



International  
School of Neurology

# 17<sup>TH</sup> INTERNATIONAL SUMMER SCHOOL OF NEUROLOGY

8 - 10 JULY 2022

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VIRTUAL  
EVENT

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## ***PROGRAM COORDINATORS***

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### ***NATAN M. BORNSTEIN***

Director of Neurological Division,  
Shaare Zedek Medical Center

Vice President of the World Stroke Organization (WSO)

Chairman of the Israeli Neurological Association

Doctor Honoris Causa,  
"Iuliu Hatieganu" University of Medicine and Pharmacy,  
Cluj-Napoca, Romania



### ***DAFIN F. MURESANU***

President of the European Federation of  
NeuroRehabilitation Societies (EFNR)

Chairman of EAN Communication and Liaison  
Committee

Co-Chair EAN Scientific Panel Neurotraumatology

Past President of the Romanian Society of Neurology

Professor of Neurology, Chairman Department of  
Neurosciences "Iuliu Hatieganu" University of Medicine  
and Pharmacy, Cluj-Napoca, Romania

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## **THE SOCIETY FOR THE STUDY OF NEUROPROTECTION AND NEUROPLASTICITY LOCAL SCIENTIFIC COMMITTEE**

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### **DAFIN F. MURESANU | ELECTED PRESIDENT**

President of the European Federation of  
NeuroRehabilitation Societies (EFNR)  
Chairman of EAN Communication and Liaison Committee  
Co-Chair EAN Scientific Panel Neurotraumatology  
Past President of the Romanian Society of Neurology  
Professor of Neurology, Chairman Department of Neurosciences "Iuliu  
Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania



### **NATAN M. BORNSTEIN | PRESIDENT OF THE INTERNATIONAL SCIENTIFIC COMMITTEE**

Director of Neurological Division, Shaare Zedek Medical Center  
Vice President of the World Stroke Organization (WSO)  
Chairman of the Israeli Neurological Association  
Doctor Honoris Causa,  
"Iuliu Hatieganu" University of Medicine and Pharmacy,  
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Vice-Rector Carol Davila' University of Medicine and Pharmacy  
Department of Neurology, School of Medicine, 'Carol Davila'  
University of Medicine and Pharmacy,  
Colentina Clinical Hospital Bucharest, Romania

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## **FACULTY**

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**IN ALPHABETICAL ORDER**

Claudia Anghel / Romania  
Rodica Balasa / Romania  
Natan Bornstein / Israel  
Michael Brainin / Austria  
Michael Chopp / USA  
Adela Ciobanu / Romania  
Doina Cozman / Romania  
Laszlo Csiba / Hungary  
Jesse Dawson / UK  
Petru Romeo Dobrin / Romania  
Hanna Dragos / Romania  
Virgil Enatescu / Romania  
Cristian Falup-Pecurariu / Romania  
Antonio Federico / Italy  
Urs Fischer / Switzerland  
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Brindusa Focseneanu / Romania  
Mihail Gavriiliuc / Rep. of Moldova  
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Vitalie Lisnic / Rep. of Moldova  
Xianshuang Liu / USA  
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Ioana Mindruta / Romania  
Dafin F. Muresanu / Romania  
Mihai Mutica / Romania  
Catalina Giurgi Oncu / Romania  
Adina Roceanu / Romania  
Corina Roman / Romania  
Hari Shanker Sharma / Sweden  
Mihaela Simu / Romania  
Adina Stan / Romania  
Andreea Szalontay / Romania  
Jozsef Szasz / Romania  
Cristina Tiu / Romania  
Vitalie Vacaras / Romania  
Johannes Vester / Germany  
David Vodusek / Slovenia  
Andreas Winkler / Austria

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***SCIENTIFIC  
PROGRAM***

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# 17<sup>TH</sup> INTERNATIONAL SUMMER SCHOOL OF NEUROLOGY

## **DAY ONE – FRIDAY, JULY 8<sup>TH</sup>**

09.45 – 10.00

### **WELCOME ADDRESS**

Volker Hoemberg (Germany), Natan Bornstein (Israel),  
Dafin F. Muresanu (Romania), Wolfgang Grisold (Austria)

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### **SESSION I CHAIRPERSONS:**

Dafin F. Muresanu (Romania),  
Volker Hoemberg (Germany)

10.00 – 10.50

Neurorehabilitation: Future perspectives  
Volker Hoemberg (Germany)

10.50 – 11.30

Advances and updates in neurorecovery after stroke –  
new EAN-EFNR guideline  
Dafin F. Muresanu (Romania)

11.30 – 12.00

Cognitive deficits after stroke  
Michael Brainin (Austria)

12.00

### **SESSION BREAK**

**DAY ONE – FRIDAY, JULY 8<sup>TH</sup>**  
**PARALLEL STREAM 1**

**SESSION 2 | CHAIRPERSONS:**

Natan Bornstein (Israel),  
Michael Brainin (Austria)

- 12.15 – 12.40 Educational activities of the World Federation of Neurology  
Wolfgang Grisold (Austria)
- 12.40 – 13.05 A new gold standard to improve TBI clinical research – the multidimensional approach  
Johannes Vester (Germany)
- 13.05 – 13.30 Neurological and neurophysiological evaluation of the lower sacral segments  
David Vodusek (Slovenia)
- 13.30 – 14.30 **SESSION BREAK**

**PARALLEL STREAM 2**

- 12.00-12.15 Welcome address  
Psychiatric Perspectives in  
Neurocognitive Disorders  
Doina Cozman (Romania)

**SESSION 1 | CHAIRPERSONS: Doina Cozman (Romania)**

- 12.15-12.35 Management of treatment-resistant depression in elderly  
Adela Ciobanu (Romania)
- 12.35-12.55 Depression at the border of cognitive impairment – therapeutic approach.  
Case report  
Brindusa Focseneanu (Romania)
- 12.55-13.15 A case of mild cognitive impairment after SARS-CoV-2 infection  
Andreea Szalontay (Romania)

## PARALLEL STREAM 1

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**SESSION 3 | CHAIRPERSONS:** Antonio Federico (Italy),  
Tudor Lupescu (Romania)

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- 14.30 – 15.00      Neurology and Neurosciences in  
Migrants and Refugees  
Antonio Federico (Italy)
- 15.00 – 15.25      Diabetic autonomic neuropathy  
Max Hilz (Germany)
- 15.25 – 15.50      Diagnostic approach in  
neuropathies  
Tudor Lupescu (Romania)
- 15.50 – 16.00      **SESSION BREAK**

## PARALLEL STREAM 2

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- 13.15-10.35      The efficacy of neurotrophic factors in  
neurocognitive disorder  
**Petru Romeo Dobrin (Romania)**
- 13.35-13.55      Mild cognitive impairment in a patient  
with polymorphic symptoms  
**Mihai Mutica (Romania)**
- 13.55-14.10      Discussion
- 14.10-14.30      **SESSION BREAK**

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**SESSION 2 | CHAIRPERSONS:** Doina Cozman (Romania)

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- 14.30-14.50      The efficacy of neurotrophic factors  
in a case of minor cognitive disorder  
comorbid with bipolar I disorder and  
sequelae of cerebral infarctions  
**Virgil Enatescu (Romania)**



## PARALLEL STREAM 1

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### SESSION 4 | CHAIRPERSONS:

Marc Fisher (USA), Urs Fischer (Switzerland)

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- 16.00 – 16.45 Repurposing neuroprotection (Cyto) and recovery enhancing drugs in the thrombectomy era  
Marc Fisher (USA)
- 16.45 – 17.10 Management of spontaneous intracerebral haemorrhage: is there any evidence?  
Urs Fischer (Switzerland)
- 17.10 – 17.40 Diabetes and Stroke  
Natan Bornstein (Israel)
- 17.40 – 18.05 Interesting cases from the daily practice  
Laszlo Csiba (Hungary)
- 18.05 Day #1 - Concluding remarks  
Volker Hoemberg (Germany),  
Natan Bornstein (Israel),  
Dafin F. Muresanu (Romania),  
Wolfgang Grisold (Austria)

## PARALLEL STREAM 2

- 14.50-15.10 A significant improvement of affective symptoms and Theory of Mind abilities in a patient treated with neurotrophic factors for a Mild Cognitive Disorder  
**Catalina Giurgi Oncu (Romania)**
- 15.10-15.30 Vascular neurocognitive disorder - presentation of a clinical case with language disturbances  
**Adriana Mihai (Romania)**
- 15.30-15.50 Electroconvulsive therapy - between necessity and stigma  
**Claudia Anghel (Romania)**
- 15.50-16.05 Discussion
- 16.05 Concluding Remarks  
**Doina Cozman (Romania)**

## **DAY TWO – SATURDAY, JULY 9<sup>TH</sup>**

### **MAIN SESSION**

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09.50 – 10.00 **WELCOME AND INTRODUCTION**

Natan Bornstein (Israel),  
Dafin F. Muresanu (Romania)

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#### **SESSION 5 | CHAIRPERSONS:**

Natan Bornstein (Israel), Dafin F. Muresanu (Romania)

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10.00 – 10.40 Secondary Stroke Prevention - The DAPT  
Story - A Journey of 25 Years  
Natan Bornstein (Israel)

10.40 – 11.15 Post-stroke cognitive decline - current  
concepts and treatment approaches  
Natan Bornstein (Israel)

11.15 – 12.00 Microcirculation and Stroke  
Dafin F. Muresanu (Romania)

12.00 – 12.20 **SESSION BREAK**

### **SATELLITE SESSION**

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9.00 Welcome and registering

9.30 - 10.00 Opening Session.  
Guidelines and Recommendations in  
Parkinson's Disease  
Dafin F. Mureșanu (Romania)

10.00 - 10.20 Challenges in the diagnosis and  
evaluation of patients with  
Parkinson's Disease  
Simu Mihaela (Romania)

10.20 - 10.45 Escaladarea complicațiilor motorii și  
limitele medicației convenționale.  
Clinical Considerations.  
Viorelia Constantin (Romania)

10.45 - 11.15 Practical clinical aspects of available new  
therapeutic solutions.  
Jozsef Szasz (Romania)

11.15 - 11.30 **COFFEE BREAK**

## MAIN SESSION

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### **SESSION 6 | CHAIRPERSONS:**

Dafin F. Muresanu (Romania), Adina Stan (Romania)

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12.20 – 12.50 Stimulation (neuromodulation) for post stroke recovery  
Jesse Dawson (UK)

12.50 – 13.15 How can we be more efficient in motor recovery after stroke?  
Andreas Winkler (Austria)

13.15 – 13.30 Case presentations - Stroke  
Adina Stan (Romania)

13.30 – 13.40 A Rare Disease You Don't Want to Miss  
Adina Stan, Hanna Dragos (Romania)

13.40 – 14.40 **SESSION BREAK**

## SATELLITE SESSION

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11.30 - 12.00 ON time optimization in the evolution of Parkinson's Disease  
**Amalia Ene (Romania)**

12.00 - 12.30 Consideration in the selection of treatment for patients with BPA.  
**Cristian Falup-Pecurariu (Romania)**

12.30 - 13.00 Recent progresses in the intrajejunal triple therapy (LECIg).  
More with less!  
**Prof. Dr. Bogdan Popescu (Romania)**

Conclusions

13.00 - 14.15 **LUNCH BREAK**

## MAIN SESSION

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### **SESSION 7 | CHAIRPERSONS:**

Cristina Tiu, Rodica Balasa (Romania)

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- 14.40 – 15.10 About immunosenescence and inflammaging in multiple sclerosis. Therapeutic options in older patients. Cristina Tiu (Romania)
- 15.10 – 15.35 Cognitive impairment in MS - from theory to practice Mihaela Simu (Romania)
- 15.35 – 16.00 Plasmatic exosomal microARN from brain cells in the evaluation of immunological treatment in multiple sclerosis patients Rodica Balasa (Romania)
- 16.00 – 16.10 **SESSION BREAK**

## SATELLITE SESSION

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### **ROUNDTABLE SESSION**

Opportunities and challenges in the multidisciplinary approach

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- 14.15 - 14.40 Multidisciplinary approach – Colentina center  
**Bogdan Popescu & Dr. Delia Tulbă  
Bogdan Mastalier & Dr. Cristian Botezatu  
(Romania)**
- 14.40 - 15.00 Multidisciplinary approach – Cluj center  
**Nicoleta Tohănean & Silvina Iluț  
Cornelia Popovici & Romeo Chira  
(Romania)**
- 15.00 - 15.30 Life with Parkinson's Disease!  
Emilia Zagavei  
Asoc.Pac. (Romania)
- 15.30 - 16.00 **COFFEE BREAK**

## MAIN SESSION

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### **SESSION 8 | CHAIRPERSONS:**

Xianshuang Liu (USA), Hari Shanker Sharma (Sweden)

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- 16.10 – 16.40 Methamphetamine exacerbates Alzheimer's disease pathology.  
Neuroprotective effects of nanowired Cerebrolysin with Neprilysin  
Hari Shanker Sharma (Sweden)
- 16.40 – 17.05 Exosomes enhance the coupling of neurogenesis and angiogenesis by transfer of microRNA  
Michael Chopp, Xianshuang Liu (USA)
- 17.05 – 17.30 Semiology of epileptic seizures - the new glossary of terms  
Ioana Mindruta (Romania)
- 17.30 Day #2 - Concluding remarks  
Natan Bornstein (Israel),  
Dafin F. Muresanu (Romania)

## SATELLITE SESSION

- 16.00 - 16.30 Multidisciplinary approach - Tg. Mures center  
**Jozsef Szasz & Viorelia Constantin & Marius Ciorbă (Romania)**
- 16.30 - 17.00 Multidisciplinary approach - Constanța center.  
**Docu Axelerad & Echipa Eugen Dumitru & Echipa (Romania)**
- 17.00 - 17.30 The Parkinson's patient journey - moment

### **CONCLUSIONS**

## **DAY THREE – SUNDAY, JULY 10<sup>TH</sup>**

09.50 – 10.00

### **WELCOME AND INTRODUCTION**

Natan Bornstein (Israel), Dafin F. Muresanu (Romania)

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### **SESSION 9 |**

**CHAIRPERSONS:** Peter Jenner (UK), Amos Korczyn (Israel)

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10:00 – 10:30

Is alpha synuclein a potential target in PD?  
Amos Korczyn (Israel)

10.30 – 10.55

Can we develop non-dopaminergic approaches to the treatment of Parkinson's disease?  
Peter Jenner (UK)

10.55 – 11.20

Autonomic dysfunction in Parkinson's disease  
Cristian Falup-Pecurariu (Romania)

11.20 – 11.45

Post stroke cognitive impairment and dementia -  
Treatment challenges  
Alla Guekht (Russia)

11.45 – 11.50

### **SESSION BREAK**

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### **SESSION 10 |**

**CHAIRPERSONS:** Cristian Falup-Pecurariu, Jozsef Szasz (Romania)

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11.50 – 12.20

Management of advanced Parkinson's disease with  
Levodopa intestinal gel  
Jozsef Szasz (Romania)

12.20 – 12.45

Is Neurorehabilitation Useful in Parkinson's Disease?  
Dafin F. Muresanu (Romania)

12.45 – 13.10

Nonconvulsive Status Epilepticus - A Complex and Often  
an Under-Recognised Entity  
Stanislav Groppa (Rep. of Moldova)

13.10 – 14.00

**SESSION BREAK**

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**SESSION 11 |**

**CHAIRPERSONS:** Adina Roceanu, Corina Roman (Romania)

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14.00 – 14.30

Migraine treatment  
Adina Roceanu (Romania)

14.30 – 15.05

Secondary headaches - case presentations  
Corina Roman (Romania)

15.05 – 15.20

When headache hides neurocysticercosis -  
Case presentations  
Vitalie Vacaras (Romania)

15.20 – 15.30

**SESSION BREAK**

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**SESSION 12 |**

**CHAIRPERSONS:** Catalin Jianu (Romania), Vitalie Lisnic (Rep. of Moldova)

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15.30 – 16.00

An integrated approach on the diagnosis of cerebral veins  
and dural sinuses thrombosis  
Catalin Jianu (Romania)

16.00 – 16.25

Neuroborreliosis  
Mihail Gavriiliuc (Rep. of Moldova)

16.25 – 16.50

Wilson disease - a constellation of phenotypes  
Vitalie Lisnic (Rep. of Moldova)

16.50

**WRAP-UP & CONCLUDING REMARKS**

Volker Hoemberg (Germany), Natan Bornstein (Israel),  
Dafin F. Muresanu (Romania), Wolfgang Grisold (Austria)

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# ***ABSTRACTS***

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## ***ELECTROCONVULSIVE THERAPY - BETWEEN NECESSITY AND STIGMA***

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***CLAUDIA ANGHEL***

Psychiatrist, Psychiatric Hospital "Dr. Gh. Preda ", Sibiu, Romania

Electroconvulsive therapy is one of the therapeutic procedures with a long history in the psychiatric medical system.

Although important changes have been made in the way this therapy has been applied since 1938, the emphasis is now on patient safety, comfort, and the limitation of possible complications, it is misunderstood, stigmatized and avoided, despite its therapeutic efficacy.

Today the ECT is applied under general anesthesia, after the patient has been previously evaluated (brain CT, EEG, ECG, neurological and cardiological evaluation, lab tests) all taking place in a suitable space where a trained professional team had carried out its activity for this procedure. One of the important indications of this therapy is treatment-resistant schizophrenia, with persistent positive symptoms, despite the administration of clozapine augmented, most often, with some atypical antipsychotics. The therapeutic efficiency of ECT is observed from the first sessions, quantifiable on psychological scales, regardless of whether it is applied unilaterally or bilaterally. An important aspect of the need for this therapy is the particularity of the therapeutic decision, depending on the patient's level of insertion, its functionality and the degree of danger given by the positive symptoms.

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## ***PLASMATIC EXOSOMAL microARN FROM BRAIN CELLS IN THE EVALUATION OF IMMUNOLOGICAL TREATMENT IN MULTIPLE SCLEROSIS PATIENTS***

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***RODICA BALASA***

Head of the Neurology 1 Clinic, Emergency Clinical County Hospital of Mures, Romania

MS is a chronic neuroinflammatory and neurodegenerative disease of the central nervous system (CNS), being the leading cause of chronic neurological handicap in young adults.

MS is very heterogeny: pathophysiological, clinical courses and treatment response to different disease-modifying therapies (DMTs); makes treatment decisions very difficult. Among the 18 DMTs available, the correct choice for an individual patient

depends on the specific biological mechanism of CNS inflammation, which is compartmentalized. One of the mechanisms of action of DMTs is the dysregulation of already modified microRNAs. There will be discussed the known findings regarding the DMTs in MS studied effect on exosomal mRNAs. Exosomes (EXO) are a mode of intercellular communication described in pathological conditions such as MS. EXO, membrane-like vesicles with small diameter are secreted by numerous cell types, including cells from the CNS and lymphocytes. EXO can travel between different compartments of the body, cross complex membranes such as the BBB to deliver their content to a distant recipient. In MS, EXO are one of the answers for the interplay between the central and peripheral compartments. EXO contain different proteins, among which are non-coding RNAs such as microRNAs.

There will be presented the used method for determining and isolation of EXO from peripheral blood in MS treated patients.

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## ***POST-STROKE COGNITIVE DECLINE - CURRENT CONCEPTS AND TREATMENT APPROACHES***

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### ***NATAN M. BORNSTEIN***

Professor of Neurology, Tel-Aviv University, Neurology, Sackler Faculty of Medicine, Israel

Stroke is a major cause of long-term physical, cognitive, emotional and behavioral disability.

There is poor recognition of the emotional burden after stroke. Depression is abnormal and considered as "emotional distress". Post-stroke Depression (PSD) is the most frequent non-cognitive neuropsychiatric complication affecting up to a third of all ischemic stroke patients. PSD is associated with increased mortality, poorer functional recovery and lower quality of life. Despite its great clinical relevance the relationship between stroke, depression and cognitive impairment remains relatively unexplained and the awareness of. The potential mechanisms of PSD are either neuroanatomical caused by lesions in the frontal areas, or directly affecting neural circuits involving mood regulation, or as a result of psychological adjustment required by the disease. There is controversy regarding the appropriateness of diagnosing depression in the setting of an acute stroke. Geriatric Depression Scale (GDS) is the most widely used.

Regarding treatment there is insufficient randomized evidence to support the routine use of antidepressants for the prevention of depression or to improve recovery from stroke. The approaches to management should be multidisciplinary including nurses and allied health staff.

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## **COGNITIVE DEFICITS AFTER STROKE**

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### **MICHAEL BRAININ**

Immediate Past President - WSO and Emeritus Professor of Neurology and Chair,  
Department of Clinical Neurosciences and Preventive Medicine, Danube University,  
Krems, Austria

Disorders of cognition (neurocognitive disorders) following stroke occur between 7% in population-based studies of first-ever stroke patients and 41% in hospital-based studies which includes recurrent strokes. Milder forms of cognitive deterioration following stroke were found between 22% and 84% depending on definition, testing, and time of investigation. Incidence rates are 2-3% increasing annually at linear rates. Importantly, milder forms can also be quite disabling and hinder rehabilitation and reuptake of occupational and social roles. Probably all stroke patients are at risk of suffering from cognitive deterioration but some risk factors are more important than others such as location of stroke, initial stroke severity, previous strokes, level of pre-stroke cognition and presence of vascular risk factors. Genetic and inflammatory biomarkers are under investigation but observational data suggest that high levels of interleukins and C-reactive protein have predictive value. Whereas an overlap with Alzheimer's pathology is frequent, cognitive and brain reserve can protect against cognitive deterioration and depends on education, leisure activities and social interactions. Moreover, diagnosis of post-stroke cognitive deterioration (mild neurocognitive disorder) varies according to test instruments used. Usually, a short bedside test is used and an extended neuropsychological test battery is applied later. Variations also result from speech disturbances, emotional disorders such as depression. CT and MRI confirm the diagnosis and provide additional information on location and size of infarct, previous infarcts, white matter lesions, microbleeds, and brain atrophy.

Treatment is focused on the arterial lesions and prevention of stroke, whereas management focuses on treatment of cognitive impairment. A number of new treatment approaches are being tested. There is solid evidence that treatment of hypertension especially when started in mid-life effectively prevents post-stroke cognitive deficits. Also some evidence points to cognitive training and modification of other modifiable risk factors. Life-style modifications have been shown to be

beneficial in preventing cognitive decline in persons at risk of dementia. While a general treatment recommendation of cognitive decline following stroke (especially small vessel disease) is still lacking, some ongoing exploratory drug trials and case series have shown promising effects in stroke patients.

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## ***EXOSOMES ENHANCE THE COUPLING OF NEUROGENESIS AND ANGIOGENESIS BY TRANSFER OF *microRNA****

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**MICHAEL CHOPP<sup>1</sup>**

**XIANSHUANG LIU<sup>2</sup>**

1. Vice Chairman for Research of the Department of Neurology, Scientific Director Henry Ford Neuroscience Institute, Detroit, MI, USA

2. Associate scientist at Department of Neurology Henry Ford Hospital, Detroit, MI, USA

Introduction: Molecular mechanisms underlying coupling of angiogenesis and neurogenesis remain unknown. We tested the hypothesis that exosomes mediate coupling of stroke-induced angiogenesis and neurogenesis by transferring exosomal cargo miRNAs between ischemic cerebral endothelial cells (CECs) and neural stem cells (NSCs).

Methods and Results: Cell-type specific exosomes were purified from conditional media of cultured CECs and NSCs harvested from non-ischemic and ischemic rats, respectively. Exosome markers and size distribution were verified with Western blot and transmission electron microscopy, respectively. Using an advanced Cre-Loxp system, we found CEC-exosomes carrying Cre recombinase were taken up by recipient NSCs to induce genome recombination. We then tested if exosomal miRNAs mediated cell-to-cell interplay. First, using miRNA array, we identified that miR-146a and miR-125a were the most upregulated miRNAs in ischemic CECs-exosomes. Incubation of non-ischemic NSCs with ischemic CECs-exosomes substantially increased these two miRNA levels in recipient NSCs, which led to downregulation of their target genes, IRAK1, TRAF6 as well as BAK1 and KLF13, consequently leading to an increase in Tuj1+ and NG2+ cells ( $p < 0.05$ ). These data suggest that CEC-exosomes transfer miRNAs to NSCs and thereby promote neuronal differentiation. Moreover, stroke increased miR-106b and miR-125b in NSCs-exosomes. Incubation of non-ischemic CECs with ischemic NSC-exosomes elevated both miRNAs in CECs, which resulted in a significant increase in capillary tube formation, suggesting that ischemic NSC-exosomes promote angiogenesis. The effect of ischemic CEC-exosomes and ischemic NSC-exosomes on differentiation of NCSs and CECs, respectively, is specific, because ischemic CEC- and NSC-exosomes derived from cells with knockdown of Rab27, a protein that

regulates miRNA sorting into exosomes, completely abolished elevation of listed miRNAs in recipient cells.

