

**VIII CONGRESSO NAZIONALE SIRN
17 – 19 aprile 2008**

ABSTRACT

TOPIC:

Rehabilitation of the hemiparetic upper limb after stroke

TITLE:

Robot-assisted arm training and transcranial direct current stimulation in rehabilitation of subacute stroke patients with a severely affected paretic arm.

KEY WORDS:

Stroke, rehabilitation, robot, brain stimulation.

AUTHORS:

Waldner Andreas, Bolzano/Bozen, Villa Melitta, Department of Neurological Rehabilitation; Werner Cordula, Berlin, Klinik Berlin, Department of Neurological Rehabilitation, Charité – University Berlin; Hesse Stefan, Berlin, Klinik Berlin, Department of Neurological Rehabilitation, Charité – University Berlin

THE MOST PREFERRED WAY OF PRESENTATION: oral

TEXT OF ABSTRACT:

Robot aided therapy of upper limb improves the motor control of the paretic arm.

A single blind randomized trial in two centers has shown that a computerized arm trainer, allowing repetitive practise of passive and active bilateral forearm and wrist movement cycles improves motor control (measured by Fugl-Meyer-score) and motor power (measured by MRC-score) significantly more than an electromyography-initiated electrical stimulation of the paretic wrist extensors in severely affected subacute stroke patients. In the robot group, the Fugl-Meyer and the MRC-sum score was 15 points higher at study end and after 3 months. Preliminary reports suggest that central stimulation may enhance the effect of conventional physical therapies after stroke.

This study group is examining the effects of the simultaneous use of transcranial direct current stimulation and robot assisted arm training in subacute stroke patients with a severely affected paretic arm in a double-blind, randomized, placebo-controlled, multicenter trial. The study began in October 2006. In April 2008 the study group will be able to present the first results.