

**Private Property of Blue Cross and Blue Shield of Florida.**

This medical coverage guideline is Copyright 2008, Blue Cross and Blue Shield of Florida (BCBSF). All Rights Reserved. You may not copy or use this document or disclose its contents without the express written permission of BCBSF. The medical codes referenced in this document may be proprietary and owned by others. BCBSF makes no claim of ownership of such codes. Our use of such codes in this document is for explanation and guidance and should not be construed as a license for their use by you. Before utilizing the codes, please be sure that to the extent required, you have secured any appropriate licenses for such use. Current Procedural Terminology (CPT) is copyright 2008 American Medical Association. All Rights Reserved. No fee schedules, basic units, relative values, or related listings are included in CPT. The AMA assumes no liability for the data contained herein. Applicable FARS/DFARS restrictions apply to government use. CPT® is a trademark of the American Medical Association.

**09-L0000-06**

[Original Effective Date:](#) 02/15/04

[Reviewed:](#) 04/26/07

[Revised:](#) 05/15/07

[Next Review:](#) 04/24/08

## Subject: Microprocessor-Controlled Prosthetic Knees

**THIS MEDICAL COVERAGE GUIDELINE IS NOT AN AUTHORIZATION, CERTIFICATION, EXPLANATION OF BENEFITS, OR A GUARANTEE OF PAYMENT, NOR DOES IT SUBSTITUTE FOR OR CONSTITUTE MEDICAL ADVICE. ALL MEDICAL DECISIONS ARE SOLELY THE RESPONSIBILITY OF THE PATIENT AND PHYSICIAN. BENEFITS ARE DETERMINED BY THE GROUP CONTRACT, MEMBER BENEFIT BOOKLET, AND/OR INDIVIDUAL SUBSCRIBER CERTIFICATE IN EFFECT AT THE TIME SERVICES WERE RENDERED. THIS MEDICAL COVERAGE GUIDELINE APPLIES TO ALL LINES OF BUSINESS UNLESS OTHERWISE NOTED IN THE PROGRAM EXCEPTIONS SECTION.**

<a href="#">Position Statement</a>	<a href="#">Billing/Coding</a>	<a href="#">Reimbursement</a>	<a href="#">Program Exceptions</a>	<a href="#">Definitions</a>	<a href="#">Related Guidelines</a>
<a href="#">Other</a>	<a href="#">References</a>	<a href="#">Updates</a>			

### DESCRIPTION:

There are over 100 different prosthetic knee designs currently available. The choice of the most appropriate design depends on the patient's underlying activity level, i.e., the requirements of a prosthetic knee in an elderly, largely homebound individual will be quite different than a younger, active individual.

In general, key elements of a prosthetic design involve providing stability during both the stance and swing phase of the gait. Prosthetic knees also vary in their ability to alter the pace of the gait, or the ability to walk on rough or uneven surfaces. In contrast to simpler designs that are designed to function optimally at one walking pace, fluid and hydraulic-controlled devices are designed to allow the amputee to vary their walking speed by matching the movement of the shin portion of the prosthesis to the movement of the upper leg. For example, the rate at which the knee flexes after "toe-off" and then extends before heel strike depends in part on the mechanical characteristics of the prosthetic knee joint. If the resistance to flexion and extension of the joint does not vary with gait speed, the prosthetic knee extends too quickly or too slowly relative to the heel strike if the cadence is altered. When properly controlled, hydraulic or pneumatic swing phase controls allow the amputee to set a pace from very slow to a race walking pace.

Hydraulic prostheses are heavier than other options and require gait training; therefore, these prostheses are generally prescribed to athletic or fit individuals. Other design features include multiple centers of rotation, referred to as "polycentric knees". The mechanical complexity of these devices allows engineers to optimize selected stance and swing phase features.

Microprocessor controlled (computerized) prosthetic knees most recently becoming available, include the Intelligent Prosthesis (Blatchford, United Kingdom) and the C-LEG® (Otto Bock Orthopedic Industry, Minneapolis, MN). These devices are equipped with a sensor that detects when the knee is in full extension and adjusts the swing phase automatically, permitting a more natural walking pattern of varying speeds. For example, the prosthetist can specify

several different optimal adjustments that the computer later selects and applies according to the pace of ambulation. The C-LEG is also designed to improve the stance control. For example, it may be possible for the sensors to recognize a stumble, stiffen the knee, and avoid a fall.

## POSITION STATEMENT:

Microprocessor-controlled prosthetic knees (e.g., C-Leg) **meets the definition of medical necessity** for patients having a functional level of 3 or above:

- Level 0 - Does not have the ability or potential to ambulate or transfer safely with or without assistance and a prosthesis does not enhance their quality of life or mobility.
- Level 1 - Has the ability or potential to use a prosthesis for transfers or ambulation on level surfaces at fixed cadence. Typical of the limited and unlimited household ambulator.
- Level 2 - Has the ability or potential for ambulation with the ability to traverse low-level environmental barriers such as curbs, stairs or uneven surfaces. Typical of the limited community ambulator.
- Level 3 - Has the ability or potential for ambulation with variable cadence. Typical of the community ambulator who has the ability to traverse most environmental barriers and may have vocational, therapeutic, or exercise activity that demands prosthetic utilization beyond simple locomotion.
- Level 4 - Has the ability or potential for prosthetic ambulation that exceeds basic ambulation skills, exhibiting high impact, stress, or energy levels. Typical of the prosthetic demands of the child, active adult, or athlete.

