

C-Leg Clinical Studies

1. Bellmann M, Köhler TM, Schmalz T. Comparative biomechanical evaluation of two technologically different microprocessor-controlled prosthetic knee joints in safety-relevant daily-life situations. *Biomed Tech (Berl)*. 2018 Dec 12. pii: /j/bmte.ahead-of-print/bmt-2018-0026/bmt-2018-0026.xml. doi: 10.1515/bmt-2018-0026. [Epub ahead of print]. [Download](#)
2. Kaufman KR, Bernhardt KA, Symms K. Functional assessment and satisfaction of transfemoral amputees with mobility (FASTK2): A clinical trial of microprocessor-controlled vs. non-microprocessor-controlled knees. *Clin Biomech (Bristol, Avon)* 2018 Oct;58:116-122. doi: 10.1016/j.clinbiomech.2018.07.012. Epub 2018 Jul 19. [Download](#)
3. Thiele J, Schöllig C, Bellmann M, Kraft M. Designs and performance of three new microprocessor-controlled knee joints. *Biomed Tech (Berl)* 2018 Feb 9. pii: /j/bmte.ahead-of-print/bmt-2017-0053/bmt-2017-0053.xml. doi: 10.1515/bmt-2017-0053. [Epub ahead of print]. [Download](#)
4. Cutti AG, Lettieri E, Del Maestro M, Radaelli G, Luchetti M, Verni G, Masella C. Stratified cost-utility analysis of C-Leg versus mechanical knees: Findings from an Italian sample of transfemoral amputees. *Prosthet Orthot Int* 2017; 41(3): 227-236. [Epub 2016 ahead of print]. [Download](#)
5. Hahn A, Lang M. Effects of mobility grade, age, and etiology on functional benefit and safety of subjects evaluated in more than 1200 C-Leg trial fittings in Germany. *J Prosthet Orthot* 2015; 27(3): 86-95. [Download](#)
6. Wong K, Rheinstein J, Stern MA. Benefits for adults with transfemoral amputation and peripheral artery disease using microprocessor compared with nonmicroprocessor prosthetic knees. *Arch Phys Med Rehabil* 2015; 94 (10): 804-810. [Download](#)
7. Kannenberg A, Zacharias B, Pröbsting E: Benefits of microprocessor prosthetic knees to limited community ambulators: A systematic review. *J Rehabil Res Dev* 2014; 51 (10): 1469-1495. [Download](#)
8. Highsmith MJ, Kahle JT, Shepard NT, Kaufman KR: The effect of the C-leg knee prosthesis on sensory dependency and falls during sensory organization testing. *Technol Innov* 2014; 15: 343-347. [Download](#)
9. Thiele J, Westebbe B, Bellmann M, Kraft M: Designs and performance of microprocessor-controlled knee joints. *Biomed Tech (Berl)* 2014; 59(1): 65-77. [Download](#)
10. Eberly VJ, Mulroy SJ, Gronley JK, Perry J, Burnfield JM: Impact of a stance phase microprocessor-controlled knee prosthesis on level walking in lower functioning individuals with transfemoral amputation. *Prosth Orthot Int* 2014; 38(6): 447-455. [Download](#)
11. William D, Beasley E, Shaw A: Investigation of the quality of life of persons with a transfemoral amputation who use a C-leg® prosthetic device. *J Prosthet Orthot* 2013; 25(3): 100-109. [Download](#)
12. Tofts LJ, Hamblin N: C-Leg® improves function and quality of life in an adolescent traumatic transfemoral amputee – a case study. *Prosthet Orthot Int* 2013; Sep 20 [epub ahead of print]. [Download](#)
13. Wolf EJ, Everding VQ, Linberg AA, Czerniecki JM, Gambel, JM: Comparison of the Power Knee and C-Leg during step-up and sit-to-stand tasks. *Gait Posture* 2013; 38(3): 397-402. [Download](#)
14. Wolf EJ, Everding VQ, Linberg AA, Schnell BL, Czerniecki JM, Gambel, JM: Assessment of transfemoral amputees using C-Leg and Power Knee for ascending and descending inclines and steps. *J Rehabil Res Dev* 2012; 49(6): 831-842. [Download](#)

