

Understanding Your

Sleep Study Results

A Patient Reference Guide to Reading Your Report

Better Sleep Project

Evidence-Based Sleep Education

Your sleep study (polysomnography) measures what happens in your body while you sleep. This guide explains the key numbers in your report and what they mean for your health.

Key Metrics in Your Sleep Study Report

Metric	What It Measures	Normal Range	What Abnormal Means
AHI (Apnea-Hypopnea Index)	Breathing events per hour	Less than 5	5–14: Mild OSA 15–29: Moderate OSA 30+: Severe OSA
RDI (Respiratory Disturbance Index)	AHI + respiratory effort-related arousals	Less than 5	Similar to AHI but more sensitive
Lowest SpO₂	Lowest oxygen level during sleep	Above 90%	Below 88%: significant desaturation
Time below 90% SpO₂	Minutes with low oxygen	0 minutes	Extended time suggests severity
ODI (Oxygen Desaturation Index)	Oxygen drops $\geq 3\%$ per hour	Less than 5	Correlates with AHI severity
Total Sleep Time	Hours actually asleep	6–8 hours	Low values may mean repeat study needed
Sleep Efficiency	% of time in bed that was sleep	Above 85%	Below 85% suggests fragmented sleep
Sleep Latency	Minutes to fall asleep	10–20 minutes	Under 5: sleep deprived Over 30: difficulty initiating sleep
REM Latency	Minutes to first REM	70–120 minutes	Under 15: possible narcolepsy Very long: REM suppression
Arousal Index	Brief awakenings per hour	Under 25	High values indicate fragmented sleep
PLMI (Periodic Limb Movement Index)	Leg movements per hour	Under 15	Above 15 may indicate PLMD

Understanding Sleep Architecture

Stage	Normal %	Role
N1 (Light)	2–5%	Transition to sleep
N2 (Stable)	45–55%	Memory consolidation, body maintenance
N3 (Deep/SWS)	15–25%	Physical restoration, growth hormone, immune function
REM	20–25%	Emotional processing, dreaming, learning

Your sleep study breaks down how much time you spent in each stage. Abnormalities — like very little deep sleep or suppressed REM — can point to specific problems.

What Affects Sleep Architecture

- **Alcohol:** suppresses REM sleep
- **Sleep apnea:** reduces deep sleep and REM due to arousals
- **Age:** deep sleep naturally decreases with age
- **Medications:** antidepressants, beta-blockers can alter stages

AHI: The Most Important Number

AHI	Classification	What It Means
< 5	Normal	No significant sleep apnea
5–14	Mild	Breathing events present but fewer symptoms. Treatment depends on symptoms.
15–29	Moderate	Significant events. Treatment usually recommended.
30+	Severe	Many events per hour. Treatment strongly recommended. Increased cardiovascular risk.

AHI can vary by body position (often worse on your back) and by sleep stage (often worse during REM). Your report may show positional and REM-specific AHI values.

What Happens After Your Sleep Study

- 1 Your sleep provider reviews the data (typically 1–2 weeks).
- 2 You'll receive a diagnosis based on the findings.
- 3 A treatment plan is recommended (CPAP, oral appliance, positional therapy, etc.).
- 4 If CPAP is prescribed, a titration study may follow to determine your pressure setting.
- 5 Follow-up appointment to review how treatment is working.

Questions to Ask Your Provider

- What is my AHI, and what does my severity level mean for my health?
- Were my oxygen levels affected during the night?
- Did the study show any other findings besides sleep apnea (PLMS, parasomnias)?
- Was my sleep architecture normal? Am I getting enough deep sleep and REM?
- What treatment do you recommend, and why?
- If CPAP is recommended, will I need a titration study?
- How soon should I follow up after starting treatment?
- Are there lifestyle changes that could help alongside treatment?

Remember: Bring a copy of your sleep study report to every sleep-related appointment. If you don't have one, ask your provider's office for a copy — you are entitled to your medical records.

Keep in Mind: Sleep study results are complex. Numbers alone don't tell the full story — your symptoms, medical history, and exam findings all factor into the diagnosis and treatment plan.

About Better Sleep Project

Better Sleep Project provides evidence-based sleep health education to help patients understand their conditions and treatment options.

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This guide is for general education only and does not constitute medical advice. Always consult your healthcare provider regarding your specific condition and treatment plan.

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