Polysomnography (PSG) (Sleep Studies)

Polysomnography (PSG*)* is a series of tests used for detecting (*diagnosing*) obstructive sleep apnea. The tests measure how some parts of your body are working while you are sleeping. The tests are extensive and expensive. They are done in a sleep lab or hospital, and vary from center to center. Your caregiver may perform other more simple sleep studies and questionnaires before doing more complete and involved testing. Testing may not be covered by insurance. Some of these tests are:

- An EEG (Electroencephalogram). This tests your brain waves and stages of sleep.
- An EOG (Electrooculogram). This measures the movements of your eyes. It detects periods of REM (rapid eye movement) sleep, which is your dream sleep.
- An EKG (Electrocardiogram). This measures your heart rhythm.
- EMG (Electromyography). This is a measurement of how the muscles are working in your upper airway and your legs while sleeping.
- An oximetry measurement. It measures how much oxygen (air) you are getting while sleeping.
- Breathing efforts may be measured.

The same test can be interpreted (understood) differently by different caregivers and centers which study sleep.

Studies may be given an apnea/hypopnea index (AHI). This is a number which is found by counting the times of no breathing or under breathing during the night, and relating those numbers to the amount of time spent in bed.

When the AHI is greater than 15, the patient is likely to complain of daytime sleepiness. When the AHI is greater than 30, the patient is at increased risk for heart problems and must be followed more closely. Following the AHI also allows you to know how treatment is working.

SIMPLE OXIMITRY (TRACKING HOW MUCH OXYGEN IS TAKEN IN) CAN BE USED FOR SCREENING THOSE PATIENTS WHO:

- Do not have *symptoms* (problems) of OSA.
- Have a normal Epworth Sleepiness Scale Score.
- Have a low pre-test probability of having OSA.
- Have none of the upper airway problems likely to cause apnea.
- Oximetry is also used to determine if treatment is effective in patients who showed significant *desaturations* (not getting enough oxygen) on their home sleep study.

One extra measure of safety is to perform additional studies for the person who only snores. This is because no one can predict with absolute certainty who will have OSA. Those who show significant *desaturations* (not getting enough oxygen) are recommended to have a more detailed sleep study.

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