

The UltraMIST® System Removes Barriers to Healing

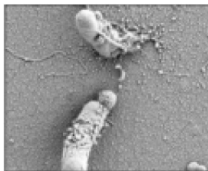
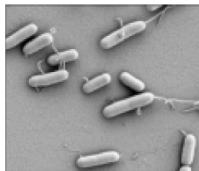
BACTERIA

High levels of bacteria delay healing.

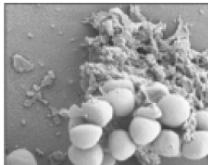
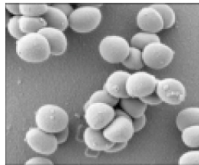
MECHANICAL STRESS CAUSED BY LOW-FREQUENCY ULTRASOUND RESULT IN BACTERIAL CELL DEATH AND REDUCTION OF BACTERIAL COUNT

SHAM CONTROL

MIST® THERAPY



Pseudomonas aeruginosa



Staphylococcus aureus

93.9%

RISK REDUCTION IN STAPHYLOCOCCUS AUREUS

99.6%

RISK REDUCTION IN ACINETOBACTE BAUMANNII

100%

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
- Pretreatment bacteria loads were >10⁵ CFU/g tissue
- 13 different types of bacteria were cultured from prepunch biopsies
- Six MIST treatments
 - Three treatments/week (two-week duration)

ULTRAMIST THERAPY MECHANICALLY ALTERS BACTERIA CELL WALLS

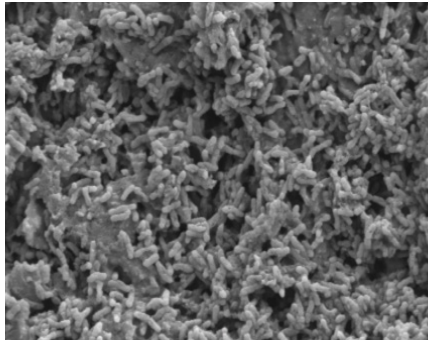
ULTRAMIST THERAPY REDUCES BACTERIA IN HIGHLY COLONIZED STAGE III PRESSURE ULCERS

UltraMIST therapy can reduce a wide range of bacteria including the most difficult to treat: VRE, MRSA, Acinetobacter, E. coli.¹⁻³

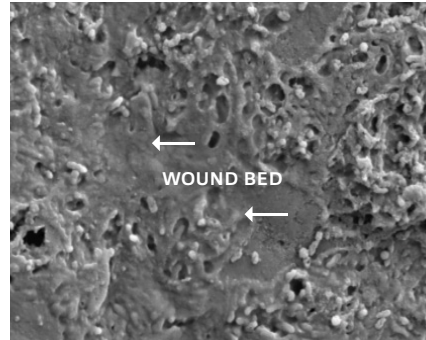
BIOFILM

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.

NLFU THERAPY DISRUPTED BIOFILM IN RABBIT EAR MODEL*



CONTROL (UNTREATED)



MIST THERAPY

Northwestern University⁴

- Established rabbit ear biofilm model using *Pseudomonas aeruginosa*
- Three MIST treatments every other day over six-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

NLFU disrupted biofilm to promote healing⁴

*Data was compiled utilizing MIST® therapy. UltraMIST® is the successor but maintains the same mechanism of action. *For more information, please refer to the UltraMIST® therapy instructions for use.*

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.