

Lower Leg Ulcers

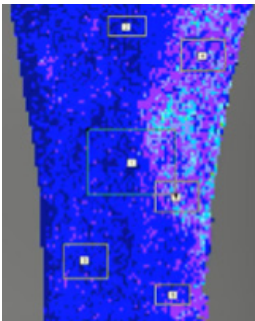
Chronic wounds represent a silent epidemic that affects a large percentage of the world population and poses a major and gathering threat to the public's health and the global economy¹



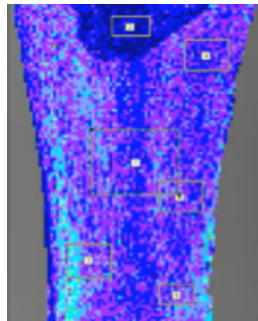
How does the geko™ device impact blood flow and wound healing?

When activated geko™ significantly increases:

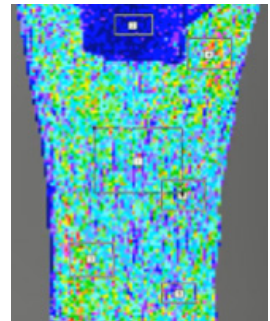
- Healing rates in lower limb and foot wounds of various etiologies when used as an adjunctive therapy in combination with evidence-based wound care⁶⁻¹⁰
- Venous and arterial volume and microcirculatory flow in the lower limbs in healthy individuals and those with peripheral arterial disease (ABPI 0.45 -0.68)²⁻³
- Venous peak velocity with chronic venous insufficiency (CVI)⁴
- Microcirculatory red blood cell flux:
 - by 1000% in healthy individuals (upper image below)⁵
 - by 225% to the wound bed and 67% to the peri-wound skin in an infected venous ulcer (lower image below)⁵



Baseline -
The geko™ device turned off



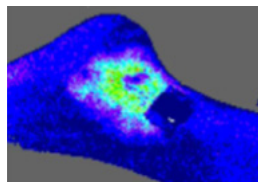
The geko™ device activated
but no foot twitch – 100% - 200%
increase in microcirculatory flux



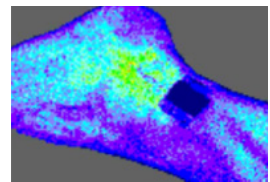
The geko™ device at a higher setting
to elicit foot twitch – 1,000%
increase in microcirculatory flux



Infected ulcer



Increase with heart systole -
The geko™ device not activated



Increase with the geko™
device activated

What benefits can the patient and health care professional expect?

In a series of case studies and trials:

Clinicians reported:

- Improved wound appearance^{6-7,9}
- Accelerated weekly healing rates and time-to-healing in patients who were adherent to the geko™ and best practices⁶⁻¹⁰
- Reduction in chronic edema¹¹⁻¹²
- Improved tolerance to therapeutic levels of compression therapy where required⁶⁻⁷

Patients reported:

- Decreased nociceptive & neuropathic pain^{6-7,9}

Patients and Clinicians reported:

- Increased mobility and level of activity⁶⁻⁷
- Improved quality of life^{6-9,13}
- Increased patient engagement with self-care⁶⁻⁷




Breaking
the cycle
of chronic
wounds

What are the benefits to the health care system?

- Potential for shorter length of stay with associated decreased utilization of wound care products and fewer nursing visits^{6-7,9}
- Improved patient satisfaction^{6-9,13}
- Estimated cost-savings of \$2,500.00 per patient if used as a first-line adjunctive therapy¹⁰

Where can I find more information?

Go to www.gekowound.ca to find the:

- How to use the geko™ wound therapy device “fitting” video
 - Annotated bibliography - contains reference citations with brief summaries (found under “Other Wound Therapy Collateral”)
 - Links to hemodynamic videos, published papers, testimonials, webinars and case studies
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What is the geko™ device?

