# **The Treatment**



- The innovative Silver-Thera™ Stocking & Micro-Z Mini is a knitted garment electrode which conducts energy (electrotherapy) to the foot and leg. Energy is delivered into the Silver-Thera™ Stocking by the Micro-Z Mini™ Stimulator which promotes micro-circulation. The Silver-Thera™ Stocking is highly conductive and is made of silver treated nylon fibers blended with Dacron® fibers.
- The Silver-Thera™ Stocking is soft and comfortable to wear. It is very durable and is washable! For optimum results, the Silver Thera Stocking™ should be worn daily while reading, watching TV even while sleeping to help relieve pain and get a better night's rest.

#### **Precautions:**

- Clinician to determine protocols
- When there is a tendency to hemorrhage
- Over the menstruating uterus
- Specifications subject to change without notice

#### Contradictions:

- Patients with cardiac demand pacemakers
- Should not be used on cancer patients

#### **Warninas:**

- Keep out of reach of children
- Safety has not been established for use during pregnancy
- Persons with suspected or diagnosed epilepsy
- Not to stimulate over the carotid sinus nerves.

### Caution:

 Federal Law restricts this device for sale by or on the order of a licensed physician or any other practitioner licensed by the law of the state in which s/he practices to use or order the use of this device.

### Micro-Z Mini™ Specifications:

- One AAA battery
- Treatment time 15 minutes up to 24 hours
- Pulse rate 1-120 pps in 5v increments
- Programmable
- Polarity positive or negative
- Intensity amplitude 0-100 volts
- Wave form: pulsed galvanic monophasic exponential spike with a fixed interpulse interval of 100 microseconds
- High voltage, low-amperage pulsed galvanic stimulation
- Dimensions 2" x 2" x .5"
- Unit weight approximately 2 oz.
- Warranty: 1 year of defective parts and labor



Silver-Thera™ Stocking Products Protected by U.S. Patent #5,374,283

Micro-Z Mini™ has copyrighted software

(  $\in$  registered and approved



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# Intelligent Textiles

# for Medicine

# Diabetic Foot Disease

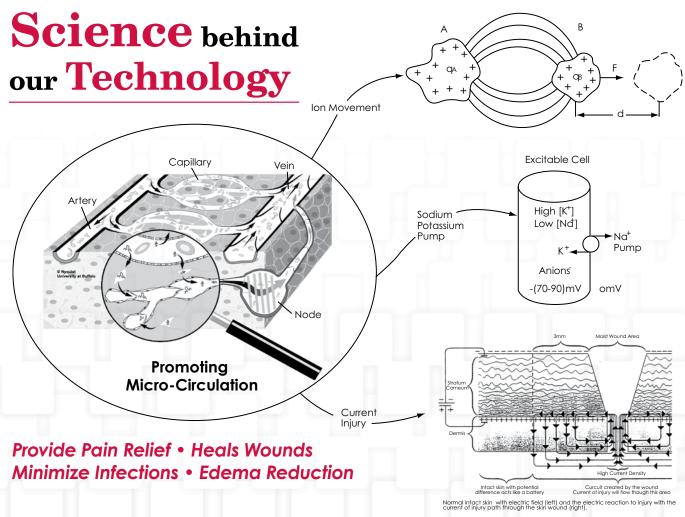
Increase Mico-Circulation for:

- Pain Relief
- Rapid Wound Healing
  - Edema Reduction



Silver-Thera<sup>™</sup>
Stocking Electrode
& Micro-Z Mini<sup>™</sup>





### Mechanism of Action<sup>1</sup>

- 1. Electrical current applied
- 2. Cell membrane potential is altered
- 3. Voltage sensitive channels in cell membrane are opened
- 4. Increased Ca++ uptake
- 5. Increased intercellular Ca++ level
- 6. Insulin receptor sites are uncapped
- 7. Increased insulin binding occurs
- 8. Enhanced protein and DNA synthesis results
- Enhanced fibroblast formation
- 10. Healing promoted by the release of VEGF

1 Bourguigwow, G. & Bourguigwow, L. (1987-1989) reported this stepwise process leading to healing.

### **Case Report**









## Microamperage Current Promotes Soft Tissue Healing

- Cheng et al. (1982) cited direct currents at 500 uA (microamp) resulted in a 500% increase in ATP. The same ranges of stimulus intensity greatly enhanced amino acid incorporation (member transport). With currents higher than 1000 uA a significant drop in ATP production resulted. Protein synthesis was also seen to be greatly increased by microamperage electrical current.
- Becker et al. (1967) stated that externally applied electrical currents stimulate biologic homeostasis, which activates feedback mechanisms, and therefore resulted in tissue repair and replacement.

### **Evidence Based Medicine**

- 50 years of clinical studies > 75 peer review medical journal research.\* (now available for in-home use)
- The center for Medicare and Medicaid services (CMS) on July 25, 2002, stated, "The use of electrical stimulation will be covered as an adjunctive therapy only after there are no measurable signs of healing for at least 30 days of treatment with standard wound therapy and must be used in addition to standard wound care."
- U.S. Department of Health and Human Services Clinical Practical Guidelines State: "At this time, electrotherapy is the only adjunctive therapy with sufficient supporting evidence to warrant recommendation by the panel."
- 4 Published Prizm Studies on Wound Healing, Pain Relief, and Perfusion.
- Proof of clinical evidence rating of "A" by EPUAP and NPUAP in 2009.

### Therapy While Sleeping...

The human body goes into a natural healing cycle when in a sleeping state.

- 70% of growth hormones are produced during sleep.
- Fibroblast cells are more active during sleep.
- Micro-Z-Mini<sup>™</sup> promotes microcirculation while enhancing the body's own healing mechanism.

<sup>\*</sup> References and clinical studies provided upon request.