Conclusion: Our data demonstrate that exosomes derived from ischemic CECs and NSCs mediate NSC and CEC function, respectively, by transferring their cargo miRNAs, suggesting that these exosomes can be used as a therapy for amplifying angiogenesis and neurogenesis in ischemic brain.

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## **MANAGEMENT OF TREATMENT-RESISTANT DEPRESSION IN ELDERLY**

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### **ADELA CIOBANU**

Habilitated Professor of Psychiatry

“Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania

75-year-old female patient, with a known psychiatric history, with numerous psychiatric hospitalizations, diagnosed with recurrent depressive disorder according to DSM-4-TR, is admitted to the psychiatric clinic for antidepressant-treatment resistant symptoms.

The patient complied with the treatment and until the time of admission presented six hospitalizations in Clinical Hospital of Psychiatry Prof. dr. Al. Obregia for depressive symptoms with: sadness, anhedonia, diffuse anxiety with paroxysmal exacerbations, insomnia, low tolerance to frustration, decreased appetite with weight loss .

As a personal pathological history we can mention the diagnosis of ischemic heart disease and chronic gastritis. The symptoms listed above began after the death of her husband, and the fact that the patient lived alone aggravated the course of the disease.

During previous hospitalizations, but also as an outpatient treatment, more than three treatment courses with antidepressants of different classes were tried (Trazodone cp 150 mg / day, Mirtazapine 30 mg / day, Sertraline 100 mg / day) with no remission. At admission, the psychological examination showed a decrease in scores of MMSE = 24 and the clock test - 8/10 and an increase of HAMD-17 items score = 22. At treatment with Mirtazapine 30 mg / day we added Cerebrolysin 10 ml / day as in infusion - for 10 days.

The HAMD-17 item items on admission = 22 indicated a severe depressive episode without psychotic elements. Under the aforementioned treatment, the depression

was progressively improved and after 3 weeks, we obtained a total remission with HAMD-17 items score = 6, MMSE score = 28.

In conclusion, in the case of mild cognitive impairment associated with treatment-resistant depression, the addition of Cerebrolysin in antidepressant treatment is absolutely necessary, obtaining the remission of treatment-resistant depression with cognitive improvement.

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## ***INTERESTING CASES FROM THE DAILY PRACTICE***

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### ***LASZLO CSIBA***

Professor of the Department of Neurology, Debrecen University, Debrecen, Hungary

The diseases "do not learn neurology".

The symptoms, the onset, the outcome, that we can find in the textbooks can be different from patient to patient. Sometimes unusual complications or rare side effects happen in our patients, not described by the textbook. Therefore, we have to pay special attention to the patients with unusual symptoms or disease course, especially by ICU patients.

The guidelines are important but we have to ready also to perform unusual therapeutic intervention. The following cases will be presented: MS with rare complication, discrepancy between imaging finding and clinical condition, seemingly hopeless outcome and unusual intervention by a young stroke patient.

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## ***STIMULATION (NEUROMODULATION) FOR POST STROKE RECOVERY***

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### ***JESSE DAWSON***

Professor of Stroke Medicine Institute of Cardiovascular and Medical Sciences, Glasgow, UK

Randomised controlled trials of vagus nerve stimulation (VNS) paired with rehabilitation, transcranial magnetic stimulation (TMS), transcranial direct current stimulation (tDCS), pharyngeal electrical stimulation and sphenopalatine ganglion stimulation in people with stroke have reported in recent years. The use of VNS paired with rehabilitation is approved by the US Food and Drug Administration

for treatment of chronic upper limb deficits after ischaemic stroke. So far, trials of TMS and tDCS based approaches in stroke rehabilitation have not definitively demonstrated improved clinical outcomes, although there is some evidence for an improvement in upper limb impairment and experimental evidence of effects on plasticity and learning. Subgroup analysis of a neutral trial of sphenopalatine ganglion stimulation suggests this may improve functional outcome in people with cortical ischaemic stroke who do not receive thrombolytic therapy.

This talk will discuss these promising developments in neuromodulation technologies, highlighting areas for future study and how these techniques could be incorporated into clinical practice.

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## ***THE EFFICACY OF NEUROTROPHIC FACTORS IN NEUROCOGNITIVE DISORDER***

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### ***PETRU ROMEO DOBRIN***

Associate Professor of Psychiatry, "Grigore T. Popa" University of Medicine and Pharmacy, Head of Clinical Psychiatry IX, "Socola" Institute of Psychiatry, Iasi, Romania

Introduction: Dementia manifests as a progressive cognitive decline, including memory, thinking and social impairment that interfere with a person's daily routine. Dementia rates increase with age, making it a more regular occurrence among our aging population.

Material and methods: We present the case of a 65-year-old male, with a psychiatric emergency admission in the "Socola" Institute of Psychiatry of Iasi, who developed psychomotor restlessness, irritability, irascibility, physical and verbal aggressive behavior towards himself and others, spatial and temporal disorientation, mnesical and vigilance deficits, executive dysfunction and apathy.

Results: The patient had a family history of psychiatric disorders (Alzheimer's disease and mixed dementia) and was diagnosed in 2014 with anxiety-depressive disorder, treated with a selective serotonin reuptake inhibitor (Sertraline). His follow-ups revealed declining cognitive functions (aggravated by a transient ischemic attack), affecting his personal and professional life, with a MMSE initial score of 14, going up to 17 after his latest admission. The patient was evaluated by a multidisciplinary team (neurologist, psychiatrist, psychologist, radiologist) and based on the results and his genetic predisposition, he was diagnosed with Mixed dementia (Alzheimer and vascular). He was given a regimen of therapy that included Donepezil (10mg/day), Memantine (10mgx2/day), Cerebrolysin

(10ml/day), Risperidone (up to 2ml/day) and Trazodone (50mg/day). The patient's condition improved under the correct treatment, slowing down his psychocognitive dysfunction and the intensity of his behavioral disorder.

Conclusions: In recent decades, significant progress has been made in our understanding of dementia. Dementia presents laboratory, clinical, societal and economic challenges, while dementia-causing diseases overlap in their pathophysiology and phenotypes. Management should include both non-pharmacologic approaches with cognitive, physical, and social activities, and pharmacologic approaches, although efficacy of treatments remains limited.

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***THE EFFICACY OF NEUROTROPHIC FACTORS IN A CASE OF MINOR COGNITIVE DISORDER COMORBID WITH BIPOLAR I DISORDER AND SEQUELAE OF CEREBRAL INFARCTIONS***

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Despite the lower prevalence, the prognosis of bipolar disorder is poorer than that of unipolar depression due to its more negative impact on the patient's general functionality resulting from the younger age onset of the disorder, sometimes during adolescence, as well as increased comorbidity with other mental illnesses. Hence, according to the literature, the association of bipolar disorder with anxiety and substance use are challenges that clinical practitioner often face. Excessive "Unhealthy behaviors" such as smoking, alcohol, and other psychoactive substances use lead to a shorter life expectancy than that of the general population to which it belongs. Some studies have shown that bipolar disorder may even have certain genetic vulnerabilities common to other chronic medical conditions, of which cardiovascular disease is the most frequent.

Therefore, comorbidity with cerebrovascular pathology could also be considered a distant effect. In this presentation, we would like to report a case of bipolar affective disorder comorbid with sequelae cerebral infarction and secondary minor cognitive disorder, which in addition to specific psychiatric treatment, also benefited from parenteral treatment with neurotrophic factors.



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## ***AUTONOMIC DYSFUNCTION IN PARKINSON'S DISEASE***

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Parkinson's disease (PD) has a wide variety of non-motor symptoms that range from neuropsychiatric and autonomic dysfunction to sleep disturbances and cognitive impairment. Among them, autonomic nervous system dysfunction occurs frequently in patients with PD, with an estimated prevalence of 30-40%, severely affecting the quality of life, especially in advanced stages.

The spectrum of dysautonomic symptoms include gastrointestinal dysfunction (GI), urinary dysfunction, sexual dysfunction, cardiovascular and thermoregulatory dysfunction. Early development of autonomic dysfunction is negatively affecting disease course, indicated by a more rapid progression of disease, and survival, translated in shorter survival time in PD patients. Autonomic dysfunction is common in early stages of PD and increases in severity as the disease advances, this being demonstrated by the abnormal proportion of each autonomic function test. Ocular disturbances are associated with PD and spontaneous changes in pupil diameter is associated with daytime somnolence, as well as with disease severity. GI disturbances had a significantly higher incidence in PD patients, dry mouth, drooling, dysphagia, constipation and defecatory dysfunction were significantly more prevalent. One of the most common disturbance is abnormal salivation, and defecatory dysfunction in advanced disease. Dysphagia is a problematic and sometimes dangerous feature of PD and can occur in all phases of swallowing, including oral phase, pharyngeal phase, and esophageal phase. Considering all the complications of dysphagia, treatment management should take into account multiple strategies, such as dietary, behavioral and pharmacological.

One third of Parkinson disease patients can be found also with thermoregulatory dysfunction, manifested as peripheral neuropathy, affecting blood vessel, sweat glands and erector pili muscles, half of them frequently being diagnosed with hyperhidrosis.

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## ***NEUROLOGY AND NEUROSCIENCES IN MIGRANTS AND REFUGEES***

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After the recent increased number of immigrants and refugees in many world countries, a new area of interest in research has been developed, investigating the immigrants and refugees needs and capacity to access to health services in hosting countries, their main clinical data, the possibilities of different phenotypic presentation of the diseases, the effect of the migration on some pathological conditions, their genetic background. Clinical Neurology and Neurosciences have been very much involved , and this book is an example. Here we summarize the most relevant data in this topic, reported in a recent book edited by prof. Mustapha El Alaoui-Faris from Marocco, myself and Wolfgang Grisold by Springer, on behalf of the WFN Specialist Group on Neurology of Migrants, showing that the immigration and refugees research may be a promising area for Neurology and Neurosciences, in clinical as well in basic studies, offering also interesting contributions to politicians in order to improve the quality of life of immigrants and refugees and in the same time to improve the knowledge of brain functions and dysfunctions.

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## ***MANAGEMENT OF SPONTANEOUS INTRACEREBRAL HAEMORRHAGE: IS THERE ANY EVIDENCE?***

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TBA

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## **REPURPOSING NEUROPROTECTION (CYTO) AND RECOVERY ENHANCING DRUGS IN THE THROMBECTOMY ERA**

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The treatment of acute ischemic stroke has made substantial strides with the advent of reperfusion therapy induced by intravenous thrombolysis and intraarterial device-related thrombectomy. Treatments targeted at the cellular consequences of ischemia to preserve neurons and other cellular elements of brain tissue, i.e. neuroprotection have been shown to be beneficial in many past clinical trials. Neuroprotection should now be revisited in the era of highly effective reperfusion as an adjunctive treatment. New drugs targeted at multiple aspects of ischemic cascade induced by focal brain ischemia can be envisioned and older drugs may be worth reconsidering, if they already have evidence of robust neuroprotective effects in preclinical models and have demonstrated reasonable safety in prior clinical trials. Several development pathways for neuroprotection as an adjunct to reperfusion can be envisioned. Trials can be envisioned that will evaluate the possibility of slowing down infarct growth prior to thrombectomy or after thrombectomy to ameliorate the consequences of reperfusion injury. Patient selection will be a key element to improve the likelihood of success and advanced brain imaging will help to identify patients for inclusion in new clinical trials. The successful development of a neuroprotective drug will require careful planning and the performance of well-designed clinical trials.

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## **DEPRESSION AT THE BORDER OF COGNITIVE IMPAIRMENT – THERAPEUTIC APPROACH. CASE REPORT**

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We hereby present the case of a 60-year-old patient with a history of addiction to morphine derivatives which were administered for refractory radiculopathy. The patient has a history for depression in treatment with two antidepressants with a favorable evolution, an endocrinological history with severe thyrotoxic episodes currently balanced under endocrinological treatment. The patient developed a couple weeks ago a depressive episode with marked anxiety, behavioral and mood imbalance and worsening of somatic symptoms consisting of dizziness, postural instability, worsening of the predominantly left thoraco-lumbar and sciatic pain that

masks the onset of a cognitive impairment. Clinical and paraclinical investigations and monitoring, as well as psychological tests performed in dynamics highlights the new psychiatric condition, exclude endocrinological relapse, with the aim to improve the antidepressant treatment and to associate therapy with neurotrophic factors, which led to fast and sustained recovery of both cognitive-affective and behavioral skills.

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## **NEUROBORELIOSIS**

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Lyme Borreliosis is an antropozoonosis caused by several genospecies of *Borrelia burgdorferi sensu lato* (B.b.s.l.). These spirochetes are transmitted by *Ixodes ricinus* ticks and cause a large array of clinical syndroms in the human species, also known as Lyme disease.

The etiologic agent of Lyme borreliosis is transmitted to humans during the feeding process of the infected tick. The division of neuroborreliosis into stages in conventional and used for the general description of the disease. Meningoradiculitis, Guillain-Barre syndrome, cranial neuropathy, meningitis, encephalitis, transverse myelitis are attributed to the early disseminated stage. Late neuroborreliosis is dominated by progressive encephalomyelitis, polyneuropathy, and late encephalopathy.

At the current stage, two groups of laboratory methods for detecting borreliosis infection are known: direct (identification of the pathogen or its components) and indirect (specific immune response). In neuroborreliosis, the suspected clinical diagnosis can most often be confirmed with certainty through the CSF examination. CSF demonstrates lymphocytic pleocytosis with numerous plasma cells and activated lymphocytes, such as increased CSF/serum albumin ratio or increased total protein in CSF. In the acute forms, the intrathecal synthesis of IgM is highlighted, and in the chronic forms - IgG and IgA.

The choice of the antibiotic for the treatment of neuroborreliosis is carried out, taking into account its ability to penetrate the affected tissues and reach the effective concentrations. Effective oral medications for treating patients with erythema migrans include amoxicillin, penicillin, tetracycline, cefuroxime axetil. Doxycycline has replaced tetracycline due to twice-daily dosing, CNS penetration,

gastrointestinal absorption, and better tolerability.

Thus, the analysis of data from the literature leads us to the following conclusions:

- Lyme neuroborreliosis is a treatable disease;
- the success of the treatment depends on the stage and duration of the disease;
- oral administration of antibiotics is preferable in early NB, and injectable forms are more frequently useful in late NB.

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## ***EDUCATIONAL ACTIVITIES OF THE WORLD FEDERATION OF NEUROLOGY***

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***WOLFGANG GRISOLD***

President WFN

TBA

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## ***NONCONVULSIVE STATUS EPILEPTICUS - A COMPLEX AND OFTEN AN UNDER-RECOGNISED ENTITY***

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Background: Status epilepticus (SE) is "a condition resulting either from the failure of the mechanisms responsible for seizure termination or from the initiation of mechanisms, which lead to abnormally, prolonged seizures."

SE according to clinical presentation is classified on the basis of the presence of prominent motor symptoms and the degree of impaired consciousness. Within the frame of the diagnostic classification system endorsed by the International League Against Epilepsy (ILAE), SE without prominent motor symptoms is termed nonconvulsive SE (NCSE).

NCSE comprises a group of syndromes that display a great diversity regarding response to anticonvulsants ranging from virtually self-limiting variants to entirely refractory and super-refractory forms. NCSE is certainly an underdiagnosed pathology with chameleonic presentation. It represent a persistent change in the

level of consciousness, behavior, autonomic function, and sensorium associated with continuous epileptiform electroencephalographic (EEG) changes, but without major motor signs. It lacks in prominent motor characteristic, but may have subtle motor signs (twitching, blinking). NCSE occur in 8-37% of the ICU patients.

The diagnosis and treatment are not straightforward and depend on clinical presentation, etiology, EEG findings. However, it is not always clear how electrographic activity contributes to clinical impairment or to ongoing neuronal injury. NCSE can lead to progressive neuronal damage and psychomotor retardation. However, recent advances allow the use of EEG to record the dynamic and evolving patterns. EEG criteria for NCSE are- definite electrographic seizure activity with typical evolution; periodical epileptiform discharges (EDs) or rhythmic discharge with clinical sign; rhythmic discharge with either clinical or electrographic response to treatment. More difficult is when there are EDs on EEG but they do not achieve the diagnostic criteria, we must look for: subtle motor signs time-related with EDs; spatiotemporal evolution; EEG and clinical improvement with anti-epileptics.

Conclusions: Thus, NCSE diagnosis requires high index of suspicion in patients with risk factors and suggestive clinical features. NCSE is a medical emergency that needs to be detected at the bedside by EEG. Once diagnosed, treatment should be prompt to halt neuronal injury and prevent cognitive impairment. Availability of continuous EEG is lacking in many centers and diagnosis is delayed. Early recognition and treatment are essential to optimize therapeutic response and to prevent neurological and systemic consequences. Overdiagnosis and aggressive treatment can contribute to high morbidity and mortality. The aetiology and clinical form of NCSE are strong predictors for the overall prognosis.

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## ***POST STROKE COGNITIVE IMPAIRMENT AND DEMENTIA - TREATMENT CHALLENGES***

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Cognitive dysfunction frequently occurs following stroke and is an important cause of stroke-related morbidity. Post-stroke cognitive impairment (PSCI) contributes substantially to the burden of stroke worldwide. Incidence and prevalence of post-stroke cognitive impairment are being extensively investigated over the last years; however, the results of the studies vary for the difference between the countries,

diagnostic criteria, time elapsed from stroke and other methodological issues. Three months after stroke the majority of studies reveal cognitive impairment in 30–60% of stroke survivors, though the range is from 17 to 92%. With changing population demographics, increased life expectancy and improved survival from stroke, the absolute numbers of patients with PSCI will increase.

The growing health, social and economic burden of PSCI is driving the demand for translational research and clinical studies that evaluate the benefits and risks of pharmacological and nonpharmacological therapies

In terms of risk factors, biomarkers and mechanisms, there is an extensive overlap between vascular and degenerative mechanisms, when the tissue damage produced by vascular factors aggravates the damage produced by neurodegeneration and vice versa. These common pathways include excitotoxicity, neuroinflammation, oxidative stress, apoptosis, proteinopathies and neurotrophic alterations, leading to neurovascular damage and degeneration. A number of the cellular and molecular processes involved in dysfunction of neuro-vascular unit have been extensively studied over the last decade in terms of their role in the mechanisms of post-stroke cognitive decline. Some important lessons could be learnt from disease modification and prevention trials in the neighboring field of Alzheimer disease (AD). Assuming that the  $\beta$ -amyloid ( $A\beta$ ) pathology is causally related to dementia in AD, anti-amyloid treatments (e.g.,  $\gamma$ -secretase inhibitors, monoclonal antibodies) have been considered as disease-modifying agents par excellence, although a close relationship between amyloid and cognition has not been well established. Anti- $A\beta$  immune therapy is still being tried in mild to moderate AD.  $A\beta$  is therefore still considered by some to be the right target, but the dementia stage of the disease may be beyond the window of opportunity.

The multifactorial pathogenesis of PSCI and VCI needs to consider drug combinations or multimodal agents to change the course of the disease, as well as the search of selective ligands targeting distinctive cellular or molecular pathways. Beyond pharmacological agents, non-pharmacological approaches might also be included in this scenario. One of the promising strategies of the modifying therapies has been associated with the use of neurotrophic factors. There is an increasing evidence that alterations in the brain neurotrophic support and in particular BDNF and NGF expression and signaling might contribute to neurodegeneration. The hypothesis was suggested on the principal involvement of stress response mechanisms (including interaction of released glucocorticoids with hippocampal receptors and subsequent inflammatory events) in the remote hippocampal damage underlying delayed dementia and depression induced by focal brain damage (e.g. post-stroke and post-traumatic). The translational validity of this hypothesis comprising new approaches in preventing post-stroke and post-trauma depression and dementia

can be confirmed in experimental and clinical studies.

The best way to prevent PSCI is to prevent stroke recurrence and stroke severity through optimal acute treatment and intensive secondary prevention. Better understanding of the risk factors and estimation of the risk scores for post-stroke cognitive impairment are important for development and assessment of preventive strategies (lifestyle modification, neuroprotective agents, cognitive rehabilitation, other interventions). The notion of disease modification should be explored, with the integration of pharmacological and non-pharmacological multimodal approaches, with pleiotropic effects targeting endothelial and brain–blood barrier dysfunction, neuronal death and axonal loss, cerebral plasticity and compensatory mechanisms; degenerative-related protein misfolding and other interventions.

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## **DIABETIC AUTONOMIC NEUROPATHY**

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## **NEUROREHABILITATION: FUTURE PERSPECTIVES**

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**VOLKER HOEMBERG**

President Elect, WFNR

Within the last decades the field of neurorehabilitation has made great progress . This was primarily driven by the use of noninvasive technologies especially neuro-imaging in understanding principles of brain plasticity and the systematic use of evidence based principles. Although the classical “Cochrainian” way of thinking probably is not the best epistemology to create new horizons ,it has however helped to conceive and root neurorehabilitation as applied neuroscience. We are faced with an increasing need for rehab services worldwide: The WHO in their latest survey last autumn estimate that 1 out of 5 people in the world need some sort of rehabilitation. This is probably even increased by the sequelae of the Covid pandemic . Hence the need for intensive neurorehabilitation to combat resulting impairment and handicap is increasing.

Lets look at what has been achieved and where are the gaps to close:

Dramatic progress has been made in the application of evidence based medical principles and the number of well designed randomized controlled trials in the field is increasing. Nevertheless there is a remaining epistemological problem in how far the rationales of EBM originally designed for pharmaceutical studies are really suited as a source to find of best evidence :Due to heterogeneity of populations and comparably small sample sizes as well as the difficulties with interpreting meta-analyses the EBM rationale may sometimes be misleading.

Nevertheless a reasonable approach to design optimal treatment strategies is to follow elementary rules derived from behavioural- and neuro -sciences concerning neuroplasticity and e.g. learning mechanisms. This has resulted in the invention of better scientifically founded procedures for neurological treatment of motor, cognitive and language problems. A good example is the very successful application of the principle of “forced use” and avoidance of “learned non use” in movement therapy. This concept now also spreads to motor fields as language, cognitive and perceptual rehabilitation.

Furthermore the use of intelligent mechanical training devices (often loosely called “robots” ) has opened new therapeutic windows especially in the early stage of treatment in severely impaired patients. The amatorium of other possible “high-tech” options such as brain-computer interfaces or VR an AR technology is appealing and certainly opening new perspectives.

On the other hand pharmaceutical concepts for neuroprotection have more or less failed so far possibly due to the selection of mostly monomodal drugs not properly addressing the complexity of the brain's endogenous defense mechanisms at an early stage after injury. There is fortunately a growing number of neuromodulatory techniques such as peripheral nerve stimulation, non-invasive brain stimulation and also pharmaceutical interventions with antidepressants to facilitate brain recovery within a limited time-window after stroke and TBI with the aim to reduce impairment.

Possible additional candidates for a true „impairment“ oriented treatment approach are neuromodulatory techniques such as peripheral neuromuscular and/ or sensory stimulation ( eg. whole hand subliminal „mesh-glove“ stimulation )and more and more also non invasive brain stimulation techniques such as repetitive transcranial magnetic stimulation and transcranial DC stimulation. Also the use of non fatiguable robotic devices to enable a high intensity massed movement treatment appear promising

So far only three major strategies have been shown to help decrease impairment in the subacute stage e.g. after stroke: The forced use or constraint induced movement therapy approach has been proven to be effective in the multicenter prospective EXCITE trial ( Wolf et al 2008) ). Also the use of antidepressant agents was shown to be effective in the FLAME trial (Chollet et al 2011 ). Very recently we demonstrated in the CARS trial (Muresanu et al 2016) for the first time after decades of frustrane attempts to achieve some sort of neuroprotective and/or neurorestorative effects that a multimodal drug (Cerebrolysin) can improve impairment after stroke .

As treatment intensity is likely to be the key element for impairment reduction we certainly have to find clever and affordable ways: to increase the daily treatment time of our patients. To day even during inpatient rehabilitation treatment times hardly exceed three hours a day i.e. that we use only a small percentage of waking hours leaving long “idling” time not filled by any treatment. In this sense we have to “reinvent” neurorehabilitation within this sensitive post injury period to combat impairment with high frequency treatments combined with neuromodulatory techniques (robot use, peripheral and central stimulation, pharmaceuticals).

