

New Evidence that Changes the Game with Negative Pressure Wound Therapy

PICO Single-use Negative Pressure Wound Therapy vs. Traditional Negative Pressure Wound Therapy

This is a brief summary of a presentation at the annual fall conference of Wounds Canada, in Niagara Falls, ON, on October 5, 2019. It has been produced with the financial support of Smith & Nephew. The presenters were Kristi Huebner, MSN, RN, CW, and Robert S. Kirsner, MD, PhD.

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Use of sNPWT vs. Traditional NPWT

For diabetic foot ulcers (DFUs) and venous leg ulcers (VLUs), compression, offloading and debridement are standard of care, but up to a third of patients fail to heal within six months using this treatment. This is where advanced therapies come in. In the past, all negative pressure wound therapy (NPWT) has been seen as equal; no one system has been shown to be more effective than any other. In 2019, Robert Kirsner and colleagues conducted a study comparing the effectiveness of two existing health-care interventions for patients with DFUs and VLUs: traditional NPWT (tNPWT) and single-use NPWT (sNPWT).¹ One hundred and fifteen patients were treated for 12 weeks or until wound closure. Patients treated with sNPWT had improved outcomes in wound area, depth and volume reduction when compared to those treated with tNPWT. Furthermore, full closure was seen in 45% of wounds treated with sNPWT, versus 22% of wounds treated with tNPWT.

The researchers concluded that sNPWT had improved clinical effectiveness when compared with tNPWT. This was surprising, since all systems had previously been considered to have equal results. The researchers also noted that patients treated with the sNPWT reported greater satisfaction—measured by scores on willingness to use, comfort of use, impact on mobility, activity level and sleep—than those treated with tNPWT. These results support the use of sNPWT for the management of

VLUs and DFUs where NPWT is being considered. In these cases, Smith & Nephew's PICO 7 dressing should be the first choice.

PICO 7 Product Overview

Smith & Nephew's newest generation of single-use negative pressure wound therapy (sNPWT) has many benefits over other types of sNPWT, including

PICO 7's Four-layer Design Components

- **Silicone adhesive layer:** easy to apply and reposition; protects the wound environment and minimizes trauma and pain to periwound area on removal
- **AIRLOCK Technology layer:** distributes negative pressure equally across the wound, enables movement of fluid through the dressing
- **Super absorbent core:** locks in moisture from the wound
- **High moisture vapour transmission rate layer:** 80% of water vapour evaporates off the top of the dressing

Pump Design Features

- Transparent carry clip
- 25% quieter than previous version
- Better at dealing with air leaks
- Improved battery case with space to write therapy start date

