



UMF
UNIVERSITATEA DE
MEDICINĂ ȘI FARMACIE
IULIU HAȚIEGANU
CLUJ-NAPOCA



FACULTY of MEDICINE
DEPARTMENT of
NEUROSCIENCES



1ST TRANSCRANIAL MAGNETIC STIMULATION TEACHING COURSE/

PRIMUL CURS DE STIMULARE MAGNETICĂ TRANSCRANIANĂ

MARCH 24TH-26TH 2014/24-26 MARTIE 2014

**RONEURO - INSTITUTE FOR NEUROLOGICAL RESEARCH AND DIAGNOSTIC/
INSTITUTUL RONEURO - CENTRUL DE CERCETARE SI DIAGNOSTIC AL BOLILOR NEUROLOGICE
CLUJ-NAPOCA | ROMANIA | MIRCEA ELIADE 37**

WELCOME ADDRESS

It is a pleasure to welcome you to the 12th Seminar, "1st Transcranial Magnetic Stimulation Teaching Course", March 24th-26th, 2014. The seminar is hosted by the Department of Neurosciences, Faculty of Medicine, "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca and "RoNeuro" Neurological Disorders Research and Diagnosis Center.

This seminar aims to establish itself as a highly useful framework that will enable local specialists to benefit from the expertise of our invited speakers who are part of associated international faculty of our Department of Neurosciences Cluj-Napoca, Romania and RoNeuro Science network. Our scope is to flourish over years and set up an educational vector aiming to meet our junior and senior specialists' needs.

In contrast to large international conferences, the intention behind these seminars is to create an informal and intimate setting, which hopefully will stimulate open discussions. As organizers, we would therefore be deeply grateful if you participate and share your time with us.

We are looking forward to your active participation in this educational event!

With consideration,

Prof. Dr. Daşin F. Mureşanu,
Chairman Department of Neurosciences, Faculty of Medicine,
University of Medicine and Pharmacy "Iuliu Hatieganu", Cluj Napoca, Romania



ORGANIZERS



UMF
IULIU HATIEGANU
UNIVERSITY OF
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University of Medicine and Pharmacy
"Iuliu Hatieganu",
Cluj Napoca, Romania



Faculty of Medicine
University of Medicine and Pharmacy
"Iuliu Hatieganu",
Cluj Napoca, Romania



FACULTY of MEDICINE
DEPARTMENT of
NEUROSCIENCES

Faculty of Medicine
Department of Neurosciences
Cluj-Napoca, Romania



Foundation for the Study of
Nanoneurosciences and
Neuroregeneration



RONEURO
Institute for Neurological
Research and Diagnostic

ORGANIZATORI



UMF
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UNIVERSITY OF
MEDICINE AND PHARMACY
CLUJ-NAPOCA

Universitatea de Medicină și Farmacie
"Iuliu Hatieganu"
Cluj-Napoca, România



Facultatea de Medicină
Universitatea de Medicină și Farmacie
"Iuliu Hatieganu"
Cluj-Napoca, România



FACULTY of MEDICINE
DEPARTMENT of
NEUROSCIENCES

Facultatea de Medicină
Departamentul de Neuroștiințe
Cluj-Napoca, România



Fundația pentru studiul
Nanoneuroștiințelor și
Neuroregenerării



Institutul
RONEURO
Centrul De Cercetare si
Diagnostic al Bolilor Neurologice

SPEAKER/ LECTOR



SPEAKER

PROFESSIONAL EXPERIENCE:

January 2011- present

- MagVenture A/S Farum Denmark, International Application Specialist
- My duties include user training on device handling and clinical application in Neurology, Psychiatry, Brain Research, Neurorehabilitation
- Furthermore, I'm responsible in establishing reference sites for Magnetic Stimulation in Diagnostic, Research and Treatment

August 2007 – December 2010

- Alpine Biomed GmbH Langenfeld Germany, Product Manager/ Specialist for NeuroDiagnostic
- I was responsible for user training on device handling and clinical application in Neurology, NeuroSurgery and Neurorehabilitation (EMG, NCV, EP, ERP, IOM, EEG, Sleep)

September 1998 – August 2007

- Medtronic GmbH Dusseldorf Germany, Product Manager/ Specialist for NeuroDiagnostic
- I was responsible for user training on device handling and clinical application in Neurology, NeuroSurgery and Neurorehabilitation (EMG, NCV, EP, ERP, IOM, EEG, Sleep)