We have to rethink how our rehabilitation environments should look like and can be “enriched” and how we can generate a high level of motivation and fun in patients to let them successfully participate in such high frequency treatments. This means that we have to design clever and economically feasible, approaches to increase the net number of therapy or activity hours per day by creating true „ enriched environments“ for severely impaired patients . They should enable 6-8 hours of daytime treatment to avoid leaving our patients „inactive and alone“ (Bernhardt et

al 2004) in future. The field of „motivation“ has been neglected in neurorehab and we certainly have to look deeper in how we can increase patients' motivation to allow for the necessary high intensity treatments.

Furthermore prognostic criteria have to be worked out to enable decisions when to switch from impairment oriented (massed practice) to compensatory (task specific learning) strategies and we also have to improve the availability and the use of genetic biomarkers to marshal individual truly “custom-tailored” rehab approaches.

All of these difficulties can certainly be solved in the rich part of the world . On the other hand we have to recognize that still millions of people in the world do not have access to decent rehabilitation knowledge and procedures. If there is anything good of what we have learned during the Covid-pandemic it is a grater ease to deal with digital communication strategies. This opens new chances for teaching and consulting also outside the classical hospital based structures with availability of knowledge on an easily accessible basis to create community based and care-giver and relative supported neurorehabilitation approaches

My claims for the future :

--Use digital low threshold strategies to spread knowledge and procedures  
--Concentrate on useful and evidence- based “low-tech” options for most of the world population --Critically use and develop further “high-tech” options --Look deeper in the secrets of human motivation --Sharpen the view on which future clinical trials we really need --Increase understanding of individual factors ( genetic , epigenetic, cultural) to marshal treatments --Develop “teleological” drugs to foster neural recovery and reorganisation

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## ***CAN WE DEVELOP NON-DOPAMINERGIC APPROACHES TO THE TREATMENT OF PARKINSON'S DISEASE?***

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The treatment of the motor components of Parkinson's disease (PD) is dominated by the effectiveness of dopaminergic medications but major unmet need still exists in treating both motor and non-motor components of the illness. In particular, there are non-dopaminergic, non-motor components of PD that clearly require alternative therapeutic approaches. Some motor components, such as treatment resistant 'OFF' periods also appear to be non-dopaminergic in nature. Because of the widespread pathological and biochemical changes that occur in PD, there are numerous potential non-dopaminergic pharmacological targets and these have been explored in experimental models of the illness with some degree of success.

However, there has been no major breakthrough so far to produce a clear new direction for the future treatment of PD akin to the revolution provided by dopaminergic medications. There are some exceptions, such as the introduction of the 5-HT<sub>2A</sub> inverse agonist pimavanserin for the treatment of psychosis in PD.

While there is considerable activity in early clinical trials in examining non-dopaminergic approaches to treating PD, most of the current studies focus on aspects of motor symptoms – such as 'wearing off' and dyskinesia – rather than the greater unmet need in the non-motor area. There is also a problem in translation from preclinical models of PD to efficacy in the clinic and this may be a reflection of the limited pathology and biochemistry of the classical models of nigro-striatal damage used to mimic PD in laboratory investigations. It may also be the case that the general approach of developing molecules that selectively target individual neuronal systems is not the right one for a multi-symptom, multi-

pathology, multi-biochemical change disorder such as PD. Rather multimodal drugs with a rich pharmacology could provide more effective control of motor and non-motor symptoms in the same molecule. Combining MAO-B inhibition with sodium channel blocking activity that inhibits glutamate release in to safinamide may be one such example. Zonisamide which has been repurposed for PD is another example combing dopaminergic and non-dopaminergic drug actions. It is also worth remembering that while amantadine is described as a weak NMDA receptor antagonist, it also has a range of other pharmacological actions that may contribute to its overall clinical efficacy.

If the treatment of PD is to advance from the focus on some aspects of motor symptoms and to address the current unmet needs, there needs to be a change in the philosophy of drug development for this disorder. The non-dopaminergic components of PD need greater emphasis and it may be that a 'dirty drug' approach to this complex disorder will be the way forward.

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## ***AN INTEGRATED APPROACH ON THE DIAGNOSIS OF CEREBRAL VEINS AND DURAL SINUSES THROMBOSIS***

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(1) Objectives: This review aims to discuss multiple aspects of cerebral venous thrombosis (CVT), including epidemiology, etiology, pathophysiology, and clinical presentation. Different neuroimaging methods for diagnosis of CVT, such as computer tomography CT/CT Venography (CTV), and Magnetic Resonance Imaging (MRI)/MR Venography (MRV) will be presented.

(2) Methods: Different studies concerning risk factors, clinical picture, and imaging signs of patients with CVT were examined.

(3) Results: At least one risk factor can be identified in 85% of CVT cases. Searching for a thrombophilic state should be realized for patients with CVT who present a high pretest probability of severe thrombophilia. Two pathophysiological mechanisms contribute to their highly variable clinical presentation: augmentation

of venular and capillary pressure, and diminution of cerebrospinal fluid absorption. The clinical spectrum of CVT is frequently non-specific and presents a high level of clinical suspicion. Four major syndromes have been described: isolated intracranial hypertension, seizures, focal neurological abnormalities, and encephalopathy. Cavernous sinus thrombosis is the single CVT that presents a characteristic clinical syndrome. Non-enhanced CT (NECT) of the Head is the most frequently performed imaging study in the emergency department. Features of CVT on NECT can be divided into direct signs (demonstration of dense venous clot within a cerebral vein or a cerebral venous sinus), and more frequently indirect signs (such as cerebral edema, or cerebral venous infarct). CVT diagnosis is confirmed with CTV, directly detecting the venous clot as a filling defect, or MRI/MRV, which also realizes a better description of parenchymal abnormalities.

(4) Conclusions: CVT is a relatively rare disorder in the general population and is frequently misdiagnosed upon initial examination. The knowledge of wide clinical aspects and imaging signs will be essential in providing a timely diagnosis.

Keywords:

cerebral veins and dural sinuses thrombosis (CVT); thrombophilia; headache; native and contrast-enhanced Head Computed Tomography (CT); Magnetic Resonance Imaging (MRI) of the Head; Magnetic Resonance (MR) Venography.

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## ***IS ALPHA SYNUCLEIN A POTENTIAL TARGET IN PD?***

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## **WILSON DISEASE - A CONSTELLATION OF PHENOTYPES**

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### **VITALIE LISNIC**

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Wilson disease (WD) is one of rare diseases whose evolution could be modified by treatment. First description was made by Kinnear Wilson in Brain, 1912. It is an autosomal recessive disorder, caused by ATP7B mutation on chromosome 13. The prevalence of the disease is one case per 7,000 inhabitants. The phenotypic variability of WD is considerable and its onset can be heterogeneous.

There are no patients with WD that have the same clinical picture. The age of onset is usually between 10 and 20 years. Clinical manifestations of WD are extraordinarily diverse, with wide variation in hepatic abnormalities and an inconsistent relationship between severity of liver disease and the classical neurological disturbances. Hepatic manifestations are usually the first clinical presentation with slowly progressive hepatic failure. The main neurological manifestations are movement disorders, bulbar symptoms and other neurologic manifestations that can appear in different combinations. Tremor, dystonia and Parkinsonism form the core movement disorders. Tremor is the first clinical manifestation in almost half of the patients. The presentation is different from case to case: proximal, distal, at rest, with posture and with action. The classical one is proximal, rubral so called "wing beating" Dystonia could be focal, segmental or generalized. Manifestations typical for Parkinsonism develop in 40%, cerebellar dysfunction in 30% of patients. Psychiatric manifestations are observed in 30 – 40% patients from mild changes to psychosis.

The diagnosis of WD is supported by detection of the Kayser-Fleischer ring and sunflower cataract. The laboratory findings include increased free copper and decreased ceruloplasmin in the serum, as well as increased urine copper output. According to Leipzig diagnostic criteria the mentioned changes are sufficient WD diagnosis to be established. Increase the accuracy of the diagnosis measurement of liver copper content and detection of the disease causing ATP7B mutation. The typical MRI findings are increased T2 sign at mesencephalon and pons levels, so called "giant panda" sign.

The prognosis of WD is fatal if the disease is not treated. Lifelong treatment is required even in asymptomatic persons. Copper chelators (D-penicillamine, trientine) are first line treatments. Zinc salts decrease copper absorption. In acute hepatic failure liver transplantation is considered. New treatment options are trientine tetrahydrochloride, tetrathiomolybdate ammonium. Future belongs to liver-targeted gene therapy.

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## **DIAGNOSTIC APPROACH IN NEUROPATHIES**

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### **TUDOR LUPESCU**

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Evaluating neuropathies is a demanding process in clinical practice. After excluding other sites of the disease and localizing the problem at the level of the peripheral nervous system, appreciation of some clinical characteristic at the presentation helps in identifying the neuropathy.

The main modalities that are affected – motor, sensory and autonomic symptoms should be evaluated first; then, the distribution of the symptoms and signs is described. Is it a focal, multifocal or generalized disease? Symmetric or asymmetric? Is the intensity of the manifestations more proximal, or more distal? Regarding the pathogenic mechanism, differentiation between primarily demyelinating or axonal neuropathies is important. And, naturally, identifying hereditary vs. acquired neuropathies is essential.

All these data, combined in patterns, lead to a diagnosis in most cases. Such a clinical case is described in the second part of the presentation.

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## **VASCULAR NEUROCOGNITIVE DISORDER - PRESENTATION OF A CLINICAL CASE WITH LANGUAGE DISTURBANCES**

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### **ADRIANA MIHAI**

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Introduction: Vascular neurocognitive disorder, known also as vascular dementia is second most common cause of neuro-cognitive disorders after Alzheimer disease. The prevalence of vascular dementia is 0.2%-13% in 65-70 years age group and 16% in persons 80 years and older (dsm v) It is common fact that within 3 months following a stroke 20-30% of patients are diagnosed with vascular dementia.

Clinical Case presentation of DARIA (name changed for this presentation):

A 69 years old, woman which was agitated, speaking in a strange language which neither her family or medical staff cannot understand. The woman seems that she didn't understand anything what the others said and became agitated because she



cannot communicate and she is not understood. The neurologist referred the case to psychiatry in emergency with presumptive diagnosis: Acute psychotic disorder. Patient is known with high blood pressure kept under control with pharmacologic treatment. Daria had a stroke, with partial motor deficit on right side, 2 years ago, when she was admitted in Neurology clinic, the motor deficit was rapidly recuperated. The family describe that 6 months after the stroke the patient complained by some memory impairment, and short period of 'being lost' as patient said, probably short period of time-spatial disorientation, emotional instability appeared in same period of time. She was able to cook and clean the house and live independently. This episode appeared suddenly in the same morning when she woke up, she spoke in a strange language, and became more and more agitated when she saw that nobody understands her. CT re-evaluation before the referral to psychiatry do not reveal any other change compare with previous evaluation which show multiple cerebral infarction. Psychologic evaluation was not possible to be done in emergency setting in first 4 days after admissions because the communication barriers. Diagnosis in emergency was Delirium associated with a vascular neurocognitive disorder.

Expected outcome of the treatment plan was to reduce agitation and improve the clarity of consciousness, improving the attention, orientation and self-awareness. Treatment plan included iv administration of 20ml of Cerebrolysin, 10 days in 250ml physiologic ser, haloperidol 1f/day – 3 days, zolpidem 10mg/day, clonazepam 1 tablet of 0.5mg in case of agitation – 2 days Evolution: After 3 days she start to understand German language and then English and we could communicate with her. The patient was aware about all events since admission, and explain to us that she spoke in Lithuanian, not being able to understand any other language. Psychologic evaluation: MMSE 22, QD 30%. Discussions: She was born in Lithuania from a German father and Lithuanian mother, the father died and the mother emigrate with her 3 years old daughter in UK, where she grew up. Her mother remarried with a Hungarian, from Romania, when she had 4-5 years old and after 12 years of marriage they moved in Romania where her mother died from a lung cancer and she lived with step-father and his family. She never spoke Lithuanian since she was child.

Differential diagnosis will be discussed and different language disturbances which could appear in dementia.

Conclusions: The clinical case is complex and need attention, patience, complete collection of information from doctors, patient and relatives, the diagnosis could be changed gradually in concordance with new information. The treatment in psychiatry is symptomatic and efficient. Each case could be a useful source of information about the brain functioning.

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## ***SEMIOLOGY OF EPILEPTIC SEIZURES - THE NEW GLOSSARY OF TERMS***

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***IOANA MINDRUTA***

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The terminology in use to describe the clinical symptoms and signs of epileptic seizures is periodically revised according with the increasing knowledge rising especially from intracranial recordings for pre-surgical workup. Ictal semiology, including motor elementary and complex, somatosensory, autonomic symptoms and cognitive-emotional manifestations, and postictal potential deficits are explained and defined in the new glossary of terms recently published in the Epileptic Disorders educational journal. The use of Stereotactic intracerebral EEG (SEEG) recordings made possible to describe a clinical pattern highly suggestive for the cerebral structures involved in generation and propagation of epileptic seizures. The presentation will be illustrated with clinical cases that have been explored by means of intracranial electrodes in the National Program for drug resistant epilepsy at the University Hospital of Bucharest.

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## ***MICROCIRCULATION AND STROKE***

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TBA

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## ***IS NEUROREHABILITATION USEFUL IN PARKINSON'S DISEASE ?***

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## ***ADVANCES AND UPDATES IN NEURORECOVERY AFTER STROKE – NEW EAN-EFNR GUIDELINE***

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## ***MILD COGNITIVE IMPAIRMENT IN A PATIENT WITH POLYMORPHIC SYMPTOMS***

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Background: Mild cognitive disorder (MCI) is a nosographic entity often encountered in clinical settings and in the psychiatric practice, but the lines of therapeutic approach are less studied, especially since most cases involve comorbidities.

MCI, first fully characterized in elderlies by Petersen in 1997, is redefined in DSM-5 (the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders) as Mild Neurocognitive Disorder (NCD) and includes acquired cognitive disorders of all age groups, being anchored on four criteria (cognitive changes, functional activities, and exclusion of delirium and competing mental disorders) and two specifiers (the presumed etiologies of mild NCD and the presence or absence of behavioral problems).

Case presentation: We present the case of a 68-year-old patient, with a history of alcohol in distant past only, who insidiously installed affective depressive symptoms, as well as cognitive symptoms. Clinical picture also includes

somatoform and functional neurologic symptoms. After several therapeutic trials involving psychopharmacological regimens for depression, anxiety, and functional symptoms, only modest therapeutic success was reported. Nevertheless, the symptoms were finally controlled under treatment dedicated to the organic substrate, in this case neurotrophic factors. In evolution, the patient had two more similar hospitalizations in which, using the experience from the first hospitalization, the approach was per primam with medication of this type. At both new hospital admissions, the evolution was quickly favorable. At all hospitalizations, placebo-type expectations were excluded. Nootropic medication among hospital admissions has had limited success.

Discussions: Although MCI is considered to be the term for individuals who fall between the cognitive changes of aging and early dementia, symptoms of this type are common in clinical practice. Some of these symptoms mimic cognitive symptoms of depression or anxiety or can be interpreted as functional symptoms.

Conclusions: Regarding the treatment of a patient with (dis)cognitive or cognitive-like symptoms, the clinical judgment should not eliminate from the diagnosis and should not ignore as treatment the possible organic substrate, regardless of the clinician's biases.

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***A SIGNIFICANT IMPROVEMENT OF AFFECTIVE SYMPTOMS  
AND THEORY OF MIND ABILITIES IN A PATIENT TREATED WITH  
NEUROTROPHIC FACTORS FOR A MILD COGNITIVE DISORDER***

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Mild cognitive impairment is regarded as an important risk state for dementia. The prevalence of MCI in the general ageing population has been estimated at 5.0%–36.7% and up to 33% of subjects with MCI develop dementia within 2 years. Besides the apparent cognitive and functional decline in activities of daily living, this condition is frequently associated with affective symptoms, such as depression, anxiety, and apathy - symptoms that have been found to contribute to disease progression. Theory of Mind (ToM) serves to form and maintain adequate social relationships. According to the World Health Organization, depression is currently the second cause of disability worldwide and is predicted to become the leading cause of disease burden by the year 2030. Defective ToM abilities have been well documented in people with a history of clinical depression. The decrease in the

ability to interpret emotional stimuli leads to a decline in social interactions, social functioning, generally giving way to isolation, which determines a possible onset, relapse, or the maintenance of depression.

We present the case of a 64-year-old woman, with a history of major depression, which has been admitted for complaints in the context of an atypical depressive episode, characterised by severe apathy, anergia and anhedonia, non-responsive to maintenance treatment. A combination of antidepressant and intramuscular neurotrophic factors treatment resulted in significant improvements on both, cognitive and depression assessment scales.

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## **MIGRAINE TREATMENT**

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### **ADINA ROCEANU**

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Migraine is a highly disabling primary headache – affects more than 1 billion people worldwide. Migraine is characterized by recurrent episodes of severe unilateral throbbing headache, associated with autonomic nervous system dysfunction (nausea, vomiting) and with sensitivity to light, sound and head movement (migraine without aura). About one third of migraineurs experience fully reversible neurological symptoms. The aura is characterized by transitory visual or sensorio-motor dysfunction that precedes or accompanies. (1) Migraine is a complex neurovascular disorder. There is an activation of ipsilateral brainstem during acute migraine attacks on PET (positron emission tomography). (2) Cortical spreading depolarization (CSD) may explain aura<sup>3</sup>. CSD may activate trigemino-vascular system and peripheral trigeminal sensory fibers. Headache may be due to neurogenic inflammation in cranial dural arterial walls. CGRP – calcitonin gene-related peptide - is a potent vasodilator and also functions as a messenger in nerve cells. It is a new target for anti-migraine drugs (4). For acute migraine treatment there are nonspecific drugs non-specific drugs– in patients with mild to moderate attacks - NSAIDs (non-steroidal anti-inflammatory drugs), acetaminophen and aspirin. Antiemetic drugs (metoclopramide, domperidone) may be associated. (6-8) Specific anti migraine drugs are required in moderate-severe attacks. Historically ergots were the first used, abandoned due to adverse reactions. DHE nasal spray was FDA approved in 2021. Serotonin receptor agonist 5-HT<sub>1B/1D</sub> („triptans”) are useful for acute migraine treatment, but the vasoconstrictor effect in cerebral and coronary territory limits their use. Ditans are serotonin (5-HT<sub>1F</sub>) agonists. Lasmiditan is lacking vasoconstrictor effect and could be an option in

patients with triptans contraindications. Gepants are small molecules CGRP receptor antagonists (ubrogepant, rimegepan) use for acute migraine treatment. As migraine preventive therapy, beta-blockers and antiepileptic drugs (sodium divalproex in men, topiramate) are used as first line.

Onabotulinum toxin A is also approved for prevention of headache in chronic migraine. Recently, monoclonal antibodies targeting CGRP receptor (erenumab) or CGRP peptide (galcanezumab, fremanezumab, eptinezumab) are available as preventive treatment for episodic and chronic migraine. Non-pharmacological interventions (noninvasive neuromodulation - electrical trigeminal nerve stimulation, noninvasive vagus nerve stimulation, single-pulse transcranial magnetic stimulation) are appropriate for situation in which pharmacological treatment is ineffective (medication overuse headache) or contraindicated (pregnancy). (6-8)

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## **SECONDARY HEADACHES - CASE PRESENTATIONS**

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### **CORINA ROMAN**

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Headache is one of the most common presentation symptoms as it can be highly burdensome and slightly impair daily activity. In most of the cases, headache is a benign primary condition and is usually transitory as it has been linked to various triggering factors including tiredness, stress or changes in sleep pattern. Despite the fact that mild headaches do not raise any particular concerns, there are several

serious underlying conditions that can cause headache of various intensity as this is called secondary headache. Our presentation focuses on presenting several clinical cases involving secondary headaches. The first case is linked to tumoral pathology. It focuses on the case of a 68 years old male with an acute onset of high intensity headache followed by left sided hemiparesis. The most common pathology mimicking this clinical picture, especially when looking at the patient's age is stroke. However, a cerebral computer tomography pointed out to an interhemispheric cellular growth that compressed on the lateral ventricles and the internal capsule causing both increased intracranial pressure and motor deficit. The tumor is revealed to be unregular and with vasogenic edema suggesting a quick diagnosis of a highly malignant astrocytoma. Other tumoral causes of secondary headache can be linked to meningeal carcinomatosis and secondary brain tumors. The second case focuses on a relatively underdiagnosed vascular cause. Arteriovenous malformations can reach considerable dimensions as they can compress on nearby structures causing focal neurologic deficits. We hereby present the case of a 45 year old woman admitted to the hospital for high intensity left side occipital-temporal headache. The headache was reported to have a progressive evolution through a period of more than 6 months without history of migraine. Physical examination revealed papilledema and right sided pyramidal signs and the MRI performed on the patient revealed a left sided occipital arteriovenous malformation. Therefore, even a pathology that mimics migraine has to be thoroughly investigated. The last clinical case focuses on trigeminal neuralgia. Here we have chosen to highlight a case of headache secondary to trigeminal neuralgia in a patient diagnosed with multiple sclerosis. Trigeminal neuralgia secondary to multiple sclerosis manifests with facial paroxysmal pain triggered by typical maneuvers; neurophysiological investigations and MRI support the diagnosis, providing the definite evidence of trigeminal pathway damage. In conclusion, headache can be linked to a various degree of causative factors therefore requiring comprehensive management including history, clinical examination and imagistic procedures.

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***METHAMPHETAMINE EXACERBATES ALZHEIMER'S DISEASE  
PATHOLOGY. NEUROPROTECTIVE EFFECTS OF NANOWIRED  
CEREBROLYSIN WITH NEPRILYSIN***

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Alzheimer's disease (AD) is a devastating neurological ailment imposing lifetime disabilities causing heavy financial burden on the society. AD reflect lifetime

behavior and stressors that affect the mental function culminating into the disease with advanced aging. Several risk factors of AD are well known such as traumatic brain injury, hypertension, diabetes and/or posttraumatic stress disorders (PTSD). These risk factors accelerate or exacerbate the pathogenesis of AD. However, apart from these well known risk factors of AD, studies on substance abuse affecting AD pathology is still not well known. Use of methamphetamine (METH), cocaine, morphine, MDMA and other addictive substances are quite common in the society that affects mental and physical health. However their impact on AD pathophysiology are not known. In this study, we examined effects of METH on the pathogenesis of AD in an animal model.

METH when administered alone leads to hyperthermia and breakdown of the blood-brain barrier (BBB) permeability associated with edema formation and cell injuries. Thus, a possibility exists that METH users may have a high risk factor for developing AD.

Male Wistar rats (age 30-35 weeks) were administered METH (0.5 mg/kg, per day s.c.) for 1 week. This dose of METH causes slight hyperthermia on the first 3 days with abnormal behavior such as hyperlocomotion, mild jumping, grooming and restlessness. After that by 7th day these animals look quite normal and do not show abnormal behavior. These animals showed mild to moderate leaking of Evans blue in their brain on the 7th day showing BBB breakdown.

**Methods:** AD like pathology was developed in naïve or chronic METH treated rats by administering AP (1-40) intraventricularly (i.c.v.) in the left lateral ventricle (250 ng/10  $\mu$ l) once daily for 4 weeks. Control rats received saline instead of METH. In separate group of rats TiO<sub>2</sub> nanowired cerebrolysin (NWCBL 50  $\mu$ l) and or nanowired neprilysin (NWNPL, 100 ng/10  $\mu$ l) were administered (i.c.v.) once daily 3 weeks after the 1st AP administration and continued for 1 week. After 30 days of the 1st AP infusion, the rats were examined for BBB breakdown, edema, neuronal, glial injuries and AP deposits in their brain.

**Results:** Our observations showed that AP infusion in METH intoxicated rats exacerbated 3- to 4-fold higher BBB breakdown to Evans blue albumin and radioiodine ([<sup>131</sup>I]) in several brain areas as compared to naïve rats after identical AP treatment. The brain edema formation was also exacerbated by 1-5 to 2 fold in those brain areas showing BBB breakdown. Radioimmunoassay of AP showed 60 to 120 % higher deposits in METH treated AD group whereas NPL measurement showed 40 to 68 % decrease in several brain regions in METH intoxicated AD group as compared to control AD rats. Cell injuries showed massive upregulation of neuronal injuries as seen by Nissl or H&E staining in AD group with METH intoxication as compared to normal AD rats.



Treatment with NWCBL and NWNPL together was significantly able to thwart BBB breakdown, edema formation and cell injuries in METH treated AD groups. In these METH treated AD rats NWCBL and NWNPL therapy also restored NPL level and decreased AP deposition in METH treated AD rats. However, in METH treated AD groups NWCBL alone or NWNPL alone showed only mild to beneficial effects.

