

# Debridement of Pressure Ulcers Using Acoustic Pressure Wound Therapy\* in the Absence of Sharp Debridement in a Skilled Nursing Facility



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## Background

Presence of adherent slough or eschar warrants debridement, typically sharp or surgical, to allow wound healing to progress.<sup>1</sup> A skilled nursing facility (SNF), however, may not be staffed with clinicians who can perform sharp/surgical debridement. Acoustic pressure wound therapy is a low-intensity/frequency ultrasound (LIFU)\* therapy indicated for maintenance debridement of yellow slough, fibrin, tissue exudates, and bacteria.<sup>2</sup>

## Case Series

LIFU was used to debride necrotic pressure ulcers in 4 SNF patients who would typically be sent to a wound clinic for sharp debridement.

## Conclusions

LIFU successfully debrided pressure ulcers of extensive adherent slough and eschar, thus eliminating the need to transfer patients from an SNF to a wound clinic for sharp debridement.

## References

1. Steed DL, Donohoe D, Webster MW, Lindsley L. Effect of extensive debridement and treatment on the healing of diabetic foot ulcers. Diabetic Ulcer Study Group. *J Am Coll Surg.* Jul 1996;183(1):61-64.
2. Unger PG. Low-frequency, noncontact, nonthermal ultrasound therapy: a review of the literature. *Ostomy Wound Manage.* 2008;54(1):57-60.

\*Low-intensity/frequency ultrasound (MIST® Therapy, Celleration, Eden Prairie, Minnesota)

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## Patient #1 Right Ankle

A 52-year-old diabetic woman had a Stage III pressure ulcer of the right ankle with 100% pink granulation tissue. During treatment nurse's one-week vacation, the wound developed 100% yellow slough. The first LIFU treatment (3 min) removed the slough (see table). The wound went on to heal 3 weeks later (Dec. 22) despite DNR/hospice status.

	Nov. 3	Nov. 19	Dec. 3
<b>LIFU</b>	None	3 min	3 min
<b>Dressings</b>	-----	Hydrocolloids	-----
<b>Wound Area</b>	0.36 cm <sup>2</sup>	Not measured	0.25 cm <sup>2</sup>
<b>Tissue Quality</b>	100% pink granulation	100% yellow slough	100% red granulation

## Patient #2 Sacrum (MRSA)

An 85-year-old diabetic man had an MRSA-positive Stage IV sacral pressure ulcer with 100% gray slough. LIFU (5 minutes) 2-3 times weekly targeted to wound edges lifted and loosened slough at edges to reveal granulation tissue beneath (see table) before the patient died of nonwound-related causes.

	Oct. 21	Nov. 3	Dec. 1
<b>LIFU</b>	Oct. 24 – Dec 3 5 min, 2-3 times/week		
<b>Dressings</b>	Silver alginate and hydrocolloids		
<b>Wound Area</b>	5.0 cm <sup>2</sup>	4.8 cm <sup>2</sup>	2.0 cm <sup>2</sup>
<b>Tissue Quality</b>	100% slough	95% slough 5% granulation	80% slough 20% granulation

*Patient expired Dec. 3*

## Patient #3 Left Hip (MRSA)

A 62-year-old diabetic man with wasting syndrome had an MRSA-positive Stage IV pressure ulcer on the left hip with 100% black eschar. Twice weekly LIFU (15 minutes) over 2.5 weeks softened and loosened eschar, which was lifted from the edges to expose a granulating wound bed. Despite partial epithelialization (see table), surgical debridement was performed to remove remaining slough after patient was transferred to a local hospital due to declining health.

	Sep. 21	Sep. 29	Oct. 8
<b>LIFU</b>	Sep. 22 – Oct 31 15 min, 2 times/week		
<b>Dressings</b>	Silver alginate, hydrocolloids, whirlpool		
<b>Wound Area</b>	68 cm <sup>2</sup>	78 cm <sup>2</sup>	40 cm <sup>2</sup>
<b>Tissue Quality</b>	100% black eschar	50% slough 50% granulation	Areas of slough replaced by areas of epithelialization Slough remained on un-epithelialized tissue

*Patient expired Nov. 19*

## Patient #4 Right Ischium (MRSA)

A 31-year-old paraplegic man had an MRSA-positive Stage IV pressure ulcer on the right ischium with 100% gray slough. Five LIFU treatments (10 minutes) over 11 days removed all slough to expose 100% granulation tissue beneath (see table).

	Jun. 11	Jun. 16	Jun. 24
<b>LIFU</b>	Oct. 24 – Dec 3 5 min, 2-3 times/week		
<b>Dressings</b>	Wet-to-dry dressing; wheelchair cushion; low- air-loss mattress		
<b>Wound Area</b>	56 cm <sup>2</sup>	64 cm <sup>2</sup>	44 cm <sup>2</sup>
<b>Tissue Quality</b>	100% slough	30% slough 70% granulation	100% granulation