

# Utilization of a Microcurrent-Generating Device in High-Risk Patients Necessitating Complex Medical Care



Sondra Walker, RN  
Home Health of Middle Tennessee, Springfield, TN

## Background

Wound healing in high-risk, complex patients remains a challenge to both the patient and the provider. Post-stroke patients are oftentimes bedridden or non-mobile, which may compromise the wound healing process and are at greater risk for developing infectious complications. Specialized care is of paramount importance in the management of wounds and skin conditions in this population. In patients at risk for compromised wound healing, steps should be taken to create optimum wound healing conditions. Modalities that can reduce healing times have the possibility to improve the wound healing environment and improve quality of life. The clinical efficacy of electrical stimulation in expediting wound healing is well-known (1-2), and a novel wireless microcurrent-generating device\* has been used in various clinical applications (3-4).

## Methods

An microcurrent-generating antimicrobial device (MCD) was assessed in a series of skin conditions, including a pressure ulcer on the metatarsophalangeal joint and two candida infections on the lower extremity. The dressing was applied bi-weekly and was secured in place with standard secondary dressings.

## Results

The case history demonstrates successful outcomes, despite complex co-morbidities as well as the severity of contractures, the constantly prone nature of the patient, yeast issues, and history of ulcerations and painful wounds. The presence of the MCD in the presented cases served as an effective treatment method for the ulceration as well as a valuable preventative measure in combating microbial contamination and associated skin disorders when other standard modalities were unable to be employed.

## Conclusion

We have found that treatment of cutaneous skin conditions with the MCD offers a versatile solution and compelling potential advantage compared with conventional advanced standard treatment approaches. Importantly, the MCD was also found to be easy to apply and remove.


## References

1. Wolcott LE, Wheeler PC, Hardwicke HM, Rowley, BA. Accelerated Healing of Skin Ulcers by Electrotherapy. *Southern Medical Journal* 1969; 62(7):795-801.
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3. Whitcomb E, Monroe N, Hope-Higman J, Campbell P. Demonstration of a Microcurrent-Generating Wound Care Device for Wound Healing within a Rehabilitation Center Patient Population. *Journal of the American College of Clinical Wound Specialists* 2013; 4(2):32-39.
4. Blount AL, Foster S, Rapp DA, Wilcox R. The Use of Bioelectric Dressings in Skin Graft Harvest Sites: A Prospective Case Series. *J Burn Care Res* 2012;33(3):354-357.




**Candidiasis**

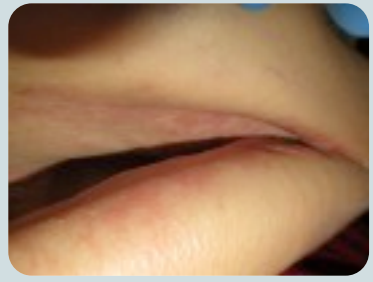
Patient presented with Candidiasis in the groin and posterior leg areas due to prolonged contracture. MCD applied, with resolution in 3 days.



Initial



MCD Applied



Day 3

**Pressure Ulcer**

Patient presented with pressure ulcer on right foot. Full resolution achieved in 3 weeks following application of MCD.



9-16-13



9-23-13



10-1-13



10-15-13



10-21-13