

Bacteria

High levels of bacteria delay healing.

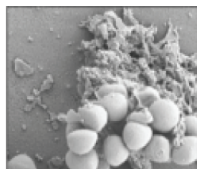
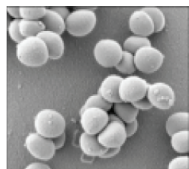
Mechanical stress caused by low-frequency ultrasound result in bacterial cell death and reduction of bacterial count

Sham Control

MIST[®] Therapy



Pseudomonas aeruginosa



Staphylococcus aureus

93.9%

99.6%

100%

Risk reduction in
Staphylococcus aureus

Risk reduction in
Acinetobacter baumannii

Risk reduction in
Escherichia coli

Mayo Clinic¹

- 5 x 10⁶ bacteria on agar plates subjected to 2.5-minute treatments (UltraMIST[®] Therapy or the Sham Control)
- Scanning Electron Microscopy photos of bacteria to characterize morphological effects after treatment

Multicenter trial²

- 11 patients with Stage III pressure ulcers showing no clinical signs of acute infection
- Pre-treatment bacteria loads were >10⁵ CFU/g tissue
- 13 different types of bacteria were cultured from pre-punch biopsies
- 6 MIST treatments
 - 3 treatments/week (2-week duration)

UltraMIST Therapy Mechanically Alters Bacteria Cell Walls

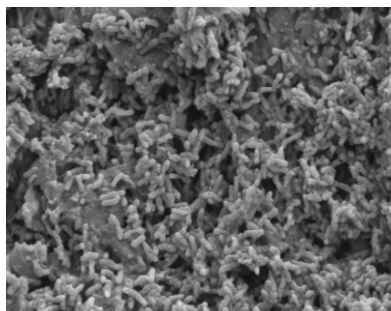
UltraMIST Therapy Reduces Bacteria in Highly Colonized Stage III Pressure Ulcers

UltraMIST Therapy can reduce a wide range of bacteria¹⁻³ including the most difficult to treat: *VRE*, *MRSA*, *Acinetobacter*, *E. coli*

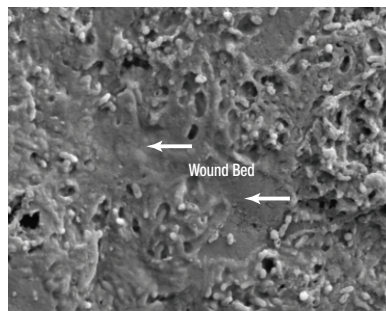
Biofilm

Biofilm is a structured community of bacteria tightly enclosed within a self-produced exopolymeric matrix, and its presence is a significant barrier to healing. Since it is metabolically inactive, it is extremely hard to disrupt with topical/systemic antibiotics, antimicrobials, and/or antiseptics.

MIST[®] Therapy Reduced Bacteria in Highly Colonized Stage III Pressure Ulcers*



Control (untreated)



MIST Therapy

Northwestern University⁴

- Established rabbit ear biofilm model using *Pseudomonas aeruginosa*
- 3 MIST treatments every other day over 6-day period
- Scanning Electron Microscopy of images (15.03x) demonstrate dense amounts of bacterial cells in untreated wounds
- MIST-treated wounds show dramatically reduced density of biofilm bacteria and large amounts of visibly bare wound bed

*Data were compiled utilizing MIST Therapy. UltraMIST is the successor but maintains the same mechanism of action.

UltraMIST[®] Therapy can reduce a wide range of bacteria¹⁻³ including the most difficult to treat: VRE, MRSA, Acinetobacter, E. coli

SANUWAVE[®]
 Healing today. Curing tomorrow.

UltraMIST[®]
 Ultrasound Healing Therapy

For more information, please refer to the UltraMIST Therapy Instructions for Use.

References: 1. Kavros SJ, Schenck EC. Use of noncontact low-frequency ultrasound in the treatment of chronic foot and leg ulcerations: a 51 patient analysis. *J Am Podiatr Med Assoc.* 2007;97(2):95-101. 2. Serena T, Lee SK, Lam K, Attar P, Meneses P, Ennis W. The impact of noncontact, nonthermal, low-frequency ultrasound on bacterial counts in experimental and chronic wounds. *Ostomy Wound Manage.* 2009;55(1):22-30. 3. Kavros SJ, Wagner SA, Wennberg PW, Cockerill FR. The effect of ultrasound mist transfer technology on virulent bacterial wound pathogens. *Abstract.* Presented at SAWC 2002. 4. Seth AK, Mustoe TA, Galiano et al. Noncontact, low-frequency ultrasound as an effective therapy against *Pseudomonas aeruginosa*-infected biofilm wounds. *Wound Repair Regen.* 2013;21(2):266-274.