Conclusions: These observations are the first to show that METH intoxication exacerbates AD pathology probably by higher accumulation of AP deposits and greater reduction in NPL levels in the brain. Thus, METH users in the society are also highly vulnerable to AD pathology and for that awareness is needed to understand the dangers of METH abuse with regard to AD, not reported earlier.

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## ***COGNITIVE IMPAIRMENT IN MS - FROM THEORY TO PRACTICE***

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### ***MIHAELA SIMU***

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Although Charcot first described cognitive impairment (CI) in MS over 150 years ago, it has only recently reemerged as a topic of interest for research, with studies on the prevalence, expression, and neural bases of MS cognitive dysfunction. The CI is a common MS feature, affecting 40–70% of patients at any time in their disease course. It can arise in isolation or accompany the neurological signs associated with an increased risk of future neurological disability. The neuropsychological pattern is characterized by deficits in information processing speed (IPS), attention, episodic memory, executive functions, and visuospatial abilities. Although it is difficult to compare studies performed in different settings with different clinical phenotypes,

using various neuropsychologic batteries, attempts were made to characterize the CI according to clinical MS phenotype. In radiologically isolated syndromes (RIS), at the pre-clinical stage, CI presented a similar profile to relapsing-remitting MS (RRMS), affecting IPS and memory. In patients with clinically isolated syndromes (CIS), studies reported impairments in IPS and episodic verbal and visuospatial memory deficits; executive functions and verbal fluency were also impaired. The cognitive profile in RRMS is manifests with deficits mainly in IPS, verbal and visuospatial memory, and executive functions domains. The MRI studies correlate cognitive deficits to higher brain lesion load, but T2-weighted MRI does not fully explain the severity of CI in MS patients. Currently, technological improvements document more complex morphological targets. Consensus recommendations on optimal strategies for screening, monitoring, and treating cognitive changes were developed recently. They endorse, as a minimum, early baseline screening with the Symbol Digit Modalities Test (SDMT) or similarly validated test when the patient is clinically stable, with an annual re-assessment with the same instrument, or more often as needed. There are several validated screening and evaluation tools.

In conclusion, CI is present in all MS phenotypes, significantly impacting HQoL and ADL besides the EDSS captured disability. Its assessment is mandatory in MS patients from the beginning of the clinical disease, and it must be correlated with each patient's everyday life and functional needs.

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## ***A RARE DISEASE YOU DON'T WANT TO MISS***

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***ADINA STAN'***

***HANNA DRAGOS***

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Case reports represent useful tools in the process of learning for young neurologists, remaining one of the cornerstones of medical progress.

The case reports presented offer a brief overview and interesting insight in the vast field of cerebrovascular diseases, focusing on unique features of the diseases and showing differential diagnosis and therapeutic approaches.

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## ***A CASE OF MILD COGNITIVE IMPAIRMENT AFTER SARS-COV-2 INFECTION***

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***ANDREEA SZALONTAY***

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The SARS-CoV-2 pandemic infection has affected millions of people, causing short and long-term consequences. More than one-third of patients with SARS-CoV-2 infection experience altered cognitive mental status, headache, cardiovascular diseases, vertigo, anosmia, ageusia and other neurological manifestations. We present a case of 57 years old female patient, with personal history of Major Recurrent Depressive Disorder and Generalized Anxiety Disorder in treatment with Escitalopram 20 mg/day, Alprazolam 0,50 mg/day, Quetiapine 300 mg/day which, after medium-severe SARS-CoV-2 pneumonia developed a symptomatology characterized by depressive mood, marked fatigue, difficulty concentrating, distractibility, marked decrease in the capacity of fixation and assimilation of new information, decreased perceptive visual abilities. The patient was diagnosed with Mild cognitive impairment and started treatment with Cerebrolysin 10 ml/day, 10 – 15 days/month. After 7 months of treatment the outcome was favorable, and the patient recovered cognitive function to previous to SARS-CoV-2 infection levels.

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## ***MANAGEMENT OF ADVANCED PARKINSON'S DISEASE WITH LEVODOPA INTESTINAL GEL***

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## **ABOUT IMMUNOSENESCENCE AND INFLAMMAGING IN MULTIPLE SCLEROSIS. THERAPEUTIC OPTIONS IN OLDER PATIENTS.**

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Since interferon beta 1 b was first released on the market as a valid therapeutic option for multiple sclerosis, the field of research in this domain has grown exponentially, and various classes of medication were added, as a consequence of new pathophysiological pathways explored by scientists. The paradigm has slowly shifted from an inflammatory and demyelinating disorder, toward a time dependent mixture of a neurodegenerative and inflammatory disorder.

Along the years we have learned that the sooner we treat, the better it is. Reduction of the inflammation in early stages is associated with fewer relapses, a delay in transition toward the secondary progressive evolutive form and a reduced progression of disability. The duration of the disease is prolonged, and people who started treatment in their 30ties or 40ties are reaching now the age of 50 or 60, or even older. Are our therapeutic options still valid in these patients? What is happening with their immune system? Meningeal inflammation, compartmentalized inflammation, the response to active and very active drugs differs in elder people compared to younger patients. There is an increased risk of malignancies in these patients, compared to younger MS patients, and a risk of infectious or vascular comorbidities. Several studies have demonstrated a decrease in the efficacy of immunomodulators over the age of 45, for all the classes of drugs, but at the same time, other authors have demonstrated a faster progression in patients who have stopped medication. Although we do not have a clear-cut recommendation for older MS patients it is obvious that these patients require a more complex care, including neuro-rehabilitation and lifestyle recommendation.

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## **WHEN HEADACHE HIDES NEUROCYSTICERCOSIS - CASE PRESENTATIONS**

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## ***A NEW GOLD STANDARD TO IMPROVE TBI CLINICAL RESEARCH – THE MULTIDIMENSIONAL APPROACH***

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Is TBI clinical research stifled by backward oriented designs? An evaluation of neuroprotection intervention studies conducted in the last 30 years has determined that methodological design flaws are among the major reasons why pharmacological agents fail to demonstrate efficacy. Almost all the inconclusive studies used a single outcome measure approach. This classic approach in clinical TBI trials cannot capture all clinical relevant functional information in survivors of any kind of TBI. Even survivors of mild to moderate TBI may experience lifelong disturbances in the physical, behavioral, emotional, cognitive (memory, attention, reasoning, communication and planning), motor, sensory, perception and social domains of life that may affect specific or global functioning. Leading interdisciplinary research groups recently highlighted the multidimensional nature of TBI, such as, e.g., the International Mission on Prognosis and Clinical Trial Design in TBI (IMPACT), stating that "outcome after TBI is by definition multidimensional" or the US Traumatic Brain Injury Clinical Trials Network Group, pointing out that "multiple measures are necessary to address the breadth of potential deficits and recovery following TBI". The multidimensional strategy is expected to become a key development in TBI clinical research, opening up new horizons for TBI management. Examples from the literature and current study designs in neurosciences are discussed and their implications related to future developments. The CAPTAIN approach is introduced as the first series of trials in TBI history with a true multidimensional approach based on full outcome scales.

Key Words: Clinical Research, TBI, Multidimensional, Methodology

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## ***NEUROLOGICAL AND NEUROPHYSIOLOGICAL EVALUATION OF THE LOWER SACRAL SEGMENTS***

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Emeritus Professor of Neurology, Faculty of Medicine, University of Ljubljana, Slovenia

The bladder, bowel and sexual functions are neurally controlled and have striated

and smooth muscles involved in their complex functioning. They are not really amenable to clinical "observation" but methods for their objective assessment have been developed (i.e. urodynamics). The neural elements controlling sacral functions comprise (somatic) motor control of pelvic floor muscles, sensory input from the anogenital region, and autonomic nerve fibers. Clinical examination provides some data on motor function (the presence of voluntary and reflex contraction), and data on sensation. Morphological data obtained by imaging can provide only indirect data of potential dysfunction of neuromuscular structures. To test the integrity of the sacral segmental reflexes, the individual components of the reflex arcs and their suprasegmental connections, several neurophysiological methods have been introduced. Of the many published methods, EMG, sacral reflex studies, sensory and motor evoked potentials (SEP, MEP) have been most often studied (cf. 1, 2). All these methods have conveniently been called "uroneurophysiological". The International Continence Society has suggested well defined standards regarding the general and technical information that needs to be stated when performing and reporting uroneurophysiological tests, to assure transparency and reproducibility of published reports (3). In the context of urodynamics, electromyography (EMG) describes the pattern of muscle activity (i.e. the timing and quantity of motor unit activity). This kind of EMG has also been called "kinesiological" and is used to demonstrate detrusor-sphincter dyssynergia. Most often, however, EMG is used for its ability to distinguish normal from neuropathic striated sphincter / pelvic floor muscles. Wider experience is only available for the concentric needle electrode (CNEMG). CNEMG demonstrates both pathological spontaneous activity and changes in motor unit potentials (MUAPs). MUAP changes are specific and sensitive to diagnose reinnervation in sphincter muscles in individual patients. CNEMG has been found helpful in diagnosing involvement of lower sacral segments in different traumatic and compressive lesions, and malformations involving the thoracolumbosacral spine or the pelvis, because it provides data not obtainable by other methods (4). Sacral reflex, SEP and MEP testing has shown poor ability to distinguish accurately between neurogenic and non-neurogenic bladder, bowel, and/or sexual dysfunction (in other words their lack of sensitivity and specificity for this purpose in individual patients). These functions depend more on autonomic than on somatic nerve fibers, and then on several other non-neurogenic factors. Therefore, the sensitivity and specificity of neurophysiological tests should only be considered with reference to the particular underlying neurological lesion, not in direct reference to the bladder, bowel, and/or sexual dysfunction. In lesions of the lower sacral segments, CNEMG reveals muscle denervation and reinnervation. Bulbocavernosus reflex testing is more sensitive to demonstrate the preservation of the reflex arc than clinical testing. Demyelination lesions (such as in inflammatory polyradiculoneuropathy and multiple sclerosis), will show abnormalities in latencies of responses (sacral reflex, SEP, MEP), but the necessity to investigate such patients only rarely arises. In axonal type lesions, however, sensory involvement will be

more readily demonstrated by clinical testing. It should be borne in mind that the assessment of patients' uro-ano-genital functions necessarily relies more heavily on history than for instance limb functions. The clinical examination of the lower sacral neuromuscular system tends to provide less information on motor and reflex function than is typically the case of other body areas. Because of these facts neurophysiological tests may be relatively more important to assess lower sacral than other neurogenic lesions. In conclusion, EMG and bulbocavernosus reflex are suggested as useful in selected patients with suspected lesions in the peripheral lower sacral reflex arc.

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Vodušek DB. Pelvic floor conduction studies. In: Kimura J ed. Peripheral Nerve Diseases, Chapter 13. (Handbook of Clinical Neurophysiology, volume 7. Series Editors: Daube J & Mauguiere F). Edinburgh, London, etc.: Elsevier, 2006: 295-310.

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Amarenco G, Doumouchtis S K, Derpapas, A., Fernando, Sekida, N, Shobeiri, S. A., Tubaro, A, Vodusek, D B, Podnar, S. Neurophysiology. In: ABRAMS, Paul (ed.). Incontinence : 6th edition 2017. Vol. 1. [S. l.: s. n.]. cop. 2017, 671-802

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## ***HOW CAN WE BE MORE EFFICIENT IN MOTOR RECOVERY AFTER STROKE***

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### **ANDREAS WINKLER**

Medical Director, Head of Department, Neurological Rehabilitation Klinik Bad Pirawarth, Vienna, Austria

How can we be more efficient in motor recovery after stroke? Stroke is the leading cause of long-term disability worldwide. Global burden of stroke has continued to increase in spite of declines in age-standardized incidence, prevalence, mortality rates and disability with most of the burden in low-income and middle-income countries. Major progress over the past decades has been made in acute stroke management to reduce the number of deaths, leading to more people requiring

rehabilitation services. After stroke the human brain changes itself through the reorganisation of its neuronal connections. This phenomenon is known as neural plasticity. The development of new effective therapeutic strategies relies on a better understanding of the mechanisms underlying recovery of function, resulting in the formulation of hypothesis generated novel motor rehabilitation strategies for treating motor deficits after stroke, such as upper limb hemiparesis. In stroke survivors, motor impairment is a leading cause of chronic disability in activities of daily living with up to 80% experiencing hemiparesis of the contralateral upper limb. While 4 out of 5 stroke patients will be able to walk independently, only 2 out of 5 with upper limb paresis regain functional use. Functional improvement of upper limb (UL) recovery in patients with mild to moderate severe stroke is seen mainly within the first few weeks after stroke and largely completed by 3 months post-stroke. Most troublesome symptoms of upper extremity motor impairment compromise paresis, flaccid or spastic changes in muscle tone, joint laxity, impaired motor control and loss of selective finger movements. These impairments interfere with everyday activities such as reaching, grasping and picking up and holding on to objects. Rehabilitation training is the most effective way to enhance motor recovery in stroke patients and to minimize impairments. Task specific training is still the gold standard for post-stroke rehabilitation, but effect sizes studied recently in patients with upper extremity impairment (UE) in the subacute stages after stroke were rather small. Special concerns regard stroke patients with more severe initial impairments who in general will not show the same degree of proportional recovery compared to stroke survivors with mild or medium impairment. A multimodal approach in upper extremity rehabilitation combining synergetic effects of different treatment modalities might therefore be beneficial. In the recent past, clinical neurophysiology has been able to establish itself as an essential therapeutic option, particularly in the field of neurology - non-invasive brain stimulation, especially transcranial magnetic and direct current stimulation, is increasingly being used successfully in a wide variety of indications. A steadily increasing number of publications on this topic deepens our understanding of the modulability of neuronal plasticity, improves the methodological basis, strengthens our evidence base and heightens confidence in the effectiveness and safety of the procedures. Last but not least, non-invasive brain stimulation opens new therapeutic windows and thus contributes significantly to the goal of improving or restoring functions in stroke rehabilitation. In the field of neurological rehabilitation, non-invasive stimulation methods have proven particularly useful for the treatment of motor, sensory, aphatic, affective and cognitive symptoms, paving their way into everyday clinical practice. Pre-clinical and clinical Data from the literature and our first pilot-studies with this new triple-therapy approach will be presented and the rationale for an ongoing phase II clinical trial (IMPULSE) introduced.



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***CURRICULUM  
VITAE***

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***CLAUDIA ANGHEL***  
**ROMANIA**

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For the time being she is working as a psychiatrist in the Psychiatric Hospital "Dr. Gh. Preda" of Sibiu and is the president of the NGO Psychiatric Hospital Association "Dr. Gh. Preda".

She graduated from the "Victor Papilian" Faculty of Medicine in Sibiu, "Lucian Blaga" University of Sibiu and has a Master's Degree in Health Management.

She has attended several training courses (ECT, emergency medicine), has participated in numerous exchanges experience in Europe and is working as a psychotherapist under supervision in cognitive-behavioral psychotherapy.

Also, she participated at many national and international events and had published articles about topics like depression, suicidal behavior, ECT and mental health services.

As a member of Scientific Societies it is relevant to mention the following: Romanian Association of Psychiatry and Psychotherapy and European Psychiatric Association.

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***RODICA BALASA***  
**ROMANIA**

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Dr. Rodica Balasa is a professor of neurology at the University of Medicine, Pharmacy, Sciences and Technology „George Emil Palade” of Targu Mures (UMFST) and head of the Neurology 1 Clinic in the Emergency Clinical County Hospital of Mures, Romania. Since 2017, she is the director of the Doctoral School of UMFST. Dr. Balasa obtained her PhD degree from the University of Medicine and Pharmacy of Targu Mures in 2003 in the field of visual evoked potentials for MS. Her research interests are focused on the clinical features and treatment of demyelinating pathologies, notably multiple sclerosis (MS). A special interest reflected in numerous ISI publications covers developing predictive biomarkers of treatment's response, research that has been materialized into numerous impact publications. She has been the recipient of several important research grants, which developed an experimental model of

peripheral mononuclear cells cultivation, with the intention of developing personalised MS treatment. She is the coordinator of the national programme for neurological disorders: multiple sclerosis, acute and chronic degenerative and inflammatory immune pathologies, myasthenia gravis and fibrinolysis therapy for acute ischemic stroke. She has conducted more than 30 international clinical trials in the field of neurological pathologies, notably MS.

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**NATAN BORNSTEIN**  
**ISRAEL**

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#### EDUCATION

1970-73 University of Sienna, Medicine, Sienna, Italy  
1973-79 Technion Medical School, Haifa, Medicine, MD, 1979  
Date of receiving specialisation certificate: 11 September, 1984  
Title of Doctoral dissertation: Dextran 40 in acute ischemic stroke  
Name of Supervisor: Dr. Jacob Vardi

#### FURTHER EDUCATION

1978-83 Tel-Aviv University, Sackler Faculty of Medicine, neurology  
(residence), Israeli Board certified in Neurology, 1983  
1979-83 Tel-Aviv University, Sackler Faculty of Medicine, Post graduate  
studies in Neurology  
1984-87 Sunnybrook Medical Center, University of Toronto, M.R.C stroke,  
Fellowship

#### ACADEMIC AND PROFESSIONAL EXPERIENCE

1982-1995 Tel-Aviv University, Neurology, instructor  
1991-present European stroke Conference (ESC), Executive committee  
1995-1999 Tel-Aviv University, Neurology, Senior lecturer  
1995 Eliprofil CVD 715 clinical trial, Steering Committee  
1995-1997 International Stroke Study (IST), Steering Committee  
1995-1999 American Academy of Neurology, Member of the International  
Affairs Committee  
1996 Asymptomatic Carotid Stenosis and Risk of Stroke(ACSRS), Advisory  
Committee  
1996-present The Mediterranean Stroke Society (MSS), President  
1996-2002 EFNS, Management Committee  
1997-2009 Israeli Neurological Association, Secretary

1999-present Tel-Aviv University, Neurology, Associated Professor  
2001- present European Society Neurosonology and Cerebral Hemodynamics (ESNCH) Executive committee  
2005-present Neurosonology Research Group, Executive committee  
2006-present European Master in Stroke Medicine, Member of faculty  
2006-2008 NEST II clinical Trial, Steering Committee  
2006-present SENTIS clinical Trial, Steering Committee  
2006-present CASTA Trial, Steering Committee  
2006-present Brainsgate clinical Trial, Steering Committee  
2008- present World Stroke Association (WSO), Vice president  
2009-present Israeli Neurological Association, Chairman  
2009-present European Stroke Organization (ESO), Member on the board of directors  
2010- NEST III clinical Trial, Steering Committee

#### PROFESSIONAL ACHIEVEMENTS- EDITORIAL BOARD

1991-present Neurological Research Journal, Guest Editor  
1991-present STROKE, Member of the editorial board  
1998-present European Journal of Neurology, Member of the editorial board  
1999-present Journal of Cerebrovascular disease, Member of the editorial board  
2000-present Journal of Annals of Medical Science, Consulting Editor  
2001-present Journal of Neurological Science (Turkish), Member of the editorial board  
2001-present Acta Clinica Croatica, Member of the editorial Council  
2003-present Italian Heart Journal, International Scientific Board  
2003-present Journal of Neurological Sciences, Guest Editor  
2004-present Turkish Journal of Neurology, International Advisory Board  
2005-present Archives of Medical Sciences (AMS) , Member of the Editorial Board  
2006-present Journal of Cardiovascular Medicine, International Scientific Board  
2006-present International Journal of Stroke, Editorial Board  
2006-present Acta Neurologica Scandinavica, Editorial Board  
2009-present American Journal of Neuroprotection& Neurogeneration (AJNN)  
Member of the Editorial Board  
2010 Neurosonology, International Editorial Board  
2010 Frontiers in Stroke, Review Editor

#### PROFESSIONAL ACHIEVEMENTS- REVIEWER

1998-present Lancet, Ad Hoc reviewer  
1998-present Diabetes and its complications, Ad Hoc reviewer  
1999-present Journal of Neuroimaging, Reviewer  
1999-present Journal of Neurology, Ad Hoc reviewer  
2000-present Neurology, Ad Hoc reviewer  
2003-present Israeli Medical Association Journal (IMAJ), Reviewer  
2003-present Acta Neurologica Scandinavica, Ad Hoc reviewer  
2006-present Journal of Neurology, Neurosurgery & Psychiatry, Reviewer  
2010- European Neurology, Ad Hoc reviewer

#### MEMBERSHIP IN PROFESSIONAL SOCIETIES

1977-present	Israeli Medical Association
1983-present	The Israeli Neurological Association
1985-present	Stroke Council of the American Heart Association (Fellow)
1986-present	American Academy of Neurology
1986-present	Neurosonology Research Group of the World Federation of Neurology
1987-present	Stroke Research Group of the World Federation of Neurology
1990-2008	International Stroke Society
1995-2008	European Stroke Council
1995-present	Mediterranean Stroke Society (MSS)
1998-present	European Neurosonology Society
2005-present	World Stroke Organization (WSO)
2008-present	Fellow of the European Stroke organization (FESO)

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**MICHAEL BRAININ**  
**AUSTRIA**

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Michael Brainin is Emeritus Professor at Danube University, Krems, Austria. He started here in 1995, becoming Head of the Center for Postgraduate Studies in Neurosciences in 1998, then full Professor and chairman of the Department for Clinical Neurosciences and Preventive Medicine in 2005, where he remained until his retirement in 2020. From 1994-2016, Michael was also Director and Chair of the Neurological University Clinic Tulln, Austria.

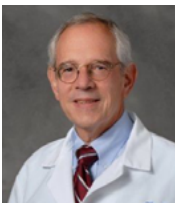
In 1997, Michael founded the first acute stroke unit in Austria. In 1998, he co-founded the Austrian Stroke Society and was elected as its first president, where he pioneered the planning and establishment of acute stroke units. He also established the first stroke database in Austria, from which the Austrian Stroke Unit Register emerged. He was chairman of the Scientific Committee of the EFNS which later developed into the European Academy of Neurology. From 2012 to 2014, Michael was President of the European Stroke Organization (ESO) and from 2018 to 2020, he was President of the World Stroke Organization (WSO). In this global position he published the "Declaration on the Prevention of Stroke and Dementia" while also developing the project 'Cut Stroke in Half'. From 2008 to 2017, Michael was also head of the Education Committee of the WSO. In this function, he supported the development of a global network of stroke researchers as well as the educational programmes for stroke physicians in numerous countries. Michael also co-founded the World Stroke Academy, a web-based learning platform. He is active in numerous WSO activities. Together with Valery Feigin, he chairs the WSO's Global Policy Committee. He organised and co-chaired numerous

international congresses, and during his career, has represented the stroke agenda in meetings with the UN and the WHO, often jointly with the World Federation of Neurology, World Heart Federation and World Hypertension League. Furthermore, he advised many countries on the creation and implementation of strategies for stroke treatment, stroke prevention and specialist training, and supported the founding of the African Stroke Organisation. He developed the Gugging Swallowing Screen and the Poststroke check list, both validated and widely used in numerous translations and countries today.

To this day Michael was and is Principal Co-Investigator or Steering Committee member for numerous international studies on new treatments for stroke, including thrombolysis and neuroprotection.

Michael has published numerous scientific publications in top quality journals (H index 60; citations 40.000) and has received various prizes and awards, including the Science Award of the State of Lower Austria, the Marinescu Award of the Romanian Society for Neurology, honorary doctorates from the universities of Iuliu Hațieganu and Hanoi and an honorary professorship at Zhengzhou University. In 2021, Michael received the Presidential Award from the European Stroke Organization (ESO), the Dan Lackland Award from the International Hypertension League and the Silver Commander's Cross for Services to the State of Lower Austria.

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**MICHAEL CHOPP**  
**USA**

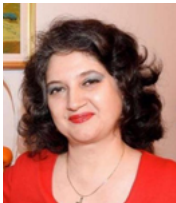
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Michael Chopp, PhD, joined the Henry Ford Health System in Detroit in 1983. He was appointed Vice Chairman for Research of the Department of Neurology in 1991, Scientific Director of the Henry Ford Neuroscience Institute in 1999, and is the Zoltan J. Kovacs Chair in Neuroscience Research. Dr. Chopp is also Distinguished Professor of Physics at Oakland University in Rochester, MI.

