

Subject:	Myoelectric Upper Extremity Prosthetic Devices	Current Effective Date:	08/11/2006
Guideline #:	CG-DME-28	Last Review Date:	03/23/2006
Status:	New		

Description

This guideline addresses the use of myoelectric upper extremity (i.e., hand and/or arm) prosthesis. This type of prostheses is differentiated from standard upper extremity prostheses by the incorporation of an external power source, electric motors and microprocessing units.

For information on related prostheses, please refer to the following clinical guidelines:

- Lower Limb Prosthesis (CG-DME-13)
- NeuroControl Freehand Neuroprosthesis (CG-OR-PR-01)

Clinical Indications

Medically Necessary:

The use of myoelectric upper extremity prosthetic devices is considered **medically necessary** when ALL the following criteria have been met:

1. The patient has sufficient neurological, myocutaneous and cognitive function to operate the prosthesis effectively; AND
2. The patient has an amputation or missing limb at the wrist or above (i.e., forearm, elbow, etc); AND
3. The patient is free of comorbidities that could interfere with maintaining function of the prostheses (i.e., neuromuscular disease, etc); AND
4. The patient retains sufficient microvolt threshold in the residual limb to allow proper function of the prostheses; AND
5. Standard body powered prosthetic devices cannot be used or are insufficient to meet the functional needs of the patient in performing activities of daily living; AND
6. The patient does not function in an environment that would inhibit function of the prosthesis (i.e., a wet environment or a situation involving electrical discharges that would affect the prostheses).

Not Medically Necessary:

The use of myoelectric upper extremity prosthetic devices is considered **not medically necessary** when all the criteria above are not met.

Place of Service

Place of Service: Ambulatory, Outpatient Facility

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.

HCPCS

Prostheses

- 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
- 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

Additions

- L6677 Upper extremity addition, harness, triple control, simultaneous operation of terminal device and elbow
- L6881 Automatic grasp feature, addition to upper limb prosthetic terminal device
- L6882 Microprocessor control feature, addition to upper limb prosthetic terminal device
- L7025 Electronic hand, Otto Bock or equal, myoelectronically controlled
- L7030 Electronic hand, System Teknik, Variety Village or equal, myoelectronically controlled
- L7035 Electronic Griever, Otto Bock or equal, myoelectronically controlled
- 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-9 Diagnosis

- 755.20-755.27 Reduction deformities of upper limb (congenital absence)
- 887.0-887.7 Traumatic amputation of arm and hand (complete) (partial)
- V49.64-V49.67 Upper limb amputation status

Discussion/General Information

Myoelectric prostheses of the upper extremity are sophisticated alternatives to standard body-powered devices used for the replacement of upper extremities absent due to trauma, disease or congenital causes. This type of prosthesis uses an external battery pack to supply power to electric motors and microprocessors that enable movement of the device in several planes. Movement of the prostheses may include movement of the elbow and wrist, as well as the fingers. Several benefits have been proposed for the use of myoelectric upper extremity prostheses, including greater pinch and grip force over standard prosthetic devices, and more realistic appearance.

Myoelectric prostheses devices operate through the use of surface electrodes embedded in the socket of the prosthesis. When these electrodes come into contact with the skin they are able to detect and amplify the electrical activity of muscle groups in the residual limb. These potentials are translated through the microprocessor units into limb movement via the electric motors in the limb function (e.g., 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 myoelectrical prosthesis.

References

1. Crandall RC, Tomhave W. Pediatric unilateral below-elbow amputees: retrospective analysis of 34 patients given multiple prosthetic options. *J Pediatr Orthop*. 2002; 22(3):380-3.
2. Kritter AE. Myoelectrical prostheses. *J Bone Joint Surg Am*. 1985; 67(4):654-657.
3. Nader, M. The artificial substitution of missing hands with myoelectrical prostheses, *Clin Orthop*. 1990; 258:9-17.
4. Silcox DH Rooks MD, Vogel RR, et al. Myoelectrical Prostheses. A long term follow up and a study of the use of alternative prostheses. *J Bone Joint Surg Am*. 1993; 75(12):1781-1789.
5. Stein RB, Walley M. Functional comparison of upper extremity amputees using myoelectric and conventional prostheses. *Arch Phys Med Rehab* 1983; 64(6):243-248.
6. Uellendahl JE. Upper extremity myoelectric prosthetics. *Phys Med Rehabil Clin N Am*. 2000; 11(3):639-52.
7. Weaver SA, Lange LR, Vogts VM. Comparison of myoelectric and conventional prostheses for adolescent amputees. *Am J Occup Ther*. 1988; 42(2):87-91.
8. Wright TW, Hagen AD, Wood MB. Prosthetic usage in major upper extremity amputations. *J Hand Surg [Am]*. 1995; 20(4):619-22.

Index

Arm
 Elbow
 Myoelectric
 Prosthesis
 Wrist

History

Status	Date	Action
New	03/23/2006	Medical Policy & Technology Assessment Committee (MPTAC) initial guideline development.

Pre-Merger Organizations	Last Review Date	Policy/Guideline Number	Title
Anthem Connecticut	09/01/2004		CT DME Coverage Guidelines, Section G: Prostheses: Upper and Lower Limb

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical Guidelines periodically.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.