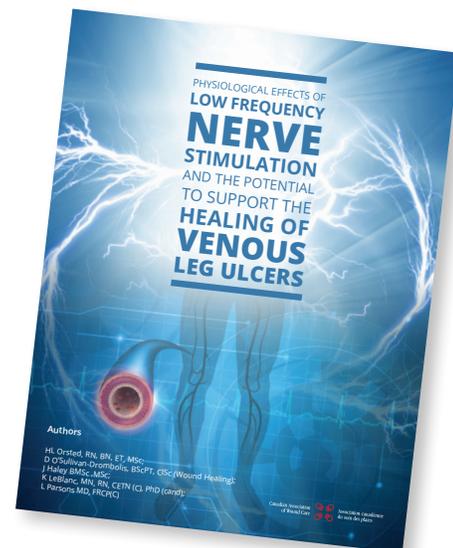


# The Effects of Low-frequency Nerve Stimulation to Support Healing of Venous Leg Ulcers

By Heather L Orsted, RN, BN, ET, MSc;  
Deirdre O’Sullivan-Drombolis, BScPT, CISC (WH);  
Jennifer Haley, BMSc, MSc; Kim LeBlanc, MN, RN, CETN (C),  
PhD (cand), and Laurie Parsons, MD, FRCP (C)

*With the support of an unrestricted educational grant from one of our industry partners\* the Canadian Association of Wound Care initiated a review of the literature regarding the use of low-frequency nerve stimulation in the management of venous leg ulcers. The goal of the document was to provide an overview of the existing literature and establish protocols for the use of this therapy in the treatment and management of diabetic foot ulcers. The full document has been published as a supplement to Wound Care Canada and is available at [www.woundcarecanada.ca/wp-content/uploads/CAWC-LFNS-Final-110316.pdf](http://www.woundcarecanada.ca/wp-content/uploads/CAWC-LFNS-Final-110316.pdf). A summary of the article is provided here.*

\*Perfuse Medtec Inc.



There is a complex interplay of factors at the core of the development of venous leg ulceration. Central to this are edema, pain and decreased blood flow. Electrical stimulation has long been used to address these impairments. The use of this technology is now being investigated to see what effect it can have on supporting healing in venous leg ulcers.

There are many ways to deliver electrical stimulation to the body with varying physiological effects, challenges and benefits in application. It can be deliv-

ered directly to the wound bed to help heal ulcers, and this treatment has significant literature to support its use. This review does not focus on the use of electrical stimulation in this manner, but rather as a way to augment healing indirectly by affecting the body through low-frequency nerve stimulation (LFNS). The modality investigated applies stimulation at 1 Hz over the common peroneal nerve in the lower leg to elicit an involuntary muscle twitch. This is enough of an action that early investigators have

demonstrated it to have a positive impact on blood flow and reduce edema and pain.

Overall, the literature is limited at this time, and further study is warranted. Early investigations suggest the cumulative effects of using LFNS—improving circulation as well as reducing pain, and associated improved mobility—have shown a positive impact on wound healing. Use of this device may be a comfortable and practical method to support healing of venous leg ulcers. 🤲