



# Congress Interviews

Erich Schmutzhard, László Csiba, Ambra Stefani, and László Oláh spoke with EMJ, sharing their perspectives on how the European Academy of Neurology (EAN) advances neurology and patient care, as well as highlighting EAN's commitment to education, research collaboration, and the dissemination of best clinical practices.

Featuring: Erich Schmutzhard, László Csiba, Ambra Stefani, and László Oláh



## Erich Schmutzhard

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## Q1 Was there a particular event or person that encouraged you to pursue a career in tropical neurology and critical care neurology?

With respect to tropical neurology, no. I started medical school with the intention to do a postgraduate diploma/master's course in Tropical Medicine, and to work in a rural Sub-Saharan-African hospital as a tropical medicine specialist. After basic postgraduate training in infectious diseases and general medicine, I completed the course in tropical medicine and hygiene in Liverpool, UK, as I had planned since my early university days. Since it took very long to get my Tanzanian work permit, I accepted the opportunity to work as a resident in neurology at the Department of Neurology, University of Innsbruck, Austria. Here, the head of the department, Franz Gerstenbrand, was very interested in emergency and intensive care neurology, and he completely enticed me into

this field of neurology. Nevertheless, after all the bureaucratic processes with my residence and work permit for Tanzania were solved, I quit the residency in Innsbruck and went to Mnero Hospital, Nachingwea District, a rural hospital in Southern Tanzania, where I worked for 4 years as a tropical medicine expert (and beyond, when necessary). After these 4 years, Gerstenbrand encouraged me to join his team again and to continue the residency/training in neurology. In 1986, I interrupted training in Innsbruck and accepted a 4-month scholarship in the Department of Neurology, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand. After re-joining the Innsbruck neurology department, I eventually became a specialist in neurology, psychiatry, and a few years later in intensive care medicine. In the early 1990s, I was given the responsibility to initiate a neuro-critical care unit within the Department of Neurology, University of Innsbruck.

## Q2 Do you think there are any misconceptions about your speciality, and with respect to tropical neurology?

Firstly, neurocritical care medicine requires an in-depth understanding of neurology, neuroanatomy, and neurophysiology. Therefore, neurocritical care medicine (or intensive care neurology) must be based upon a full training of neurology with secondary specialisation in intensive care procedures and intensive care medicine. Secondly, tropical neurology is much more than infectious disease neurology in tropical countries or so-called low- and middle-income countries (LAMIC). Besides infections of the nervous system (viruses, bacteria, fungi, protozoa, and helminths), it includes all kinds of malnutrition (vitamin deficiencies, protein-calorie-malnutrition, etc.), air pollution as a risk factors for stroke (including particulate matter and ultra-fine particular matter; indoor and outdoor), heat-related diseases, specific malignancies, neurogenetic disorders, haemoglobinopathies as a stroke risk factor (e.g., sickle cell disease), toxins, and envenomation (snakes, scorpions, fish, jellyfish, etc.), to list a few. We should not forget the severity of traumatic brain injuries in LAMICs.

## Q3 Your personal education and professional experience have involved you travelling to numerous destinations such as England, Thailand, and Tanzania. Where do you believe you gained the most experience and do you believe travelling was integral for you to make it to where you are today?

Yes, travelling was essential for my training, both in tropical neurology (UK, Tanzania, and Thailand) and intensive care neurology (several times to the USA: Houston, Baltimore, and Cleveland).

## Q4 You currently have more than 370 publications to your name for your research in tropical neurology, neuro-infections, and critical care neurology. What do you believe to be the current gaps in literature and what topics require greater attention?

Critical care neurology in LAMICs is a wide gap in the literature, as is emergency neurology.

