

# Dermacyn® Effective in Treatment of Chronic Wounds with Extensive Bioburden while Reducing Local Pain Levels

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## INTRODUCTION:

Treatment of chronic and acute wounds requires comprehensive local wound care, which clearly must include bioburden control and pain management. Due to ease of use and relative cost efficiency, local antiseptic agents are widely used to assist with prevention of infection while maintaining a moist wound environment to promote healing. Super-Oxidized Water (SOW) has shown to be an effective antiseptic agent via a mechanism of denaturing cellular membrane proteins which results in the destruction of single-cell organisms while blocking the inflammatory process. Data suggests that SOW can reduce critical bioburden levels without affecting the host as human cell walls are not disrupted due to minimal cellular wall exposure.<sup>1</sup>

## DISCUSSION:

Historically SOW has had a short shelf life and was therefore under utilized. Recently, a stable, pH-neutral SOW was developed which has eliminated this storage problem. Dermacyn® is a SOW approved for the treatment of pressure ulcers, diabetic foot ulcers, stasis ulcers, post-surgical wounds, and burns. We present a series of 4 patients with recalcitrant wounds that failed to heal despite aggressive local wound care that included serial sharp debridement and local antimicrobial control. All wounds were subsequently treated with Dermacyn® soaks 30-45 minutes prior to resuming local wound care efforts.

### CASE #1

This is a 57-year-old male with a 40 year history of painful bilateral lower extremity ulcerations that failed to heal despite topical enzymatic, cadexomer, and antimicrobial care. Also attempted were hyperbaric oxygen therapy, split thickness skin grafting, as well as vein stripping and compression therapy. Patient had multiple courses of systemic antibiotic therapy for MRSA, while pain management included scheduled doses of Oxycontin and Percocets for breakthrough pain. Dermacyn was initiated 6 months ago as a wound soak for 45 minutes and then the wounds were covered with a silver product. Pain levels were measured at each appointment.



**Figure 1 - Pre-Treatment**  
R Medial  
Pain = 8



**Figure 2 - Current Appearance**  
R Medial  
Pain = 0 (no meds)



**Figure 3 - Pre-Treatment**  
L Medial  
Pain = 8



**Figure 4 - Current Appearance**  
L Medial  
Pain = 0 (no meds)

### CASE #2

This is a 79-year-old male seen on consult with a one year history of venous ulceration on the left medial ankle. Treatment prior to Dermacyn® included compression, vein stripping, ablation of deep vein, as well as enzymatic, cadexomer iodine and Negative Pressure Wound Therapy, all of which failed. Punch biopsy was performed to rule out malignancy.



**Figure 5 - Pre-Dermacyn**  
Pain = 4



**Figure 6 - 12 Weeks Post Dermacyn**  
Pain = 0

### CASE #3

This is a 47-year-old male with a 7 year history of non-healing wounds secondary to venous insufficiency. Wounds failed to close despite compression therapy, Ultrasound Assisted Wound (UAW) therapy, cadexomer iodine and topical wound care as well as grafting. Pain was significantly reduced while wounds showed contracture while on Dermacyn®.



**Figure 7 - Pre-Dermacyn**  
L Anterior  
Pain = 8



**Figure 8 - 6 Weeks Post Dermacyn**  
L Anterior  
Pain = 1



**Figure 9 - Pre-Dermacyn**  
L Lateral  
Pain = 8



**Figure 10 - 6 Weeks Post Dermacyn**  
L Lateral  
Pain = 1

### CASE #4

This is a 37-year-old female with a non-healing surgical abdominal wound. Wound was present for 18 months prior to consultation with healing compromised due to obesity and colonization with Pseudomonas. The wound failed to heal despite NPWT, local wound care, antibiotics and UAW therapy. Pain was also a problem prior to therapy, but patient was pain free with Dermacyn®. The wound progressed to closure in 2 months.



**Figure 11 - Pre-Dermacyn**  
Pain = 8



**Figure 12 - 2 Months Post Initiation**  
Pain = 0

## CONCLUSION:

All patients showed contracture with progression to closure soon after the initiation of SOW. Additionally, these patients reported a significant reduction in pain levels with the addition of Dermacyn® therapy as measured using a numerical pain scale. We conclude that SOW is an effective antiseptic agent that assists with bioburden control and pain management while promoting wound healing.

## REFERENCES:

Bryant R. (2005).  
Super-oxidized water kills bacteria; demonstrates potential for healing. *Dermatology Times*.