# Evaluating the Utility and Application of an All-in-One, Peel and Place Dressing for Negative Pressure Wound Therapy: Initial Experience in Lower Extremity Wounds

### Background

- Negative pressure wound therapy (NPWT) using reticulated open-cell foam (ROCF) dressings has demonstrated versatility in various wound types.<sup>1,2</sup>
- However, ROCF dressing changes can be painful, and prolonged use of ROCF dressings is subject to tissue ingrowth.
- A novel all-in-one dressing<sup>3</sup> composed of encapsulated ROCF, a perforated nonadherent layer, and hybrid acrylicsilicone drape is available with an extended wear time.

# Aim

• We report our experience with an all-in-one negative pressure wound therapy (NPWT) dressing to adjunctively manage 4 complex wounds.

# Methods

- Patients with lower extremity wounds were assessed.
- Wounds were appropriately debrided, and antibiotics prescribed as needed.
- Wound area was measured at each dressing change, including undermining.
- An all-in-one wound dressing with drape\* was applied over the wound and connected via tubing to an NPWT unit<sup>†</sup>.
- NPWT setting was adjusted to -150 mmHg as appropriate.
- All-in-one dressings were changed at least once per 7 days.

Case 1. Residual limb wound. 53-year-old female presented with a wound on her residual **Case 3. Infected trauma wound.** 42-year-old male in otherwise good health presented with limb after a high amputation. Patient is smoker with history of CV disease, PAD, hypertension, deep tissue trauma wound sustained 5 weeks prior. Patient expressed pain level of 7/10 and could not tolerate debridement. Collagenase applied until soft enough to sharply debride, then and pulmonary complications. NPWT<sup>†</sup> with standard ROCF dressings<sup>‡</sup> had been previously utilized but with pain of 10/10 during dressing changes. With wound size decrease, NPWT NPWT initiated with all-in-one dressings. Wound progressed toward closure during next 56 was applied with all-in-one dressing in outpatient settings. Pain during dressing changes days, then therapy discontinued. was reduced to 0/10. The wound progressed toward closure and after 3.3 months, therapy switched to collagen.



A. 1 week prior to dressings all-in-one with ROCF<sup>‡</sup> NPWT dressing change led to bleeding and pain



E. Day 7. Epithelialization occurring beneath dressing (closeup)

Case 2. Traumatic ulcer. 71-year-old female presented with infected hard-to-heal traumatic Case 4. Trauma wound. 82-year-old male presented with a hematoma secondary to avulsive ulcer that had significantly worsened over prior months and was open to her right Achilles injury. Medical history included Type 2 DM, gout, HTN, dementia and hyperlipidemia. The tendon. Prior medical history included ESRD on dialysis, Type 1 DM, sarcoidosis, venous hematoma was evacuated and debrided via ultrasound. Wound initially managed with gelling insufficiency and chronic myeloma. Had previously used NPWT<sup>+</sup> with ROCF dressings<sup>‡</sup> but fiber and foam dressing, then changed to NPWT with all-in-one dressings. After 5 weeks, therapy stopped due to leakage and skin irritation from drape. NPWT and all-in-one dressings were transitioned to ORC/collagen/silver-ORC dressings<sup>§</sup> and compression. used for 80 days to prepare for cellular/tissue-based product.



A. Day 0. Hard-to-heal wound with slough cover at presentation



wound

Presented at The Symposium on Advanced Wound Care | Wound Healing Society, April 30-May 4, 2025, Grapevine, TX NOTE: Specific indications, contraindications, warnings, precautions and safety information exist for these products and therapies. Please consult a clinician and product instructions for use prior to application. Rx only.

Cases



**B. Day 0**. After surface area decreased to accommodate large size all-in-one dressing (225 cm<sup>2</sup>), -150 mmHg pressure applied



F. Day 26. Surface area reduced to 94 cm<sup>2</sup>



C. First all-in-one dressing was applied efficiently by home care nurse with no prior product training



G. Day 43. Surface area now 90 cm<sup>2</sup>



D. Day 7. Patient returned to clinic: epithelialization noted from wound edges. Surface area now 182  $cm^{2}$  (-43  $cm^{2}$ ).



