Clinical Research Overview

Focus	Conclusion	Reference
Comparative Effectiveness Research	1) AHRQ Technology Assessment published in May 2009 states after extensive literature review of all existing NPWT research they were not able to identify a significant therapeutic distinction of one NPWT system or component over another through the use of head-to-head comparison. (page 95)	Agency for Health Care Research and Quality, (May, 2009). Negative Pressure Wound Therapy Devices. AHRQ Technology Assessment Report, Project ID: WNDT1108.
	2) No NPWT system has been proven to be superior by means of RCTs. There is no evidence to date demonstrating a singular component of this complete system is more important in Wound Care than any of the others. (page 95, 96)	
Wound Dressing Interface Research	1) 87 patient randomized trial concluded that gauze interface general suction provides an alternative NPWT that is at least as effective as VAC with respect to changes in wound volume and surface area while decreasing pain per dressing change and pain medications required in an acute care setting.	Gottlieb, Dorafshar, Franczyk, Lohman, 2009. "Prospective Randomized Study Comparing Gauze Suction NPWT with Standard Vacuum Assisted Closure Device", Study completed, not published yet. ClinicalTrials.gov, Identifier: NCT00724750.
	2) Gauze interface suction saved time spent on dressing application and significant cost savings.	
	1) Foam & Gauze resulted in similar microdeformation of the wound bed surface. 2) Gauze is comparable to foam in terms of pressure transduction, wound contraction and stimulation of blood flow at the wound edge. 3) Scar tissue formed under gauze based NPWT is thinner and more organized vs foam based NPWT which is thicker and more disorganized.	Borgquist, O., Ingemansson, R., Malmsjö, M. (2009) "Negative pressure wound therapy using gauze and foam: An in-detail study of the effects on the wound bed including macro and microdeformation, tissue ingrowth and wound bed histology". Presented at the 24th Annual Clinical Symposium on Advances in Skin and Wound Care in 2009.
	1) NPWT caused the wound bed tissue to grow into the foam, while there was no such ingrowth into gauze. 2) More force is needed to remove foam than gauze, which may explain the pain during dressing changes after treatment with foam. 3) Morphology of the wound bed differs between foam and gauze. 4) Beneath the foam there was more leukocyte infiltration, tissue disorganization, disruption of contact among cells, and differences in size among cells regardless of the NPWT setting. 5) Leukocytes promote the formation of granulation tissue however extensive granulation tissue formation results in scarring that will contract the wound during the healing process.	Borgquist, O., Ingemansson, R., Malmsjö, M. (2009) "Tissue Ingrowth Into Foam but Not Into Gauze During Negative Pressure Wound Therapy". Wounds. Retrieved from http://www.woundsresearch.com/content/tissue-ingrowth-into-foam-notinto-gauze-during-negativepressure-wound-Therapy.
	1) Porcine study on full thickness wounds in which various commercially available dressing types (foam, gauze 1, gauze 2, silver, textiles) and coupled with NPWT for 10 days. 2) Results suggest that healing is taking place at a similar rate with each one of the dressings used in combination with NPWT. 3) All regenerated tissues appeared healthy with collagen and new vessel formation, indicating good response of the wound to the treatment applied.	A comparison of various wound dressings coupled to a negative pressure wound therapy (NPWT) system to study effects on wound healing progression. Medela AG, Healthcare Switzerland.