

# Improving Patient Experience through a Novel Negative Pressure Wound Therapy System

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## BACKGROUND and PURPOSE

The use of Negative Pressure Wound Therapy (NPWT) has grown exponentially since its inception. While patients understand the positive clinical benefits of the device on their wounds, issues such as noise, sleep disturbance, and reduced mobility<sup>1</sup> may impact their adherence to treatment and subsequently impede healing.

The purpose of this investigation was to evaluate the ability of a Novel NPWT System<sup>‡</sup> to improve both the patient experience and clinical outcomes as compared to a Common NPWT System<sup>^</sup>.

## METHODS

This investigation provides patient outcomes data from two different clinical sites for 12 diabetic patients with lower extremity wounds who fit the criteria for NPWT. Wounds included neuropathic ulcers, amputations, dehiscence and post-debridement application of NPWT. Dressings were changed 2-3 times weekly and wound measurements were taken.

Both sites enrolled six patients who received either a Novel NPWT System<sup>‡</sup> or a Common NPWT System<sup>^</sup>. Both devices contained an electronically controlled feedback system ensuring the prescribed pressure is maintained at the wound bed, consistent with the European Wound Management Association (EWMA) consensus review on NPWT devices<sup>2</sup>.

Patients were asked a series of questions at weekly intervals consisting of pain level, noise level, sleep disturbance, and overall satisfaction with the device.

## RESULTS

Patients utilizing the Novel NPWT System<sup>‡</sup> experienced an average volume reduction of 84% and treatment duration of 9.7 weeks, which was 41% less than the Common NPWT System<sup>^</sup> (average 17 weeks). Additionally, staff reported that patients utilizing the Novel NPWT System<sup>‡</sup> had a higher level of adherence to treatment; routinely returning to the clinic with the system powered and dressings intact. Patients reported increased satisfaction due to the light weight and simple operation which made it easier to adhere to treatment. Staff did not observe this same level of adherence with patients using the Common NPWT System<sup>^</sup>.

## CONCLUSIONS

The impact of patient satisfaction on overall NPWT effectiveness cannot be neglected. The improved patient experience seen with the Novel NPWT System<sup>‡</sup> resulted in increased adherence to therapy and outcomes which exceeded those of the Common NPWT System<sup>^</sup>. This investigation included a small patient cohort and more data is needed from the diabetic patient population to confirm the results. However, our preliminary conclusion supports that the Novel NPWT System<sup>‡</sup> not only provided better patient experience but also improved clinical outcomes and should be considered when evaluating an NPWT system.

	Patient	M / F	Age	Weeks on NPWT	Initial Measurements	Final Measurements	Volume Reduction
Novel NPWT System <sup>‡</sup>	1 <sup>A</sup>	Female	67	16	2.2 x 2.4 x 0.4	0 x 0 x 0	100%
	2 <sup>A</sup>	Male	63	13	9 x 7 x 0.5	9 x 6 x 0.1	83%
	3 <sup>A</sup>	Female	68	13	4.5 x 4 x 0.2	3.5 x 1.6 x 0.1	84%
	4 <sup>B</sup>	Male	70	6	5.3 x 2.7 x 3.4	1.4 x 0.7 x 1.4	97%
	5 <sup>B</sup>	Male	57	5	7.8 x 6 x 0.3	5.5 x 3.8 x 0.2	70%
	6 <sup>B</sup>	Male	62	5	4 x 2 x 1	3.1 x 1.8 x 0.5	70%
				58 Total Weeks (9.7 Average)			
Common NPWT System <sup>^</sup>	7 <sup>A</sup>	Male	60	9	2 x 3 x 1.2	1.4 x 0.4 x 0.1	95%
	8 <sup>A</sup>	Male	92	31	3 x 1 x 0.2	0 x 0 x 0	100%
	9 <sup>A</sup>	Female	65	13	8 x 8.2 x 0.1	5.5 x 3.8 x 0.01	97%
	10 <sup>B</sup>	Male	80	18	16 x 14 x 3	17.5 x 6.8 x 0.8	86%
	11 <sup>B</sup>	Male	74	16	14 x 11 x .0.4	8.5 x 7.4 x 0.2	80%
	12 <sup>B</sup>	Male	43	12	11.3 x 5.3 x 0.9	4.5 x 2 x 0.2	97%
				99 Total Weeks (17 Average)			

## SITE A

### Patient 2 Novel NPWT System<sup>‡</sup>



1/15/2020



7/15/2020

### Patient 9 Common NPWT System<sup>^</sup>



12/29/2019



7/27/20

## SITE B

### Patient 6 Novel NPWT System<sup>‡</sup>



Week 1



Week 5

### Patient 11 Common NPWT System<sup>^</sup>



Week 1



Week 16

## AUTHORS

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1. Ubbink, D.T., Westerbos, S.J., Evans, D. et al. Topical negative pressure for treating chronic wounds. Cochrane Database Syst Rev. 2008; 16: 3, CD001898.
2. Apelqvist, J., Willy, C., Fagerdah, A.M. et al. Negative Pressure Wound Therapy – overview, challenges and perspectives. J Wound Care 2017; 26: 3, Suppl 3, S1–S113.

‡Invia® Liberty™ NPWT System; Medela AG

^ACTIV.A.C.™ Therapy System; 3M+KCI

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