H. Day 100. Therapy switched to collagen alone with twice weekly dressing changes



**B.** All-in-one dressing applied. Extra drape applied over heel to smooth surface.



E. Day 49.



reduced from 57.5 cm<sup>2</sup> to 25.5 cm<sup>2</sup> with healthier periwound



F. Day 80. NPWT with all-in-one dressing discontinued and cellular/ tissue-based product applied

# Dot Weir, RN, CWON, CWS; Saratoga Hospital Center for Wound Healing and Hyperbaric Medicine, Saratoga Springs, New York



A. At presentation. Eschar was cross-hatched collagenase started.



**D. Day 7.** Undermining reduced to just 7-9 o'clock



After 12 days of collagenase, wound soft enough to sharply debride



**E. Day 14.** 21.0 cm<sup>2</sup> and undermining resolved



C. Day 0. NPWT initiated with all-in-one dressing. Wound measured 6.0 x 7.4 x 0.5 cm (44.4 cm<sup>2</sup>) with 0.7 cm undermining from 7-2 o'clock.



F. Day 29. 17.8 cm<sup>2</sup> surface area, and dressing switched to size small



A. Day 3. 3 days post initial presentation, wound measured 3.5 cm x 4.6 cm x 0.3 cm (16.1 cm<sup>2</sup>) with 0.7 cm undermining from 10-2 o'clock. NPWT initiated with all-in-one dressing.



**B**. All-in-one dressing applied



C. Day 10. Wound size decreased (3.5 X 4.3 X 0.1 cm; 15.1 cm<sup>2</sup>), no further undermining



**D. Day 28**. Wound edges epithelializing, 4.0 x 2.5 cm (10.0 cm<sup>2</sup>). One week later, therapy changed to ORC/ collagen/silver-ORC and compression dressings.

\*Solventum™ V.A.C.<sup>©</sup> Peel and Place Dressing, <sup>†</sup>Solventum™ ActiV.A.C.™ Therapy System, <sup>‡</sup>Solventum™ V.A.C.<sup>©</sup> Granufoam™ Dressing Kit, <sup>§</sup>3M<sup>™</sup> Promogran Prisma<sup>™</sup> Matrix, Solventum Corporation, Maplewood, MN

Dot Weir is a paid consultant for Solventum. The author thanks Solventum for assistance with poster preparation and production.





G. Day 56. NPWT discontinued due to patient lifestyle factors

E. Day 63. Wound epithelialized

# Results

- Four patients (2 female and 2 male patients; age range: 42-82) with lower extremity wounds were treated.
- Patients' treatments included prior gelling fiber and foam dressing, NPWT<sup>+</sup> reticulated open cell foam using (ROCF)<sup>‡</sup>, collagenase, and non-adherent dressings.
- Duration of NPWT-all-in-one dressing therapy ranged from 32-100 days.
- All wounds exhibited a positive wound healing progression during therapy, as evidenced by increased granulation tissue formation, reduction in wound dimensions, and reepithelialization (Cases 1-4).

## Discussion

- •All hard-to-heal wounds in this series progressed in a positive wound healing trajectory during use of NPWT and all-in-one dressings.
- Minimal to no pain was noted during dressing application and removal.
- The all-in-one dressing was well tolerated by patients.
- •7-day extended wear and ease of dressing placement also addressed other challenges in using NPWT, such as patient transportation issues and clinic scheduling.

### References

- Norman G, Shi C, Goh EL, et al. Negative pressure wound therapy for surgical wounds healing by primary closure. Cochrane Database Syst Rev. 2022;4(4):CD009261
- Wu Y, Shen G, Hao C. Negative pressure wound therapy (NPWT) is superior to conventional moist dressings in wound bed preparation for diabetic foot ulcers: A randomized controlled trial. Saudi Med J. 2023;(10):1020-1029.
- Allen D. Mann S. Robinson T. et al. Preclinical Assess ments of a Novel Peel and Place Extended-Wear Negative-Pressure Wound Therapy Dressing for up to 35 Days in a Porcine Model. Adv Wound Care (New Rochelle). 2024;13(6):291-307.