

# Evaluation of Novel Negative Pressure Wound Therapy Peel and Place Seven-Day Dressing

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## Background

- While reticulated open cell foam (ROCF) is a well-established dressing for negative pressure wound therapy (NPWT), granulation tissue ingrowth can occur if the dressing is left in place longer than 72 hours.
- Application and removal of ROCF dressings and frequent dressing changes can be time-consuming.
- An integrated peel-and-place dressing (IPPD) with a polyurethane foam manifolding core, integrated wound contact layer, and hybrid silicone-acrylic adhesive drape<sup>1,2</sup> has been developed to remain in place for longer wear time.

## Purpose

- We describe the initial clinical use of an integrated multilayer peel and place dressing.

## Methods

- 10 patients being adjunctively treated with NPWT and traditional ROCF dressings\* were switched to NPWT and IPPD<sup>†</sup> at one hospital in Chile.
- To apply IPPD, release liners were removed and the dressing was placed over the wound bed as a wound cover dressing, with foam core portion extending  $\geq 1$  cm past the wound perimeter. Layers of IPPD are shown in **Figure 1**.
- IPPD was connected to the NPWT device via multi-lumen tubing, and -125 mmHg continuous pressure was applied (**Fig. 2**).
- Dressing changes for patients 1-5 (3 pressure injuries, 1 diabetic foot ulcer, and 1 dehisced abdominal wound) were performed every 3 days, then switched to once per week, depending on clinical presentation.
- For patients 6-10 (3 traumatic and 2 post-surgical wounds), dressings were changed on days 5 or 7, then moved to a 7-day schedule. Note: patient 6 discontinued therapy on day 5.

