## $Nicolet^{TM}$ SONARA

## Transcranial Doppler System



**Nicolet** 

The SONARA<sup>™</sup> transcranial Doppler (TCD) system allows for non-invasive assessment of blood flow velocities in the basal cerebral arteries. This method of measurement has been well documented in the medical literature as a useful diagnostic tool for examining the major arteries supplying blood to the brain.

Transcranial Doppler (TCD) is also extremely valuable for monitoring cerebrovascular hemodynamics to help detect sudden changes in perfusion and identify potential embolic events.<sup>1</sup> Emboli are small particles of foreign matter (air, clots, etc.) within the bloodstream that can potentially cause obstructions in cerebral arteries, which can cause ischemic stroke.

SONARA digital TCD systems are designed to offer both diagnostic and monitoring evaluations of the cerebral vasculature thereby assisting the physician in enhancing patient care. Doppler sensitivity, intuitive touch screen user interface, customized protocols and partially automated specialty tests are a few examples of the SONARA's time saving features.

M-mode in Diagnostic mode serves as an optimal acoustic window finder and vessel locator to enable quicker examination time. The M-mode in conjunction with the multi-depth display provides a hemodynamic overview of the circle of Willis thus assisting clinicians in their diagnosis. Utilizing advanced graphics, customizable Spectral Summary Reports offer right to left comparison facilitating identification of potential anomalies. Daily Exam Trending feature helps the clinician manage the course of patient treatment, for example, identifying potentially critical phases of vasospasm. The SONARA TCD system gives the physician and researchers access to patient data in multiple export formats.

"Transcranial Doppler ultrasonography (TCD) is the only non-invasive examination that provides a reliable evaluation of intracranial blood flow patterns in real-time, adding physiological information to the anatomical information obtained from other neuroimaging modalities."<sup>2</sup>







## Features at a Glance:

- High Quality Doppler Signal
- Customized Protocols and Reporting
- Emboli Detection with Variable Thresholds
- Specialty Tests: VMR and BHI
- Multi-button Advanced Remote Control
- Multiple Languages Capability
- Statistics and Trending Packages
- and Multi-Depth Displays in Diagnostic and Monitoring Modes
- Unilateral or Bilateral Monitoring Options
- DICOM<sup>™</sup> Compatible.

TCD is a useful tool for the evaluation of numerous neurovascular conditions in adult and pediatric patients:

- Diagnostic cerebrovascular and extracranial investigation
- Extended-term unilateral and bilateral cerebrovascular monitoring

The systems may be used in vascular labs, operating rooms, intensive care units, emergency departments and physician offices for the following applications:

- Detection of intracranial stenosis
- Detection of vasospasm due to subarachnoid hemorrhage
- Detection of arteriovenous malformations (AVMs)
- Assessment of collateral pathways
- Detection of embolic events
- Detection of PFO (Patent Foramen Ovale) with bubble test
- Track and establish trends of blood flow velocities
- Help assess surgical techniques through immediate feedback of the results of interventional procedures
- Breath Hold and Vasomotor Reactivity (VMR) tests



1, 2 Role of Transcranial Doppler Ultrasonography in Cerebrovascular Disease. Leonard L.L. Yeo and Vijay K. Sharma, Division of Neurology, National University Hospital, Singapore.



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