

**International Teaching Course
ESNCH/WON
2025**

INVITATION

We cordially invite you to attend the open lecture entitled
**THE EFFECT OF DEVELOPMENT OF NEUROSONOLOGY
ON DIAGNOSIS AND TREATMENT OF STROKE**

**LECTURER
BRANKO MALOJCIC M.D., Ph.D.**

**President of the European Society of Neurosonology and Cerebral Hemodynamics
World Organisation of Neurosonology**

**TIME and PLACE
13:00-13:45, APRIL 2, 2025
THEORETICAL BUILDING OF THE SEMMELWEIS
UNIVERSITY, BUDAPEST, NAGYVÁRAD SQUARE 4.**

**Anyone interested is welcome to attend the presentation.
Participation in the open lecture does not require registration.**

MEC_SZ 149022

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Program overview of the ITC 2025 – Budapest

	Morning	Afternoon
2nd of April Wednesday Day 1		BASIC LEVEL 14:00-17:00 Lectures 17:00-18:30 Hands-on course 20:00- Opening ceremony
3rd of April Thursday Day 2	BASIC LEVEL 08:20-11:00 Lectures 11:00-12:30 Hands-on course	ADVANCED LEVEL 13:30-16:00 Lectures 16:00-17:30 Hands-on course INTERNATIONAL CERTIFICATION 17:30-19:30 THEORETICAL PART 20:30- Dinner & Dance
4th of April Friday Day 3	ADVANCED LEVEL 08:20-10:20 Lectures 10:20-11:50 Hands-on course INTERNATIONAL CERTIFICATION 08:20-10:20 PRACTICAL PART	ADVANCED LEVEL 13:00-14:40 Lectures 14:40-16:10 Hands-on course INTERNATIONAL CERTIFICATION 13:00-14:40 PRACTICAL PART 16:10-19:00 PRACTICAL PART 20:00 Boat trip on the Danube
5th of April Saturday Day 4	ADVANCED LEVEL 08:20-11:00 Lectures 11:00-12:30 Hands-on course INTERNATIONAL CERTIFICATION 08:20-10:40 PRACTICAL PART 12:30-13:00 Closing Ceremony	

April 4, 08:20-10:20 INTERNATIONAL CERTIFICATION EXAM - PRACTICAL PART

E. Bartels, S. Horner, Z. Garami, B. Malojcic, J. Sargento-Freitas, L. Olah, A. Lovrencic-Huzjan, Z. May, G. Panczel, R. Debreczeni, I. Vastagh, U. Walter, P. Castro, E. Stolz, C.. Kulyk, A. Csanyi, P. Lochner, L. Olah

April 4, 13:00-14:40 INTERNATIONAL CERTIFICATION EXAM - PRACTICAL PART

E. Bartels, S. Horner, Z. Garami, B. Malojcic, C. Baracchini, A. Alexandrov, R. Debreczeni, I. Vastagh, G. Pánczél G, Z. May, R. Licenik, P. Castro, A. Csanyi, M. Mijajlovic, L. Olah

April 4, 16:10-19:00 INTERNATIONAL CERTIFICATION EXAM - PRACTICAL PART

E. Bartels, S. Horner, Z. Garami, U. Walter, M. Mijajlovic, P. Lochner, P. Castro, B. Malojcic, D. Skoloudik, C. Baracchini, C. Kulyk, L. Olah, G. Panczel, R. Debreczeni, Z. May, I. Vastagh, R. Licenik, B. Rosengarten, L. Zviagina, A. Csanyi, B. Rosengarten, E. Stolz, R. Licenik

April 5, 08:20-10:40 PRACTICAL PART (IF NEEDED)

E. Bartels, S. Horner, Z. Garami, A. Lovrencic-Huzjan, R. Debreczeni, R. Licenik, I. Vastagh, Z. May, B. Malojcic, E. Stolz, L. Olah

APRIL 02 – WEDNESDAY – AFTERNOON

Day 1 02 APR	Program
08:00-13:00	Registration
12:00-13:00	Executive Committee Meeting of ESNCH-WON

13:00-13:45	B. Malojcic: The effect of development of Neurosonology on diagnosis and treatment of stroke – Open lecture
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13:45-14:00	Welcome and Opening
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BASIC LEVEL