C-Leg Clinical Studies

15. Highsmith MJ, Kahle JT, Miro RM, Mengelkoch, MJ: Ramp descent performance with the C-leg and interrater reliability of the Hill Assessment Index. *Prosthet Orthot Int* 2013; 37(5): 362-368. [Download](#)
16. Wong CK, Benoy S, Blackwell W, Jones S, Rahal R: A comparison of energy expenditure in people with transfemoral amputation using microprocessor and nonmicroprocessor knee prostheses: a systematic review. *J Prosthet Orthot* 2012; 24(4): 202-208. [Download](#)
17. Meier MR, Hansen AH, Gard SA, McFayden AK: Obstacle course: users' maneuverability and movement efficiency when using Otto Bock C-leg, Otto Bock 3R60, and CaTech SNS prosthetic knee joints. *J Rehabil Res Dev* 2012; 49(4): 583-596. [Download](#)
18. Schaarschmidt M, Lipfert SW, Meier-Gratz C, Scholle H, Seyfarth A. Functional gait asymmetry of unilateral transfemoral amputees. *Human Movement Science*. 2012;31: 907–917. [Download](#)
19. Kaufman KR, Frittoli S, Frigo CA: Gait asymmetry of transfemoral amputees using mechanical and microprocessor controlled prosthetic knees. *Clin Biomech* 2012; 27 (5): 460-465. [Download](#)
20. Bar JB, Wutzke CJ, Threlkeld AJ: Longitudinal gait analysis of a person with a transfemoral amputation using three different prosthetic knee/foot pairs. *Physiother Theor Pract* 2012; 28(5): 407-411. [Download](#)
21. Wong CK, Wilska J, Stern M: Balance, balance confidence, and falls using nonmicroprocessor and microprocessor knee prostheses: a case study after vascular amputation with 12-month follow-up. *JPO* 2012;24(1): 16-18. [Download](#)
22. Theeven PJ, Hemmen B, Geers RP, Smeets RJ, Brink PR, Seelen HA: Influence of advanced prosthetic knee joints on perceived performance and everyday life activity of low-functional persons with a transfemoral amputation or knee disarticulation. *J Rehabil Med* 2012, 44 (5): 454-461. [Download](#)
23. Burnfield JM, Eberly VJ, Gronely JK, Perry J, Yule WJ, Mulroy SJ: Impact of stance phase microprocessor-controlled knee prosthesis on ramp negotiation and community walking function in K2 level transfemoral amputees. *Prosthet Orthot Int* 2012, 36 (1): 95-104. [Download](#)
24. Theeven P, Hemmen B, Rings F, Meys G, Brink P, Smeets R, Seelen H: Functional added value of microprocessor-controlled knee joints in daily life performance of Medicare Functional Classification Level-2 amputees. *J Rehabil Med* 2011; 43 (10): 906-915. [Download](#)
25. Highsmith MJ, Kahle JT, Carey SL, Lura DJ, Dubey RV, Csavina KR, Quillen WS: Kinetic asymmetry in transfemoral amputees while performing sit to stand and stand to sit movements. *Gait Posture* 2011; 34(1): 86-91. [Download](#)
26. Mâaref K, Martinet N, Grumillier C, Ghannouchi S, André JM, Paysant J. Kinematics in the Terminal Swing Phase of Unilateral Transfemoral Amputees: Microprocessor-Controlled Versus Swing-Phase Control Prosthetic Knees. *Arch Physl Med Rehabil*. 2010; 91(6): 919-925. [Download](#)
27. Theeven P, Hemmen B, Stevens C, Ilmer E, Brink P, Seelen H. Feasibility of a new concept for measuring ACTUAL functional performance in daily life of transfemoral amputees. *J Rehabil Med* 2010; 42: 744–751. [Download](#)

