

OSLER-2

A simple objective measure of daytime sleepiness and reaction times for research



OSLER-2[®] provides a simple, behavioural research tool to assess daytime sleepiness, without the need for the presence of an observer or EEG measurement whilst still achieving the same results.

- Simpler alternative to Maintenance of Wakefulness and Multiple Unprepared Reaction Time Tests (MWT and MURT)
- Behavioural research measure using auditory and/or visual stimuli
- Fully automated – doesn't require presence of an observer
- Wireless standalone operation or by PC, data downloads with Stowood Visi-Download software
- Battery or mains powered
- OSLER-2[®] is a simpler version of both the Multiple Wakefulness Test (MWT) and the Multiple Unprepared Reaction Time Test (MURT) which assesses time to fall asleep and/or reaction times.
- The test consists of a control unit mounted on a wall or bed, and a wireless proximity sensitive switch.
- During the test, the LED on the control unit is switched on for one second in every 3 seconds and the subject responds by moving their finger near the switch.

OSLER-2[®] provides a simple, behavioural way to assess daytime sleepiness, without the need for the presence of an observer or EEG measurement, by assessing time to fall asleep and/or reaction times.

OSLER-2[®] is thus a simplified version of both the Multiple Wakefulness Test (MWT) and the Multiple Unprepared Reaction Time Test (MURT).

OSLER-2[®] consists of a small LED and buzzer in a wall-/end of bed-mounted control unit and a subject-held, proximity sensitive switch with wireless or cable connection to the control unit. The switch box can also generate a white noise signal for use with headphones to mask environmental sounds.

During MWT, the LED switches on for one second in every three seconds and the subject is required to respond to the illumination by tapping the switch. The technician is alerted remotely if the subject fails to respond. During each test, the subject is told to try to remain awake but not to use extraordinary measures to achieve this. There is no 'click' on the switch to provide positive feedback, and the test ends when the subject fails to respond to 7 illuminations. Four tests are usually performed at two hour intervals, with the subject not permitted to fall asleep during the intervals. The OSLER-2[®] LCD display shows the termination timing and the number of missed events, with up to 32 tests being stored.

MURT measures reaction time to a series of visual (LED) or audible (buzzer) stimuli presented at random intervals of between 1 and 10s over a period of 10-15 min.

The system may be powered from batteries or its mains transformer. Data is either downloaded to a PC with Visi-Download immediately or stored for later downloading. The control unit may be controlled from Visi-Download, or the system may be used independently of a computer, in the lab or at the subject's home.

The OSLER test has already proven to work better than the MWT in obstructive sleep apnoea research, with greater reproducibility, accuracy, convenience and overall simplicity to detect microsleep episodes. It can discriminate between sleep apnoeics and normals, and has high sensitivity and specificity for detecting sleep.

The OSLER is aimed at the research market and is not CE marked for medical use.

Technical Specification

OSLER-2[®] main unit, containing LED designed for wall mounting

Size.....	180 x 100 x 45 mm
Weight	300g
Power	4 alkaline AA (R6) cells
Temperature range	0-40 °C

OSLER-2[®] switch, for use by the subject

Size.....	150 x 70 x 30 mm
Weight	200 g
Power	9 v PP3 (6F22) battery
Temperature range	0 - 40 °C

Headphones

Impedance	32Ω
Sensitivity.....	102 dB/mW (at 1 kHz) + volume control
Frequency response.....	20 - 2000 Hz

Cable connecting switch and control unit

Cable type/length	RJ11/7.6 m
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Serial cable for connecting control unit and PC

Cable length.....	Up to 10 m (1.7m supplied)
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Power adaptor.....	9 v 670 mA UK or European plug
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Loudspeaker.....	PC type with volume control (not supplied)
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Computer requirements	Microsoft Windows™ XP/7 with serial port
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Software.....	Visi-Download for OSLER-2 [®] included in price
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Loudspeaker.....	PC type with volume control (not supplied)
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Stowood Scientific Instruments Ltd,
Common Road, Beckley,
Oxford OX3 9UP, GB
Tel +44 (0)1865 358860
www.stowood.com