He received his MS and doctorate degrees in Mathematical and Solid State Physics from New York University. After nearly 10 years of working as a Physicist and as a Professor of Physics, Dr. Chopp made a career change and turned his interest to translational research in neuroscience. Dr. Chopp's research has primarily focused on: 1) cellular and molecular biology of ischemic cell injury, 2) the pathophysiology of stroke, traumatic brain injury, peripheral neuropathy, multiple sclerosis, and glioma, 3) combination thrombolytic and neuro and vascular protective therapies for stroke, 4) mechanisms of neuroprotection, 5) cell-based and pharmacological neuro-restorative therapies for stroke, traumatic brain

injury and neurodegenerative disease, 6) molecular and cellular mechanisms underlying neurogenesis and angiogenesis and the induction of brain plasticity leading to functional and behavioral recovery after neural injury, 7) treatment of glioma, 8) exosomes/ microRNA for treatment of neurological injury and disease, and 9) magnetic resonance imaging. Dr. Chopp has received multiple awards and recognitions for his research efforts, including the American Heart Association Thomas Willis Lecture Award, the Abraham White Distinguished Science Award, and the Lecture of Excellence and World Stroke Organization Award. Dr. Chopp has 623 peer reviewed publications and has given 414 plenary lectures and invited presentations. He has served on and chaired National Institutes of Health (NIH) study sections and has served as a consultant to government agencies, the U.S. National Institutes of Health, and the pharmaceutical industry.

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**ADELA CIOBANU**  
**ROMANIA**

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Adela Magdalena Ciobanu is a primary physician, PhD in medical sciences, Habilitate Professor of Psychiatry at "Carol Davila" University of Medicine and Pharmacy in Bucharest, Neuroscience Department and Head of 1st Clinical Department at Professor Dr. "Alexandru Obregia" hospital. She was Research Project Manager, member of multiple research teams in national and international projects, founding member and ex vice-president of the Romanian Society of Biological Psychiatry and of the Association of Free Psychiatrist of Romania, actually honorifically member of this association, member of the Romanian Association of Psychiatry and Psychotherapy. Professor Ciobanu was an expert in evaluation of guides and procedures within currently active project through National Mental Health center and drug-use fighting: "Development of professional abilities for the medical staff involved in screening of affective disorders and prevention of suicidal behavior."

Awards: "The best poster award" by the World Wide Association of Psychiatry- poster named "Value of Depression, Remission and Diabetes Control and Quality of Life" at WPA 2013 Bucharest Congress, "Primary Care, Mental Health and Public Health Integration :The Catalytic Role of Information and Communication Technology.

National distinctions:

"Constantin Radulescu – Motru" prize on behalf of the Romanian Academy for the paper: Depression Disorder, volume I, 2015, and also an award within Research Results Awarding – Articles - 2016 Competition. Ministry of National Education and Research – Human Resources Department, prize for the article entitled "Electropolymerized molecular imprinting on

glassy carbon electrode for voltametric detection of dopamine in biological samples".

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## **DOINA COZMAN**

### **ROMANIA**

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Doina Cozman is a professor of Psychiatry and Clinical Psychology at the Department of Clinical Psychology, University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca, Romania. Since 2020 she is the President of Romanian Association of Psychiatry and Psychotherapy.

She is involved in the research of suicidology for over 20 years. She founded the first NGO of suicidology (Anti-Suicide Alliance, 1995) and the first crisis line in Romania-Telefonul Verde Antisucid: 0800 801 200 (2013). Professor Doina Cozman is the CEO of Romanian Alliance for Suicide Prevention. She was for many years National Representative of Romania in International Association for Suicide Prevention and Crisis Intervention.

She was awarded in 2011 with Krepelin-Alzheimer Medal from Ludwig Maximilians University of Munich as recognition for her merits in the research of suicidology.

She participated as Romanian Principal Investigator in two large projects funded by EU 7th Framework Program: SEYLE and WE-STAY regarding the prevention of suicidal behavior in adolescents in Europe. She is also involved in researches about mental health, depression, addictions, validation in Romanian language of clinical tests, and neuropsychology.

Professor Cozman has a rich publishing activity in different languages (Romanian, French, English) being author and co-author of monographs focused on suicidal behavior and mental health as: Suicide Prevention in Romania (in D. Wasserman and C. Wasserman, ed., Oxford Textbook of Suicidology and Suicide Prevention); Suicidology (Lambert Academic Publishing); Medical Psychology, (Polirom), etc.. She also published more than 80 articles cited in international prestigious journals (Lancet, 2015; Lancet Psychiatry, 2016, etc). She is currently chief editor of Psihiatru.ro Journal.





**LÁSZLÓ CSIBA**  
**HUNGARY**

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- 1981-83, visiting scientist, Max-Planck Institute for Neurological Research, Cologne
- 1986-87, visiting scientist, in Kure City, Japan
- 1991, visiting scientist, half year in Toulouse (INSERM, France).
- between 1992-2017, chairman of the Department of Neurology at the University of Debrecen, Hungary.
- Since 2017 professor of the Department of Neurology at the University of Debrecen.
- Dept. Neurology Debrecen hosted two times the Stroke Summer Course of the European Stroke Organisation.
- He is the founder of Hungarian Neurosonological Society, honorary member of Austrian Stroke Society and previous president of the Hungarian Stroke Society, his mandate as chair of board of directors (Eur. Stroke Org.) ran out in 2016.
- Visiting professor of Belgrade, Novi Sad Universities (Serbia), Cluj, Targu Mures Universities (Rumania), Israel Association of Neurology. Corresp. member of Deutsche Gesellschaft für Klinische Neurophysiologie und Funktionelle Bildgebung
- Editorial board member: "Neurosonology (Japan)" "Clinical Neurosciences" "Eur J Stroke" and associate editor of "Frontiers in Stroke"
- Between 2009 and 2013, he was the president of European Society of Neurosonology and Cerebral Hemodynamics.
- Between 2005-2010, chair of European Cooperation Committee of the European Federation of Neurological Societies he established the regional teaching course system of EFNS in the middle and eastern European countries.
- He published more than 340 papers on stroke, neurosonology and stroke risk diseases. Hirsch index:33 IF:507, Citations:more than 7000
- He was awarded with the prize of European Stroke Conference, Eur. Neuroson. Soc. Cer. Hemodyn, Szentgyörgyi, Batthyány-Strattmann Prize (Ministry of Health), Francis Crick Award, Lazarevics prize (Serbian Neurol Soc) for his activity in stroke care, education and research.
- In 2020, the President of Hungarian Republic donated him the Széchenyi Prize, the highest Hungarian award for scientific results.
- Since 2016, he is the member of the Hungarian Academy of Sciences.



***JESSE DAWSON***  
***UK***

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Jesse Dawson is a Professor of Stroke Medicine at the Institute of Cardiovascular and Medical Sciences and Associate at the School of Medicine, Dentistry and Nursing, University of Glasgow. Professor Dawson is a Consultant Physician in the Queen Elizabeth University Hospital, Glasgow. He is Clinical Lead for the Scottish Stroke Research Network and recently chaired European Stroke Organization Conference.

Professor Dawson has research interests in clinical trials on prevention and rehabilitation in stroke survivors, with special focus on improving long-term outcomes.

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***PETRU ROMEO DOBRIN***  
***ROMANIA***

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Associate Professor Petru Romeo Dobrin, MD, PhD  
Head of Section IX - "Socola" Institute of Psychiatry Iasi  
Senior psychiatrist, Forensic specialist  
Certified in Palliative Care and Health Services Management  
Member of the Senate of the University of Medicine and Pharmacy "Grigore T. Popa", Iasi  
Member of the Society of Physicians and Naturalists  
Member of the Romanian Association of Psychiatry and Psychotherapy  
Member of the Professional Scientific Commission, Iasi College of Physicians  
Master in Sanitary Management, U. M. F. "Grigore T. Popa", Iasi  
Master in Psychosocial Intervention and Psychotherapy, „Al. I. Cuza ", Iasi  
Editor of the journal Bulletin of Integrative Psychiatry indexed BDI



***VIRGIL ENATESCU***  
**ROMANIA**

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Virgil-Radu ENĂTESCU is currently a Habilitated Professor of Psychiatry at the "Victor Babeș" University of Medicine and Pharmacy of Timișoara, Romania. He holds a BA in Medicine from the University of Medicine and Pharmacy "Victor Babeș", Timișoara, Romania, an MA in Psychotherapy, "Vasile Goldiș" Western University, Arad, Romania, a MA in Psychopharmacology from the Neuroscience Education Institute, Carlsbad, California, U.S.A. 2015-2017 Edition, accredited by Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians, and a PhD in Medicine from the "Victor Babeș" University of Medicine and Pharmacy of Timișoara. His main research interests are Perinatal Depression, Medical Co-morbidity in Major Depression, Psychiatric Epigenetics, and Personality Disorders. He has coauthored Comorbidity: Perspectives across Europe (2006). He published, as a first and coauthor, 24 articles in extenso containing original research, in journals that are ISI Web of Science indexed, 6 proceeding papers in volumes of congress ISI Web of Science indexed and 41 meeting abstracts in journals ISI Web of Science indexed. He has authored and coauthored 27 psychiatric and psychosomatic monographs, treatises and chapters. He received APR-Lilly Award of Romanian Association of Psychiatry as a young psychiatry resident doctor in 2002 and Award of Romanian Association of Psychiatry and Psychotherapy for the best oral communication entitled 'Obstetrical and Neonatal Clinical Parameters Associated with the Increased Risk of Postnatal Depression' presented at the 5th Romanian National Congress of Psychiatry in 2014.



***CRISTIAN FALUP-PECURARIU***  
**ROMANIA**

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Cristian Falup-Pecurariu is Head of the Department of Neurology, County Emergency Clinic Hospital from Brasov, and is Associate Professor of Neurology at the Transilvania University from Brasov, Romania. He received his medical degree from the University of Medicine and Pharmacy "Iuliu Hatieganu" from Cluj-Napoca. He hold a 1 year fellowship of the European

Neurological Society in movement disorders and sleep medicine at Hospital Clinic, University of Barcelona, Spain.

During his career Cristian Falup-Pecurariu was President of the European Association of Young Neurologists and Trainees (EAYNT), EAYNT Liaison Officer with World Federation of Neurological Society, co-representative of Europe on the International Working Group for Young Neurologists and Trainees (World Federation of Neurology). He was also Secretary of the EFNS/MDS-ES Panel on Movement Disorders, member of the Educational Committee of MDS-ES, member of the MDS Leadership Task Force and European Academy of Neurology Scientific Panel Movement Disorders. Cristian Falup-Pecurariu is also member of the Teaching Course sub-Committee of the European Academy of Neurology (EAN), Member of the EAN Scientific Panel Movement disorders Management Group. Currently he is Chair of the Education Committee of the International Parkinson and Movement Disorders Society (MDS) – European Section, member of the Executive Committee of MDS-European Section, member of the International Executive Committee of MDS, Chair of the Archives Committee MDS, Member of the Rating Scales Executive Committee of MDS. Cristian Falup-Pecurariu is member of EUROPAR (European Parkinson's Group), member in Steering Committee of the International Parkinson and Movement Disorders Society Non motor study group. He is Honorary Member of the Society of Neurologists of the Republic of Moldova. Cristian is the initiator and Course Director of the Movement Disorders Teaching Course held in Brasov (9 editions). His research focuses on non-motor aspects of Parkinson's diseases and restless legs syndrome.



***ANTONIO FEDERICO***  
***ITALY***

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Prof. Antonio Federico, born in Polla (Sa) on the 25.08.48, from 1990 is full professor of Neurology at the University of Siena , Director of the Unit Clinical Neurology and Neurometabolic Disease.

He was Director of the Department of Neurological, Neurosurgical and Behavioural Sciences, University of Siena ( 2002-2008).

He received the degree in Medicine and specialization in Nervous and Mental Diseases, summa cum laude, at the University of Naples in 1972 and 1975 respectively. He received the Lepetit Award for the best degree dissertation in 1972.

His biological training was in the Institute of Biochemistry as student and after in Physiology of the University of Naples, and in the Centre de Neurochimie of CNRS, in Strasbourg, directed by prof. Mandel where he worked in the years 1973-75. He also collaborated with many international research groups, in different countries where he spent in the past years some times: in Montreal (Prof. Andermann, Karpati and Shoudgbridge), in London (dr A. Harding and prof. Morgan-Hughes), in Toronto (dr.Robinson), in Bonn (prof. von Bergmann), in Paris (dr.Baumann), in Baltimore (proff. Moser and Naidu), in Oxford (prof. Matthews), etc. His clinical formation was made at the Medical School of the University of Naples, in the Dept, Neurology, and after in Siena, where he moved on 1980 with his mentor, prof. G.C. Guazzi. Associated professor in Neurology in 1982, since 1990 he is full professor of Neurology, Medical School, University of Siena. In 2013, he received honoris causa degree in Medicine at University Carol Davila, Bucharest, Rumania.

In the years 1990-96 he was Secretary of the Italian Society of Neurology. In the years 2006-08 was President of the Italian Society of Neurology. He coordinated the Study Group on Clinical Neurogenetics of the Italian Society of Neurology. He has been referee for projects evaluation in the area of Orphan drugs and Orphan diseases for Biomed Projects from EU, for MURST, CNR and Istituto Superiore di Sanita, and other national and international funding agencies, etc.

He is member of the Second Opinion Group of the American Leucodystrophy Association. Associated editor of Neurological Sciences , Springer-Verlag Editor from 2000. From 2012, he is Editor-in Chief.

He is author of more than 500 article quoted by Pubmed. He is author of a chapter on Cerebrotendinous Xanthomatosis, Vinken and Bruyn Edts, Handbook of Clinical Neurology, vol 49, Neurodystrophies and Neurolipidoses.

On the book McKusick's Mendelian Inheritance in Man., Ed.1992, Catalog of Autosomal Dominant and Recessive Phenotypes he is cited for 3 different diseases. He was editor of the book Late Onset Neurometabolic diseases (A.Federico, K. Suzuki and N.Baumann Edts), Karger 1991, and many other books from Italian and international.

Publishing Companies. Recently he published (2015) Manuale di Neurologia Pratica and Neurologia and Assistenza infermieristica, for students.

His main field of interest is related to neurometabolic, neurodegenerative and rare diseases, investigated from a genetic, metabolic, neuroimaging and clinical point of vue. Summary of the academic involvements: - Director of the Section Neurological Sciences, Dept Neurological , Neurosurgical and Behavioural Sciences (2000-2012) - Director of the Research Center for the Diagnosis, Therapy and Prevention of the Neurohandicap and Rare Neurological Diseases, until the 2010 - Vice-Dine of the Medical School, University of Siena (2003- 2006) - Director of the Postgraduate School of Neurology, University of Siena, from 2006 up to 2014. - Director of the PhD School in Cognitive and Neurological Sciences, University of Siena (from 2000 up to date) - Coordinator of the Section of the Univ. Siena of

the PhD Program Neurosciences, Univ. Florence. - Research delegate for the Dept Medicine, Surgery and Neurosciences (2013-2018 ) - Vice-Rector of the University of Siena, from 1st april 2016 to november 2017.

Medical Involvements – Until November 2018 ( date of retirement) Director of the OU Clinical Neurology and Neurometabolic Diseases, University Hospital of Siena Medical School. –He is still Director of the Regional Reference Center for Rare Diseases - Regional Coordinator of the Network for Rare Neurological Diseases, Tuscany Region. - Member of several Ministry of Health and Regional Committees.

NATIONAL AND INTERNATIONAL COMMITMENTS - President of the Italian Society of Neurology (2009-11) - Italian delegate to the World Federation of Neurology - Italian Delegate to the European Union of Medical Specialists (Section Neurology) - Italian Delegate and Chairman of the Neuromediterraneum Forum and President - Consultive Member of the European Brain Council - Editor – in – Chief of Neurological Sciences, Springer Verlag Editor. He is in the Editorial Board of many national and international journals. - Member of the American Panel United Leucodystrophies.

MEMBER OF THE SCIENTIFIC COMMITTEE of AISM (Associazione Italiana Sclerosi Multipla) - Chairman of the Scientific Committee of the European Academy of Neurology (2014-2018) - Chairman of Neuromediterraneum Forum - Co-Chairman of Research group of WFN Migration Neurology.

Member of the Scientific Societies: - Societa Italiana di Neurologia (Past Secretary, President, Past-President and Member of the Committee) - Society for the Inborn Errors of Metabolism - Italian Association of Neuropathology - SINDEM (Italian Association of Dementias) - Italian Association for Parkinson's disease - Italian Association of Neurogeriatrics ( Member of the Scientific Committee) - Italian Stroke Forum - European Academy of Neurology (Member of the Board and Chairman of the Scientific Committee) - American Academy of Neurology - World Federation of Neurology (Co-Chair Section of Migration Neurology) - Neuromediterraneum Forum (President).

#### ACADEMIC AND OTHER POSITIONS

- Full professor of Neurology, University of Siena, Medical School ( until 31 Oct 2018). Professor Emeritus by April 2020.
- Director of Unit Clinical Neurology and Neurometabolic Diseases, Siena Hospital. ( until 31 Oct 2018)
- Past-Director of the Department of Neurological and Behavioral Sciences of the University of Siena since the 2012, at the fusion of this Department in the Dept Medicine, Surgery and Neurosciences.
- Italian Delegate to the World Federation of Neurology and to European Academy of Neurology Assembly.
- Past- President of the Italian Society of Neurology ( President years 2009-2011)
- From 1995 to 2018 he was Director of a PhD Program on Applied Neurological Sciences at University of Siena, from 2004 to 2018 of the European PhD Program and European School of Doctorate of Applied Neurological Sciences. Since 2011 he was director of

the PhD Program on Cognitive and Neurological Sciences at University of Siena until retirement on the 31th Oct 2018.

- He is one of the two Italian member of the Committee of European Union of Medical Specialists, in the section Neurology.
- Delegate for Research in the Dept. Medicine, Surgery and Neurosciences until retirement.
- Coordinator for the Tuscany Region of the Network on Rare Neurological Diseases until November 2019
- On 2013, he received Honoris Causa degree in Medicine and Pharmacy from the University Carol Davila, Bucharest
- Chairman of the Neuromediterraneum Forum
- Editor in Chief of Neurological Sciences, Springer-Verlag Editor.
- Co-Editor of many international journals.
- On the 2014 was nominate WHO consultant for Rare Neurological Diseases.
- From June 2013 to June 2017, he was Chairman of the Scientific Committee and Member of the Board of the European Academy of Neurology
- From February 2015 Co-Chairman of the Research Group Migration Neurology of the World Federation of Neurology.
- Chairman of the European Academy of Neurology Task Force on Rare Neurologic Diseases
- On November 2018 he received Laurea honoris Causa in Medicine and Pharmacy at University of Cluj-Napoca, Romania.
- Professor Emeritus of Neurology, University of Siena
- Chairman of the WFN Special Research Group on Rare Neurologic Diseases (April 2020)

The main scientific interest is in the field of Rare Neurologic Diseases (genetic, neurodegenerative and neurometabolic diseases): organization of platforms and methodologies for improving diagnosis. Teaching clinical and genetic strategies for diagnosis of rare neurologic diseases.

He organized many international Congress, between them in 2009, The EFNS Meeting in Florence. He is President of the 2021 World Congress of Neurology, Rome.



## **URS FISCHER**

### **SWITZERLAND**

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Prof. Urs Fischer is the Chairman of the Department of Neurology at the University Hospital in Basel, Switzerland. Urs Fischer studied in Bern, London, San Francisco and Lomé and graduated in 2000. In 2008/2009, he performed a “Master of Science by Research in Clinical Neurology” at the University of Oxford. In 2015 he was elected as “Professor for Acute Neurology and Stroke” at the University of Bern. Since August 2021, he is chairing the Department of Neurology in Basel.

Urs Fischer is a clinical researcher and his main research interest involves diagnosis, management, treatment and outcome of patients with acute neurological diseases, especially of patients with acute ischemic and hemorrhagic stroke. He is principal investigator of several international multicenter academic trials on the management of patients with ischaemic and haemorrhagic stroke. The SWIFT DIRECT trial ([www.swift-direct.ch](http://www.swift-direct.ch)) has assessed whether adding intravenous thrombolysis to mechanical thrombectomy improves the patient outcome compared to direct mechanical thrombectomy alone (paper accepted for publication in *The Lancet*). The ELAN trial ([www.elan-trial.ch](http://www.elan-trial.ch)) assesses when oral anticoagulation with direct oral anticoagulants in stroke patients with atrial fibrillation can be introduced. The SWITCH trial ([www.switch-trial.ch](http://www.switch-trial.ch)) investigates whether decompressive craniectomy in addition to the best medical treatment is superior to best medical treatment alone for patients with intracerebral haemorrhage. The DISTAL trial aims to assess, whether mechanical thrombectomy in addition to best medical treatment in patients with distal, medium vessel occlusion (dMEO, defined as an occlusion of the co- or non-dominant M2, M3 or M4, A2 or A3, P1, P2 or P3) is superior to best medical treatment alone. The TECNO trial aims to determine the safety and efficacy of intraarterial Tenecteplase in patients experiencing an acute ischemic stroke due to a large vessel occlusion with incomplete reperfusion with residual occlusions after mechanical thrombectomy.

Urs Fischer is active in National and European Stroke Societies: he is the former Secretary General of the European Stroke Organisation (ESO), treasurer of the Swiss Neurological Society (SNG), member of the programme committee of the European Academy of Neurology (EAN), and he is co-founder the ESO ESMINT ESNR Stroke Winter School. Together with his colleagues of the stroke center Bern he is currently establishing the European Stroke Master Program, which started in 2022.





**MARC FISHER**  
**USA**

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Dr. Fisher has had a long career as a translational and clinical researcher in the stroke field. He was at the University of Massachusetts Medical School for 36 years, retiring in 2014. While there, he led a stroke modeling lab for 25 years that focused on using MRI technology to evaluate the ischemic penumbra and the effects of many types of therapies on the evolution of ischemic injury. He trained more than 25 research fellows from around the world, many of whom currently hold prestigious positions. He participated in many clinical trials as a principal investigator or steering committee member. Dr. Fisher was also an active clinician and teacher. He has published more than 330 peer reviewed papers with an h-index of 80. Currently, Dr. Fisher is a part time member of the neurology faculty at Beth Israel Deaconess Medical Center in Boston and is a Professor of Neurology (part time) at Harvard Medical School. He continues to see patients and teach residents and stroke fellows. He was the Editor in-Chief of Stroke from 2010-2020 and continues to serve Stroke as a senior consulting editor. He assumed the presidency of the WSO in November 2020.



**BRINDUSA FOCSENEANU**  
**ROMANIA**

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Dr. Brindusa Focseneanu is a Senior Lecturer at the Department of Psychiatry, Faculty of Medicine - "Titu Maiorescu" University of Bucharest, and currently the Head of the Psychiatry Department VIII within the Hospital "Prof. Dr. Al. Obregia ", where she continues to exercise her professional activity on several levels: academic, research, clinical and more recently, guiding the activity of residents working on this section.

Since the beginning of her professional career, she has participated in many national and international congresses, conferences and symposia, in order to improve her psychiatric skills. Also, to improve the quality of her services to patients, she graduated with a bachelor's and master's degree in psychology and training in psychotherapy. She valued her clinical and research experience by elaborating several scientific papers, and her passion for scientific

research was materialized by participating in a large number of national and international clinical trials.

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**MIHAIL GAVRILIUC**  
**REPUBLIC OF MOLDOVA**

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1987-1991 : Neurologist at the Republican Clinical Hospital, Chisinau

1991-1996 : Assistant professor of the Department of Neurology and Neurosurgery at the State University of Medicine and Pharmacy "Nicolae Testemitanu" Chisinau

1996-2001 : Docent of the Department of Neurology and Neurosurgery at the State University of Medicine and Pharmacy "Nicolae Testemitanu" Chisinau

2001-2010 : Deputy Director of the Institute of Neurology and Neurosurgery, Chisinau

2010-2012 : Dean of the Faculty of Medicine 2 - State University of Medicine and Pharmacy "Nicolae Testemitanu" Chisinau

2012-2018 : Vice-rector for International Relations - State University of Medicine and Pharmacy "Nicolae Testemitanu" Chisinau

2018-2019: Vice-rector for International Students - State University of Medicine and Pharmacy "Nicolae Testemitanu" Chisinau

2010 (since) : Professor of Neurology, Chairman of the Neurology Department Nr.1 at the State University of Medicine and Pharmacy "Nicolae Testemitanu" Chisinau

Fields of special interests: general neurology, ischemic tolerance of the nervous system, and medical education.



***WOLFGANG GRISOLD***  
**AUSTRIA**

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Prof. Wolfgang Grisold is a specialist for neurology and psychiatry. In neurology he has a background in neuropathology and neurophysiology.

Special interests are general neurology, neurooncology, neuromuscular disease, education and patient related issues as pain, palliative care and advocacy.

He is involved education, and has been the initiator of the UEMS European board examination in neurology.

He has experience in hospital practice, research and private practice. He has participated in EU projects on paraneoplastic syndromes. The scientific focus is the effect of cancer on the peripheral nervous system, in particular in peripheral neurotoxicity and the direct effects of cancer.

