

# Three Dimensional Silver Fabric Technologies Provide an Advanced Antimicrobial Wound Management System<sup>1</sup>

*Roger Huckfeldt, M.D.; Phillip Finley, M.S.; Debbie Mikkelson, R.N.;  
Jennifer Robertson, R.N.; Cindy Lowe, C.R.R.P*

SPRINGFIELD, MISSOURI, UNITED STATES OF AMERICA

The use of silver-plating for the provision of antimicrobial protection with dressings for burn care and acute and chronic wound management is widely accepted and the mainstay treatment in many trauma/burn units. Our center has been heavily involved over the past several years in the tailoring of one silver nylon fabric and until recently has used it exclusively. The silver fabric based dressings on the market, while effective, have limitations. The Trauma/Burn section of the Research Institute at St. Johns has sought out new methodology to resolve these issues without compromising the antimicrobial properties. The ideal dressing for burn and wound care would provide antimicrobial coverage, be conformable to various shapes and sizes, provide immediate compression, manage wound fluid balance to allow moist wound healing without fluid build up, be microcurrent compatible and be cost effective.

TheraBond<sup>®</sup> wound management system was designed with these goals in mind. Designed by a team of professionals including burn/wound specialists and fabric experts, the three dimensional technologies of this wound management system provide advanced silver based antimicrobial protection covering both gram negative and gram positive bacteria common to burn and wound centers including MRSA and VRE along with fungi commonly encountered. Its fabric stretch allows immediate wound compression and provides for complete conformability. The three dimensional structure was specifically designed to manage fluid. This structure provides three distinct layers while constructed as one. The wound contact surface is constructed with a pattern and surface resistant to adherence with appropriate perforations to manage fluid transfer. The intermediate layer is webbed to provide an absorptive reservoir allowing the contact layer to remain moist without resultant pooling of fluids. The outer surface comprises a layer of reduced transfer completing the fluid management system. Single fabric construction allows the entire system to completely plate with silver providing bacterial protection throughout the dressing. Absorption studies completed in our lab using wicking, total absorption, absorption under pressure and accelerated drying methodology confirm the ability of the fabric to manage fluids as designed. These results mimic those seen in our clinical studies.

The TheraBond<sup>®</sup> wound management system is ideal for use in partial thickness wounds, donor site coverage, skin grafts and traumatic wounds where antimicrobial coverage and moist wound healing is desired. Its construction is also designed to allow the addition of microcurrent as this technology becomes available.

---

<sup>1</sup> [abstract]. In: Proceedings of the John A. Boswick Burn and Wound Care Symposium; 2008 Feb 18-22; Maui, HI. p. 49-50.