

## Why make the VeinOPlus® Vascular device your #1 treatment strategy for treating diabetic foot ulcers (DFU) and/or venous stasis ulcers (VSU)?

1. Calf muscle pump function ensures 80% of the venous return to the heart.
2. Calf muscle pump dysfunction (CMPD) is present in over 60% of patients with PAD/CVD.
3. CMPD increases blood viscosity and glucose levels leading to O<sub>2</sub> starvation and eventually DFUs.
4. CMPD and incompetent valves lead to venous hypertension, edema, and eventually VSUs.
5. The therapeutic target for treating DFUs and/or VSUs should be the calf muscle pump.

### Lack of exercise leads to calf muscle pump dysfunction due to: ↓

VeinOPlus treats the underlying problem, namely calf muscle pump dysfunction, more effectively than standard therapies. Daily VeinOPlus therapy accelerates ulcer healing 3 times faster and daily maintenance helps prevent recurrence.

- Osteoarthritis and/or limb pain
- Musculoskeletal problems
- Foot and/or leg ulcers
- Bad weather
- Low motivation to exercise



VeinOPlus is easy to use and pain-free.

### VeinOPlus:

- Activates the calf muscle pump every second.
- Improves venous outflow 7 times.
- Reduces edema and venous hypertension.
- Reduces glucose levels and blood viscosity.
- Improves arterial inflow 5-7 times.
- 30-minutes/day prevents DFUs and VLUs.
- Accelerates healing of DFUs and/or VSUs.
- Reduces limb pain.

**Why treat the calf muscle pump?** The calf muscle pump has a larger capacity and generates a higher ejection fraction of 65% versus the thigh muscle pump of only 15%. VeinOPlus evacuates blood from the veins of the calf at a rate equal to 70% of walking which significantly increases venous outflow and arterial inflow without any measurable change in heart rate, blood pressure, or muscle ischemia.

In nanoseconds, the VeinOPlus excites the calf muscle fibers simultaneously with two electrical impulses:

- **NMES** stimulates and causes the calf muscle pump to contract 3,600 times an hour. Each contraction improves perfusion and accelerates healing.
- **TENS** stimulates the body's endorphins, which activate the opiate receptors leading to a natural reduction in limb pain.

## Ulcer Healing Begins With The VeinOPlus!

# VEINOPLUS®

Chronic edema, claudication limb pain, or  
hard to heal foot and/or leg ulcers.



## Patients report the VeinOPlus (VOP):

- Reduces edema: up to **90%**
- Decreases leg pain: up to **85%**
- Improves foot temperature: up to **4°**
- Increases walking distance w/o pain: up to **120%**
- Accelerates ulcer healing: **3 times**



- Rapid contractions reduce viscosity, blood sugar levels, and improves blood flow.
- Increases perfusion and the production of vascular endothelial growth factor (VEGF).
- VEGF occurs through RNA expression of oxygen causing angiogenic formation of new blood vessels.
- VOP increases vasodilation, nitric oxide (NO), cellular metabolism, and accelerates ulcer healing.

Blood Sugar Level		
# of patients	Pre-test	Post-test
62	305.06	204.8
	(Mean Avg.)	

Reducing blood sugar improves circulation.<sup>1</sup>



Before



After 4-weeks

Ankle Brachial Index		
# of patients	Pre-test	Post-test
62	0.82	0.95
	(Mean Avg.)	

Improving ABIs increases circulation.<sup>1</sup>

Wound Reduction Scores			
Before		After 4-weeks	
VOP	27.63	10.75	VOP + SWC
SWC	27.25	18.44	Only SWC

Wound reduction scores indicate VOP is more effective in ulcer healing than only standard wound care (SWC).<sup>2</sup>

<sup>1</sup>Increasing Foot Circulation with ES in Patients with DM. *Belitung Nursing Journal* 2018; Volume 4, 343-349.

<sup>2</sup>The influence of electrical muscle stimulation for diabetic foot ulcers. *Wounds Asia* 2022; Volume 5, 16-21.

## VeinOPlus Produces Positive Outcomes!

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Pacemaker/defibrillator are  
contraindicated for the VOP.