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Negative Pressure
Therapy with Instillation
**Bibliography of
Published Studies**

3M + **KCI**™

Surgical Specialty	Citation	Foam	Wound type	Evidence Level	Publication Year
Cardiothoracic Surgery	Karaca S, Kalangos A. Vacuum-assisted closure (VAC)-Instill® with continuous irrigation for the treatment of Mycoplasma hominis mediastinitis. International Wound Journal. 2015	GRANUFOAM™	Acute Mediastinitis	Level 5	2015
	Idris A, Hart A, Branam S, Guglin M. VeraFlo negative pressure wound therapy with household bleach for refractory driveline infection in a patient with left ventricular assist device. VAD J. 2015;1:1-10.	VERAFLO™	LVAD	Level 5	2015
General Surgery	Raykha C, Riad Botros AS, Roden Y, Murchan P. Negative Pressure Wound Therapy with Instillation as Conservative Management for a Large Abdominal Wound Following Incarcerated Parastomal Hernia Repair. Cureus. 2018 Dec 13;10(12):e3728.	VERAFLO™ & VERAFLO CLEANSE CHOICE™	Hernia repair	Level 5	2018
General Woundcare	Goss SG, et al. Negative Pressure Wound Therapy with Instillation (NPWT) Better Reduces Postdebridement Bioburden in Chronically Infected Lower Extremity Wounds than NPWT Alone. Journal of the American College of Clinical Wound Specialists 2012;4:74-80.	VERAFLO™	Chronic Wounds	Level 2	2012
	Nather A, Yi Joy WL, Wei Mae CC, Shu-Yi CC. Vacuum-Assisted Closure Ulta with Veraflo Instillation for the Healing of Diabetic Foot Wounds. Orthopaedic Surgery and Traumatology. 2016 Jun 24;1(1):10-18.	VERAFLO™	Diabetic Foot	Level 2	2016
	Obst MA, Harrigan J, Wodash A, Bjurstrom S. Early-stage management of complex wounds using negative pressure wound therapy with instillation and a dressing with through holes. Wounds. 2019 May;31(5):E33-E36.	VERAFLO CLEANSE CHOICE™	Chronic Wounds	Level 2	2019
	Omar M, Gathen M, Liodakis E, Suero EM, Krettek C, Zeckey C, Petri M. A comparative study of negative pressure wound therapy with and without instillation of saline on wound healing. Journal of Wound Care. 2016 Aug;25(8):475-8.	VERAFLO™	Chronic Wounds	Level 3	2016
	Dalla Paola L. Diabetic foot wounds: the value of negative pressure wound therapy with instillation. International Wound Journal. 2013 Dec;10(Suppl 1):25-31.	VERAFLO™	Diabetic Foot	Level 3	2013
	Fluieraru S, et al. Sterile-water negative pressure instillation therapy for complex wounds and NPWT failures. Journal of Wound Care. 2013 Jun 12;22(6):293-9.	GRANUFOAM™	Chronic Wounds	Level 4	2013
	Wolvos T. The use of negative pressure wound therapy with an automated, volumetric fluid administration: An advancement in wound care. Wounds. 2013 Mar;25(3):75-83.	VERAFLO™	Chronic Wounds	Level 4	2013
	Rupert P, Ochoa RA, Punch L, Van Epps J, Gordon-Burroughs S, Martinez S. The Use of NPWT-i Technology in Complex Surgical Wounds. Cureus. 2016 Dec 8;8(12):e920.	VERAFLO™	Surgical Wounds	Level 4	2016