C-Leg Clinical Studies

28. Highsmith MJ, Kahle JT, Bongiorno DR, Sutton BS, Groer S, Kaufman KR
Safety, energy efficiency, and cost efficacy of the C-leg for transfemoral amputees. *Prosth Orthot Int* 2010, 34 (4): 362-377. [Download](#)
29. Bellmann M, Schmalz T, Blumentritt S
Comparative biomechanical analysis of current microprocessor-controlled prosthetic knee joints. *Arch Phys Med Rehabil* 2010, 91(4): 644-652. [Download](#)
30. Petersen AO, Comins J, Alkjær T: Assessment of gait symmetry in transfemoral amputees using C-leg compared with 3R60 prosthetic knees. *J Prosthet Orthot* 2010; 22(2): 106-112. [Download](#)
31. Blumentritt S, Schmalz T, Jarasch R: The safety of C-leg: Biomechanical tests. *J Prosthet Orthot* 2009, 21(1): 2-17. [Download](#)
32. Hafner BJ, Smith DG: Differences in function and safety between Medicare Functional Classification Level-2 and -3 transfemoral amputees and influence of prosthetic knee joint control. *J Rehabil Res Dev* 2009, 46 (3): 417-434. [Download](#)
33. Seelen HAM, Hemmen B, Schmeets AJ, Ament AJHA, Evers SMAA: Costs and consequences of a prosthesis with an electronic stance and swing phase controlled knee joint. *Technology and Disability* 2009, 21: 25-34. [Download](#)
34. Berry D, Olson MD, Larntz K: Perceived stability, function, and satisfaction among transfemoral amputees using microprocessor and non-microprocessor controlled prosthetic knees: a multicenter survey. *J Prosthet Orthot* 2009, 21 (1): 32-42. [Download](#)
35. Kaufman KR, Levine JA, Brey RH, McCrady SK, Padgett DJ, Joyner MJ: Energy Expenditure and Activity Level of Transfemoral Amputees using Passive Mechanical and Microprocessor-controlled Prosthetic Knees. *Arch Phys Med Rehabil* 2008 (89(7)), 1380-1385. [Download](#)
36. Gerzeli S, Torbica A, Fattore G: Cost utility analysis of knee prosthesis with complete microprocessor control (C-leg) compared with mechanical technology in trans-femoral amputees. *Eur J Health Econ* 2009; 10 (1): 47-55. [Download](#)
37. Kahle JT, Highsmith MJ, Hubbard SL: Comparison of Non-microprocessor Knee Mechanism versus C-Leg on Prosthesis Evaluation Questionnaire, Stumbles, Falls, Walking Tests, Stair Descent, and Knee Preference; *J Rehabil Res Dev* 2008; 45 (1): 1-14. [Download](#)
38. Brodtkorb TH, Henniksson M, Johanneson-Munk K, Thidell F: Cost-effectiveness of C-leg compared with non-microprocessor-controlled knees: a modeling approach. *Arch Phys Med Rehabil* 2008 89(1): 24-30. [Download](#)
39. Kaufman KR, Levine JA, Brey RH, et al. Gait and Balance of transfemoral amputees using passive mechanical and microprocessor-controlled prosthetic knees. *Gait Posture*. 2007; 26: 489-493. [Download](#)
40. Schmalz T, Blumentritt S, Marx B: Biomechanical Analysis of Stair Ambulation in Lower Limb Amputees. *Gait Posture*. 2007; 25: 267-278. [Download](#)
41. Seymour R, Engbretson B, Kott K, Ordway N, Brooks G, Crannell J, Hickernell E, Wheller K: Comparison between the C-leg(R) microprocessor-controlled prosthetic knee and non-microprocessor control prosthetic knees: A preliminary study of energy expenditure, obstacle course performance, and quality of life survey. *Prosthet Orthot Int* 2007; 31(1): 51 – 61. [Download](#)
42. Hafner BJ, Willingham LL, Buell NC, Allyn KJ, Smith DG: Evaluation of Function, Performance, and Preference as Transfemoral Amputees Transition from Mechanical to Microprocessor Control of the Prosthetic Knee. *Arch Phys Med Rehabil* 2007; 88(2): 207-17. [Download](#)

C-Leg Clinical Studies

43. Bunce DJ, Breakey JW: The Impact of C-Leg on the Physical and Psychological Adjustment to Transfemoral Amputation. *J Prosthet Orthot* 2007; 19(1): 7-14. [Download](#)
44. Segal AD, Orendurff MS, Klute GK, McDowell ML, Pecoraro JA, Shofer J, Czerniecki JM: Kinematic and Kinetic Comparisons of Transfemoral Amputee Gait using C-Leg and Mauch SNS Prosthetic Knees. *J Rehabil Res Dev* 2006; 43(7): 857-870. [Download](#)
45. Klute GK, Berge JS, Orendurff MS, Williams RM, Czerniecki JM: Prosthetic Intervention Effects on Activity of Lower Extremity Amputees. *Arch Phys Med Rehabil* 2006; 87: 717-722. [Download](#)
46. Williams RM, Turner AP, Orendurff M, Segal AD, Klute GK, Pecoraro J, Czerniecki J: Does Having a Computerized Prosthetic Knee Influence Cognitive Performance during Amputee Walking? *Arch Phys Med Rehabil* 2006; 87: 989-994. [Download](#)
47. 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):239-246. [Download](#)
48. Chin T, Machida K, Sawamura S, Shiba R, Oyabu H, Nagakura Y, Takase I, Nakagawa A: Comparison of different microprocessor controlled knee joints on the energy consumption during walking in trans-femoral amputees: intelligent knee prosthesis (IP) vs. C-Leg. *Prosthet Orthot Int* 2006; 30(1): 73-80. [Download](#)
49. Johannson JL, Sherill DM, Riley PO, Bonato P, Herr H: A clinical comparison of variable-damping and mechanically passive prosthetic knee devices. *Arch J Phys Med Rehabil* 2005, 84 (8): 563-575. [Download](#)
50. Swanson E, Stube J, Edman P: Function and body image levels in individuals with transfemoral amputation using the C-leg. *JPO* 2005, 17 (3): 80-84. [Download](#)
51. Perry J, et al: Energy Expenditure and Gait Characteristics of a Bilateral Amputee Walking with C-Leg Prostheses Compared with Stubby and Conventional Articulating Prostheses. *Arch Phys Med Rehabil* 2004; 85: 1711-1717. [Download](#)
52. Schmalz T, Blumentritt S, Jarasch R. Energy Expenditure and Biomechanical Characteristics of Lower Limb Amputee Gait: Influence of Prosthetic Alignment and Different Prosthetic Components. *Gait Posture*. 2003; 16: 255-263. [Download](#)

Contact information:

Ottobock Reimbursement North America
 P 800 328 4058 F 800 962 2549
professionals.ottobockus.com
professionals.ottobock.ca
reimbursement911@ottobock.com