

The geko™ Neuromuscular Electrostimulation Device Reduces Pre-Operative Oedema and Accelerates Readiness for Theatre in Patients Requiring Open Reduction Internal Fixation for Acute Ankle Fracture

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The Burden

- 15,000 ankle fractures treated surgically each year (9% UK T&O workload)^{1,2}
- Soft tissue swelling can delay time to surgery due to fears about wound breakdown³
- While delayed fixation may help to reduce the risk of complications it can decrease patient satisfaction^{4,5}
- Delays mean increased length of stay and associated healthcare costs^{6,7}
- Current strategies to decrease ankle swelling include passive (elevation, ice) or active (arterio-venous foot pumps [AVFP], Intermittent Pneumatic Compression [IPC], however evidence for their efficacy is unclear⁸

Methods

- **Case control feasibility study**
 - Prospective cohort – 20 consecutive consenting patients meeting criteria
 - Retrospective cohort – Ankle fracture patients matched for age, gender, ethnicity, fracture pattern and dislocation at presentation
- **Primary aim:**
 - (i) Ease of recruiting patients with ankle fractures in the MTC* setting.
- **Secondary aim:**
 - (i) Assess time to 'readiness for theatre'
 - (ii) Assess tolerability of device

What is the geko™ device?

- Small, disposable, internally powered, transdermal neuromuscular stimulator
- Self-adhesive, applied to the posterolateral aspect of the knee
- Deemed effective if causes discernible dorsiflexion
- Clinically proven to increase blood flow in the deep veins of the calf⁹
- The increase in blood flow is equal to 60%¹⁰ of walking without a patient having to move or exert energy

INCLUSION CRITERIA
Age 18-60
Ankle fracture requiring fixation
Able to understand patient info and complete consent
Able to follow protocol requirements

* MTC – Major Trauma Centre

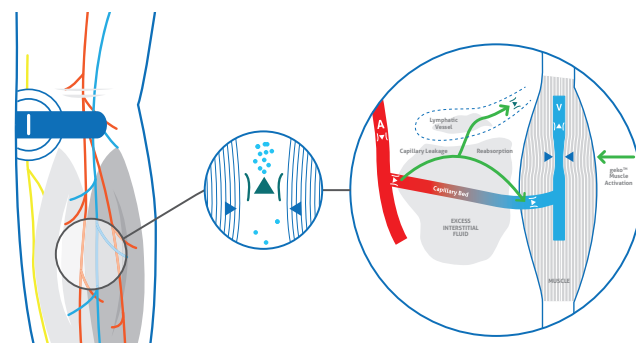


Figure 1. geko™ device mechanism of action – oedema reduction

Results

	geko™ group n=15	Retrospective matched group n=15	P-value
Readiness to theatre	1.66 days	3.66 days	0.001
Time to theatre	3.87 days	4.00 days	0.89
Tolerability	95% compliance	N/A	

Conclusion

- The geko™ is a safe and effective device for reducing pre-operative oedema in ankle fractures
- Reducing the time to theatre by 2 days could provide a saving of £569 per patient¹¹
- Reducing oedema via this method provides an opportunity to optimise theatre schedules, release savings and has the potential to accelerate the patient recovery pathway

SAVING
£569¹¹



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