Making Assistive Technology and Rehabilitation Engineering a Sure Bet

Assessment of Transfemoral Amputees using the C-Leg and the Power Knee for Ascending Inclines and Steps

Erik. J. Wolf, PhD, Vanessa Q. Everding, MS, Alison A. Linberg, DPT, Barri L. Schnall, MPT
Walter Reed Army Medical Center, Washington DC, 20307

ABSTRACT
Many attempts have been made to restore the function of missing joints as the result of traumatic amputation. The Power Knee attempts to restore and enhance function by dynamically adding power to the prosthetic knee. The objective of this study is to examine if functional and clinically relevant differences exist between the C-Leg and the Power Knee for participants with transfemoral amputations ascending ramps and stairs. Results show no observable differences between peak knee power generation at the intact or the prosthetic knee for amputees ascending a ramp. However for stair climbing the power generated at the prosthetic knee for amputees using the Power Knee was greater than those using the C-Leg.

KEYWORDS
Transfemoral Amputation, Gait, Power Knee

ACKNOWLEDGMENTS
The authors would like to thank Dave Beachler, Jenna Montgomery, Kathryn Werner, and Kathleen Perret for their contribution to this work.

Disclaimer: the views expressed in this abstract are those of the authors and do not necessarily reflect the official policy or position of the Department of the Army, Department of Defense, nor the U.S. Government.

Author Contact Information:
Erik J. Wolf, PhD, Walter Reed Army Medical Center, Military Advanced Training Center, Bldg. 2A, Rm. 146, 6900 Georgia Ave. NW, Washington, DC 20307, PHONE: (202) 356-1012 x 42149
EMAIL: erik.wolf1@us.army.mil