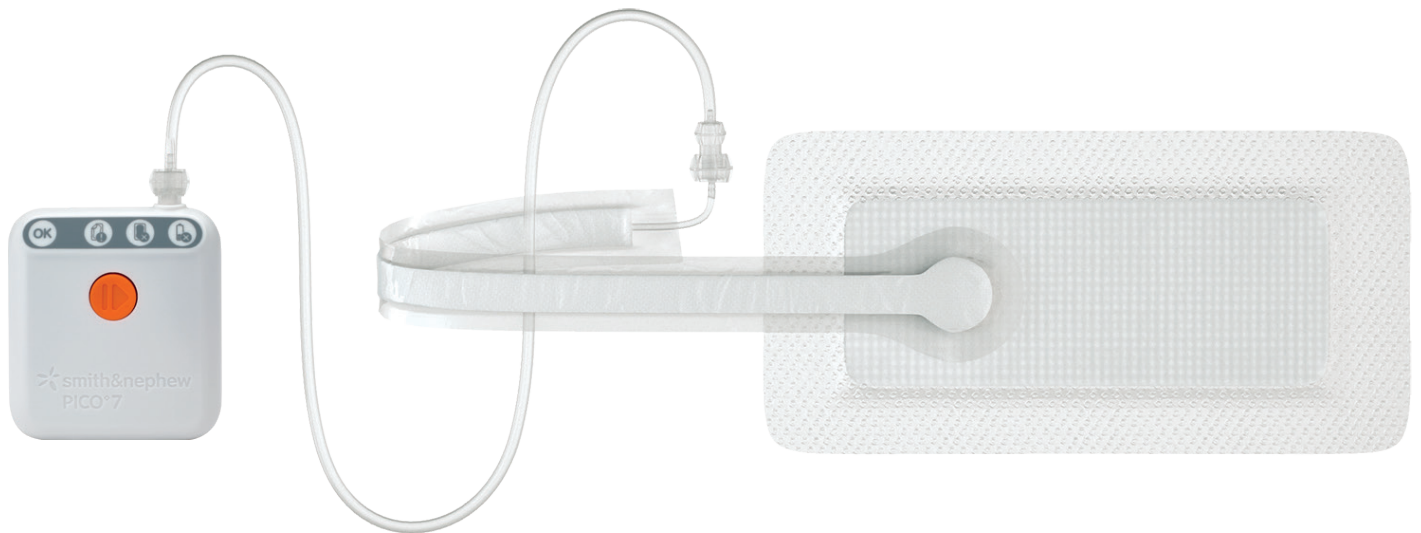


Figure 1: PICO 7 Design

improved patient experience, enhanced portability (Figure 1), simple application and operation, and clinical and cost effectiveness. The dressing has a multi-functional, four-layer design that delivers negative pressure and removes exudate through absorption and evaporation (see box on previous page).

Enhanced Results of sNPWT

There are three proposed mechanisms that likely lead to improved healing outcomes using sNPWT compared to tNPWT (Figure 2).

Wider Zone of NPWT Delivery

Single-use NPWT devices like the PICO 7 dressing do not require a filler such as film or gauze, enabling an area of negative pressure treatment that is dispersed over all tissue below the dressing, well beyond the wound margins, which results in compression and edema reduction.

Uninterrupted Healing

Lack of filler material means the dressing does not need to be changed for seven days (depending on exudate level). Using PICO 7, reduction in wound

area can be attributed to accelerated re-epithelization, whereas contraction is the main mechanisms in tNPWT dressings.

Portability and Simplicity

Small size and ease of use make this product more desirable for clinicians and patients alike. Enhanced portability and simplicity can support faster discharge from hospital to home care, greater mobility, improved sleep, increased ability to work and more active therapy hours, all of which may lead to improved adherence and thus clinical outcomes.

Experimental studies are underway to investigate these mechanisms of action and provide better information about the key reasons the PICO 7 dressing results in better clinical outcomes than tNPWT dressings.

References

1. Kirsner R, Dove C, Reyzelman A, Vayser D, Jaimes H. A prospective, randomized, controlled clinical trial on the efficacy of a single-use negative pressure wound therapy system, compared to traditional negative pressure wound therapy in the treatment of chronic ulcers of the lower extremities. *Wound Rep Regen.* 2019;27(5):519–529.

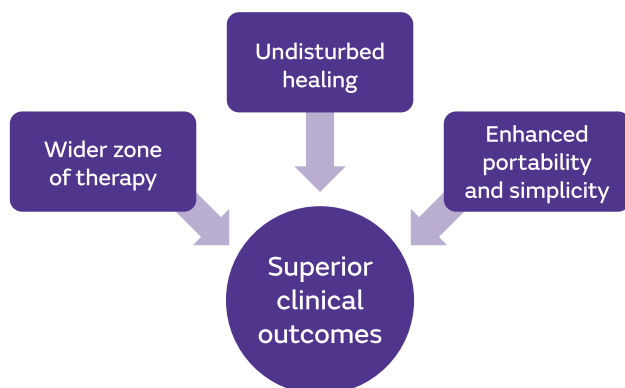


Figure 2: Mechanisms of PICO 7

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