September 1996 – August 1998

- Schwamedico GmbH Giessen Germany, Product Specialist for Acupuncture, TENS

January 1993 – August 1996

- ProScience Research Center Linden Germany, Assistant for Neuropharmacological Research

March 1987 – December 1992

- University Hospital Giessen, Nurse Neurosurgery Intensive Care Unit

EDUCATION/ QUALIFICATION

2002 – Physiotherapy: Basic Education Munich School of Physiotherapy

1993 – Graduation: Diplom – Ingenieur FH Biomedizinische Technik, Fachhochschule Gießen-Friedberg



**MATTHIAS
KIENLE**
/DENMARK

LECTOR

EXPERIENȚĂ PROFESIONALĂ

Ianuarie 2011- prezent

- MagVenture A/S Farum Denmark, International Application Specialist
- Responsabilitățile mele includ instructajul privind manevrarea echipamentelor și aplicațiilor din domeniile Neurologiei, Psihiatriei, Brain Research, Neuroreabilitare
- În plus, sunt responsabil cu identificarea site-urilor de referință pentru Stimularea Magnetică în domeniile diagnosticului, cercetării și tratamentului

August 2007 – Decembrie 2010

- Alpine Biomed GmbH Langenfeld Germany, Product Manager/
Specialist Neurodiagnostic
- Responsabil cu instructajul utilizatorilor privind manevrarea echipamentelor și aplicațiilor din domeniile Neurologiei, Neurochirurgiei și Neuroreabilitării (EMG, NCV, EP, ERP, IOM, EEG, Somnografie)

Septembrie 1998 – August 2007

- Medtronic GmbH Dusseldorf Germany, Product Manager/
Specialist Neurodiagnostic
- Responsabil cu instructajul privind manevrarea echipamentelor și aplicațiilor din domeniile Neurologiei, Neurochirurgiei și Neuroreabilitării (EMG, NCV, EP, ERP, IOM, EEG, Somnografie)

Septembrie 1996 – August 1998

- Schwamedico GmbH Giessen Germany,
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Ianuarie 1993 – August 1996

- ProScience Research Center Linden Germany, Assistant for
Neuropharmacological Research

Martie 1987 – Decembrie 1992

- University Hospital Giessen, Nurse Neurosurgery Intensive Care Unit

EDUCAȚIE/ CALIFICĂRI

2002 – Fizioterapie: Basic Education Munich School of Physiotherapy

1993 – Absolvire: Diploma Ingenieur FH Biomedizinische Technik, Fachhochschule Gießen-Friedberg



**MATTHIAS
KIENLE**
/DENMARK

SCIENTIFIC PROGRAM/
PROGRAM ȘTIINȚIFIC



SCIENTIFIC PROGRAM

MONDAY, MARCH 24TH 2014

09.00 – 10.30

Introduction in TMS:

- the principle of magnetic stimulation
- coil presentation (geometry and size, orientation)
- pulse forms
- basic physiological mechanism
- safety regulations and precautions

10.30 – 11.00

Coffee Break

11.00 – 13.00

Magnetic Stimulation in Diagnostic:

- general principles
- motor evoked potential (MEP)
- central motor conduction time (CMCT)
- cortical silent period (CSP)
- intracortical inhibition & facilitation (ICI&ICF)
- triple stimulation technique (TST)
- clinical case presentation

13.00 – 14.00

Lunch Break

14.00 – 16.30

Practical Session 1

16.30 – 17.00

Coffee Break

17.00 – 19.00

Practical Session 2



PROGRAM ȘTIINȚIFIC

LUNI, 24 MARTIE 2014

9.00 – 10.30

Introducere în stimularea magnetică transcraniană (TMS):

- Principiul stimulării magnetice
- Prezentarea bobinelor (geometrie, forme, orientare)
- Forme de puls
- Principii de bază ale mecanismului fiziologic al stimulării magnetice
- Reguli privind siguranța stimulării și precauții

10.30 – 11.00

Pauză de cafea

11.00 – 13.00

Stimularea magnetică în diagnostic:

- Principii generale
- Potențiale evocate motorii (MEP)
- Timpul de conducere motorie central (CMCT)
- Perioada de liniște corticală (CSP)
- Inhibiția și facilitarea intracorticală (ICI&ICF)
- Tehnica de triplă stimulare (TST)
- Prezentare de cazuri clinice

