

A Brief Review of Narcolepsy for the Sleep Tech

By Zack Freeman, RPSGT

When I was brand new to sleep, all I knew about Narcolepsy is that people with it fell asleep easily, and that MSLTs could show it by showing sleep onset REM periods. Training standards are rising throughout the country, and all techs will have a deeper understanding of Narcolepsy when they meet their patients to perform their Multiple Sleep Latency Tests (MSLT). Here is a brief review of narcolepsy for those of us who are new to the MSLT.

Multiple Sleep Latency Tests are commonly performed to confirm the suspicion of Narcolepsy. As technicians and technologists, an understanding of the disease helps understand the principles of the MSLT. Educating the patient is always a valuable tool for running quality studies, providing patient comfort, and achieving good compliance.

The diagnosis of narcolepsy goes deeper than mean sleep latency (MSL) of 8 minutes or less and 2 sleep onset REM periods (SOREMP). To qualify for the diagnosis of narcolepsy under one of the three categories listed by the International Classification of Sleep Disorders Diagnostic and Coding Manual – Second edition 2006 (ICSD-2) (- Narcolepsy with Cataplexy, Narcolepsy without Cataplexy, and Narcolepsy Due to Medical Conditions), each category includes a complaint of excessive daytime sleepiness occurring daily for at least 3 months, and that this hypersomnia is not better explained by another sleep disorder, medical or neurological disorder, medication use, or substance use disorder (excluding the significant medical or neurological disorder accounting for daytime sleepiness in patients falling under the category of Narcolepsy Due to Medical Conditions).

For a lot of people with narcolepsy, their REM periods continue at 90-120 minute intervals into wake. This is the reason for MSLT naps starting 90-120 minutes after lights on from the PSG and the naps being at 120 minute intervals. With the patient staying awake between each nap, this increases the likelihood of catching those SOREMPs.

Narcolepsy research is ongoing. Although the cause of Narcolepsy without Cataplexy is still undetermined, the cause of Narcolepsy with Cataplexy has been determined to be usually due to the lack of hypocretin-1 and hypocretin-2.

Hypocretin-1 and hypocretin-2 are molecules found in the hypothalamus section of the brain. Hypocretin has an excitatory effect on receptors in the arousal-producing tuberomammillary nucleus (which releases chemicals that contribute to wakefulness and alertness), and therefore damage to these cells (resulting in a lack thereof) can cause Narcolepsy.

Over 90% of patients with narcolepsy with cataplexy carry HLA-DQB1*0602. HLA molecules are expressed on the surface of white blood cells to coordinate the immune response. However this is nearly a marker for Narcolepsy, and with 20% of the nation having this marker but not having narcolepsy, it can't be used to diagnose the disease.

Many patients with narcolepsy show a fragmented sleep pattern during their PSG. There have also been studies showing that some narcoleptic patients show higher percentages of REM sleep without atonia, as well as higher amounts of phasic EMG activity and REM density. It also has been shown that narcolepsy can also be linked to another sleep disorder, REM Behavioral Disorder (RBD).

There are many symptoms of narcolepsy that may lead a person to the sleep center. It's not usually much like the movies, where the person suddenly falls to the ground and starts snoring. The symptoms that present themselves as well as their severity vary greatly from person to person. A very small percentage of people with narcolepsy have *all* of the symptoms of the narcolepsy tetrad (EDS, Cataplexy, Sleep Paralysis, and Hypnagogic Hallucinations). Possible symptoms for Narcolepsy are:

Cataplexy - *sudden, dramatic decrement in muscle tone and loss of deep reflexes that leads to muscle weakness, paralysis, or postural collapse. Usually caused by outburst of emotion: laughter, startle, or sudden physical exercise*

Excessive daytime sleepiness or somnolence (EDS) - *subjective report of difficulty in staying awake, accompanied by a ready entrance into sleep when the individual is sedentary.*

Hypnagogic imagery (Hallucinations) - *Vivid and often scary sensory images occurring at sleep onset but particularly vivid with sleep-onset REM periods*

Sleep paralysis - *waking and not being able to move for a short period of time, usually occurs out of REM (dream) sleep.*

Sleep Attacks- *uncontrollably falling asleep during sedentary situations for a few seconds up to an hour or more.*

Automatism - *automatic action--especially any action performed apparently without intention or awareness. Often associated with sleepiness or sleep attacks.*

It has also been said that you can "pass" a MSLT and still have Narcolepsy, and you can "fail" an MSLT and still have it. SOREMP can also be an indication of sleep disruption from another sleep disorder or medical condition, as well as a symptom of withdrawal from certain medications. On the other hand, a person could make it through the naps without REM (or perhaps unrecognized REM), be un-hooked from the sensors and experience cataplexy right there in front of you.

With all the variables, from drug effects to unambiguous sleep stages to other possible conditions, the doctor must take a thorough look at each patient's history, current situation, and test results to properly diagnose a patient with narcolepsy.

Narcolepsy is the 3rd most frequently diagnosed sleep disorder. Its still under recognized and under diagnosed. One of the best things about being a sleep tech is the rewards of helping people feel better. By being able to educate our patients we contribute to better compliance to treatment. The more we learn, the more we can help.

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