

**WEARABLE NON-INVASIVE APPARATUS FOR AND METHOD OF ENHANCING
LOWER LIMBS VENOUS RETURN OF A SUBJECT**

Abstract

In various embodiments, a wearable non-invasive apparatus for enhancing lower limb venous return of a subject may be provided. The apparatus may include a monitoring device configured to determine a venous state of a subject such as a photoplethysmography (PPG) sensor. The apparatus may also include a neuromuscular electrical stimulation (NMES) device configured to generate an electrical stimulus in response to the determined venous state and concurrently stimulate the triceps surae and the deep posterior calf muscle of the subject with the generated electrical stimulus to enhance lower limb venous return. In an alternative embodiment, electrical stimulation can be at the tibial nerve of the subject to retrograde target the triceps surae and the deep posterior calf muscle of the subject.

FIG. 7E