

**Preliminary program – International Teaching Course of the ESNCH/WON 2025 – Budapest**

<b>Day 1 APR 02</b>	<b>Program</b>
08:00-13:00	<b>Registration</b>
13:00-13:15	<b>Welcome and Opening</b>
13:15-14:00	<b>Open lecture Branko Malojcic: The effect of development of neurosonology on diagnosis and treatment of stroke</b>
<b>BASIC LEVEL</b>	
<b>Ultrasound principles and examination of extracranial arteries</b>	
14:00-14:20	Ultrasound physics and knobology
14:20-14:40	Carotid artery examination protocol
14:40-15:00	Vertebral artery examination protocol
15:00-15:20	Carotid stenosis criteria
15:20-15:40	<b>Coffee</b>
<b>BASIC LEVEL</b>	
<b>Examination of intracranial vessels</b>	
15:40-16:00	Flow velocity parameters, waveform interpretation
16:00-16:20	TCD – basics and knobology – Detection of intracranial arteries
16:20-16:40	TCCD – basics and knobology
16:40-17:00	TCCD – examination of intracranial vessels
17:00-18:30	<b>Hands-on course</b> – Knobology, carotid and vertebral artery examination, TCD, TCCD examination of intracranial arteries and veins
20:00-	<b>Opening ceremony</b>

<b>Day 2 APR 03</b>	<b>Program</b>
<b>BASIC LEVEL</b>	
<b>Extra- and intracranial vascular pathologies</b>	
08:20-08:40	Carotid artery wall pathologies - High risk atherosclerotic plaques
08:40-09:00	Extracranial arterial dissection
09:00-09:20	Subclavian steal syndrome
09:20-09:40	Vasculitis of extracranial vessels – Takayashu arteriitis, Giant cell arteriitis
09:40-10:00	<b>Coffee</b>
10:00-10:20	Carotid web
10:20-10:40	Role of TCD in detection of asymptomatic high risk carotid plaques; Vasoreactivity and microembolus detection
10:40-11:00	Normal TCD/TCCD data and criteria for intracranial arterial stenoses
11:00-12:30	<b>Hands-on course</b> – Extracranial duplex – carotid and vertebral arteries, Examination of intracranial arteries, TCD, Cerebral vasoreactivity (BHI), Examination of superficial temporal artery
12:30-13:30	<b>Lunch</b>
<b>ADVANCED LEVEL</b>	
<b>Transcranial Brain Sonography Working Group Transcranial brain sonography</b>	
13:30-13:50	Transcranial brain parenchyma scanning – protocol, techniques and practical
13:50-14:10	TCS in Parkinson’s disease and Parkinsonian syndromes – established indications
14:10-14:30	TCS applications with real-time fusion imaging
14:30-14:50	Use of software tools for quantitative TCS image analysis
<b>Microembolic Signal Detection Working Group Microembolic signal detection</b>	
14:50-15:10	Patent Foramen Ovale
15:10-15:30	Non-iatrogenous microembolus signal detection
15:30-15:50	<b>Coffee</b>
16:00-17:30	<b>Hands-on course</b> – Extracranial duplex, TCCD of intracranial arteries, Transcranial brain sonography – Brain parenchyma, Microembolus detection, PFO detection, Fusion imaging
17:30-19:00	<b>INTERNATIONAL CERTIFICATION EXAM – THEORETICAL PART</b>
20:00-	<b>Gala dinner</b>

<b>Day 3 APR 04</b>	<b>Program</b>
<b>ADVANCED LEVEL</b>	
<b>Acute Stroke Ultrasound Working Group Role of TCD and TCCD in acute stroke</b>	
08:20-08:40	Intracranial symptomatic stenosis: ultrasound-guided definition of grading, nature of stenosis and efficacy of treatment.
08:40-09:00	Functional TCD in acute stroke patients: what to know
09:00-09:20	Suspicious signs of cardiac/systemic disease in transcranial ultrasound waves
<b>Neuro-POCUS Working Group Point Of Care UltraSound in Neurology</b>	
09:20-09:40	Focused Cardiac Ultrasound
09:40-10:00	Medical Point of Care Ultrasound in Neurology
10:00-10:20	Ultrasound guided interventions
10:20-10:40	<b>Coffee</b>
10:40-12:10	<b>Hands-on course</b> – Carotid and vertebral artery duplex, TCD, Transcranial sonography – Brain parenchyma, TCCD of intracranial arteries and veins, Functional TCD, NeuroPOCUS (Echocardiography, Ultrasound guided interventions)
13:00-14:00	<b>Lunch</b>
<b>ADVANCED LEVEL</b>	
<b>Neuro-intensive Care Unit and Neuroorbital Working Groups Ultrasound in Neurointensive Care Unit – TCD and orbital US</b>	
14:00-14:20	Neuroorbital ultrasound. Tips and tricks of examination of the Optic Nerve Sheath Diameter (ONSD)
14:20-14:40	ONSD and nICP; Computing ultrasound based techniques to determine intracranial pressure
14:40-15:00	TCD in brain death
15:00-15:20	TCD in vasospasm
15:20-15:40	TCD in thunderclap headache
15:40-16:00	<b>Coffee</b>
16:00-17:30	<b>Hands-on course</b> – TCD, Examination of superficial temporal artery, ONSD, Examination of ophthalmic and central retinal arteries, NeuroPOCUS (Echocardiography, Ultrasound guided interventions), TCS, Nerve ultrasonography
17:30-19:00	<b>INTERNATIONAL CERTIFICATION EXAM – PRACTICAL PART</b>
20:00-	<b>Social event</b>

<b>Day 4 APR 05</b>	<b>Program</b>
<b>ADVANCED LEVEL</b>	
<b>Miscellaneous topics</b>	
08:20-09:00	Muscle and nerve sonography
09:00-09:20	Detection of hyperperfusion syndrome after carotid reconstruction
09:20-09:40	Evaluation of cerebral collateral circulation – role of TCD and TCCD
09:40-10:00	Sickle cell disease
10:00-10:20	Role of TCS in detection and follow-up of intracranial hemorrhage
10:20-10:40	<b>Coffee</b>
11:00-12:30	<b>Hands-on course</b> – Muscle and nerve sonography, Examination of cerebral collateral circulation, Ultrasound guided interventions, TCCD of intracranial arteries and veins
12:30-12:45	Closing Ceremony
12:30-14:00	<b>Lunch</b>