BASIC LEVEL - LECTURES	
Ultrasound principles and examination of extracranial arteries	
Moderators: B. Malojcic and J. Sargento Freitas	
14:00-14:20	L. Olah: Ultrasound physics and knobology
14:20-14:40	P. Martinez-Sanchez: Carotid artery examination protocol – carotid stenosis criteria
14:40-15:00	J. Sargento-Freitas: Vertebral artery examination protocol
15:00-15:20	Z. Garami: Standard of interpretation and reporting of ultrasound findings
15:20-15:40	Coffee

BASIC LEVEL - LECTURES	
Examination of intracranial vessels	
Moderators: A. Alexandrov and E. Bartels	
15:40-16:00	A. Alexandrov: Flow velocity parameters, waveform interpretation
16:00-16:20	Z. Garami: TCD – Basics and knobology – Detection of intracranial arteries
16:20-16:40	E. Bartels: TCCD – Basics and knobology
16:40-17:00	E. Stolz: TCCD – Examination of intracranial vessels
17:00-18:30	Hands-on course – Knobology, Carotid and vertebral artery examination, TCD, TCCD examination of intracranial vessels
18:30-19:30	General Assembly - ESNCH-WON
20:00-	Opening ceremony

Hands-on course - APRIL 02 - AFTERNOON	
April 02, Wednesday, Afternoon, 17:00-18:30 (Day 1/Afternoon)	Instructors
Extracranial duplex Extracranial duplex Extracranial duplex Extracranial duplex Extracranial duplex Extracranial duplex	P. Martinez-Sanchez R. Debreczeni L. Oláh Z. May A. Alexandrov, G. Panczel, I. Vastagh
TCD TCD TCD	Z. Garami A. Lovrencic-Huzjan P. Castro
Intracranial duplex/TCCD Intracranial duplex/TCCD Intracranial duplex/TCCD Intracranial duplex/TCCD Intracranial duplex/TCCD Intracranial duplex/TCCD	E. Bartels A. Pavlovic B. Malojcic, C. Baracchini J. Sargento-Freitas E. Stolz

(Back-up: C. Kulyk, D. Skoloudik, R. Licenik)

APRIL 03 – THURSDAY – MORNING

Day 2 03 APR	Program
BASIC LEVEL - LECTURES	
Extra- and intracranial vascular pathologies Moderators: D. Skoloudik and C. Baracchini	
08:20-08:40	D. Skoloudik: Carotid artery wall pathologies - High risk atherosclerotic plaques
08:40-09:00	C. Baracchini: Extracranial arterial dissection
09:00-09:20	S. Horner: Subclavian steal syndrome
09:20-09:40	B. Malojcic: Vasculitis of extracranial vessels – Takayasu arteritis, Giant cell arteritis
09:40-10:00	Coffee
10:00-10:20	A. Lovrencic-Huzjan: Carotid web
10:20-10:40	P. Castro: Role of TCD in detection of asymptomatic high risk carotid plaques; Vasoreactivity and microembolus detection
10:40-11:00	E. Stolz: Normal TCD/TCCD data and criteria for intracranial arterial stenoses
11:00-12:30	Hands-on course – Extracranial duplex – carotid and vertebral arteries, Examination of intracranial arteries: TCD and TCCD, Cerebral vasoreactivity (BHI), Examination of superficial temporal artery
12:30-13:30	Lunch

Hands-on course - APRIL 03 - MORNING	
April 03, Thursday, Morning, 11:00-12:30 (Day 2/Morning)	Instructors
Extracranial duplex Extracranial duplex Extracranial duplex Extracranial duplex Extracranial duplex/Subclavian steal Extracranial duplex/STA	J. Sargento-Freitas G. Panczel, Z. May A. Pavlovic C. Baracchini, S. Horner B. Malojcic
TCD TCD TCD/BHI, vasoreactivity	A. Csányi, L. Olah, A. Lovrencic-Huzjan P. Castro
Intracranial duplex/TCCD Intracranial duplex/TCCD Intracranial duplex/TCCD Intracranial duplex/TCCD Intracranial duplex/TCCD Intracranial duplex/TCCD	D. Skoloudik S. Schreiber E. Stolz F. Schlachetzky, E. Bartels C. Kulyk R. Debreczeni, I. Vastagh

(Back-up: Z. Garami, R. Licenik, A. Alexandrov)

