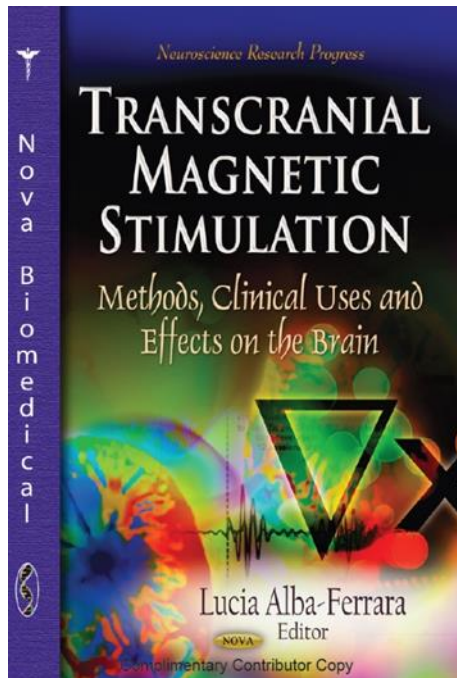


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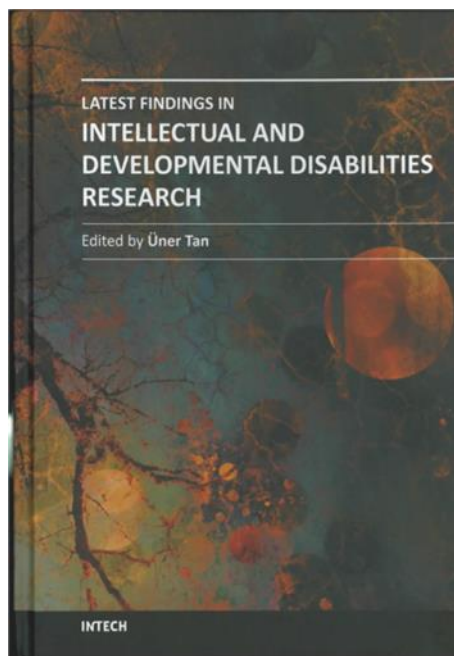
**Transcranial Magnetic Stimulation:  
Methods, Clinical Uses and Effects on the  
Brain**

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Chapter 11

Combination Treatment of Repetitive  
Transcranial Magnetic Stimulation and  
Intensive Occupational Therapy: A Novel  
Therapeutic Approach for Upper Limb  
Hemiparesis After Stroke

Wataru Kakuda and Masahiro Abo



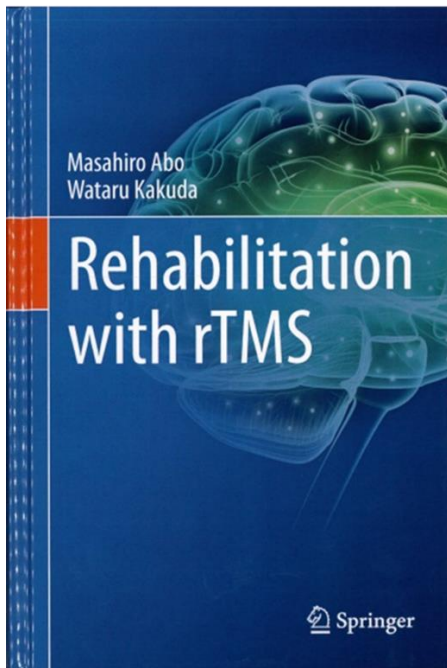
**LATEST FINDINGS IN  
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Chapter 11

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Wataru Kakuda and Masahiro Abo



## Introduction

In 1998, while studying at the Karolinska Institutet, I was blessed with the opportunity to use a magnetic stimulation device. I was surprised at how easily cerebral cortex could be stimulated with this device, and I still remember, as if it had been yesterday, the “tremor of excitement” that I felt when imagining that some day this magnetic stimulation device would contribute to the development of new therapies in the field of rehabilitation. For the clinical application of magnetic stimulation therapy, I first repeatedly conducted basic experiments using rat models of brain injury and stopped these temporarily after gaining first insights.

Then, aiming to challenge the notion accepted worldwide that neurological sequelae of stroke will not improve in the chronic stage, to help patients who suffer from the neurological sequelae of stroke, and to further develop rehabilitation medicine, I made a point of calling on Dr. Wataru Kakuda, one of the authors and editors of this book, to return from Stanford University, and eventually in April 2008 we began to conduct NEURO therapy.

In Treatment Approaches for the Recovery of Fine Motor Functions of the Hand.....

.....  
Finally, I want to express my gratitude to all members of the 13 hospitals who have banded together in the same spirit and cooperated in this clinical project. I hope that this book will be used by patients who suffer from neurological sequelae of stroke and their families and will serve as a reference for TMS treatment, which is one of a number of approaches to therapeutic rehabilitation.

October, 2014

Masahiro Abo

## **Only PubMed about TMS and BoNT-A, and prof. abo concerned**

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