MULTIPLE SLEEP LATENCY TEST (MSLT)

What it does and doesn't tell a sleep physician

The multiple sleep latency test (MSLT) tests for excessive daytime sleepiness by measuring how quickly you fall asleep in a quiet environment during the day. The MSLT is the standard tool used to diagnose narcolepsy and idiopathic hypersomnia. A MSLT immediately follows an overnight polysomnogram (PSG). An overnight sleep study (PSG) is performed to rule out other sleep disorders such as obstructive sleep apnea and periodic limb movement disorder etc as the cause of a patient's excessive daytime sleepiness. A PSG is also very helpful in investigating insomnia, narcolepsy, idiopathic hypersomnia and restless limb syndromes.

The MSLT is a full-day test that consists of four or five scheduled naps separated by two-hour breaks. During each nap you will lie quietly in bed and try to go to sleep. Once the lights go off, the test will measure how long it takes for you to fall asleep. You will be awakened after sleeping 15 minutes. A series of sensors will measure whether you are asleep. The sensors also determine your sleep stage.

When sleep latency (the time it takes you to fall asleep) is below 8 minutes and there is the presence of sleep-onset REM periods (SOREMPs) in two or more of the MSLT naps (a SOREMP within 15 minutes of sleep onset on the preceding nocturnal polysomnogram may replace one of the SOREMPs on the MSLT) suggests a diagnosis of narcolepsy. When the MSLT shows less than two sleep onset REM periods it suggests a diagnosis of idiopathic hypersomnia. However, this differentiation of 2 or less SOREMPs and other aspects of the MSLT has been called into question and suggests more appropriate testing methods need to be applied.

Despite the PSG/MSLT currently being the only test used to diagnose Idiopathic Hypersomnia, it "prevents the documentation of the prolonged night-time sleep and the MSLT procedure itself prevents the documentation of prolonged, unrefreshing, daytime sleep episodes" (Billiard 1998). It has been suggested that the only way to accurately test for idiopathic hypersomnia is to test the patient in an overall environment, ie: what happens

during the nocturnal sleep episode, how the patient responds in a MSLT and how much and for how long a patient will sleep on an “ad lib” basis – totally unrestricted over a 24hr period (ie: night PSG, MSLT and then 24-hour continuous polysomnography).

There have been various papers published questioning the reliability of the MSLT to accurately test for narcolepsy and idiopathic hypersomnia. The two main issues are the MSLT not being the appropriate test for idiopathic hypersomnia for the reasons mentioned above and that the specificity of multiple SOREMPs for Narcolepsy Type 2 (without cataplexy) is not reliable. Apart from multiple SOREMPs being found in other sleep disorders including sleep apnea they have also been found in other neurological disorders such as Parkinson disease. Interestingly more than 13% of the normal population can also have multiple SOREMPs. This is usually as a result of shift work and/or sleep deprivation. Therefore, great caution should be taken by doctors when using the MSLT to diagnose Narcolepsy Type 2 (without Cataplexy) and Idiopathic Hypersomnia. It is imperative that all other causes of the symptoms are properly ruled out and proper consideration given to the patient’s clinical history.

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