ADVANCED LEVEL

APRIL 03 – THURSDAY – AFTERNOON

ADVANCED LEVEL - LECTURES	
Transcranial Brain Sonography WG Moderators: M. Mijajlovic and U. Walter	
13:30-13:50	M. Mijajlovic: Transcranial brain parenchyma scanning – protocol, techniques and practical
13:50-14:10	U. Walter: TCS in Parkinson’s disease and Parkinsonian syndromes – established indications
14:10-14:30	S. Schreiber: TCS applications with real-time fusion imaging
14:30-14:50	D. Skoloudik: Use of software tools for quantitative TCS image analysis
14:50-15:10	Coffee
Microembolic signal detection WG Moderators: W. Mess and Z. Garami	
15:10-15:30	Z. Garami: PFO
15:30-16:00	W. Mess: Non-iatrogenous microembolus signal detection
16:00-17:30	Hands-on course – Extracranial duplex, TCCD of intracranial arteries, Transcranial brain sonography, TCD, Microembolus detection, PFO detection
17:30-19:30	INTERNATIONAL CERTIFICATION EXAM – THEORETICAL PART
17:30-18:00	Industry Meeting
20:30-01:00	Dinner & Dance

Hands-on course - APRIL 03 - AFTERNOON

April 03, Thursday, Afternoon 16:00-17:30 (Day 2/Afternoon)	Instructors
TCS	U. Walter
TCS	D. Skoloudik
TCS	R. Licenik
TCS	M. Mijajlovic
TCS	L. Zviagina
TCS/Fusion imaging	S. Schreiber
TCD/MES	W. Mess, E. Ho
TCD/MES	P. Castro
TCD/PFO	Z. Garami
Extracranial duplex	A. Csanyi
Extracranial duplex	B. Malojcic
Extracranial duplex	P. Lochner, L. Olah
Intracranial duplex/TCCD	E. Stolz
Intracranial duplex/TCCD	F. Schlachetzky
Intracranial duplex/TCCD	J. Sargento-Freitas

(Back-up: R. Debreczeni, G. Pánczél, I. Vastagh, Z. May, C. Baracchini, A. Lovrencic-Huzjan, C. Kulyk)

APRIL 04 – FRIDAY – MORNING

Day 3 04 APR	Program
ADVANCED LEVEL – LECTURES	
Acute Stroke Ultrasound and Neuro-POCUS WG	
Role of TCD and TCCD in acute stroke; Point of Care Ultrasound in Neurology	
Moderators: C. Baracchini and R. Licenik	
08:20-08:40	C. Baracchini: Intracranial symptomatic stenosis: ultrasound-guided definition of grading, nature of stenosis and efficacy of treatment
08:40-09:00	A. Alexandrov: Suspicious signs of cardiac/systemic disease in transcranial ultrasound waves
09:00-09:20	J. Pagola: Focused Cardiac Ultrasound
09:20-09:40	R. Licenik: Medical Point of Care UltraSound in Neurology
09:40-10:00	D. Limbu: Ultrasound guided interventions (ultrasound guided lumbar puncture and ultrasound guided vascular access - Peripheral access and Central (Internal Jugular) access
10:00-10:20	Coffee
10:20-11:50	Hands-on course – TCD, Transcranial brain sonography, TCCD of intracranial arteries and veins, Functional TCD, Neuro-POCUS, Echocardiography, Ultrasound guided interventions
08:20-10:20	INTERNATIONAL CERTIFICATION EXAM – PRACTICAL PART
11:50-13:00	Lunch

Hands-on course - APRIL 04 - MORNING	
April 04, Friday, Morning, 10:20-11:50 (Day 3/Morning)	Instructors
US-guided interventions/Administration of Botulinum toxin US-guided interventions/LP, Vascular access	A. Csanyi D. Limbu
TCS TCS TCS	M. Mijajlovic, U. Walter D. Skoloudik
Functional TCD Functional TCD TCD TCD	B. Rosengarten P. Castro A. Alexandrov Z. Garami
Intracranial duplex/TCCD Intracranial duplex/TCCD	C. Baracchini F. Schlachetzky, C. Kulyk
Neuro-POCUS Neuro-POCUS	P. Lochner R. Licenik
Echocardiography Echocardiography	L. Schwindling J. Pagola

