

# MDDI

Medical Device & Diagnostic Industry®



## MEDICAL DESIGN EXCELLENCE AWARDS® 2007

**MIDEA Winners  
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and Substance,  
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# 2007 Winning Products and Suppliers

## 2007 Medical Design Excellence Award (MDEA) NESS® L300™ Foot Drop System Rehabilitation and Assistive –Technology

NESS® L300™ Foot Drop System, manufactured by NESS Ltd. (Ra'anana, Israel) and submitted by Bioness® Inc. (Santa Clarita, CA) is the recipient of the prestigious Gold 2007 Medical Design Excellence Award (MDEA). A combined panel of healthcare and medical design experts selected the NESS L300 from hundreds of entrants worldwide. The NESS L300 was judged by the MDEA panel and declared a gold winner based on its superior product innovation, design sophistication, and enhanced healthcare benefits delivery.

The NESS L300 is recognized for its innovative design and ability to assist in lifting the foot to compensate for foot drop, a condition caused by weakness of the muscles that can lead to instability and difficulty in walking. It is designed to help people who have experienced a stroke, traumatic brain injury or other neurological conditions to help them increase community participation and walk more naturally and faster, with increased confidence<sup>1, 2</sup>

The technology may also provide other important benefits such as the prevention of muscle atrophy and improved joint range of motion and blood circulation. Prior to the availability of the NESS L300, patients typically relied on rigid plastic braces that restrict ankle movement and sometimes lead to additional injuries.

The NESS L300 device integrates state-of-the-art electronics into a compact wireless system. The lightweight L300 consists of: a small wireless gait sensor, a leg cuff and a hand-held control unit. The leg cuff, which fits discretely and comfortably under clothing, sits just below the knee and contains a stimulation unit and electrodes. When the heel lifts, wireless signals from the gait sensor are sent to the stimulation unit in the leg cuff that stimulate the nerves to contract the muscles that lift the foot while walking. A small, hand-held remote control unit allows the patient to turn the stimulation on or off, and adjust the stimulation intensity when needed. Used in acute or outpatient therapy and then transitioned to home and community environments, the NESS L300 may save therapy time, may improve function and may help patients to take charge of their recovery.



***"There are three benefits that I am now enjoying by using the L300... better balance, better speed, and more confidence." Simon, 13 years post traumatic brain injury and stroke***



**NESS L300 leg cuff that houses the RF Stim Unit, the wireless Gait Sensor and the wireless hand held Remote Control Unit.**

"It's a wonderful experience for people to once again be able to walk with their families, to walk in a more natural way, and not feel like everyone is looking at them ... it's liberating" said Dr. David M. Lowell, neurologist and Medical Director at Rehabilitation Hospital at the Cape and Islands. "The L300 is an amazing and revolutionary rehabilitation tool."

Supply and design credit: Aran Ltd. (Caesarea Business Park, Israel) and Jonathan Bar-Or Industrial Design Ltd. (Pardes Hanna, Israel)

1. Hausdorff J, Ring H, The effect of the NESS L300 neuroprosthesis on gait stability and symmetry, (abstract) *J Neurol Phys Ther.* 2006 Dec 30 (4):195-200 (included in CSM 2007 Platform Presentations).
2. Hausdorff J, Ring H, The effect of a new lower-limb neuroprosthesis on physical and social functioning, (abstract) *J Neurol Phys Ther.* 2006 Dec 30 (4):209-22 (included in CSM 2007 Platform Presentations).

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