In regard to neuromuscular disease, he has experience with autoimmune diseases, in particular myasthenia gravis and inflammatory neuropathies. He works in an interprofessional setting in diagnosis and treatment of mononeuropathies including imaging (ultrasound) electrophysiology and also plastic and reconstructive surgery.

He has authored and edited 20 books, and his pubmed count is presently 265.

He is involved in several international neurological societies and has organized several international neurological congresses, among the EANO congress in 2006 in Vienna, the ICNMD 2018 in Vienna , and was involved in the organization of the World Congress of Neurology 2013, in Vienna, as the congress secretary.

He has become an elected trustee of the World federation of Neurology in 2009, and has started his term as the WFN president in 2022.



**STANISLAV GROPPA**  
**REPUBLIC OF MOLDOVA**

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Born in the Republic of Moldova, the well-known scientist and Academician of the Academy of Sciences of Moldova, Stanislav GROPPA, has an impressive career. Currently, he leads the Neurology Department at State University of Medicine and Pharmacy "Nicolae Testemitanu" and is the vice-rector of Research activity at the same institution. In addition he is the President of the Moldavian Society of Neurology and the President of Moldavian chapter of International League Against Epilepsy (ILAE).

Professor GROPPA, started his professional and academic career by studying medicine at Nicolae Testemitanu State University of Medicine and Pharmacy (SUMP). During his studies he developed a particular interest in neurology. Therefore, he continued his education with a residency in neurology and a PhD program at Moscow Medical University. He was trained as a neurologist and clinical neuroscientist in a series of fellowships and traineeship, including one at Bethel Epilepsy Center.

In 1995, at the age of 29 years old, he became a Doctor of Medical Sciences and vice rector of Nicolae Testemitanu SUMP. At the age of 35 he finished his postdoctoral and became a habilitated doctor in medical sciences. 4 years later he was already conferred the title of university professor. In 2012 Mr Groppa, became an associate member of the Academy of Sciences of Moldova (ASM). And Since 2014, he has served as the vice president of ASM.

Mr Groppa's main expertise is Clinical neuroscience. He conducts teaching and research regarding the function of the brain - from a molecular level to the effect on society. Throughout his career he has committed towards organizing and promoting educational programs and improving the health system in Moldova. His scientific work has contributed to a better understanding, and therefore a better organization and implementation of the health services in epilepsy, stroke, Alzheimer diseases and other brain pathologies. His main interests in neuroscience research are: drug resistant epilepsy, drug development for refractory epilepsy, cognitive neuroscience and neuroepidemiology. He is the author and co-author of more than 180 peer-reviewed publications, books and book chapters.

During his career he has been actively involved in educating and training young neurology specialists. He has a distinctive number of PhD and postdoc students who under his supervision conducted and defended their thesis, out of whom, 5 students were awarded with habilitation in doctoral sciences. As a Vice-Rector for Research activity he is the founder of the National Health Institute In Medicine and Research of Nicolae Testemitanu SUMP. He is an advocate for implementing research based medical education at Nicolae Testemitanu SUM.

Professor Groppa has dedicated an impressive part of his career towards raising general awareness and understanding of epilepsy; and supporting national health authorities in identifying epilepsy needs and advancing epilepsy education, training, treatment, research, and prevention. Professor Stanislav Groppa has been actively involved with various international epilepsy organizations in planning and developing various research projects and public health initiatives as well as organizing epilepsy education and training for neurology specialists.

Mr. Groppa elaborated and put into plan a successful program in organizing the epilepsy service in Moldova, which corresponds with the strategies of the global campaign against epilepsy strategies - "Out of the shadows". A significant achievement of Professor Groppa is the foundation of the National Center of Epilepsy with the aim of improving treatment, management and prevention of epilepsy in Moldova. As a result, the epilepsy service has been transferred from the psychiatric care to the neurology care. And therefore, the department of Neurology of the SUMP became the clinical and research basis for epilepsy. Furthermore, new training programs in epilepsy for neurology doctors were introduced. As well as, new laboratories of EEG video-monitoring presurgical monitoring and total evaluation of epilepsy patients were established.

In 1994, under professor Groppa's guidance, Moldavian League Against Epilepsy was created. The success of Mr. Groppa's effort is reflected by the fact that in 1996 the Moldavian League became a member of the International League Against Epilepsy (ILAE).

Professor Groppa is an involved member in various international epilepsy societies, including the Central and Eastern European epilepsy alliances.

Mr Groppa is the founder and organizer of the 9 National Conferences in Epilepsy with International Participation. Additionally, professor Groppa planned and arranged 5 international conferences in epilepsy for Central and Eastern European countries, which became an emblematic feature of the regional epilepsy event calendar.

Professor's Stanislav Groppa ability to foresee greatness beyond the horizons has won him the recognition of being a leader in novel approaches in epilepsy treatment and research.



***ALLA GUEKHT***  
***RUSSIA***

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Alla Guekht is Director of the Moscow Research and Clinical Center for Neuropsychiatry of the Moscow Healthcare Department and Professor of Neurology in the Russian National Research Medical University.

She received the PhD Diploma for the dissertation on EEG monitoring in carotid surgery and the Doctor of Medical Sciences Diploma for the dissertation on Brain plasticity and restoration after stroke. She also completed MBA and MPA programs. Her main research interests are: epilepsy (epilepsy after stroke and traumatic brain injury, epidemiology, social issues, including QOL and stigma); cerebrovascular diseases (post-stroke cognitive impairment and recovery after stroke). Professor Guekht is the author of more than 230 publications (Pubmed), including over 120 papers in international peer-reviewed journals and chapters in international textbooks, with an H-index of 31 (Google scholar) / 28 (Scopus). She is the mentor to many junior neurologists with over 25 completed PhD and 4 doctoral dissertations. She is the member of the editorial boards of the European Journal of Neurology, Neurological Sciences (associate editor), Journal of Neurological Sciences, Acta Neurologica Scandinavica, European Journal of Stroke and the Korsakov Journal of Neurology and Psychiatry. She is a reviewer for many international journals

Professor Guekht received the Bruce S. Schoenberg International Award in Neuroepidemiology from the American Academy of Neurology, European Educational Award on Epileptology and the Ambassador for Epilepsy Award from the International League against Epilepsy and the International Bureau for Epilepsy. She is the Elected trustee of the World Federation of Neurology, the Treasurer the International League against epilepsy and the Secretary-General of the National Society of Neurologists.

Professor Guekht is very much involved in the collaborative projects with the WHO in the area of Brain health. She is serving as a co-chair of the Follow up and long-term impact working group of Neurology and COVID-19 WHO Forum.



**MAX HILZ**  
**GERMANY**

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He studied medicine at the Universities of Cologne and Erlangen-Nuremberg in Germany. He first trained in Anesthesiology and Intensive Care Medicine and in Ear-Nose-and-Throat diseases, and then started his residency in Neurology and Psychiatry at the University of Erlangen-Nuremberg.

He specialized in Neurology, Clinical Neurophysiology, Neurological Intensive Care Medicine and Disorders of the Autonomic Nervous System (ANS). He holds German board certificates in Neurology and Psychiatry and in Psychotherapy. He also passed the board examination of the American Board of Electrodiagnostic Medicine.

He is licensed to practice medicine in Germany, the United Kingdom, and in the State of New York, USA.

From 1992 until 2013, he was Attending and Full Professor of Neurology, Medicine and Psychiatry at New York University, New York, NY. Until 2007, he also served as the Associate Director of the Dysautonomia Evaluation and Treatment Center at New York University. In 2006, he was offered an Endowed Chair and tenured Professorship at New York University. From September 2016 to August 2017, he was the Chair in Autonomic Neurology, and Director of the Clinical Department of Autonomic Neurology at the University College London, Institute of Neurology, Queen Square, London, UK. Until April 2019, he was Professor of Neurology at the University of Erlangen-Nuremberg in Erlangen, Germany. Since June 2015, he is also Adjunct Professor of Neurology at Icahn School of Medicine at Mount Sinai, New York, NY, USA.

In December 2018, he received the academic degree of Doctor honoris causa (Dr. h.c.) from the "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania,

Professor Hilz is the current Chair of the Autonomic Disorders Research Group in the World Federation of Neurology. He also co-chairs the Autonomic Nervous System Subspecialty Panel of the European Academy of Neurology, EAN. He was President of the German Autonomic Society, President of the European Federation of Autonomic Societies, and Chair of the Autonomic Section of the American Academy of Neurology. He is a member of the editorial board of Clinical Autonomic Research, and Associate Clinical Editor of Autonomic Neuroscience: Basic and Clinical. He also served as an advisor to the European Medicines Agency, EMA, on issues related to autonomic nervous system dysfunction.

He co-authored the guidelines of the German Neurological Society on syncope, the

guidelines on erectile dysfunction and the guidelines of the German Diabetes Society on diabetic neuropathy. He has published more than 300 original and review articles in peer-reviewed journals and chapters in textbooks and presented his work at several hundred scientific conferences.

Prof. Hiltz is experienced in the examination of small nerve fiber diseases and disorders of the peripheral and central autonomic nervous system, including hereditary sensory and autonomic neuropathies, diabetic neuropathies, and Fabry disease, and central autonomic disorders. He studied the pathophysiology of Familial Dysautonomia, also known as Hereditary Sensory and Autonomic Neuropathy Type III, of Fabry disease, and the effects of brain lesions of various etiologies on the central autonomic network and on autonomic function. He also described long-term changes in the central autonomic modulation of the cardiovascular system in patients with a history of traumatic brain injury, stroke, epilepsy, multiple sclerosis and other diseases.

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***VOLKER HOEMBERG***  
***GERMANY***

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Prof. Hoemberg had his medical education at the Universities of Düsseldorf, Freiburg and Boston Massachusetts. After spending electives in Neurology at Boston City Hospital and the National Hospital for Nervous Diseases Queens Square London he was a research fellow at the C. and O. Vogt Institute for Brain Research in Düsseldorf. In 1981 he started a residency in neurology with Prof. Hans Freund at Heinrich Heine University Düsseldorf. In 1987 he was appointed Director of the Neurological Therapy Centre (NTC) a newly founded Institute at Heinrich Heine University in Düsseldorf. He was also founding Director of the NTC in Cologne. He was involved in the setup of many in- and outpatient rehabilitation hospitals in Germany. In 2001 he started the St. Mauritius Therapy Clinic in Meerbusch near Düsseldorf and since 2011 he is Director of the Dept. of Neurology at the Gesundheitszentrum Bad Wimpfen and works as senior neurology group leader for the SRH-Group, one of the biggest hospital groups in Germany.

He was founder, president and vice president of the German Society for Neurorehabilitation for many years. He serves as Secretary General for the World Federation of Neurorehabilitation (WFNR) for more than 12 years and is Vice President of the European Federation of Neurorehabilitation Societies. (EFNR)

He is regular reviewer and co-editor for many international peer-reviewing journals.



He is regular (co)-programme chairman for neurorehabilitation for major international meetings as the World- and European Neurorehabilitation Congresses (WCNR, ECNR), Controversies in Neurology (CONy) and the European Stroke Congress (ESC).

He has published more than 250 articles in international peer reviewed journals and many book chapters. His primary scientific interest are the fields of motor rehabilitation, cognition epistemology, neurological music therapy and pharmacology in neurorehabilitation.



**PETER JENNER**  
**UK**

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Prof Peter Jenner is a specialist in preclinical aspects of neurodegenerative diseases, notably Parkinson's disease. He has spent the major part of his career at King's College London where he was Head of Pharmacology for 14 years before returning to his research roots and subsequently becoming Emeritus Professor of Pharmacology. Peter has expertise in drug metabolism and pharmacokinetics but neuropharmacology based on functional models of neurodegenerative diseases has formed the major focus of his work. Peter holds a BPharm, PhD and DSc from the University of London. He has published well over 1000 articles with more than 700 peer reviewed papers. He is a Fellow of the Royal Pharmaceutical Society, the British Pharmacological Society, the Royal Society of Medicine and of King's College London. Peter has worked closely with the pharmaceutical industry for many years and acts as an adviser and consultant to both major pharma and biotech companies. He has a wide knowledge of the drug discovery and drug development process and has been involved from molecule synthesis through to drug registration for use in man. Peter was the Founder, Director and Chief Scientific Officer of Proximagen, a biotech focussed on the treatment and cure of neurodegenerative diseases that was listed on AIMs and subsequently purchased by a US based healthcare company. He is a regular speaker at international meetings and also takes time to speak at Parkinson's disease patient-carer groups across the UK. Peter works closely with Parkinson's UK and the Cure Parkinson's Trust.



## **CATALIN JIANU**

### **ROMANIA**

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D.C. Jianu (born 1965) is Professor of Neurology at the University of Medicine and Pharmacy "Victor Babeș", Dept. of Neurology, Timișoara, Romania, and senior consultant neurologist, and Head of the First Dept. of Neurology at the Clinical Emergency County Hospital, Timișoara, Romania.

He is a member of several international societies: WSO (World Stroke Organization), ESO (European Stroke Organization), ESNCH (European Society of Neurosonology and Cerebral Hemodynamics), EAN (European Academy of Neurology).

1991 - MD, Graduate of the Faculty of Medicine "Victor Babeș", University of Medicine and Pharmacy, Timișoara, Romania; first of the candidates. Presented the Diploma Thesis titled "Neurostimulation in lower-back pain".

May 2001 - Senior Consultant in Neurology, first of the candidates (exam at "Carol Davila", University of Medicine and Pharmacy, Dept. of Neurology, Bucharest, Romania).

May 2001 - Defending the doctoral thesis (PhD degree) entitled "Contributions to the semiology of expressive disturbances in aphasia" at the University of Medicine and Pharmacy "Victor Babeș", Timișoara, Romania.

May 2005 - Competence in Neurovascular Ultrasound/Neurosonology, University of Medicine and Pharmacy "Carol Davila", Dept. of Neurology, Bucharest, Romania.

#### RESEARCH EXPERIENCE

05/2004 – 07/2004-Visiting Research Fellow (Perfecting stage of duplex imaging of extracranial arteries and transcranial Doppler ultrasound) L'Unite d'explorations vasculaires du Service de Chirurgie Thoracique et Cardiovasculaire, Centre Hospitalier Regional et Universitaire de Caen, France.

09/2005-Visiting Research Fellow (Perfecting stage of duplex imaging of extracranial arteries and Transcranial color-coded sonography), Le service d'Imagerie Medicale: Echographie, Radiologie, Scanner, IRM de la Fondation Ophtalmologique "Adolphe de Rothschild", Paris, France.

09/2015 Visiting Research Fellow (Perfecting stage of Transcranial color-coded sonography, MRI, MR-A, Stroke-Unit), Le service d'Imagerie Medicale: Echographie, Radiologie, Scanner,

IRM de la Fondation Ophtalmologique "Adolphe de Rothschild", Paris, France.

09/2017 Visiting Research Fellow (Perfecting stage of Transcranial color-coded sonography, CT, CT-A, MRI, MR-A, Stroke-Unit), Fondation Ophtalmologique "Adolphe de Rothschild", Paris, France.

## RESEARCH TOPICS

1. Ischemic stroke: Large arteries diseases: (extracranial and intracranial arterial stenosis/occlusions, extra and transcranial Doppler sonography), cerebral venous thrombosis, small arteries diseases (cerebral and renal impairment in patients with diabetes mellitus-DM: cerebral vessels endothelial dysfunction in DM, and the relation between kidney disease and cerebrovascular disease in diabetic patients).
2. Neuro-ophthalmology: anterior ischemic optic neuropathies, central retinal artery occlusion, giant cell arteritis with eye involvement, Color Doppler ultrasound of retrobulbar (orbital) vessels.
3. Disorders of speech and language: vascular aphasias, assessment of aphasias with WAB-Western Aphasia Battery-Romanian version.
4. Vascular cognitive impairment.
5. Parkinson's disease. Management of the patient with advanced Parkinson's disease

## INTERNATIONAL RESEARCH EXPERIENCE

05-07/2004 -Visiting Research Fellow (Perfecting stage of duplex imaging of extracranial arteries and transcranial Doppler ultrasound) - L'Unité d'explorations vasculaires du Service de Chirurgie Thoracique et Cardiovasculaire, Centre Hospitalier Régional et Universitaire de Caen, France.

09/2005-Visiting Research Fellow (Perfecting stage of duplex imaging of extracranial arteries and Transcranial color-coded sonography), Le service d'Imagerie Médicale: Echographie, Radiologie, Scanner, IRM de la Fondation Ophtalmologique "Adolphe de Rothschild", Paris, France.

09/2017 Visiting Research Fellow (Perfecting stage of Transcranial color-coded sonography, CT, CT-A, MRI, MR-A, Stroke-Unit), Le service d'Imagerie Médicale: Echographie, Radiologie, Scanner, IRM et le Stroke-Unit de la Fondation Ophtalmologique "Adolphe de Rothschild", Paris, France.



**AMOS KORCZYN**  
**ISRAEL**

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Professor Korczyn graduated from the Hebrew University – Hadassah Medical School in Jerusalem in 1966 (MD), where he also received an MSc degree in pharmacology (cum laude) in 1966. He trained in neurology at Beilinson Hospital and at the National Hospital for Nervous Diseases, Queen Square, London. He was the Chairman of the Department of Neurology at the Tel-Aviv Medical Center since 1981 until 2002, and the incumbent of the Sieratzki Chair of Neurology at Tel-Aviv University, 1995-2010. Professor Korczyn has a particular interest in neurodegenerative diseases. He has authored or co-authored over 600 articles in peer-reviewed journals, as well as chapters in books, etc. He edited several books and Special Issues in Journals, and is co-Editor of the Journal of the Israeli Neurological Association (JINA) since 2009. He is or has been an Editorial Board member of 20 international journals, and organized several neurological conferences, mainly in the field of dementia, Parkinson's disease and other degenerative brain disorders, as well as CONy – the International Congress on Controversies in Neurology. Professor Korczyn also served on advisory boards in several drug discovery programs.

Professor Korczyn is the Chairman of the Scientific Administrative Board of the Israeli Alzheimer's disease association (EMDA), and member of the SAB of Alzheimer Disease International, and has been the chairman of the WFN Research Committee for Neuropharmacology.

Professor Korczyn is an honorary member of the neurological societies of Israel, Serbia, Poland and Russia. Professor Korczyn's H-index is 73.

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**VITALIE LISNIC**  
**REPUBLIC OF MOLDOVA**

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Vitalie Lisnic is a Professor of Neurology at Nicolae Testemitanu State University of Medicine and Pharmacy, Chisinau, Moldova. His clinical activity is performed at Diomid German Institute of Neurology and Neurosurgery. Dr. Lisnic received his MD degree in 1989 in the same university. In 1996 he received his first PhD degree, and in 2006 – the second PhD

degree, both in Nicolae Testemitanu State University of Medicine and Pharmacy of Moldova.

To obtain more professional experience Dr. Lisnic completed internships in Neurology and Neurophysiology in Moscow, Russian Federation, 1993; Charles University, Czech Republic, 1994; Landesnervenklinik of Salzburg, Austria, 1999; Emory University, Atlanta, USA, 2002-2003; National Institute of Neurology, Queen Square, London, UK, 2003; Vienna University, Austria, 2008; Department of Neurophysiology in Manheim, Germany 2015.

The main fields of clinic expertise and scientific interests are peripheral nerve disorders, neuromuscular diseases.

In 2003-2004 Vitalie Lisnic was the Principal researcher in the grant on demyelinating neuropathies with participation of the Moldovan Research and Development Association and Civilian Research and Development Foundation of USA. He was also the Principal researcher in neuropathies, neuropathic pain, depressive disorders projects, and Parkinson's disease.

For many years Vitalie Lisnic worked for the European Academy of Neurology (EAN) as a member of the Education Committee, member of the management group of the scientific panels on neuropathies, amyotrophic lateral sclerosis, neuroepidemiology and was clinical lead of the e-brain educational platform. Since 2017 he is a Fellow of the EAN.

In the time period 2020-2021 Vitalie Lisnic was the President of the Society of Neurologists of the Republic of Moldova, delegate of the Republic of Moldova for the World Federation of Neurology (WFN), EAN.

Nowadays he is a member of the Education Committee of the WFN. Other professional memberships are as follows: American Academy of Neurology; European Stroke Organization; Movement Disorders Society; Romanian Society of Electrodiagnostic Neurophysiology (honorary member).

Professor Vitalie Lisnic is the author of 2 monographs, more than 150 scientific publications in Moldovan and International biomedical journals. Under his guidance were defended 5 PhD theses.

He is the member of the Editorial Board of the scientific journals: Ukrainian Neurological Journal, Ukrainian Journal of Medical and Social Expertise, Frontiers Neurology.

In 2012, Professor Lisnic was elected the member of the Editorial Advisory Board and in 2020 – the Managing Associate Editor of the Moldovan Medical Journal.



**XIANSHUANG LIU**  
**USA**

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Dr. Liu, Xianshuang, PhD, is an Associate scientist at Department of Neurology in Henry Ford Hospital in Detroit and an Associate Professor-Research at Department of Physiology in Michigan State University in USA.

His research has focused on developing neuroprotective and neurorestorative therapies including neurogenesis, oligodendrogenesis, axonal regeneration, and neurorecovery for the treatment of stroke and diabetic neuropathy. He has extensive experience in investigating the roles of exosomes and non-coding RNAs in brain and peripheral nerve damages. His researches are funded by National Institute of Health (NIH) R01 and American Heart Association/American Stroke Association.

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**TUDOR LUPESCU**  
**ROMANIA**

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Tudor Lupescu obtained his medical degree from "Carol Davila" University of Medicine in Bucharest, in 1989. After 3 years of training at Colentina Clinical Hospital he became Specialist in Neurology in 1994. Since 2006 he is running the Neurology Department at Agrippa Ionescu Hospital in Bucharest. 1998, he qualified as Consultant Neurologist. Since his early years of training in Neurology, Tudor Lupescu has shown a special interest in Clinical Neurophysiology. In 2000 he earned a Competence in Clinical Neurophysiology (EEG, EMG, and Evoked Potentials). 1997 he was the first to use Transcranial Magnetic Stimulation in Romania. This was also the subject of his PhD thesis presented in 2005. Since 2008, Tudor Lupescu is President of ASNER – Romanian Society of Electrodiagnostic Neurophysiology. He is also founding member and vicepresident of the Romanian Society of Diabetic Neuropathy.

Dr Tudor Lupescu is member of the European Academy of Neurology, Fellow of the American Academy of Neurology, and Associate Member of the American Association of Neuromuscular and Electrodiagnostic Medicine. Between 2008 and 2014 he was also member of the Neurophysiology Subcommittee of ENS, and since 2015, he is member of

the Neurophysiology Subcommittee of the European Academy of Neurology, and since 2019 member of the Rare Neurological Diseases panel of the EAN.

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**ADRIANA MIHAI**  
**ROMANIA**

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Mihai Adriana MD, PhD, Associate Professor at Psychiatric Department of University of Medicine, Pharmacy, Science and Technology George Emil Palade, Targu Mures, Romania, since 2012, became director of Centre of Psychotherapy and Personal Development (IPPD) in 2009. She works as a psychiatrist and psychotherapist in family therapy. As a research psychiatrist and scientist, she published 53 scientific papers in extenso with a total Impact Factor: 75,687. Her studies have documented changes in mental health system in Eastern Europe; she had also contribution in addiction domain, psychiatric emergencies and medical education.

The organizing and educational activity was acknowledged by winning the Educational Award offered by Lundbeck Institute (2002). The scientific activity was recognised by 6 prizes awarded by different organizations WPA (World Psychiatric Association), EPA (European Psychiatric Association), Berlin Summer School, ARPP (Association of Romanian Psychiatrists and Psychotherapists), Geneva Initiative, 3 prizes awarded by CNCSIS (National Council of Scientific Research). Member in board of different international associations: she was the vice-chair of Section on Education in Psychiatry of the WPA, chair of Section of Addictive Behaviours of the EPA (2009-2011), the president of EFPT (European Federation of Psychiatric Trainees 2001-2003); international member of APA (American Psychiatric Association).



***IOANA MINDRUTA***  
**ROMANIA**

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Ioana Mindruta, neurologist with interest in epileptology and presurgical evaluation, is the Head of the Epilepsy Monitoring Unit at the University Emergency Hospital of Bucharest and Coordinator in the National Program for Drug Resistant Epilepsy and Rare Disorders. She is currently Vicepresident of Romanian Society for Clinical Neurophysiology (ASNER) and part of the Board Committee of National Neurology Society and National Chapter of ILAE (SRIE).

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***DAFIN F. MURESANU***  
**ROMANIA**

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Professor of Neurology, Senior Neurologist, Chairman of the Neurosciences Department, Faculty of Medicine, "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, President of the European Federation of Neurorehabilitation Societies (EFNR), Chairman of the EAN Communication Committee and Member of the Board, Co-Chair EAN Scientific Panel Neurotraumatology, Past President of the Romanian Society of Neurology, President of the Society for the Study of Neuroprotection and Neuroplasticity (SSNN), Corresponding Member of the Romanian Academy, Member of the Academy of Medical Sciences, Romania, secretary of its Cluj Branch.