(Back-up: E. Stolz, L. Zviagina)

APRIL 04 – FRIDAY – AFTERNOON

ADVANCED LEVEL – LECTURES	
NICU and Neuroorbital WG	
Ultrasound in Neurointensive Care Unit – TCD and orbital US	
Moderators: P. Lochner and B. Rosengarten	
13:00-13:20	P. Lochner: Neuroorbital ultrasound. Tips and tricks of examination of the Optic Nerve Sheath Diameter (ONSD)
13:20-13:40	B. Rosengarten: ONSD and nICP; Computing ultrasound based techniques to determine intracranial pressure
13:40-14:00	C. Kulyk: TCD in brain death
14:00-14:20	A. Lovrencic-Huzjan: TCD in vasospasm and thunderclap headache
14:20-14:40	Coffee
14:40-16:10	Hands-on course – TCD, ONSD, Examination of ophthalmic and central retinal arteries, Neuro-POCUS, Echocardiography, Ultrasound guided interventions, Transcranial brain sonography, Nerve ultrasonography
13:00-14:40 16:10-19:00	INTERNATIONAL CERTIFICATION EXAM – PRACTICAL PART
20:00-	Boat trip on the Danube (Dinner)

Hands-on course - APRIL 04 - AFTERNOON	
April 04, Friday, Afternoon, 14:40-16:10 (Day 3/Afternoon)	Instructors
Orbit US, ONSD/Central retinal a. Orbit US, ONSD, Central retinal a. Orbit US, ONSD, Central retinal a.	P. Lochner L Zviagina E. Stolz, Z. May, G. Panczel
Echocardiography Echocardiography	L. Schwindling R. Licenik
Neuro-POCUS and Ultrasound guided interventions	D. Limbu
TCD TCD TCD	C. Kulyk A. Lovrencic-Huzjan Z. Garami, B. Rosengarten
US-guided interventions/Administration of Botulinum toxin	A. Csanyi
Muscle and nerve Muscle and nerve Muscle and nerve	Z. Aranyi A. Csillik K. Saftics
TCS TCS	U. Walter M. Mijajlovic

(Back-up: L. Olah, R. Debreczeni, B. Malojcic, D. Skoloudik, C. Baracchini, P. Castro)

APRIL 05 MORNING

Day 4 05 APR	Program
ADVANCED LEVEL - LECTURES	
Miscellaneous topics Moderators: N. Bornstein and U. Walter	
08:20-08:40	Zs. Aranyi: Muscle and nerve sonography
08:40-09:00	G. Tsiygoulis: The clinical utility of MES detection in acute ischemic stroke
09:00-09:20	L. Csiba: Detection of hyperperfusion syndrome after carotid reconstruction
09:20-09:40	A. Gaál, R. Debreczeni: Evaluation of cerebral collateral circulation – role of TCD and TCCD
09:40-10:00	C. Baracchini: Sickle cell disease
10:00-10:20	U. Walter: Role of TCS in detection and follow-up of intracranial hemorrhage
10:20-10:40	Coffee
11:00-12:30	Hands-on course – Orbit ultrasound, Transcranial brain sonography, Muscle and nerve sonography, TCD, Examination of cerebral collateral circulation, TCCD of intracranial arteries and veins, Examination of superficial temporal artery
08:20-10:40	INTERNATIONAL CERTIFICATION EXAM – PRACTICAL PART
12:30-13:00	Closing Ceremony and Announcement of the WON/ESNCH Conference 2026
13:00-14:00	Lunch

Hands-on course - APRIL 05 - MORNING	
April 05, Saturday, Morning, 11:00-12:30 (Day 4/Morning)	Instructors
Orbit US Orbit US Orbit US	P. Lochner, G. Panczel L. Zviagina E. Stolz, Z. May
TCS TCS	U. Walter M. Mijajlovic
Neuro-POCUS TCS/TCCD	R. Licenik
TCD TCD TCD	A. Lovrencic Huzjan/L. Olah Z. Garami R. Debreczeni, A. Gaal
Extracranial duplex/STA	B. Malojcic
Muscle and nerve Muscle and nerve Muscle and nerve	Z. Aranyi A. Csillik K. Saftics,
Intracranial duplex/TCCD Intracranial duplex/TCCD	D. Skoloudik C. Kulyk,

(Back-up: I. Vastagh)