Manual of Neurosonology

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Edited by

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and

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Foreword

Ultrasound is a reliable, safe and relatively inexpensive imaging technique which plays an indispensable and integral role in the evaluation of patients with cerebrovascular disease. It provides a unique diagnostic perspective in cerebrovascular disorders, with extremely high temporal resolution and excellent spatial display of extracranial arteries, brain structures and cerebral vessels. Ultrasound therefore provides a unique diagnostic perspective and has several important advantages compared with traditional computed tomography, magnetic resonance and invasive angiographic approaches.

Carotid ultrasound is capable of monitoring the development of atherosclerosis from early asymptomatic changes to the morphological changes associated with the unstable carotid artery plaque. It is possible using ultrasound to visualize arterial and venous blood flow characteristics, brain perfusion and vessel wall anatomy and thrombus formation. It can also detect and monitor emboli with their origin from unstable atherosclerotic plaques or emboli which arise during invasive cardiovascular examinations and surgery.

Cerebrovascular ultrasound studies also have an important role during patient follow-up. It has played an integral part in prospective randomized clinical trials, both in epidemiological and in interventional studies. Technological developments and the standardization of examination procedures have made important contributions regarding patient care including stroke prevention, acute stroke treatment, including sonothrombolysis, and interventional and surgical management.

The *Manual of Neurosonology* was initiated by the European Society of Neurosonology and Cerebral Hemodynamics (ESNCH) and includes contributions from experienced ESNCH members who are all international experts. It is mainly intended for clinicians who use cerebrovascular ultrasound in the assessment and treatment of cerebrovascular disease. However, it also includes other important neurosonological applications such as orbital ultrasound, brain parenchyma imaging and ultrasonography of the peripheral nerves which are gaining increasingly important roles in patient management.

The *Manual of Neurosonology* provides a comprehensive and authoritative work on the principles, practice and future developments of neurosonology which will provide an excellent reference in neurosonology for clinicians and clinical neuroscientists.

David Russell, MD
Founding President of the ESNCH