He is member of 17 scientific international societies (being Member of the American Neurological Association (ANA) - Fellow of ANA (FANA) since 2012) and 10 national ones, being part of the executive board of most of these societies. Professor Dafin F. Muresanu is also a specialist in Leadership and Management of Research and Health Care Systems (specialization in "Management and Leadership, Arthur Anderson Institute, Illinois, USA, 1998"; "MBA – Master of Business Administration - Health Care Systems Management, The Danube University - Krems, Austria, 2003"). He has performed valuable scientific research in high interest fields such as: neurobiology of central nervous system (CNS) lesion mechanisms; neurobiology of neuroprotection and neuroregeneration of CNS; the role of the Blood-brain barrier (BBB) in CNS diseases; developing comorbidities in animal models



to be used in testing therapeutic paradigms; nanoparticles neurotoxicity upon CNS; the role of nanoparticles in enhancing the transportation of pharmacological therapeutic agents through the BBB; cerebral vascular diseases; neurodegenerative pathology; traumatic brain injury; neurorehabilitation of the central and peripheral nervous system; clarifying and thoroughgoing study on the classic concepts of Neurotrophicity, Neuroprotection, Neuroplasticity and Neurogenesis by bringing up the Endogenous Defense Activity (EDA) concept, as a continuous nonlinear process, that integrates the four aforementioned concepts, in a biological inseparable manner.

Professor Dafin F. Muresanu is coordinator in international educational programs of European Master (i.e. European Master in Stroke Medicine, University of Krems), organizer and co-organizer of many educational projects: European and international schools and courses (International School of Neurology, European Stroke Organisation Summer School, Danubian Neurological Society Teaching Courses, Seminars - Department of Neurosciences, European Teaching Courses on Neurorehabilitation) and scientific events: congresses, conferences, symposia (International Congresses of the Society for the Study of Neuroprotection and Neuroplasticity (SSNN), International Association of Neurorestoratology (IANR) & Global College for Neuroprotection and Neuroregeneration (GCNN) Conferences, Vascular Dementia Congresses (VaD), World Congresses on Controversies in Neurology (CONy), Danube Society Neurology Congresses, World Academy for Multidisciplinary Neurotraumatology (AMN) Congresses, Congresses of European Society for Clinical Neuropharmacology, European Congresses of Neurorehabilitation). His activity includes involvement in many national and international clinical studies and research projects, over 500 scientific participations as "invited speaker" in national and international scientific events, a significant portfolio of scientific articles (209 papers indexed on Web of Science-ISI, H-index: 22) as well as contributions in monographs and books published by prestigious international publishing houses.

Prof. Dr. Dafin F. Muresanu has been honored with: „Dimitrie Cantemir" Medal of the Academy of The Republic of Moldova in 2018, Ana Aslan Award 2018 - "Performance in the study of active aging and neuroscience", for the contribution to the development of Romanian medicine, National Order "Faithful Service" awarded by the President of Romania in 2017; "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, Faculty of Medicine, the "Iuliu Hatieganu Great Award 2016" for the best educational project in the last five years; the Academy of Romanian Scientists, "Carol Davila Award for Medical Sciences / 2011", for the contribution to the Neurosurgery book "Tratat de Neurochirurgie" (vol.2), Editura Medicala, Bucuresti, 2011; the Faculty of Medicine, "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca "Octavian Fodor Award" for the best scientific activity of the year 2010 and the 2009 Romanian Academy "Gheorghe Marinescu Award" for advanced contributions in Neuroprotection and Neuroplasticity.



***MIHAI MUTICA***  
**ROMANIA**

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Dr. Mihai Mutică has graduated "Grigore T. Popa" University of Medicine and Pharmacy from Iasi, Romania.

He has completed his PhD from University of Medicine and Pharmacy Craiova in 2016 and in present he is certified physician practicing psychiatry at "Elisabeta Doamna" Psychiatry Hospital, Galati, Romania.

He is involved in numerous research and advocacy projects in mental health.

His professional concerns are eclectic and interdisciplinary.

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***CATALINA GIURGI ONCU***  
**ROMANIA**

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Dr. Catalina Giurgi-Oncu, MD, PhD

- Senior Lecturer in Psychiatry, Department of Neuroscience, "Victor Babes" University of Medicine and Pharmacy of Timisoara (since 2021; University lecturer 2013-2021)

- Consultant Psychiatrist, Timis County Emergency Clinical Hospital, "Eduard Pamfil" Psychiatric Clinic (2019-ongoing)

- Graduate of the "Victor Babes" University of Medicine and Pharmacy of Timisoara, Faculty of General Medicine, graduated 2007 (doctor-medic, Bachelor's degree)

- Over 12 years of experience as a trainee, specialist, subsequently, Consultant Psychiatrist in General Adult Psychiatry, working in both inpatient and outpatient settings, in Romania and the United Kingdom (fully registered with the General Medical Council, 2016-2018,

employed by NHS trusts in Scotland and England)

- Specialist Associate (Royal College of Psychiatrists, UK, 2017-ongoing)
- formerly affiliated with the Institute of Health and Wellbeing, University of Glasgow, Global Mental Health MSc (visiting lecturer, 2016-2018)
- Level II EMDR Psychotherapist
- Chair of the Committee of Early Career Psychiatrists within the Romanian Association of Psychiatry and Psychotherapy (ARPP) (2017)
- Former Chair (2012-2013), and, subsequently, Executive Chair (2014-2015) of the Romanian Association of Psychiatry Trainees (AMRPR)
- Member in the Board of the Timisoara Association of Psychiatrists; member of the Romanian Association of Psychiatry and Psychotherapy



***BOGDAN O. POPESCU***  
**ROMANIA**

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Born March 8th, 1971 in Bucharest, Romania.

Address: Department of Neurology, School of Medicine, 'Carol Davila' University of Medicine and Pharmacy, Colentina Clinical Hospital, 19-21 Sos. Stefan cel Mare, sector 2, 020125, Bucharest, Romania.

Scientometrics: 50 ISI full text articles, Over 1000 ISI citations, Hirsch index 18.

#### ACADEMIC EDUCATION AND APPOINTMENTS

1996	MD, 'Carol Davila' University School of Medicine, Bucharest, Romania
2000 - 2009	Assistant Professor, 'Carol Davila' University School of Medicine
2001	PhD, 'Carol Davila' University School of Medicine - suma cum laudae
2002 - 2008	Neurologist, University Hospital Bucharest
2004	PhD, Karolinska Institute, Stockholm, Sweden
2005 -	Head of Laboratory of Molecular Medicine, 'Victor Babeş' National Institute of Pathology, Bucharest, Romania
2008 -	Senior Neurologist

2009 - 2012 Lecturer, 'Carol Davila' University School of Medicine  
2009 - Senior Researcher, 'Victor Babeş' National Institute of Pathology,  
Bucharest, Romania  
2012 - 2015 Associate Professor, 'Carol Davila' University School of Medicine and  
Head of Neurology Unit II, Colentina Clinical Hospital  
2015 Professor of Neurology, 'Carol Davila' University School of Medicine,  
Colentina Clinical Hospital

#### AWARDS

1999 Beaufour-Ipsen prize for the best research study in neurology  
2000 Young histochemist award - International Society of Histochemistry and  
Cytochemistry  
2004 Diploma of scientific merit – 'Victor Babeş' National Institute of Pathology  
2007 'Victor Babeş' Award of Romanian Academy for medical research  
2010 Science and Art National Foundation Award of Excellence for research in the field  
of Neuroscience and Neuropathology  
2014 'Brain Networking' Foundation Award of Romanian Academy of Medical Sciences,  
for developing Neurology nationally and internationally.  
2017 'Carol Davila' Prize for Medicine, Awarded by The Great Lodge of Romania and  
Romanian Academy  
2018 'Ana Aslan' Prize for performance in studies and treatment of chronic degenerative  
diseases, for contribution to development of Romanian medicine, awarded by 'Ana  
Aslan' National Institute of Gerontology and Geriatrics

#### OTHER CURRENT ACTIVITIES

Editor in Chief of Romanian Journal of Neurology (2016 – ) and former Executive Editor  
(2001-2016)  
President of the Romanian Society of Neurology (2017 – ) and former Secretary General  
(2001-2013)  
Research director of the Society for the Study of Neuroprotection and Neuroplasticity (2005  
– )  
Vicepresident of 'Carol Davila' University of Medicine and Pharmacy Bucharest (2016 –2020)  
Vicepresident of Bucharest College of Physicians (2015 –2019 )

#### SELECTED PUBLICATIONS

1. Wallin A, Kapaki E, Boban M, Engelborghs S, Hermann DM, Huisa B, Jonsson M, Kramberger MG, Lossi L, Malojcic B, Mehrabian S, Merighi A, Mukaetova-Ladinska EB, Paraskevas GP, Popescu BO, Ravid R, Traykov L, Tsvigoulis G, Weinstein G, Korczyn A, Bjerke M, Rosenberg G. Biochemical markers in vascular cognitive impairment associated with subcortical small vessel disease - A consensus report. BMC Neurol. 2017; 17:102.
2. Ceafalan LC, Popescu BO. Juxtacerebral Tissue Regeneration Potential: Telocytes Contribution. Adv Exp Med Biol. 2016;913:397-402.
3. Gheorghiu M, David S, Polonschii C, Olaru A, Gaspar S, Bajenaru O, Popescu BO, Gheorghiu E. Label free sensing platform for amyloid fibrils effect on living cells. Biosens Bioelectron.

2014, 52:89-97.

4. Enciu AM, Gherghiceanu M, Popescu BO. Triggers and effectors of oxidative stress at blood-brain barrier level: relevance for brain ageing and neurodegeneration. *Oxid Med Cell Longev*. 2013;2013:297512.

5. Popescu BO, Gherghiceanu M, Kostin S, Ceafalan L, Popescu LM. Telocytes in meninges and choroid plexus. *Neurosci Lett*. 2012, 516:265-9.

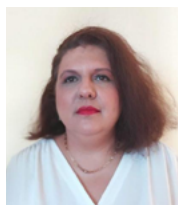
6. Hort J, O'Brien JT, Gainotti G, Pirttila T, Popescu BO, Rektorova I, Sorbi S, Scheltens P; EFNS Scientist Panel on Dementia. EFNS guidelines for the diagnosis and management of Alzheimer's disease. *Eur J Neurol*. 2010, 17:1236-48.

7. Popescu BO, Toescu EC, Popescu LM, Bajenaru O, Muresanu DF, Schultzberg M, Bogdanovic N. Blood-brain barrier alterations in ageing and dementia. *J Neurol Sci*, 283:99-106, 2009.

8. Cowburn RF, Popescu BO, Ankarcrona M, Dehvari N, Cedazo-Minguez A. Presenilin-mediated signal transduction. *Physiol Behav*. 2007;92:93-7.

9. Popescu BO, Cedazo-Minguez A, Benedikz E, Nishimura T, Winblad B, Ankarcrona M, Cowburn RF. Gamma-secretase activity of presenilin 1 regulates acetylcholine muscarinic receptor-mediated signal transduction. *J Biol Chem*. 2004;279:6455-64.

10. Cedazo-Minguez A, Popescu BO, Blanco-Millán JM, Akterin S, Pei JJ, Winblad B, Cowburn RF. Apolipoprotein E and beta-amyloid (1-42) regulation of glycogen synthase kinase-3beta. *J Neurochem*. 2003;87:1152-64.



**ADINA ROCEANU**  
**ROMANIA**

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Neurologist (since 2000) and senior research scientist (since 2003) with special interest in headache and electrophysiology, PhD - doctor in medical sciences (since 2001), with thesis concern "Migraine – electroclinical correlations in sleep and wakefulness state", working at the University Emergency Hospital of Bucharest Department of Neurology (since 1995).

Acting as Romanian Society of Neurology representative at the European Headache Federation (since 2006), at the International Headache Society (since 2011) and European Academy of Neurology scientific panel of Headache (since 2015).

Organiser of headache teaching courses and conferences:

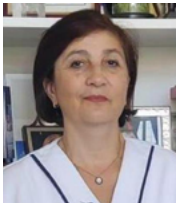
- 2009 - "European Headache School 2009 videoconference course" – Presidents: F. Antonaci, A. Roceanu; 12th-14th November 2009, Bucharest-Romania, University Emergency Hospital of Bucharest

- 2014 - 22th of November 2014 - a one day videoconference in Bucharest, Romania – EHF, with prof dr Rigmor Jensen ( Denmark)

- 2016 - symposium "Actualities in migraine diagnostic and treatment", with the participation of Prof. Dr Fabio Antonaci

- 2019 – 14.05.2019 - chairperson – course " Headache and other cranial pain", 17-Th National Congress of Romanian Society of Neurology with International Participation - Danubian Symposium of Neurology, Bucharest, 2019

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**CORINA ROMAN**  
**ROMANIA**

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Professor Corina Roman, Md PHD, the head of neurology department County Hospital Sibiu since 2017. She has been actively involved in implementing thrombolytic stroke therapy in the Stroke department of Sibiu County Hospital, she has also been appointed Coordinator of Multiple Sclerosis centre in Sibiu since 2019, she is also elected as member in the Board of the Romanian Society of Neurology ( 2021- 2024).

Moreover she is a residency programme coordinator since 2013 and is actively involved in the constant improvement and training of young neurologists, also being highly active in clinical practice and scientific research, (awards for poster works at the National Neurology Congress and scholarships for young residents for the European Academy of Neurology). She is currently the coordinator of the Neurosciences Centre in Sibiu and coordinates PhD thesis for the PhD school in the University of Sibiu.

She has a wide research activity, defined by various international publications in a wide degree of subjects including epilepsy, stroke, neurocritical care and neuroimmune disorders.



## ***HARI SHANKER SHARMA*** **SWEDEN**

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Hari Shanker Sharma, Director of Research (International Experimental Central Nervous System Injury & Repair, IECNSIR), University Hospital, Uppsala University is Professor of Neurobiology (MRC), Docent in Neuroanatomy (UU) and is currently affiliated with Department of Surgical Sciences, Division of Anesthesiology and Intensive Care Medicine, Uppsala University, Sweden. Hari Sharma was born on January 15, 1955 in an Industrialist town Dalmianagar (Bihar), India. He did his Bachelor of Science with Honors from the prestigious L. S. College Muzaffarpur in 1973 and secured 1st position in his batch. He obtained his Master Degree from Bihar University with special expertise in Cell Biology in 1976 and awarded Gold Medal of Bihar University for securing 1st position in the 1st Class. Hari Sharma joined the group of Professor Prasanta Kumar Dey, a neurophysiologist by training in the Department of Physiology, Institute of Medical Sciences, Banaras Hindu University, Varanasi in 1977 to obtain Doctor of Philosophy Degree (D.Phil.) in Neurosciences and was awarded Ph.D. in 1982 on "Blood-Brain Barrier in Stress." Hari Sharma after carrying out a series of Government of India funded Research Projects on the BBB and brain dysfunction (1982–1987), joined the lab of Neuropathology at Uppsala University with Professor Yngve Olsson in 1988 to investigate passage of tracer transport across the BBB caused by stress or traumatic insults to the Brain and Spinal cord at light and electron microscopy. Dr. Sharma awarded the prestigious Alexander von Humboldt Foundation Fellowship of German Government (1989–1991) to work on hyperthermia induced BBB dysfunction at the ultrastructural level in the laboratory of Professor Jorge Cervós-Navarro (a living "Legend in Neuropathology in Europe"). Dr. Sharma joined again Uppsala University and established a network of collaboration on "Experimental CNS Injury Research Group" as a lead investigator with eminent collaborators in various parts of Europe, USA, and Australia (1991–). On his work on hyperthermia Dr. Sharma received the prestigious Neuroanatomy award "Rönnows Research prize" of Uppsala University for "best neuroanatomical research of the year 1996" followed by the Award of the Degree of Doctor of Medical Sciences of Uppsala University in Neuroanatomy in 1999 and selected for the Best Thesis Award of the Medical faculty, "The Hwassers Prize" of 1999. On his meticulous works on the Blood Brain barrier and Brain edema (2000–2003) Dr. Sharma earned the prestigious title of "Docent in Neuroanatomy" of Medical Faculty, Uppsala University in April 2004. Currently his main research interest is Neuroprotection and Neuroregeneration, in relation to the Blood-brain barrier in stress, trauma, and drugs of abuse in health and disease.

Dr. Sharma on his research on brain pathology and neuroprotection in different models received the prestigious awards from The Laerdal Foundation of Acute Medicine, Stavanger, Norway, in 2005 followed by Distinguished International Scientists Collaboration Award by National Institute on Drug Abuse (NIDA), Baltimore, MD (2006–2008). His recent work on 5-HT<sub>3</sub> receptor mediated neuroprotection in morphine withdrawal induced neurotoxicity

won the coveted prize of Best Investigator Award 2008 and Best Scientific Presentation by European Federation of the International Association for Study of Pain (ISAP), and Awarded during their VI Annual Meeting in Lisbon, September 9–12, 2008. His recent research is aimed to find out the role of nanoparticles in Neurodegeneration and Neuroprotection using various treatment strategies that is supported by European Aerospace Research and Development (EOARD), London, UK and US Air Force Research Laboratory, Wright Patterson Air Force Base, Dayton, Oh, USA. On his works on Blood–brain barrier in hypertension and diabetes together with Romanian colleagues, University of Medicine and Pharmacy “Iuliu Hatieganu,” Cluj-Napoca, Romania awarded Dr. Sharma with Honorary Doctorate of Medical Sciences in 2009. Dr. Sharma’s work over 30 years on the blood-brain barrier and brain edema won him the US Neurosurgeon Dr. Anthony Marmarou Award (2011) by the International Brain Edema Society at their 15th Congress in Tokyo, Japan, November 20–24, 2011. His works on Nanoneuroscience and development of nanomedicine to treat the CNS injuries has won accolades at various Government and International Scotties or Organization across the World. Accordingly Dr Sharma was decorated with the most prestigious “Hind Rattan Award 2012” (Jewel of India) on the eve of Republic Day of India 25th January 2012 and Mahatma Gandhi Pravasi Gold Medal on October 12, 2012 in House of Lords, London, UK. Based on his outstanding contribution in Nanoneuropharmacology and nanodrug delivery to treat central nervous system (CNS) diseases including Neurodegenerative diseases such as Alzheimer’s and Parkinson’s Hari Sharma bestowed with Prestigious Gujarat Govt. International Visionary Award 2012 in a glittering function in Ahmedabad, Gujarat on Nov 23, 2012. His further research on co-morbidity factors e.g., hypertension or diabetes may alter pathophysiology of brain injuries and require higher drug dose or nanodrug delivery of neuroprotective agents to minimize brain dysfunction is recognized by Govt. of India by presenting him one of the coveted “Bharat Jyoti Award 2013” (Glory of India) by His Excellency Governor Balmiki Prasad Singh in Hotel Le Meridien, New Delhi on Jan 12, 2013. Dr Sharma also received the highest Award of the Govt. of India “Navrattan Award 2013” (Nine Jewels of India) on the eve of 64th Republic Day of India (25th January 2013) by His Excellency Governor Bishma Narain Singh, in Ashok Hotel, New Delhi. Hari Sharma is Founding President of the Global College of Neuroprotection & Neuroregeneration (2004-); Elected President of International Association of Neurorestoratology (IANR) (2014-); and selected Senior Expert of Asia-Pacific CEO Association, Worldwide (APCEO) (2012-) for his contribution to uplift scientific research in many countries Globally that may have better economic and social benefit for the mankind. Hari Sharma awarded coveted National Award “Sword of Honor” 2015 by Govt. of India on the eve of 66th Republic Day of India 25th January 2015 in New Delhi Eros Hotel International during the 34th Non-resident Indian (NRI) conclave by Speaker of Lok Sabha (Indian Parliament) the Hon’ble Mrs Meira Kumar of Indian national Congress (INC) Party for the continued extraordinary achievement in nanomedicine for public health awareness and possible therapeutic measures.

Based on his expertise in Nanoneuroscience, Hari Sharma was also invited to organize and chair Nanosymposium in Society for Neuroscience meetings in Chicago (2009), San Diego (2010), Washington DC (2011), New Orleans (2012), San Diego (2013) and Washington DC (2014, Nov 15-19, 2014); Chair Neurobiology Symposium 14th Int. Amino Acid & Peptide, Vienna, Austria; Keynote speaker & Chair Nanotechnology-2015, Frankfurt, Germany. Hari Sharma is also the recipient of Prestigious US TechConnect Global Innovation Award 2013 at the National Innovation Summit & Innovation Showcase, Washington DC May 12-16,



2013 on his work on Nanowired cerebrolysin in Neuropathic Pain. Hari Sharma Served as one of the Poster Judges in 2014 180th Annual Meeting of American Association of Advancement of Science (AAAS) Held in Chicago, IL, USA Feb 13-17, 2014 followed by 181st Annual Meeting of American Association of Advancement of Science (AAAS) held in San José, CA, USA Feb 12-16, 2015. Hari Sharma has published over 350 research papers and 85 reviews, 14 monographs, and 80 international book chapters and edited 18 book volumes with Current H-index = 38 (ISI Database) as of today. He served as Guest Editor of *Curr. Pharm. Desig.* (2005, 2007, 2010–); *J Neural. Transmiss.* (2006, 2011–) and is the founding Editor-in-Chief of *Int. J. Neuroprotec. Neuroregen.* (2004–), UK and the European Editor of *Central Nervous system-Neurological Disorders Drug Target* (2013–). Dr. Sharma is on board of various International Journals including *CNS and Neurological Disorders-Drug Targets*, USA (2010), *Journal of Neurodegeneration and Regeneration*, USA (2009–); *Austin Journal of Nanomedicine & Nanotechnology* (2014–); and is associate editor of *Journal of Nanoscience and Nanotechnology (Nanoneuroscience 2006–)*, USA, Review Editor—*Frontiers in Neuroengineering* (2007–), *Frontiers in Neurorestoratology*, and Associate Editor of *Frontiers in Aging Neuroscience* (2008–), *Frontiers of Fractal Physiology* (2010–), Switzerland, *Journal of Neurorestoratology*, Dove Medical press, London, UK (2012–), WebMD Central, Neurology Faculty, Advisory Board Member (2010–), *World Journal of Pharmacology* (2011–), *Journal of Physical Medicine and Rehabilitation*, USA (2012–). Dr. Sharma served as volume editor of several progress in Brain research series (Volumes 104, 115, 162 and 180), *International review of Neurobiology* (Volume 82 and 102) and other Springer Volumes on *Spinal cord injury* (1988) and *Handbook of Neurochemistry* (2009) apart from stand alone books (Elsevier, Springer and Academic Press since 1994). Dr. Hari Sharma is invited to join several National Academies of repute including *New York Academy fo Science*, USA (since 1994–); *International Academy of Stress*, New York (2003–), *Swedish Academy of Pharmaceutical Sciences* (2010–). Dr. Sharma has served as an expert evaluator and advisor to various Boards, Councils and Institutions for their Research Grants including *Wellcome Trust*, London, UK (2011–); *Catalan Agency for Health Information and Quality*, TV3 (2010–), *European Commission Projects* (2002–), *European Nanomed Council* (2009–), *Ministry of Health Science Foundation*; *Medical research Council and University Commission of Grants* in various countries in Europe, USA, UK, Canada, Hong Kong, Singapore and in Australia. Some of the notable organizations include: *Australia and New Zealand Health Council* (2000–); *University Commission of Grants, Hong Kong* (2002–), *Singapore Medical Council*, Singapore (2003–); *UK Charity Organization “Research on Ageing: Help the Aged”* (2003–); *Euro Nanomed* (2010–). Dr. Sharma is designated as ambassador of the *City of Uppsala 2007*, by *Uppsala County administration and Uppsala Tourism* for promoting Uppsala, Sweden as *International Research Collaboration/Meetings and Conference Destination*. Dr. Hari Sharma is married to *Aruna Sharma (nee Bajpai)* since 23rd April 1979 and has two sons. Dr Sharma is designated as *Visiting Professor, University of Basque Country, Bilbao, Spain* supported by *Basque Govt. Foundation*. His political affiliation belongs to *Swedish Social Democrat Party (Socialdemokraterna, Sverige)* where he is associated with the development of Education and Research matters in Sweden actively.