The geko™ device is a Health Canada-registered muscle pump activator which is:

- Small (10g) and discreet, easy to use, self-contained, self-adhesive, battery-operated and completely recyclable
- Worn at the fibular head to stimulate the common peroneal nerve, gently and effectively activating the lower leg and foot muscle pumps
- With 10 settings it can be adjusted for patient comfort and optimal response
- Worn 12 hours per day, 7 days per week, each device lasts two days



References

1. Gottrup F - A specialized wound-healing center concept: importance of a multidisciplinary department structure and surgical treatment facilities in the treatment of chronic wounds. *Am J Surg*. 2004 May; 187(5A):385-435.
2. Yilmaz S, Mermi EU, Zobaci E, Aksoy E, Yastı C. Augmentation of arterial blood velocity with electrostimulation in patients with critical limb ischemia unsuitable for revascularization. *Vascular*. 2017;25(2):137-141. <https://doi.org/10.1177/1708538116649317>.
3. Barnes R, Barakat H, Tucker A, Chetter A. ASIT 2014 Conference Poster Abstracts: Prospective observational series to evaluate the efficacy of the geko™ neuromuscular electrical stimulation device to produce muscle contraction in vascular patients. *International Journal of Surgery* 2014; 12 (53): s110.
4. Williams KJ. Chapter 7.1. NMES in the management of chronic venous disease (VeINS). *Neuromuscular Stimulation of the Leg*. Thesis submitted to Imperial College London for the degree of Doctor of Philosophy April 2017. Pages 258- 269. <https://spiral.imperial.ac.uk/bitstream/10044/1/49202/1/Williams-K-PhD-Thesis.pdf>.
5. <https://www.gekodevices.com/geko-videos/speckle-imaging-video-showing-microcirculatory-blood-flow-at-baseline-and-with-the-geko-device-switched-on/>.
6. Harris, C, Loney, A, Brooke, J, Charlebois, A, Coppola, L, Mehta, S, Flett, N. Refractory venous leg ulcers: observational evaluation of innovative new technology. *International Wound Journal*. 2017. 14:6: 1100-1107. Available at: <http://onlinelibrary.wiley.com/doi/10.1111/iwj.12766/epdf>.
7. Harris, C, Duong, R, van der Heyden, G, Byrnes, B, Cattryse, R, Orr, A, Keast. Evaluation of a muscle pump-activating device for non-healing venous leg ulcers. *International Wound Journal*. 2017. 14:6: 1189-1198. Available at: <http://onlinelibrary.wiley.com/doi/10.1111/iwj.12784/epdf>.
8. Harris C, Ramage D, Bolorchi A, Vaughan L, Kuilder G, Rakas S. using a muscle pump activator device to stimulate healing for non-healing lower leg wounds in long term care residents. *IWJ* 2019;16(1):266-274. Open access on-line <https://onlinelibrary.wiley.com/doi/full/10.1111/iwj.13027>.
9. Jones NJ, Ivins N, Ebdon V, Hagelstein S, Harding KG, A case series evaluating the geko™ neuromuscular electrostimulation device on lower limb wounds of differing aetiology. *British Journal of Nursing* 2018, 27(20): S16-S21. *TISSUE VIABILITY SUPPLEMENT*. <https://www.magonlinelibrary.com/doi/abs/10.12968/bjon.2018.27.Sup20S16?download=true&journalCode=bjon>.
10. Waterloo Wellington CCAC/ LHIN evaluation. *Perfuse Medtec Inc.* data.
11. Ingves MV, Power AH. Two Cases of Transcutaneous Electrical Nerve Stimulation of the Common Peroneal Nerve Successfully Treating Refractory, Multifactorial Leg Oedema. *Journal of Investigative Medicine High Impact Case Reports*. October-December 2014: 1-4. Available at: <http://journals.sagepub.com/doi/abs/10.1177/2324709614559839>.
12. Williams K. Section 6.6 NMES compared to graduated compression stockings for the management of oedema. *Neuromuscular Stimulation of the Leg*. PhD Thesis, Imperial College London for the degree of Doctor of Philosophy. April 2017. Page 232. Available at: <https://spiral.imperial.ac.uk/bitstream/10044/1/49202/1/Williams-K-PhD-Thesis.pdf>.
13. Williams KJ, Ravikumar R, Babber A, Davies AH. Can neuromuscular stimulation relieve symptoms of chronic venous disease, and improve quality of life? *Annual Meeting of the Society-of-Academic-and-Research-Surgery (SARS) 2015*, Publisher: WILEY-BLACKWELL, Pages: 9-9, ISSN: 0007-1323.

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For further information on the geko™ device and the clinical evidence, please visit our website:

www.gekowound.ca

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