

Elevated Vacuum Clinical Studies

1. Rosenblatt N J, Ehrhardt T. The effect of vacuum assisted socket suspension on prospective, community-based falls by users of lower limb prostheses *Gait & Posture* 2017;55:100-103. <http://dx.doi.org/10.1016/j.gaitpost.2017.03.038>
2. Rink C, Wernke MM, Powell HM, Gynawali S, Schroeder RM, Kim JY, Denune JA, Gordillo GM, Colvin JM, Sen CK. Elevated vacuum suspension preserves residual-limb skin health in people with lower-limb amputation: Randomized clinical trial. *JRRD* 2016;53(6):1121–1132. <http://dx.doi.org/10.1682/JRRD.2015.07.0145>
3. Darter BJ , Sinitski K , Wilken JM . Axial bone-socket displacement for persons with a traumatic transtibial amputation: The effect of elevated vacuum suspension at progressive body-weight loads. *Prosthet Orthot Int* 2016 Oct;40(5):552-7. Epub 2015 Sep 30. <http://dx.doi.org/10.1177/0309364615605372>
4. Gholizadeh H, Lemaire ED, Eshraghi A. The evidence-base for elevated vacuum in lower limb prosthetics: Literature review and professional feedback. *Clin Biomech* 2016 Aug;37:108-16. <http://dx.doi.org/10.1016/j.clinbiomech.2016.06.005>
5. Samitier BC, Guirao L, Costea M, Camós JM, Pleguezuelos E. The benefits of using a vacuum-assisted socket system to improve balance and gait in elderly transtibial amputees. *Prosthetics and Orthotics International* 2016;40:83–88. <http://dx.doi.org/10.1177/0309364614546927>
6. Safari MR, Meier MR. Systematic review of effects of current transtibial prosthetic socket designs--Part 2: Quantitative outcomes. *J Rehabil Res Dev* 2015;52(5):509-26. <http://dx.doi.org/10.1682/JRRD.2014.08.0184>
7. Safari MR, Meier MR. Systematic review of effects of current transtibial prosthetic socket designs-Part 1: Qualitative outcomes. *J Rehabil Res Dev* 2015;52(5):491-508. <http://dx.doi.org/10.1682/JRRD.2014.08.0183>
8. Kahle JT, Orriola JJ, Johnston W, Highsmith MJ. The effects of vacuum-assisted suspension on residual limb physiology, wound healing, and function: A systematic review. *Technol Innov* 2014;1(15): 333-341. <http://dx.doi.org/10.3727/194982413X13844488879177>
9. Kahle JT, Highsmith MJ. Transfemoral interfaces with vacuum assisted suspension comparison of gait, balance, and subjective analysis: Ischial containment versus brimless. *Gait & Posture* 2014;40(2):315-320. Epub 2014 May 9. <http://dx.doi.org/10.1016/j.gaitpost.2014.04.206>
10. Hoskins RD, Sutton EE, Kinor D, Schaeffer JM, Fatone S. Using vacuum-assisted suspension to manage residual limb wounds in persons with Transtibial amputation: A case series. *Prosthetics and Orthotics International* 2014;38(1):68–74. <http://dx.doi.org/10.1177/0309364613487547>
11. Kahle JT, Highsmith MJ. Transfemoral sockets with vacuum-assisted suspension comparison of hip kinematics, socket position, contact pressure, and preference: Ischial containment versus brimless. *J Rehabil Res Dev* 2013; 50(9):1241–52. <http://dx.doi.org/10.1682/JRRD.2013.01.0003>
12. Traballes M, Delussu AS, Fusco A, et al. Residual limb wounds or ulcers heal in transtibial amputees using an active suction socket system. A randomized controlled study. *Eur J Phys Rehab Med* 2012;48:1-2. [Download](#)

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13. Klute GK, Berge JS, Biggs W, Pongnumkul S, Popovic Z, Curless B. Vacuum-assisted socket suspension compared with pin suspension for lower extremity amputees: Effect on fit, activity, and limb volume. Arch Phys Med Rehab 2011; 92(10). <http://dx.doi.org/10.1016/j.apmr.2011.05.019>
14. Ferraro C. Outcomes study of transtibial amputees using elevated vacuum suspension in comparison with pin suspension. JPO 2011;23(2):78-81. <http://dx.doi.org/10.1097/JPO.0b013e3182173b83>
15. Gerschutz MJ, Denune JA, Colvin JM, and Schober G. Elevated vacuum suspension influence on lower limb amputee's residual limb volume at different vacuum pressure settings. JPO 2010;22(4):252-256. <http://dx.doi.org/10.1097/JPO.0b013e3181f903df>
16. Gerschutz MJ, Haynes ML, Colvin JM, Nixon D, Denune JA, and Schober G. A vacuum suspension measurement tool for use in prosthetic research and clinical outcomes: Validation and analysis of vacuum pressure in a prosthetic socket. JPO 2010;22(3):172-176. <http://dx.doi.org/10.1097/JPO.0b013e3181e8feaa>
17. Traballese M, Averna T, Delusso AS, et al. Trans-tibial prothesization in large area of residual limb wound: is it possible? A case report. Disabil Rehabil Assist Technol 2009;4:373-375. <http://dx.doi.org/10.1080/17483100903038568>
18. Brunelli S, Averna T, Delusso S, et al. Vacuum assisted socket system in trans-tibial amputees: Clinical report. The Orthopadie Technik 2009;2:2-8.
19. Fairley M. 'Hanging Tight': elevated vacuum suspension systems step forward. The O&P Edge, March 2008. [Download](#)
20. Street G. Vacuum suspension and its effects on the limb. The Orthopadie Technik 2006;4:1-4. [Download](#)
21. Beil TL, Street GM. Comparison of interface pressures with pin and suction suspension systems. J Rehabil Res Dev 2004;41:821-828. <http://dx.doi.org/10.1682/JRRD.2003.09.0146>
22. Goswami J, Lynn R, Street G, Harlander M: Walking in a vacuum-assisted socket shifts the stump fluid balance Prosthet Orthot Int 2003;27(2):107-113. <http://dx.doi.org/10.1080/03093640308726666>
23. Beil TL, Street GM, Covey SJ. Interface pressures during ambulation using suction and vacuum-assisted prosthetic sockets. J Rehabil Res Dev 2002;39(6):693-700. [Download](#)
24. Board WJ, Street GM, Caspers C. A comparison of trans-tibial amputee suction and vacuum socket conditions. Prosthet Orthot Int 2001;25:202-209. [Download](#)

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