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General Woundcare	Blalock L. Use of Negative Pressure Wound Therapy With Instillation and a Novel Reticulated Open-cell Foam Dressing With Through Holes at a Level 2 Trauma Center. Wounds. 2019 Feb;31(2):55-58. Epub 2018 Nov 22.	VERAFLO CLEANSE CHOICE™	Chronic Wounds	Level 4	2019
	Hall KD, Patterson JS. Three Cases Describing Outcomes of Negative-Pressure Wound Therapy With Instillation for Complex Wound Healing. Journal of Wound, Ostomy, and Continence Nursing. 2019 May/Jun;46(3):251-255.	VERAFLO™	Chronic Wounds	Level 4	2019
	Nakhi MB, Eltayeb H. Use of NPWT with instillation in complex chronic wounds - a Kuwaiti experience. Wounds Middle East. 2019 Aug 27;6(2):6-10.	VERAFLO™ & VERAFLO CLEANSE CHOICE™	Chronic Wounds	Level 4	2019
	Broder KW, Nguyen B, Broder RM. Negative Pressure Wound Therapy with Instillation in a Chronic Non-Healing Right Hip Trochanteric Pressure Ulcer. Cureus. 2016 Nov 14;8(11):e877.	VERAFLO™	Chronic Wounds	Level 5	2016
	Uoya Y, Ishii N, Kishi K. Comparing the Therapeutic Value of Negative Pressure Wound Therapy and Negative Pressure Wound Therapy With Instillation and Dwell Time in Bilateral Leg Ulcers: A Case Report. Wounds. 2019 Sep;31(9):E61-E64.	VERAFLO™	Chronic Wounds	Level 5	2019
Necrotizing Fasciitis	Aguiar T, Muralha N, Ramalho C. Necrotizing fasciitis after cesarean section: combination of vacuum assisted closure and antiseptic solution instillation as a successful treatment. Acta Obstétrica e Ginecológica Portuguesa 2017;11:302-306.	VERAFLO™	Necrotizing Fasciitis	Level 5	2017
	Bosman WM, Brekelmans W, Verduijn PS, Borger van der Burg BL, Ritchie ED. Necrotising fasciitis due to an infected sebaceous cyst. BMJ Case Reports. 2014 Apr 30;2014.	VERAFLO™	Necrotizing Fasciitis	Level 5	2014
	Blazek DF, Lockridge E. Instillation Therapy for the Treatment of Necrotizing Fasciitis: A Case Study. Cureus. 2016 Dec 7;8(12):e917.	VERAFLO™	Necrotizing Fasciitis	Level 5	2016
	Reider K, McElroy E, Lemay S. The Use of Negative Pressure with Instillation and Dwell for the Treatment of Necrotizing Fasciitis. Cureus. 2018 Oct 29;10(10):e3515.	VERAFLO CLEANSE CHOICE™	Necrotizing Fasciitis	Level 5	2018
Vascular Surgery	Yang c, Goss SG, Alcantara S, Schultz G, Lantis JC 2nd. Effect of negative pressure wound therapy with instillation on bioburden in chronically infected wounds. Wounds. 2017 Aug;29(8):240-246. Epub 2017 May 25.	VERAFLO™	Chronic Wounds	Level 4	2017
	Yang CK, Alcantara S, Goss S, Lantis JC 2nd. Cost analysis of negative-pressure wound therapy with instillation for wound bed preparation preceding split-thickness skin grafts for massive (>100 cm ²) chronic venous leg ulcers. Journal of Vascular Surgery. 2015 Apr;61(4):995-9. Epub 2015 Jan 13.	VERAFLO™	VLU	Level 5	2015
Orthopedic Surgery	Hasegawa IG, Murray PC. Circumferential Negative Pressure Wound Therapy with Instillation and Dwell Prior to Delayed Flap Coverage for a Type IIIB Open Tibia Fracture. Cureus. 2019 Apr 20;11(4):e4511.	VERAFLO™ & VERAFLO CLEANSE CHOICE™	Open fractures	Level 5	2019
	Hasegawa IG, Livingstone JP, Murray P. A Novel Method for Fracture Blister Management Using Circumferential Negative Pressure Wound Therapy with Instillation and Dwell. Cureus. 2018 Oct 29;10(10):e3509.	VERAFLO™ & VERAFLO CLEANSE CHOICE™	Open fractures	Level 5	2018

