

For More Information Contact:

Maria Grobelny
Cleveland Medical Devices Inc.
P: 216.791.6720
mgrobelny@clevemed.com
www.clevemed.com

FOR IMMEDIATE RELEASE

CLEVEMED AWARDED \$896,000 NIH GRANT TO HELP STROKE PATIENTS RECOVER LOST MOTOR FUNCTION

CLEVELAND, OHIO, October 24, 2006 – Cleveland Medical Devices Inc. (CleveMed) has been awarded a \$896,000 Phase II grant from the National Institute of Neurological Disorders and Stroke (NINDS) of the National Institutes of Health (NIH) to continue the development and clinical assessment of an Untethered Home Therapy System (UHTS) to help stroke patients recover upper extremity motor function through home-based rehabilitation therapy and monitoring.

Today, stroke is the leading cause of adult disability in the United States. An increasing amount of research has shown a promising link between motor recovery and the amount of time a person spends performing therapy tasks. For motor recovery, the brain's neuroplasticity, or ability to reorganize neural pathways between brain cells to compensate for lost function, may be reliant upon persistent repetition of therapy tasks.

The proposed UHTS will consist of a lightweight, wearable sleeve embedded with motion sensors and surface electrodes for measuring electromyography (EMG), the electrical activity from muscle. The sleeve will connect to a command module which records data from the sleeve sensors and delivers functional electrical stimulation (FES) to weak or paralyzed upper extremity muscles during therapy. The unique software interface will provide movie-based instruction and real-time feedback to assist patients in performing therapy at home. Information obtained by the UHTS will be input to an algorithm that will determine the appropriate level of FES to stimulate affected muscles to further assist with therapy functions. In other words, one important goal is to automatically detect when a user is trying to perform a therapy task they cannot voluntarily complete and provide assistance through FES. According to Joseph Giuffrida, PhD, principal investigator, "the hope is that allowing patients to continue therapy at home will allow them the convenience and flexibility to dedicate more time to therapy, thereby increasing functional improvement." Dr. Giuffrida also points out that, "Integrating upper extremity movement, voluntary muscle activity and FES with real-time video feedback provides multiple modes of nervous system input which may help to promote motor relearning."

In addition to providing home therapy assistance, the UHTS will also provide reports with quantitative measurements of patient compliance and improvement that will be transmitted to physicians via the Internet. The reports will provide physicians with a barometer for changing treatment protocols and ensuring patients' therapy compliance.

According to co-investigator Alan Lerner, MD, Director, Memory and Cognition Center of the University Hospitals Case Medical Center Neurological Institute, "This proposed untethered home therapy system has the potential to offer significant benefits in assisting stroke patients with

motor recovery and may ultimately improve their quality of life. By providing a viable home therapy option, the underprivileged and homebound will have access to advanced therapy as well."

About CleveMed – CleveMed was founded with the goal of developing innovative telemetry devices for a variety of medical applications. Today, CleveMed is developing and pioneering the use of novel wireless monitoring systems for high growth neurology and rehabilitation applications, including brain monitoring, sleep disorders and movement disorders. Through these innovations, CleveMed has developed a growing range of products that address the needs of the medical, research and academic communities.

–END–