

Northwest Health - La Porte Sleep Center

POLYSOMNOGRAMS

Polysomnograms are detailed diagnostic studies, which measure physiologic parameters such as:

1. Eye Movements (mostly in REM)
2. Chin EMG activity (electromyogram – muscle) – can be used to diagnose bruxism (teeth grinding).
3. Leg EMG activity – used to monitor PLMS (periodic limb movement syndrome), RLS (restless leg syndrome).
4. ECG – Variances of ECG rates and rhythms occur during sleep and during apneas. Monitoring ECG is required on all sleep studies.
5. Respiratory effort on the chest and abdomen are monitored through special quartz crystal belts. These belts help us to record the movement in the chest and abdomen, and helps in deciphering the different types of apneas.
6. Nasal/Oral thermocouples are used to measure the airflow through the nose or the mouth. The temperature probes on the thermocouple register temperature changes from the nose and mouth. If the patient stops breathing, the reading is flat, which is indicative of apnea.
7. EEG (electroencephalogram) – Wires are placed on the head to monitor brain activity. Through these wires, sleep technologists can see the stages of sleep, and verify the patient's wakefulness.
8. SaO2 probes are used to monitor the blood oxygen levels throughout the night and most especially during apneas.
9. Snore sensors are used to have a visual of snoring. Audio may not be sufficient, so snoring sensors transmit a signal so it can be seen.

Polysomnograms are used to diagnose sleep apnea, restless leg syndrome, PLMS (periodic limb movement syndrome), insomnia, and is a required test before an MSLT (Multiple Sleep Latency Test), even if the patient has already had a previous polysomnogram.

Patients may bring their own pillow, blanket and pajamas for their sleep study. Total study time is approximately 8 ½ to 9 hours. Note: 6 ½ hours is needed for recording time.

CPAP (CONTINUOUS POSITIVE AIRWAY PRESSURE) SLEEP STUDY

This is a sleep study that is performed after a polysomnogram with a positive diagnosis of sleep apnea.

All of the same physiological parameters are monitored as in the polysomnogram with the exception of the thermocouple. The thermocouple is replaced with a nasal, or full-face mask. Pressure levels are increased to decrease or eliminate apneas, hypopneas and snoring.

Snoring is difficult to hear with CPAP studies because the mask, hose and CPAP machine act as a muffler. Thus, snoring is not audible. Snore sensors allow the technologist to see the snoring and make pressure adjustments as needed. This also increases compliance.

NOTE: Bi-Level studies are done when patients are not compliant with CPAP, or if the patient requires a bi-level titration.

(more information on the other side.)

We're here to help. We will be happy to help work through questions and special circumstances.

Questions? Call 219-325-4633.

SPLIT SLEEP STUDIES

These studies are a combination of a polysomnogram and a CPAP study, but they occur in the same night. When a split study is ordered, there are specific qualifications that the patient must meet before the CPAP portion can be started.

1. The patient must have 2 hours of sleep by 1 a.m. before CPAP can be initiated.
2. The patient must have and RDI (Respiratory Disturbance Index, or the number of respiratory events per hour) of 20 or more per hour.

Split studies are used for patients suspected of having severe sleep apnea. Thirty or more respiratory events per hour is considered severe sleep apnea. If a patient is scheduled for a split night sleep study and does not meet these requirements, then we will continue performing a polysomnogram for the remainder of the test. The patient will then have to return for a CPAP sleep study (if the diagnosis is positive for sleep apnea).

Remember, split studies are only for patients suspected of having severe sleep apnea and must meet the two requirements listed above.

PAP – NAP STUDY

This test is used for patients who are having difficulty with CPAP compliance. This includes desensitization, mask fitting and usage, as well as relaxation and visualization techniques. Minor pressure adjustments are also made during this Mini-titration. This does not replace a full night CPAP titration but to aid with those patients that need more assistance. Patients that may benefit are those extremely anxious about having the CPAP test, patients who have had CPAP but are struggling with use for various reasons, pressure complaints, claustrophobia, etc.

MSLTS (MULTIPLE SLEEP LATENCY TESTS)

These tests are used to help diagnose Narcolepsy and true excessive daytime sleepiness.

A polysomnogram is performed the night before the MSLT because this ensures that the patient has had sleep prior to the MSLT. If the polysomnogram is not performed, there is no way of knowing if the patient has been sleep deprived. If they have been sleep deprived, a false-positive test will occur. Due to the sleep deprivation, the patient can have “sleep phase syndrome.” This means the patient can have REM sleep (Rapid Eye Movement) during the majority of the five naps of the MSLT.

Two positive REM naps during an MSLT is a positive diagnosis for narcolepsy. That is why it is important to perform a polysomnogram the night before the MSLT. An MSLT has 5 naps in two-hour increments, so the patient will be here all night for their polysomnogram, and all day for the MSLT. Patients may have to make arrangements for those times.

Special Needs Patients

If a patient has special needs, the scheduling department will need to know so they can make sure to not schedule them with any other patients so we can ensure that those special needs are met.

Some examples of special needs are:

- Amputees of one or both of the lower limbs
- Patients from the nursing home – many of these patients are not able to communicate, or use the restroom facilities.
- Any patients who has a mental, or physical disability that would require an aide, or a caretaker to be present during the study is considered special needs.

We test adolescents 13 years and older, and a parent or guardian is to stay with the child if they are under 18 years of age.