



**EFFECTIVE DATE:** 03|03|2009  
**POLICY LAST UPDATED:** 12|02|2014

## OVERVIEW

Computer-assisted navigation (CAN) in orthopedic procedures describes the use of computer-enabled tracking systems to facilitate alignment in a variety of surgical procedures, including fixation of fractures, ligament reconstruction, osteotomy, tumor resection, preparation of the bone for joint arthroplasty, and verification of the intended implant placement.

## PRIOR AUTHORIZATION

Not applicable

## POLICY STATEMENT

### BlueCHiP for Medicare and Commercial

Computer-assisted musculoskeletal surgical navigational orthopedic procedures are considered not medically necessary as there is insufficient evidence in published, peer-reviewed literature to support its efficacy.

## MEDICAL CRITERIA

None

## BACKGROUND

Computer-assisted navigation (CAN) in orthopedic procedures describes the use of computer-enabled tracking systems to facilitate alignment in a variety of surgical procedures. These surgical procedures include fixation of fractures, ligament reconstruction, preparation of the bone for joint arthroplasty, and verification of the intended implant placement. The goal of CAN is to increase surgical accuracy and reduce the chance of malposition of implants.

CAN devices may be image based or non-image based. Image based devices use preoperative computed tomography (CT) scans and operative fluoroscopy to direct implant positioning. Newer non-image based devices use information obtained in the operating room, typically with infrared probes. CAN systems direct the positioning of the cutting blocks and placement of the prosthetic implants based on the digitized surface points and model of the bones in space. The accuracy of each step of the operation (cutting block placement, saw cut accuracy, seating of the implants) can be verified, thereby allowing adjustments to be made during surgery.

Given the low short-term revision rates associated with conventional procedures, and the inadequate power of available studies to detect change in function, studies assessing health outcomes using a larger number of subjects, with longer follow-up, are needed. The available scientific evidence at this time has not adequately demonstrated improved health outcomes associated with CAN.

## COVERAGE

Benefits vary between groups/contracts. Please refer to the appropriate Evidence of Coverage or Subscriber Agreement for applicable not medically necessary benefits/coverage.

## CODING

### BlueCHIP for Medicare and Commercial

The following codes are not medically necessary:

**20985**

**0054T 0055T**

## RELATED POLICIES

None

## PUBLISHED

Provider Update Jan 2015

Provider Update Jun 2013

Provider Update May 2012

Provider Update Apr 2011

Provider Update May 2010

Provider Update Apr 2009

## REFERENCES

1. Department of Health & Human Services. Agency for Healthcare Research and Quality. Horizon Scan on Hip Replacement Surgery. December 22, 2006.  
<http://www.cms.hhs.gov/determinationprocess/downloads/id44TA.pdf>
2. Meuffels DE, Reijman M, Scholten RJ et al. Computer assisted surgery for knee ligament reconstruction. Cochrane Database Syst Rev 2011; (6):CD007601.
3. Manzotti A, Cerveri P, De Momi E et al. Does computer-assisted surgery benefit leg length restoration in total hip replacement? Navigation versus conventional freehand. Int Orthop 2011; 35(1):19-24.
4. Liebergall M, Ben-David D, Weil Y et al. Computerized navigation for the internal fixation of femoral neck fractures. J Bone Joint Surg Am 2006; 88(8):1748-54.
5. Lass R, Kubista B, Olischar B et al. Total hip arthroplasty using imageless computer-assisted hip navigation: a prospective randomized study. J Arthroplasty 2014; 29(4):786-91.
6. Rebal BA, Babatunde OM, Lee JH et al. Imageless computer navigation in total knee arthroplasty provides superior short term functional outcomes: a meta-analysis. J Arthroplasty 2014; 29(5):938-44.
7. Gothesen O, Espehaug B, Havelin LI et al. Functional outcome and alignment in computer-assisted and conventionally operated total knee replacements: a multicentre parallel-group randomised controlled trial. Bone Joint J 2014; 96-B (5):609-18.
8. Blakeney WG, Khan RJ, Palmer JL. Functional outcomes following total knee arthroplasty: a randomised trial comparing computer-assisted surgery with conventional techniques. Knee 2014; 21(2):364-8.
9. Lutzner J, Dixel J, Kirschner S. No difference between computer-assisted and conventional total knee arthroplasty: five-year results of a prospective randomised study. Knee Surg Sports Traumatol Arthrosc 2013; 21(10):2241-7.

10. Parratte S, Argenson JN. Validation and usefulness of a computer-assisted cup-positioning system in total hip arthroplasty. A prospective, randomized, controlled study. J Bone Joint Surg Am 2007; 89(3):494-9.

[CLICK THE ENVELOPE ICON BELOW TO SUBMIT COMMENTS](#)

This medical policy is made available to you for informational purposes only. It is not a guarantee of payment or a substitute for your medical judgment in the treatment of your patients. Benefits and eligibility are determined by the member's subscriber agreement or member certificate and/or the employer agreement, and those documents will supersede the provisions of this medical policy. For information on member-specific benefits, call the provider call center. If you provide services to a member which are determined to not be medically necessary (or in some cases medically necessary services which are non-covered benefits), you may not charge the member for the services unless you have informed the member and they have agreed in writing in advance to continue with the treatment at their own expense. Please refer to your participation agreement(s) for the applicable provisions. This policy is current at the time of publication; however, medical practices, technology, and knowledge are constantly changing. BCBSRI reserves the right to review and revise this policy for any reason and at any time, with or without notice. Blue Cross & Blue Shield of Rhode Island is an independent licensee of the Blue Cross and Blue Shield Association.

