traumatic amputation of wrist, hand, and fingers.
Z89.121-Z89.239	Acquired absence of limb.

Compliance

1. Should conflict exist between this policy and applicable statute, the applicable statute shall supersede.
2. Federal and State law, as well as contract language, including definitions and specific contract provisions or exclusions, take precedence over medical policy and must be considered first in determining eligibility for coverage.
3. Medical technology is constantly evolving, and Iowa Medicaid reserves the right to review and update medical policy on an annual and as-needed basis.

Medical necessity guidelines have been developed for determining coverage for member benefits and are published to provide a better understanding of the basis upon which coverage decisions are made. They include concise clinical coverage criteria based on current literature review, consultation with practicing physicians in the service area who are medical experts in the particular field, FDA, and other government agency policies, and standards adopted by national accreditation organizations. Criteria are revised and updated annually, or more frequently if new evidence becomes available that suggests needed revisions.

References

Ritchie et al. Prosthetic Orthotics Int 2011. 35: 332-41; U. S. Army Medical Department. Care of the Combat Amputee. 2009.

Department of Veterans Affairs Department of Defense, VA/DoD Clinical Practice Guideline for the Management of Upper Extremity Amputation Rehabilitation. Version 1.0 2014

Carey et al. Journal of Rehabilitation Res Dev 2015, 52: 247-62.
Wright, Journal Prosthetics & Orthotics 2009, 21: P3-P63

Carey et al. J Rehabil Res Dev 2015, 52: 247-62.

Geary M. Gaston RG. Loeffler B. Surgical and technological advances in the management of upper limb amputees. Bone Joint Journal. 2021; 103-B(3):430-439.

Development of utilization management criteria may also involve research into other state Medicaid programs, other payer policies, consultation with experts and review by the Medicaid Clinical Advisory Committee (CAC). These sources may not be referenced individually unless they are specifically published and are otherwise applicable to the criteria at issue.

Criteria Change History

Change Date	Changed By	Description of Change	Version

Signature

Change Date	Changed By	Description of Change	Version

Signature

Change Date	Changed By	Description of Change	Version
1/19/2024	CAC	Annual review.	3

Signature
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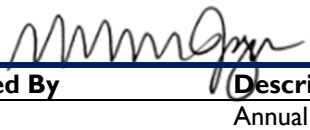

Change Date	Changed By	Description of Change	Version
1/20/2023	CAC	Annual review.	2

Signature
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Change Date	Changed By	Description of Change	Version
1/21/2022	Medicaid CAC	Criteria implementation.	1

Signature
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