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Plastic Surgery	Kim PJ, Attinger CE, Oliver N, Garwood C, Evans KK, Steinberg JS, Lavery LA. Comparison of Outcomes for Normal Saline and an Antiseptic Solution for Negative-Pressure Wound Therapy with Instillation. <i>Plastic and Reconstructive Surgery</i> . 2015 Nov;136(5):657e-64e.	VERAFLO™	Chronic Wounds	Level 1b	2015
	Ben-Nakhi ME, Eltayeb HI. First Middle East Experience with Novel Foam Dressing Together with Negative Pressure Wound Therapy and Instillation. <i>Cureus</i> . 2018 Oct 5;10(10):e3415.	VERAFLO™	Chronic Wounds	Level 2	2018
	Kim PJ, Attinger CE, Steinberg JS, Evans KK, Powers KA, Hung RW, Smith JR, Rocha ZM, Lavery L. The impact of negative-pressure wound therapy with instillation compared with standard negative-pressure wound therapy: a retrospective, historical, cohort, controlled study. <i>Plastic and Reconstructive Surgery</i> . 2014 Mar;133(3):709-16.	VERAFLO™	Chronic Wounds	Level 3	2014
	Gabriel A, Kahn K, Karmy-Jones R. Use of negative pressure wound therapy with automated, volumetric instillation for the treatment of extremity and trunk wounds: clinical outcomes and potential cost-effectiveness. <i>Eplasty</i> . 2014 Nov 3;14:e41	VERAFLO™	Chronic Wounds	Level 3	2014
	Blome-Eberwein S, Lozano D, Amani H. Utility of Negative Pressure Wound Therapy with Instillation in a Burn Center. <i>Burns Open</i> . 2018 Oct;2(4):208-211	VERAFLO™	Burns	Level 4	2018
	Teot L, Boissiere F, Fluieraru S. Novel foam dressing using negative pressure wound therapy with instillation to remove thick exudate. <i>International Wound Journal</i> . <i>Int Wound J</i> . 2017 Oct;14(5):842-848	VERAFLO CLEANSE CHOICE™	Chronic Wounds	Level 4	2017
	Matiassek J, et al. The combined use of NPWT and instillation using an octenidine based wound rinsing solution: a case study. <i>Journal of Wound Care</i> . 2014 Nov;23(11):590-6.	VERAFLO™	Wound due to infected implant	Level 4	2014
	Meybodi F, Sedaghat N, French J, Keighley C, Mitchell D, Elder E. Implant salvage in breast reconstruction with severe peri-prosthetic infection. <i>ANZ J Surg</i> . 2015 Nov 17.	VERAFLO™	Wound due to infected implant	Level 4	2015
	Rogers AD, Shahrokhi S. Salvaging length for below-knee-level amputations after burn injury using muscle flaps, negative pressure wound therapy with instillation, and allograft skin. <i>Wound Healing Southern Africa</i> . 2016;9(1):41-44.	VERAFLO™	Burns	Level 5	2016

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Plastic Surgery	Aycart MA, Eble DJ, Ross KM, Orgill DP. Mechanisms of Action of Instillation and Dwell Negative Pressure Wound Therapy with Case Reports of Clinical Applications. <i>Cureus</i> . 2018 Sep 27;10(9):e3377.	VERAFLO CLEANSE CHOICE™	Chronic Wounds	Level 5	2018
	Padilla PL, Freudenburg EP, Kania K, Laney RW, Branski LK, Herndon DN. Negative Pressure Wound Therapy with Instillation and Dwell for the Management of a Complex Burn: A Case Report and Review of the Literature. <i>Cureus</i> . 2018 Oct 29;10(10):e3514.	VERAFLO™ & VERAFLOR CLEANSE CHOICE™	Burns	Level 5	2018
	Schiltz D, Wenzel C, Brix E, Prantl L, Taeger CD. Salvage of both feet after complete resection of large carcinomas and local infection using a new negative pressure wound dressing in combination with intermittent instillation therapy. <i>J Tissue Viability</i> . 2019 Jan 10. pii: S0965-206X(18)30153-0	VERAFLO™ & VERAFLOR CLEANSE CHOICE™	Surgical wounds	Level 5	2019
Consensus/Evidence review	Anghel EL, Kim PJ, Attinger CE. A solution for complex wounds: the evidence for negative pressure wound therapy with instillation. <i>Int Wound J</i> . 2016;13 Suppl 3:19-24.	VERAFLO™	NA	Level 5	2016
	Gabriel A, Rauen B. Simplified negative pressure wound therapy with instillation: advances and recommendations. <i>Plastic Surgical Nursing</i> . 2014 Apr-Jun;34(2):88-92.	VERAFLO™	NA	Level 5	2014
	Gupta S, Gabriel A, Lantis J, Teot L. Clinical recommendations and practical guide for negative pressure wound therapy with instillation. <i>Int Wound J</i> . 2016 Apr;13(2):159-74.	VERAFLO™	NA	Level 5	2016
	Kim PJ, et al. Negative Pressure Wound Therapy with Instillation: Consensus Guidelines. <i>Plastic and Reconstructive Surgery</i> . 2013 Dec;132(6):1569-79.	VERAFLO™	NA	Level 5	2013
	Kim PJ, et al. Negative pressure wound therapy with instillation: review of evidence and recommendations. <i>Podiatry Today</i> . 2015 Dec;(Suppl):1-20.	VERAFLO™	NA	Level 5	2015
	McKanna M, et al. Clinician Panel Recommendations for Use of Negative Pressure Wound Therapy with Instillation. <i>Ostomy Wound Management</i> . 2016 April; S4:S2-S14	VERAFLO™	NA	Level 5	2016
	Fletcher J et al. Negative pressure wound therapy with instillation for Category 3 and 4 pressure ulcers: Findings of an advisory board meeting. <i>Wounds UK</i> . 2019 Jul 3;volume 15(3):	VERAFLO™ & VERAFLOR CLEANSE CHOICE™	NA	Level 5	2019
	Horch RE et al. Use of negative pressure therapy with instillation and dwell time for wound treatment - Results of an expert consensus conference. <i>Zentralbl Chir</i> . 2018; 143: 609 - 616	VERAFLO™ & VERAFLOR CLEANSE CHOICE™	NA	Level 5	2018
	Back DA, Scheuermann-Poley C, Willy C. Recommendations on negative pressure wound therapy with instillation and antimicrobial solutions - when, where and how to use: what does the evidence show? <i>International Wound Journal</i> . 2013 Dec;10(Suppl 1):32-42.	VERAFLO™	NA	Level 5	2013
	Kim PJ, Attinger CE, Constantine T, Crist BD, Faust E, Hirche CR, Lavery LA, Messina VJ, Ohura N, Punch LJ, Wirth GA, Younis I, Teot L. Negative pressure wound therapy with instillation: International consensus guidelines update. <i>International Wound Journal</i> . 2020 Feb;17(1):174-186. Epub 2019 Oct 30.	VERAFLO™ & VERAFLOR CLEANSE CHOICE™	NA	Level 5	2020