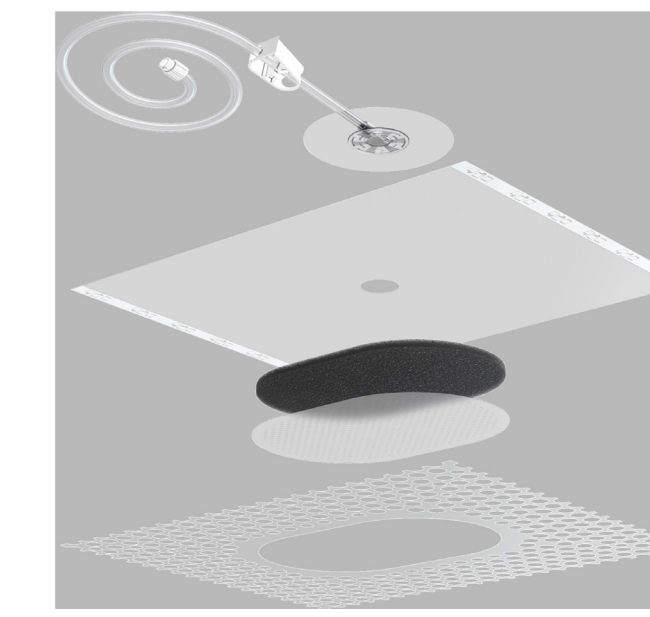


Figure 1. Layers of IPPD

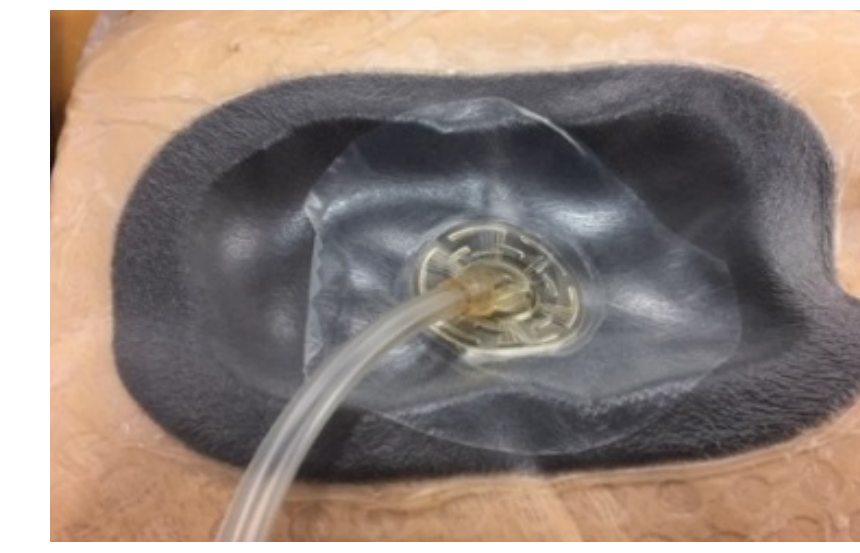
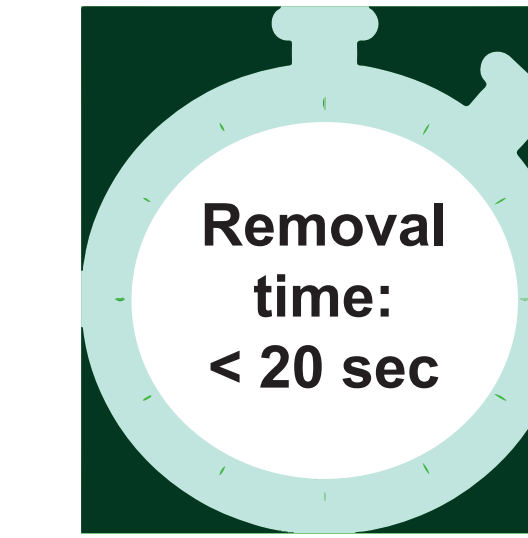
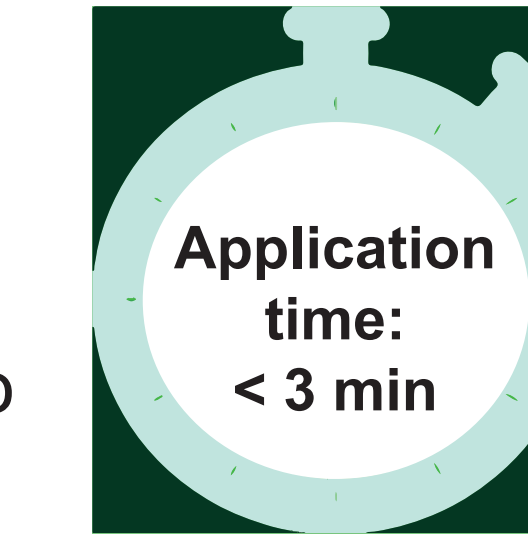


Figure 2. IPPD with negative pressure applied; dressing covered wound and periwound

## Results

- 10 clinician surveys were completed.
- Time to apply IPPD was < 3 minutes, and time to remove IPPD was < 20 seconds for all patients.
- Surveyed clinicians reported that these complex wounds appeared to be progressing with IPPD.
- Surveys stated IPPD was easier and faster to apply and remove, and much less traumatic for patients, versus traditional ROCF dressings used prior.
- There were no adverse events or complaints, and no patients reported pain at dressing removal.
- IPPD remained sealed for the intended dressing duration, from 4-7 days.
- Representative studies (**Cases 1-5**) are shown below.



## Discussion

- NPWT with IPPD was favored over NPWT with ROCF by all clinicians surveyed due to easier application and removal, lack of pain reported by patients during dressing changes, quicker dressing changes, and lower dressing change frequency.
- Use of IPPD in appropriate wounds may improve patient and clinician experience with NPWT.

## References

- Allen D, Robinson T, Schmidt M, et al. Preclinical assessment of novel longer-duration wear negative pressure wound therapy dressing in a porcine model. *Wound Repair Regen.* 2023;31(3):349-359.

## Cases

**Case 1.** Male patient with a locally infected diabetic foot ulcer. Broad spectrum antibiotics administered.



A. Wound prior to IPPD placement B. IPPD was applied in less than 3 minutes



C. Day 14 of IPPD use D. Day 18 of IPPD use

**Case 2.** Female patient with abdominal wound dehiscence post motor vehicle accident and multiple surgeries. Wound was locally infected with exposed mesh.