We attempt to fill these gaps by organising regional teaching courses (sponsored by the European Academy of Neurology [EAN], World Federation of Neurology [WFN], American Academy of Neurology [AAN], International Brain Research Organisation [IBRO], World Stroke Organisation [WSO], International Parkinson and Movement Disorder Society [MDS], and ASEAN European Academic University Network [ASEA-UNINET]), in various Sub-Saharan African countries, including Mozambique, Burkina Faso, Madagascar, Ghana, Uganda, Cameroon, Malaysia, and Pakistan in the last 7 years. Overall, medicine, particularly neurology, intensive care medicine, and infectious diseases medicine must be prepared (i.e., every medical doctor) for all the new challenges caused by migration, globalisation, climate change, air pollution, and pollution (toxic chemicals, microplastics) in food and water, to list a few examples.

## Q5 What are the most significant changes you have seen in the field of tropical neurology, neuro-infections, and critical care neurology during your time working within the field?

Regarding tropical neurology, malaria-retinopathy has become an early diagnostic method in cerebral malaria, and fundoscopy can now be done everywhere. Furthermore, hearing impairment has been identified as an important long-term effect of severe *P. falciparum* or malaria, contributing to severe language development problems; and intravenous artesunate is now used for cerebral and severe malaria. Further developments include the development of the tetravalent meningococcal vaccine; the use of neuroimaging in 'classical' tropical diseases (e.g., cerebral malaria); and early vaccination against tetanus, measles, pertussis, etc.

In terms of neuro-infections there are now rapid diagnostic methods such as PCR and multiplex PCR in the cerebrospinal fluid, and we can now recognise central nervous system complications early (e.g., vasculitis related ischaemia, hydro-, and pyocephalus). We are seeing a pandemic of antibiotic resistance, but we are also more prepared for new pandemics. With regard to neurocritical care, there have been advances in artificial ventilation and airway management by neuro-intensivists, as well as continuous

electroencephalogram monitoring multimodal (invasive) neuromonitoring, beyond increased intracranial pressure and cerebral perfusion pressure such as brain temperature, brain tissue O<sub>2</sub>, brain tissue CO<sub>2</sub>, and brain tissue lactate. We have also identified new risk factors for stroke, with air pollution being the number two in risk factors for ischaemic stroke mortality, particularly in LAMICs, and we are now using temperature management as a therapeutic (neuroprotective) measure.

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**"There have been advances in artificial ventilation and airway management."**

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**Q6** You have been the head of the EAN Task Force, and you are on the teaching course sub-committee. How much of an impact do you believe the EAN congress has, both directly on neurologists and indirectly on patients?

It has been a first, yet extremely important step, and as you know, in order to move forward the first step is crucial. By 2022, approximately 1,000 residents from Sub-Saharan African countries had attended these teaching courses and some of them have become professors/teachers of neurology, thereby spreading the knowledge in neurology and the service for neurologically ill patients. The EAN congress certainly is a crucial medium to spread the knowledge of these activities.

**Q7** What changes have you brought into effect whilst serving as the head of the EAN Task Force: 'Neurology in Sub-Saharan-Africa'?

A major achievement has been, and is, the close cooperation of the EAN with the African Academy

of Neurology (AFAN), the Pan Arab Union of Neurological Societies (PAUNS), the WFN, the AAN, the IBRO, the WSO, the MDS, and all the local universities.

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**"A major achievement has been, and is, the close cooperation of the EAN."**

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**Q8** What is one of the biggest challenges for the EAN in their goal to be the 'Home of Neurology', advance high-quality patient care, and reduce the burden of neurological diseases?

The biggest challenges include overcoming economic inequalities such as insufficient neuro-manpower. There are currently 10 African countries without a single neurologist. Additionally, it is very difficult, even impossible, to have access to diagnostic, therapeutic, and preventive resources. It is important to ensure the best possible transfer of knowledge in both directions.

**Q9** Since your appointment as Austria's delegate to the WFN and Coordinator for the Innsbruck Medical University to ASEA-UNINET and Eurasia-Pacific University networks, what has been your proudest achievement?

I am proud to have been given the chance and opportunity to meet so many highly engaged medical doctors, in particular neurologists and neuroscientists from all over the world, as well as to appreciate that so many African, Asian, American, and European colleagues are similarly eager to spread knowledge in neurology, both in research and patient care, to many parts of the world. ●