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Scientific Evidence	Tahir S, Malone M, Hu H, Deva A, Vickery K. The Effect of Negative Pressure Wound Therapy with and without Instillation on Mature Biofilms In Vitro. <i>Materials</i> . 2018 May 16;11(5).	VERAFLO™	NA	Level 5	2018
	Saijo H, Kilpadi DV, Akita S. Evaluation of the use of recombinant human basic fibroblast growth factor in combination with negative pressure wound therapy with instillation and dwell time in porcine full-thickness wound model. <i>Wound Repair Regen</i> 2018;25:972-975.	VERAFLO™	NA	Level 5	2018
	Rycerz AM, Slack P, McNulty AK. Distribution assessment comparing continuous and periodic wound instillation in conjunction with negative pressure wound therapy using an agar-based model. <i>International Wound Journal</i> . 2013 Apr;10(2):214-220.	VERAFLO™	NA	Level 5	2013
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	Lessing C, et al. Negative pressure wound therapy with controlled saline instillation (NPWTi): dressing properties and granulation response in vivo. <i>Wounds</i> . 2011 Oct;23(10):309-19.	VERAFLO™	NA	Level 5	2011
	Lessing MC, James RB, Ingram SC. Comparison of the effects of different negative pressure wound therapy modes - continuous, noncontinuous, and with instillation - on porcine excisional wounds. <i>Eplasty</i> 2013 October 1;13:e51.	VERAFLO™	NA	Level 5	2013
	Rycerz AM, Allen D, Lessing MC. Science supporting negative pressure wound therapy with instillation. <i>Int Wound J</i> . 2013;10(Suppl 1):20-4.	VERAFLO™	NA	Level 5	2013
	Phillips PL, Yang Q, Schultz GS. The effect of negative pressure wound therapy with periodic instillation using antimicrobial solutions on <i>Pseudomonas aeruginosa</i> biofilm on porcine skin explants. <i>International Wound Journal</i> . 2013 Dec;10(Suppl 1):48-55.	VERAFLO™	NA	Level 5	2013
	Singh DP, Gowda AU, Chopra K, Tholen M, Chang S, Mavrophilipos V, Semsarzadeh N, Rasko Y, Holton Iii L. The Effect of Negative Pressure Wound Therapy With Antiseptic Instillation on Biofilm Formation in a Porcine Model of Infected Spinal Instrumentation. <i>Wounds</i> . 2017 Jun;28(6):175-180.	VERAFLO™	NA	Level 5	2017
	Allen D, LaBarbera LA, Bondre IL, Lessing MC, Rycerz AM, Kilpadi DV, Collins BA, Perkins J, McNulty AK. Comparison of tissue damage, cleansing and cross-contamination potential during wound cleansing via two methods: lavage and negative pressure wound therapy with instillation. <i>International Wound Journal</i> . 2014 Apr;11(2):198-209.	VERAFLO™	NA	Level 5	2014

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