A. Dehiscence at start of IPPD B. After 5 days of IPPD



C. Day 12 after dressing removal D. After 26 days of IPPD and cleansing

**Case 3.** Female patient with abdominal wound dehiscence post motor vehicle accident and multiple surgeries. Wound was locally infected with exposed mesh.

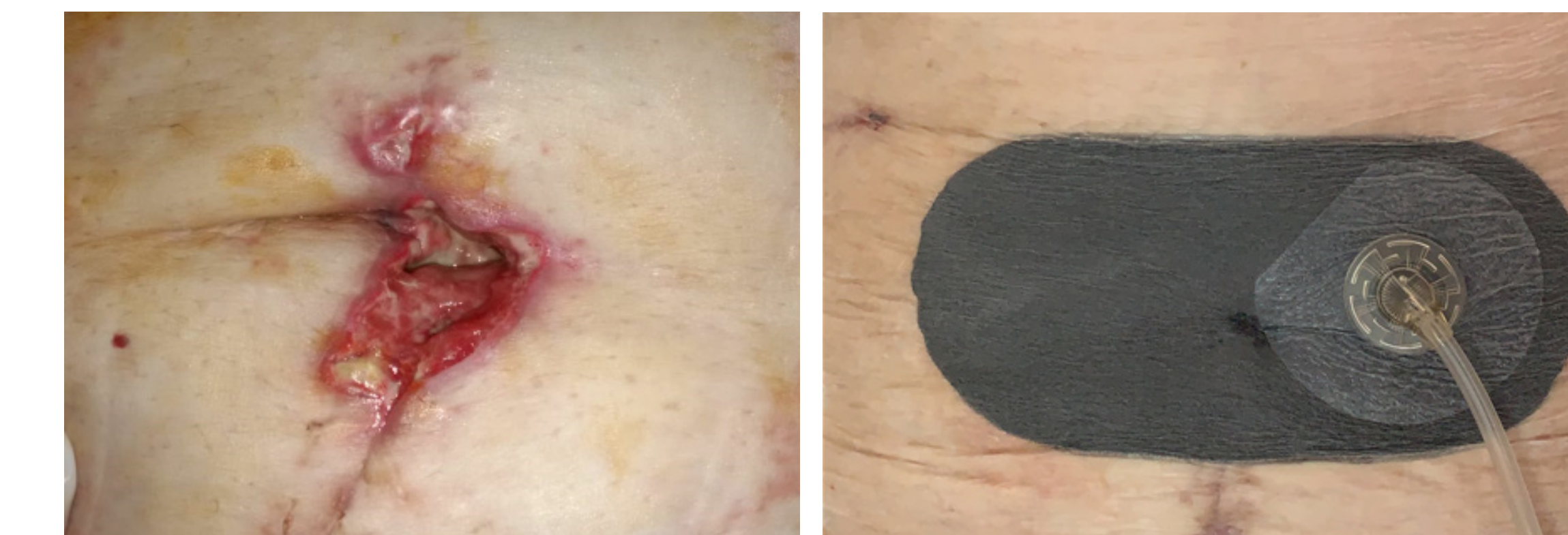


A. Wound prior to IPPD placement B. After 5 days of IPPD use



C. Split-thickness skin graft applied on Day 12

**Case 4.** A diabetic female with an infected abdominal wound post motor vehicle accident and multiple surgeries, including hernia repair. Wound irrigated with povidone iodine for 2 weeks. Skin was irritated and painful to the touch. IV anti-fungal antibiotics were administered.

