

## **Case Study: The role of the geko™, a portable electrical stimulation device, in assisted healing of a diabetic foot ulcer.**

### **Authors:**

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### **Background**

A 63 year old diabetic male with a history of foot ulcers presented with an ulcer on his inner right foot that had failed to heal following 12 weeks of treatment with compression bandaging. During this time walking was painful, and he was unable to work as a painter and decorator. He was prescribed codeine, liquid morphine and paracetamol. Upon examination the patient had superficial erosion on the inner ankle and signs of lipodermatosclerosis with haemosiderin staining on both legs. Doppler ultrasound revealed an incompetent long saphenous vein and small saphenous vein on the right leg and an incompetent long saphenous vein on the left leg, with normal and competent deep calf veins on both.

### **The geko™ therapy**

A single geko™ device was applied to the right knee according to manufacturer's instructions for 24 hours a day and for 17 days. It was switched off at night apart from two nights when it was left on.

### **Results**

After one week's treatment with the geko™ device, formation of new skin tissue and wound closing was observed. The patient also reported a reduction in pain and improvement in mood and the wound continued to look healthier and reduced further in size. After 17 days the treatment with geko™ was discontinued due to the appearance of an itchy skin rash where the device was fitted at the knee. The wound, however, continued to heal with the use of simple and lighter dressings. After a further 6 weeks the ulcer had healed and a return to work was possible. The device was described as being simple and easy to use. (The rash which can occur in some patients, resolved completely within 3 weeks with the aid of a topical steroid.)

The patient is currently awaiting a VNUS closure procedure.



*Right foot ulcer 1 week after geko™ treatment*



*Right foot ulcer 11 days after geko™ treatment*



*Right foot ulcer healed after 18 weeks*

### **Conclusion**

A recalcitrant foot ulcer in a diabetic male, showed significant healing following 17 days of therapy with the geko™. Though the geko™ treatment was discontinued healing continued with simple dressings facilitating a return to work.

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