**MIHAELA SIMU**  
**ROMANIA**

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Mihaela Simu is presently working as Professor and Chairman of the Neurology Department II of University of Medicine and Pharmacy "Victor Babes" - Timisoara. Professor Simu is currently Vicepresident of the Romanian Society of Neurology, one of the coordinators of the National Programme for the treatment of Multiple Sclerosis in Romania, active member of ENS, EFNS, American Academy of Neurology, and MDS. Professor Simu has been and is involved as principal investigator in more than 20 international and national multicentric trials and 4 national research grants, and is presently the Romanian project leader in the BIOMARK HURO project (cooperation between Szeged and Timisoara medical Universities). Her interests are directed mainly in clinical neurology, in particular in multiple sclerosis, Parkinson disease, dementia, cerebrovascular and focal dystonias. As author or co-author, has published and reported more than 100 national and international scientific papers, 3 medical books and 2 neurology courses in a bilingual (Romanian / English) version.

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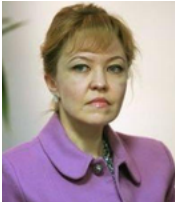
**ADINA STAN**  
**ROMANIA**

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Dr. Adina Stan is senior neurologist, lecturer of Neurology at Neuroscience Department, University of Medicine and Pharmacy "Iuliu Hatieganu", Cluj-Napoca, Romania. Adina Stan received her MD degree from the University of Medicine and Pharmacy Cluj-Napoca in 2001. She trained in neurology in The University Emergency County Hospital Cluj-Napoca, receiving her confirmation in this field in 2006. Since 2011 she is senior neurologist. In 2008 she became associate professor in neurology, at the University of Cluj Napoca, and in 2016 she was appointed lecturer of neurology at the same university. She followed the courses of European Master of Stroke Medicine, Danube University, Krems, Austria. Adina Stan received her PhD degree in 2015, with the thesis "Early neurorehabilitation in acute ischemic stroke with and without endogenous neuroplasticity stimulation with neurotrophic factors."

She has authored 35 scientific publications. She was sub-investigator in many clinical trials, including three phase II clinical studies with stroke and multiples sclerosis. Her research interests include stroke, multiple sclerosis and cognitive impairment.

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**ANDREEA SZALONTAY**  
**ROMANIA**

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Associate Professor at the Psychiatric Department of the „Grigore T. Popa” University of Medicine and Pharmacy Iasi, Head of the Clinical Psychiatry VI from the „Socola” Institute of Psychiatry Iasi.

First author and co-author of 7 textbooks and one chapter addressing topics in the field of General Psychopathology, Dementia, Clinical Psychiatry.

The lead author of more than 25 ISI listed articles, more than 20 BDI listed articles, published in both national and international journals.

Speaker to National and International Congresses of Psychiatry, expert meetings, postgraduate courses beginning to 2002.

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**JOZSEF SZASZ**  
**ROMANIA**

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EDUCATION:

- University of Medicine and Pharmacy (UMPh), Tirgu-Mures, Romania (1986-1992)
- PhD thesis: Motor complications and therapy in advanced Parkinson's Disease (2005)  
University of Medicine and Pharmacy, Tirgu-Mures, Romania

#### WORK EXPERIENCE :

- Resident in Neurology (1992-1998)
- Neurologist (1998-2003)
- Senior neurologist (2003-)
- Assist. Prof. at the Department of Neurology UMPH Tg.Mures (1999-2009)
- Senior Lecturer at the Department of Neurology UMPH Tg.Mures (2009-2020)
- Associate Prof. 2021-

#### TEACHING ACTIVITY

IN ROMANIAN: clinical practice in neurology for students and resident doctors (1999- )

IN HUNGARIAN: lectures in adult neurology (2005-)

#### CLINICAL TRIALS

Principal investigator in 16, investigator in 6, phase III clinical trials.

#### THE MOST IMPORTANT PUBLICATIONS:

1. Kerényi L, Kardos L, Szász J, Szatmari S, Bereczki D, Hegedus K, Csiba L. Factors influencing hemorrhagic transformation in ischemic stroke: a clinicopathological comparison. *European Journal of Neurology* 2006 Nov;13(11):1251-1255. ISSN 1351-5101 IF: 2,244
2. Szatmari S, Pascu I, Mihalka L, Mulesa SV, Fekete I, Fulesdi B, Csiba L, Zselyuk G, Szász J, Gebefugi J, Nicolescu S, Vasiesiu D, Smolanka VI, Bereczki D: The Mures-Uzhgorod-Debrecen study: a comparison of hospital stroke services in Central-Eastern Europe. *European Journal of Neurology* 2002;9:1-4 ISSN 1351-5101 IF: 1,565
3. Rupam Borgohain, Jozsef Szász, P. Stanzione, et al. Randomized trial of safinamide add-on to levodopa in Parkinson's disease with motor fluctuations. *Mov Disord*, 2014, 29:229-237
4. Rupam Borgohain, Jozsef Szász, Paolo Stanzione, et al. Two-Year, Randomized, Controlled Study of Safinamide as Add-on to Levodopa in Mid to Late Parkinson's Disease *Mov Disord*, 2014, 29: 1273-1280
5. Fekete K, Szatmari S, Szőcs I, Szekeres C, Szász J, Mihálka L, Smolanka V, Kardos L, Csiba L, Bereczki D. Prestroke alcohol consumption and smoking are not associated with stroke severity, disability at discharge, and case fatality. *J Stroke Cerebrovasc Dis*. 2014 Jan;23(1):e31-37 IF: 1.984
6. O. Bajenaru, A. Ene, B. O. Popescu, J. A. Szasz, M. Sabau, D. F. Muresan, L. Perju-Dumbrava, C. D. Popescu, A. Constantinescu, I. Buraga, M. Simu. The effect of levodopa-carbidopa intestinal gel infusion long-term therapy on motor complications in advanced Parkinson's disease: a multicenter Romanian experience. *J Neural Transm* (2016) 123:407-414 DOI 10.1007/s00702-015-1496-z IF: 2.392
7. Angelo Antonini, Werner Poewe, K. Ray Chaudhuri, Robert Jech, Barbara Pickut, Zvezdan Pirtosek, Jozsef Szasz, Francesc Valldeoriola, Christian Winkler, Lars Bergmann, Ashley Yegin, Koray Onuk, David Barch, Per Odin. Levodopa-carbidopa intestinal gel in advanced Parkinson's: Final results of the GLORIA registry. *Park Rel Disord* 45 (2017)

13-20. IF: 4.721

8. Szasz Jozsef A., Viorelia Constantin, Fazakas Peter Alpar, Blenysei Eszter, Grieb Levente Gabor, Balla Antal, Sarig Monika, Szegedi Kinga, Bartha Eszter Noemi, Szatmari Szabolcs. The role of selective monoamine oxidase B inhibitors in the therapeutic strategy of Parkinson's disease in the neurology clinics of Targu Mures County Emergency Clinical Hospital. *Orv Hetil* 2017 Volume: 158 Issue: 51 Pages: 2023-2028. IF:0,322
9. József A. Szász, Károly Orbán-Kis, Viorelia A. Constantin, et al. Therapeutic strategies in the early stages of Parkinson's disease: a cross-sectional evaluation of 15 years' experience with a large cohort of Romanian patients. *Neuropsychiatric Disease and Treatment* 2019;15 831-838. IF: 2,115
10. József A. Szász, Károly Orbán-Kis, Viorelia A. Constantin, et al. Profile Of Patients With Advanced Parkinson's disease Suitable For Device-Aided Therapies: Restrospective Data Of A Large Cohort Of Romanian Patients. *Neuropsychiatric Disease and Treatment* 2019;15 3187-3195. IF: 2,115
11. Szász József Attila, Szatmári Szabolcs, Constantin Viorelia, et al. Characteristics of levodopa treatment in advanced Parkinson's disease in the experiences of the neurology clinics of Târgu Mureș, Romania. *Orv Hetil.* 2019; 160(17): 662-669. IF: 0,479
12. Viorelia A. Constantin, József A. Szász, Károly Orbán-Kis, et al. Levodopa-Carbidopa Intestinal Gel Infusion Therapy Discontinuation: A Ten-Year Retrospective Analysis of 204 Treated Patients. *Neuropsychiatric Disease and Treatment* 2020;16 1835-1844. IF: 2,115
13. Jozsef Attila Szasz, Dragos Catalin Jianu, Mihaela Adriana Simu, et al. Characterizing Advanced Parkinson's Disease: Romanian Subanalysis from the OBSERVE-PD Study. *Parkinson's Disease*. Vol2021, ArticleID6635618, <https://doi.org/10.1155/2021/6635618>
14. József Attila Szász, Viorelia Adelina Constantin, Károly Orbán-Kis, et al. Management Challenges of Severe, Complex Dyskinesia. Data from a Large Cohort of Patients Treated with Levodopa-Carbidopa Intestinal Gel for Advanced Parkinson's Disease. *Brain Sci.* 2021, 11, 826. <https://doi.org/10.3390/brainsci11070826>
15. Alfonso Fasano, Tanya Gurevich, ... József Szász, et al. Concomitant Medication Usage with Levodopa-Carbidopa Intestinal Gel: Results from the COSMOS Study. *Movement Disorders*, Vol. 36, No. 8, 2021 DOI: 10.1002/mds.28596

FIELDS OF INTEREST: movement disorders, dementia, stroke, chronic pain, epilepsy,



**CRISTINA TIU**  
**ROMANIA**

---

Dr. Cristina Tiu is an associate professor, Head of the II Neurology department, Head of the Neurology discipline, Neurology Clinic of the Bucharest University Emergency Hospital, Department 6, Clinical Neuroscience at the "Carol Davila" University of Medicine and Pharmacy.

COMPETENCES:

- cerebrovascular diseases - main field of activity
- inflammatory and demyelinating diseases of the central nervous system

EDUCATION:

- 2012: European Master of Science in Stroke Medicine, Danube University, Krems, Austria
- 2001: Doctor of Medical Sciences with the thesis: "Clinical-imaging correlations in patients with chronic cerebral ischemia", "Carol Davila" University of Medicine and Pharmacy
- 2001: 2nd EFNS European Cooperation Neurology Workshop, Trest, Czech Republic
- 2000: 1st EFNS European Cooperation Neurology Workshop, Trest, Czech Republic
- 1998: Clinical internship at Center Hospitalier Universitaire, Amiens, France
- 1991 - 1998: secondary school in Neurology, Bucharest University Emergency Hospital - primary neurologist
- 1994: specialist neurologist, UMF "Carol Davila"
- 1987 - 1991: Clinical internships of 6 months in Internal Medicine, surgery, Gynecology, Paediatrics, infectious diseases and Family medicine, at the Municipal Hospital Tg. Jiu, Romania
- 1981 - 1987: University of Medicine and Pharmacy „Carol Davila”, Bucharest, Romania - doctor

EXPERIENCE:

- Since March 2007: Associate Professor at „Carol Davila" University of Medicine and Pharmacy
- From March 2000 to March 2007: Lecturer/thesis supervisor „Carol Davila" University of Medicine and Pharmacy
- From March 1993 to March 2000: Assistant Professor „Carol Davila" University of Medicine and Pharmacy

## ACHIEVEMENTS:

- President of the Romanian Society of Neurology (SNR) between 2021 - 2025
- European Stroke Organization, member of the Steering Committee for the Stroke Action Plan for Europe, 2018 - 2030
- SNR delegate for the relationship with the European Academy of Neurology
- European Society of Neurosonology and Cerebral Hemodynamics
- Chairman of the Working Group of the Ministry of Health for Priority Action for acute stroke, since 2015
- Organizer and coordinator of the National Stroke Network
- Member of the Steering Committee for the European Stroke Organization's 2019 Stroke Action Plan for Europe
- Coordinator of the Continuing Medical Education Program of the World Federation of Neurology in Romania, starting with 2005
- Member of the organizing committee of EFNS Teaching Course, Bucharest, October 2022, 2007
- Member of the organizing committees of numerous medical conferences, including the Annual Congress of the Romanian Society of Neurology

## Publications:

- Antochi FA, Tiu C, Gherasim R, Bajenaru O; "Magnetic resonance imaging in three different types of systemic lymphoma", Twelfth Meeting of the European Neurological Society, 22-26 June 2002, Berlin, J Neurol (2002) 249 (Suppl 1 ); I / 1-1 / 224, p. 176
- C. Tiu, F. Antochi, Neurosonologia Bucharest, 2006, Ed. Semne, 260 pages
- C. Tiu, M., O. Romanitan, A. Popescu. Repetitive subarachnoid haemorrhage from a spinal cord arteriovenous malformation, Romanian Journal of Neurology, vol.VI, No 2, 2008.
- C. Tiu, D. Enache, D. Vizitiu, A. Florescu, "Late meningeal carcinomatosis in a case of malignant melanoma, mimicking tuberculous meningitis"
- Ioacara S, Lichiardopol R, Ionescu - Targooviste C, Cheta D, Sabau S, Guja C, Farcasan E, C. Tiu, Diabetes type I patients life expectancy improvements in the last six decades, Diabetes Research and Clinical Practice, 2009, Nov 86 (2): 145-51
- Ioacara S, C. Tiu, Prevalence of diabetes complications in first-line therapy of type 2 diabetes mellitus, in a middle size town in Romania, Acta Endocrinologica (Buc), vol VI, no 3, pp. 327- 334, 2010
- O. Bajenaru, C. Tiu, H. Moessler, F. Antochi, D. Muresanu, BOPopescu, Philipp Novak, Efficacy and safety of Cerebrolysin in patients with hemorrhagic stroke, Journal of Medicine and Life, vol 3, No 2, April - June 2010, pp. 137- 143
- Bajenaru, O .; Tiu, C .; Dorobat, B .; Antochi, F Why antiplatelet treatment in spontaneous internal carotid dissection ?. Journal of Neural Transmission vol 120 issue 2 February 2013. pp. 335 - 338
- E. Tercoasa, V. Stefanescu, O.Rusu, C. Tiu Is carotid stenosis more frequent in stroke patients with metabolic syndrome ?, Twenty-third Meeting of the European Neurological Society, 8-11 June 2013, Barcelona, Journal of Neurology vol 260, supplement 1, June 2013, S 79

- C. Tiu, E. Terecoasa, O.A. Bajenaru Metabolic syndrome does not influence stroke subtype, Twenty-third Meeting of the European Neurological Society, 8-11 June 2013, Barcelona, Journal of Neurology vol 260, supplement 1, June 2013, S 79
- E. Terecoasa, C. Tiu, J. Masjuan, M. Alonso de Lecinana, GADan Safety of iv rt-PA thrombolysis in patients with ischemic stroke related to atrial fibrillation and previous subtherapeutic use of coumarin anticoagulants, Romanian Journal of Neurology, Vol XII, Nr 3, 2013.
- N. Grecu, C. Tiu, E. Terecoasa, O. Bajenaru, Endocarditis and Stroke, Maedica (Buchar). 2014 Dec;9(4):375-81
- H. Budincevici, C. Tiu, Bereczki D, Korv J, Tsiskaridze A, Niederkorn K, Czlonkowska A, Demarin V, CEES Working Group, Management of Ischemic Stroke in Central and Eastern Europe, Int J Stroke. 2015 Oct;10 Suppl A100:125-7. doi: 10.1111/ijss.12575. Epub 2015 14 iulie
- C. Tiu, E. Terecoasa, N. Grecu, R. Nistor, Smaranda F, F. Antochi. Disecția arterei vertebrale: o perspectivă contemporană. Maedica (Bucar). 2016 iunie;11(2):144-149.
- C. Tiu, Terecoasă EO, Grecu N, Dorobăț B, Marinescu AN, Băjenaru OA. Transient Global Amnesia After Cerebral Angiography With Iomeprol: A Case Report. Medicină (Baltimore). 2016 mai;95(19):e3590.
- Balasa R, Maier S, Voidazan S, Hutanu A, Bajko Z, Motataianu A, Tilea B, Tiu C. Assessment of Interleukin-17A, Interleukin-10 and Transforming Growth Factor-Beta1 Serum Titers in Recidivant Remitting Multiple Sclerosis Patients Treated with Avonex, Possible biomarkers for response to treatment. CNS Targets of the drug for neuronal disorders. 2017;16(1):93-101
- Răzvan Alexandru Radu, Elena Oana Terecoasă, Ovidiu Alexandru Băjenaru, C. Tiu, Clasificarea etiologică a AVC ischemic: Unde stăm?. Neurologie clinică și neurochirurgie 159, 93-106
- G Ntaios, P Michel, G Georgiopoulos, Y Guo, W Li, J Xiong, P Calleja, C. Tiu. Caracteristici și rezultate la pacienții cu COVID-19 și accident vascular cerebral ischemic acut: registrul global de accidente vasculare cerebrale COVID-19, Stroke 51 (9), e254-e258
- JE Siegler, P Cardona, JF Arenillas, B Talavera, AN Guillen, C. Tiu. Evenimente și rezultate cerebrale vasculare la pacienții spitalizați cu COVID-19: registrul multinațional SVIN COVID-19, International Journal of Stroke, 1747493020959216
- C. Tiu, V. Tiu, E. Terecoasa, A. Neacsu, O. A. Bajenaru. Positive Trend in Door-to-Needle Time and Stroke Outcome after Implementation and Data Analysis of Romanian Stroke Thrombolysis Registry. Conferința: 2nd Congress of The European Academy of Neurology – Copenhagen – 28-31 May 2016. EUROPEAN JOURNAL OF NEUROLOGY. 2016 MAI. 2(Supplement: 2): 760





**VITALIE VACARAS**  
**ROMANIA**

---

Neurologist, PhD in 2013, Head of Department Neurology II within the Cluj-Napoca County Emergency Hospital, Lecturer at Discipline Neurology and Pediatric Neurology, Department of Neuroscience of Medicine, "Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca.

Involved in: clinical and paraclinical activity in the ward with beds and outpatient ; didactic, practical and theoretical activities with students and doctors residents; clinical research activities; grants (research projects), group member interdisciplinary research, investigator / sub-investigator in clinical, multicenter studies; writing specialized papers in national and international journals, as well as many participation in national and international scientific events.



**JOHANNES VESTER**  
**GERMANY**

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Born, 1952, he specialized in Veterinary Medicine between 1971 and 1974 at the University in Munich, then changed to the University in Cologne in 1974 and specialized in Human Medicine from 1974 to 1980. In 1976 to 1979, he additionally completed the curriculum on biostatistics for pharmacology and clinical research at the Institute for Data Analysis and Study Planning in Munich.

While studying human medicine, he completed research work on pattern recognition in the visual brain and developed a pharmacodynamic Neuron Simulation Model at the Institute for Medical Documentation and Statistics of the University at Cologne.

Since 1982 he holds > 100 advanced training courses on biometry for professionals in clinical research as well as teaching courses for university institutions and international societies.

From 1985 to 1995, he was member of the Ultrahigh Dexamethasone Head Injury Study Group and the leading biometrician of the German GUDHIS trial in Traumatic Brain Injury, involving 10 Departments of Neurosurgery in Germany.

Since 1995 he is Senior Consultant for Biometry & Clinical Research at the Institute for Data Analysis and Study Planning (IDV). He planned and evaluated about 150 randomized clinical studies worldwide and is member of various international Advisory Boards and Steering Committees including participation as biometric expert in regulatory authority panels, in FDA, EMA, and BfArM hearings, and in workshops of the International Biometric Society (IBS).

Statistical peer reviewer for leading medical journals such as Stroke (American Heart Association).

Since 2013 Statistical Expert and Elected Member of the International Scientific Committee of the Society for the Study of Neuroprotection and Neuroplasticity (SSNN).

Since 2013 Statistical Expert and Elected Member of the World Academy for Multidisciplinary Neurotraumatology (AMN).

Since 2015 Member of the PhD Neuroscience International Faculty, "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania.

Since 2017 Invited Associate Professor, Department of Neuroscience, "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania.

Since 2018 Co-Chair EAN Guideline Task Force Neurorehabilitation.

Since 2018 Head Biometry & Clinical Research at the Institute for Data Analysis and Study Planning (IDV).

Since 2018 President of the Academy for Multidisciplinary Neurotraumatology (AMN).

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**DAVID VODUSEK**  
**SLOVENIA**

---

Dr. David B. Vodušek is Emeritus Professor of Neurology at the University of Ljubljana, Slovenia, Faculty of Medicine. He held the position of Medical Director, Division of Neurology, University Medical Center Ljubljana, Slovenia, between 1996 and 2018, and continues as consultant neurologist and clinical neurophysiologist.

Dr. Vodušek was born and raised in Slovenia. He received his medical degree (1976), and his PhD (1989) from the University of Ljubljana. He trained also in the Department for

Clinical Neurophysiology, Uppsalla, Sweden, and at the Institute of Neurology, Queen Square, London, UK. He became Board certified in Neurology in 1982. Dr. Vodušek was a visiting assistant professor at Baylor College, Houston, Texas, USA (1982-83), in the New York University Medical center, NY, USA (1991; 1993), and a Consultant in Ibn Sina Hospital, Kuwait (1986-1987). From 1991 to 1996 he was Head of the Institute of Clinical Neurophysiology in Ljubljana. He was appointed full Professor of Neurology at the University of Ljubljana, Slovenia, in 1997, and was Chair of Neurology, Medical Faculty, University of Ljubljana (2004 – 2007).

Dr. Vodušek is a member of the Slovene Medical Academy, the Slovene and German Neurological Associations, the British Association of Clinical Neurophysiology, the European Academy of Neurology (FEAN) and the European Federation of Autonomic Societies. Dr. Vodušek serves as Chair of the EAN Sub-Committee for European Affairs; co-chair of the Joint UEMS SN – EAN Education Board). He is Chair of the BioMed Alliance Permanent Experts Committee on CME and serves on the Editorial Boards of Neurourology and Urodynamics and Journal of European CME.

Dr. Vodušek's research interests include uro-neurology, clinical neurophysiology, and peripheral neurology; he has authored more than 150 articles in peer-reviewed international journals, many Chapters in international Editions, and co-edited the 130th volume of the Handbook of Clinical Neurology series (Neurology of Sexual and Bladder Disorders).



**ANDREAS WINKLER**  
**AUSTRIA**

---

Graduation at the Medical University Vienna, Austria  
Postgraduate study at the National Institute of Neurology and Neurosurgery, Queen Square, London, Postgraduate study at the Danube-University Krems/ Neurological Rehabilitation, Diploma for Geriatrics/Palliative medicine  
Diploma medical specialist for neurology  
Scientific Chair of the BrainDays, Neuro-Competence Center  
Head of Department of Neurology, Haus der Barmherzigkeit, Vienna  
Diploma for the postgraduate study of medical executives  
Editor in Chief "focus neurogeriatrie", SpringerWienNewYork  
Lecturer at the Danube University, Krems, Austria Lecturer at the Medical University Vienna, MUW

Since 2010 Head of Neurological Department at the Clinic Pirawarth, Medical Rehabilitation Center, Bad Pirawarth

Vice-President of Alzheimer Austria,

President of the Austrian Society for Clinical Sciences in Neurorehabilitation (ÖGKFR)

PI or CoI in recently performed clinical trials Phase III and IV: XANTUS-Study, GLORIA-AF Study, Navigate-ESUS, OBSERVE PD; Affiris - AD01; IMPULSE etc.

Numerous scientific publications in neurological and other medical journals Member of various international scientific boards and committees

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***GENERAL***  
***INFORMATION***

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## **GENERAL INFORMATION**

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### **LOGISTIC PARTNERS**



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Foundation for the  
Society for the Study of  
Neuroprotection and  
Neuroplasticity  
37 Mircea Eliade Street, 400364,  
Cluj-Napoca, Romania  
Mr. Ovidiu Selejan: +40745255311  
E-mail:office@ssnn.ro

Contact Details

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mobile: +40757096111  
doria@synapsetravel.ro

### **LANGUAGE**

The official language is English.  
Simultaneous translation will not be  
provided.

### **FINAL PROGRAM & ABSTRACT BOOK**

Available online [here](#)

### **CHANGES IN PROGRAM**

The organizers cannot assume  
liability for any changes in the  
program due to external or  
unforeseen circumstances.

### **TIME**

The program hours are adjusted to  
Current Local Time in Bucharest,  
Romania, Eastern European Summer  
Time, UTC/GMT +3 hours

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## ORGANIZERS

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## ACADEMIC PARTNERS

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of NeuroRehabilitation Societies

European Federation of  
Neurillogical Societies  
[www.efnr.org](http://www.efnr.org)  
[www.ecnr.org](http://www.ecnr.org)

WFNR

World Federation for NeuroRehabilitation

World Federation for  
NeuroRehabilitation  
[www.wfnr.co.uk](http://www.wfnr.co.uk)



Foundation for the  
Study of Nanoneurosciences and  
Neuroregeneration



Romanian Society of  
Neurology  
[www.neurology.ro](http://www.neurology.ro)



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NEUROLOGIE DIN ROMÂNIA

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Society for Neurology