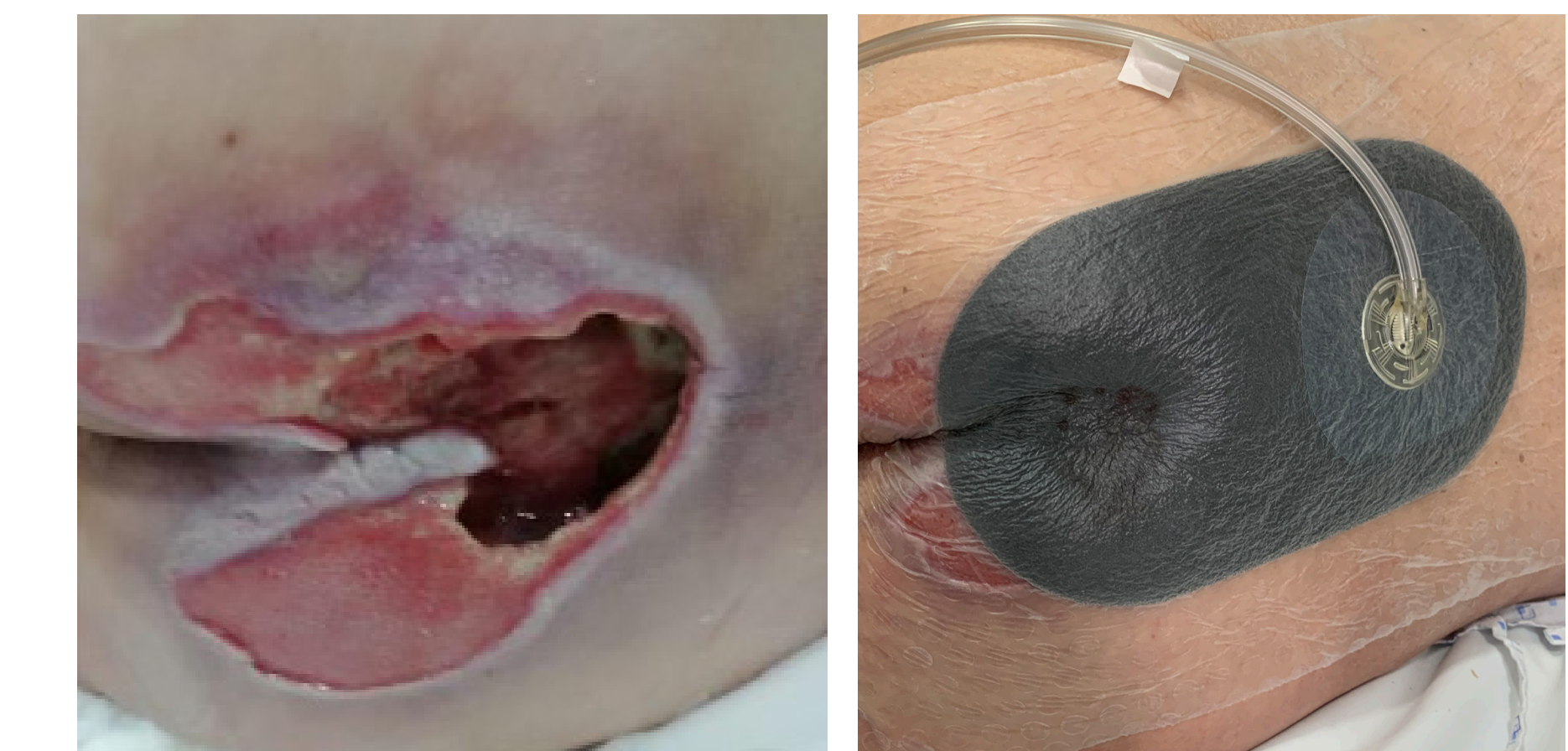


A. Surgical wound prior to IPPD initiation B. Large IPPD used to cover wound and irritated periwound skin



C. After 7 days with IPPD D. After 21 days with IPPD

**Case 5.** A male with *C. difficile* infection presented with a sacral pressure injury with undermining. Patient was in wheelchair most of day, including sleeping, so a large dressing was used to offload the tubing to minimize pressure points.



A. Wound at presentation B. Dressing applied at start of IPPD



C. Wound after 7 days of IPPD use