13.00 – 14.00

Pauză de masă

14.00 – 16.30

Sesiune practică 1

16.30 – 17.00

Pauză de cafea

17.00 – 19.00

Sesiune practică 2

SCIENTIFIC PROGRAM

TUESDAY, MARCH 25TH 2014

9.00 – 10.30

Application of rTMS in Psychiatry:

- overview of current protocols
- clinical case presentation

10.30 – 11.00

Coffee Break

11.00 – 13.00

Application of rTMS in Rehabilitation

- overview of current protocols
- clinical case presentation

13.00 – 14.00

Lunch Break

14.00 – 16.30

Practical Session1

16.30 – 17.00

Coffee Break

17.00 – 19.00

Practical Session2

WEDNESDAY, MARCH 26TH 2014

9.00 – 10.30

How to Use TMS in Clinical Studies:

- general principles
- design and procedural considerations
- brain mapping

10.30 – 11.00

Coffee break

11.00 – 13.00

TMS and Brain Plasticity

13.00 – 14.00

Lunch Break

14.00 – 16.30

Discussions about Possible Research Projects

16.30 – 17.00

Conclusion



PROGRAM ȘTIINȚIFIC

MARȚI, 25 MARTIE 2014

9.00 – 10.30

Aplicații ale rTMS în psihiatrie:

- Prezentarea diferitelor protocoale
- Prezentare de cazuri clinice

10.30 – 11.00

Pauză de cafea

11.00 – 13.00

Aplicații ale rTMS în psihiatrie:

- Prezentarea diferitelor protocoale
- Prezentare de cazuri clinice

13.00 – 14.00

Pauză de masă

14.00 – 16.30

Sesiune practică 1

16.30 – 17.00

Pauză de cafea

17.00 – 19.00

Sesiune practică 2

MIERCURI, 26 MARTIE 2014

9.00 – 10.30

TMS în Studii Clinice:

- Principii generale
- Design și considerații procedurale
- Harta corticală

10.30 – 11.00

Pauză de cafea

11.00 – 13.00

TMS și Neuroplasticitatea

13.00 – 14.00

Pauză de masă

14.00 – 16.30

Discuții despre potențiale proiecte de cercetare

16.30 – 17.00

Concluzii

ABSTRACT/ REZUMAT



1ST TRANSCRANIAL MAGNETIC STIMULATION TEACHING COURSE

Transcranial magnetic stimulation (TMS) is a non-invasive tool for the stimulation of neural tissue, including cerebral cortex, spinal roots, and cranial and peripheral nerves. This course will present basic principles of TMS, how TMS can be applied as single pulses of stimulation, pairs of stimuli separated by variable intervals to the same or different brain areas, or as trains of repetitive stimuli at various frequencies. Single stimuli can depolarize neurons and evoke measurable effects. Trains of stimuli (repetitive TMS) can modify excitability of the cerebral cortex at the stimulated site and also at remote areas along functional anatomical connections.

There will be presented information about how TMS can be used

1. To provide novel insights into the pathophysiology of the neural circuitry underlying neurological and psychiatric disorders
2. To provide clinically useful diagnostic and prognostic tests
3. As therapy in various diseases.



**MATTHIAS
KIENLE**
/DENMARK

PRIMUL CURS DE STIMULARE MAGNETICĂ TRANSCRANIANĂ

Stimularea magnetică transcraniană (TMS) reprezintă o tehnică neinvazivă de stimulare a țesutului neuronal, incluzând cortexul cerebral, rădăcinile spinale și nervii cranieni și periferici.

În acest curs vor fi prezentate principiile de bază ale TMS, modul în care TMS poate fi aplicat ca stimulare cu puls unic, cu stimuli pereche separați prin intervale variabile, aplicați aceleași arii cerebrale sau pe arii corticale diferite, cu trenuri de stimuli de frecvențe diferite. Stimularea magnetică are capacitatea de a modifica excitabilitatea neuronală la nivelul ariei stimulate și de asemenea la nivelul regiunilor conectate funcțional cu aria stimulată.

De asemenea, vor fi prezentate informații cu privire la modalitate în care TMS poate fi aplicat în diferite scopuri de diagnostic și/sau tratament:

1. Pentru a oferi informații suplimentare privind fiziopatologia circuitelor neuronale ce stau la baza diferitelor afecțiuni neurologice și/sau psihiatrice.
2. Pentru a oferi informații utile în diagnostic și prognostic.
3. Ca terapie în diferite afecțiuni neurologice și/sau psihiatrice.



**MATTHIAS
KIENLE**
/DENMARK





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