Medical necessity for a microprocessor-controlled prosthetic knee is based on the patient's potential functional abilities. Potential functional ability is based on the reasonable expectations of the prosthetist and treating physician, considering factors including, but not limited to:

- The patient's past history (including prior prosthetic use if applicable); **AND**
- The patient's current condition including the status of the residual limb and the nature of other medical problems; **AND**
- The patient's desire to ambulate.

Microprocessor-controlled prosthetic knees **does not meet the definition of medical necessity** when the above criteria are not met.

## BILLING/CODING INFORMATION:

### HCPCS Coding:

L5856	Addition to lower extremity prosthesis, endoskeletal knee-shin system, microprocessor control feature, swing and stance phase, includes electronic sensor(s), any type
L5857	Addition to lower extremity prosthesis, endoskeletal knee-shin system, microprocessor control feature, swing phase only, includes electronic sensor(s), any type
L5858	Addition to lower extremity prosthesis, endoskeletal knee shin system, microprocessor control feature, stance phase only, includes electronic sensor(s), any type

## REIMBURSEMENT INFORMATION:

Refer to section entitled [POSITION STATEMENT](#).

## PROGRAM EXCEPTIONS:

**Federal Employee Program (FEP):** Follow FEP guidelines.

**State Account Organization (SAO):** Follow SAO guidelines.

**Medicare Advantage Products:** An electronic knee (L5856, L5857, L5858) is covered for patients whose functional level is 3 or above. (Level 3: Has the ability or potential for ambulation with variable cadence. Typical of the community ambulator who has the ability to traverse most environmental barriers and may have vocational, therapeutic, or exercise activity that demands prosthetic utilization beyond simple locomotion. Coverage is extended only if there is sufficient clinical documentation of functional need for the technologic or design feature of a given type of knee. This information must be retained in the physician's or prosthetist's files.

## DEFINITIONS:

No guideline specific definitions apply.

## RELATED GUIDELINES:

None applicable.

## OTHER:

Index terms:

C-LEG  
Intelligent Prosthesis  
Microprocessor-controlled knee prosthesis  
Otto Bock C-LEG Knee-Shin System

## REFERENCES:

1. Blue Cross Blue Shield Association Medical Policy Reference Manual 1.01.25, Microprocessor-Controlled Prosthetic Knees, (04/25/06).
2. Blue Cross Blue Shield physician consultant. 02/04.
3. ECRI Hotline Response article: "Microprocessor-controlled Lower Extremity Prostheses"; last updated 08/21/06.
4. Medicare Region C DMERC Medical Review Policy, Lower Limb Prostheses. 01/01/06.
5. Orendurff MS, Segal AD, Klute GK, McDowell ML, Pecoraro JA, Czerniecki JM. Gait efficiency using the C-Leg. J Rehabil Res Dev. 2006; 43(2): 239-46. PubMed 16847790.
6. Region C DMERC DMEPOS Supplier Manual; CERT Educational Sheet: Lower Limb Prostheses; Excerpt from Chapter 53 - Lower Limb Prostheses. Accessed 02/15/07.
7. State of Washington Department of Labor and Industries, Office of the Medical Directory, Technology Assessment: Microprocessor-Controlled Prosthetic Knees. Last revised. 08/16/02.
8. U.S. Food & Drug Administration approval notice for Otto Bock C-LEG device, 07/08/99.
9. US Department of Veterans Affairs (VA). VA Technology Assessment Program. Short report - computerized lower limb prostheses. 03/2000.

## COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the BCBSF Medical Policy & Coverage Committee on 04/26/07.

## GUIDELINE UPDATE INFORMATION:

02/15/04	New Medical Coverage Guideline.
03/15/05	Scheduled review; no change in coverage statement.
04/01/05	2nd quarter HCPCS coding update; added K0670.
01/01/06	Annual HCPCS coding update; added L5858, removed K0670.
03/15/06	Scheduled review; no change in coverage statement.
05/15/07	Scheduled review; reformatted guideline; coverage position changed from investigational; added criteria for medical necessary.

**Private Property of Blue Cross and Blue Shield of Florida.**

This medical coverage guideline is Copyright 2008, Blue Cross and Blue Shield of Florida (BCBSF). All Rights Reserved. You may not copy or use this document or disclose its contents without the express written permission of BCBSF. The medical codes referenced in this document may be proprietary and owned by others. BCBSF makes no claim of ownership of such codes. Our use of such codes in this document is for explanation and guidance and should not be construed as a license for their use by you. Before utilizing the codes, please be sure that to the extent required, you have secured any appropriate licenses for such use. Current Procedural Terminology (CPT) is copyright 2008 American Medical Association. All Rights Reserved. No fee schedules, basic units, relative values, or related listings are included in CPT. The AMA assumes no liability for the data contained herein. Applicable FARS/DFARS restrictions apply to government use. CPT® is a trademark of the American Medical Association.