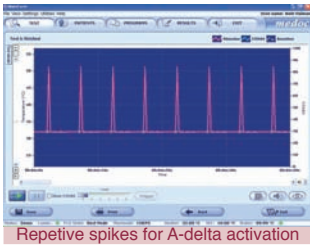
New Capabilities for use in fMRI Environment

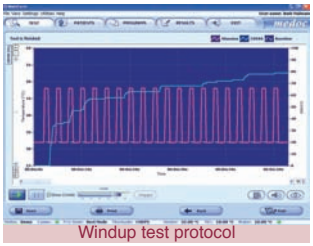
PATHWAY
Pain & Sensory Evaluation System

Since 1997 Medoc thermal stimulators have been utilized by researchers worldwide as a sensory & pain stimulator in fMRI & PET studies. The New PATHWAY Pain & Sensory Evaluation System offers exciting new contact heat and cold thermal stimulation capabilities for use in fMRI. The PATHWAY system for fMRI is offered with special, non-magnetic, 10 meters long probes and with a specialy designed filter for reducing noise in the MRI room.


Repetive spikes for A-delta activation

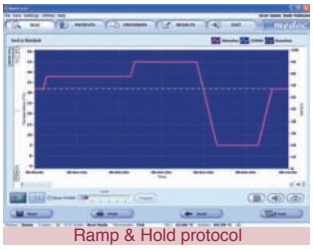
Contact Heat Evoked Potential Stimulation (CHEPS Model)

- CHEPS offers capabilities for producing painful and non-painful evoked potential recordings in response to A-delta & C-fiber activation; allowing for the first time, selective activation and identification of small nerve fibers response through EEG recording. Rapid heating rate of 70℃/Sec. delivers a heat stimulation from 32℃ to 55℃ in 250 milliseconds - activating a large skin area (27mm diameter) and resulting in a strong cerebral pain-evoked response.
- Stimulation in fMRI can be synchronized with fMRI compatible EEG recordings, providing for multi-modal evaluation of A-delta & C fibers-mediated sensory system functioning, assessing the correlation between fMRI and EEG/EPs responses, recorded concurrently.


Windup test protocol

Temporal Summation & Pain Windup (CHEPS Model)

- Utilizing rapid-heating to invoke neural mechanisms related to Central Sensitization, CHEPS provides the potential to evaluate Temporal Summation, employing an oscillation windup paradigm based on the work of leading pain researchers. A repetitive thermal stimuli at high frequencies (higher than 0.33 Hz) is applied, while psychophysical outcome or fMRI-brain response can be measured concurrently and studied.


Ramp & Hold protocol

Suprathreshold, Pain Tolerance & Extreme Cold (ATS Model)

- The PATHWAY ATS Model provides thermal stimulation in a range of 0℃ to 53℃ with an option for stimulation down to minus 10℃. Temperature is controlled at a rate of 150 times per second for better temperature control and accuracy. Synchronization with fMRI and EEG done via TTL inputs & outputs. Stimulation signals are viewed on line, saved and can be exported to Excel.

Advanced Software Capabilities

- Flexible software allows users to define and edit test parameters by controlling baseline & destination temp, rate of temp change, peak to peak intervals, plateau duration at the peak, return rate to baseline and more. An optional 'Software Development Kit' (SDK) can be integrated with research programs such as LabView™ and MatLab™ for controlling stimulation protocols. This control includes parameters such as temperatures, timing of events and synchronization with external devices

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