

The Dentist's Role in the Diagnosis and Treatment of Sleep Disordered Breathing

General Information:

Definitions

- **Apnea** - Complete cessation of breathing for at least 10 seconds
- **Hypopnea** - Decrease in tidal volume associated with a fall in oxygen saturation (4%) or arousal response
- **Arousal** - Shift in EEG for at least 3 seconds (in REM sleep requires also increase in EMG or movement)

Apnea Hypopnea Index (AHI)

- **Normal:** less than 5 events per hour
- **Mild:** 5-15 events per hour
- **Moderate:** 16-30 events per hour
- **Severe:** over 30 events per hour

Oxygen Saturation

- Normally, the blood oxygen level should be above 90%. With obstructions, you can have varying degrees of desaturations. The severity of the problem may depend on how much of a drop below 90%:
 - ⇒ Mild problem: 85-90%
 - ⇒ Moderate problem: 80-84%
 - ⇒ Severe problem: below 80%
- Look for how many desaturation events there were. Some people may be affected by frequent mild desaturations (more than 4% less than their mean O₂%) even if it never drops <90%

Abbreviations

- Apnea Index **AI**
- Apnea Hypopnea Index **AHI**
- Respiratory Disturbance Index **RDI (RDI = AHI + RERA)**
- Oxygen Desaturation Index **ODI**
- Respiratory Effort Related Arousal **RERA**

What to look for on a Sleep Study:

- Total sleep time (TST) and sleep efficiency (TST/total recording time = efficiency)
- Sleep stages (within normal ranges)
 - N1 = 5%
 - N2 = 50-55%

- N3 (formally known as stage 3 and 4) = 10-20% (less N3 as we get older)
- REM = 20-25%
- Ventilation summary
 - Obstructive Apneas
 - Central Apneas
 - Obstructive Hypopneas
 - Apnea/Hypopnea Index (AHI)
 - Respiratory Disturbance Index (RDI)
- Positional and REM data
 - Apneas, hypopneas, AHI (and maybe RDI) in
 - Supine
 - Lateral
 - REM
 - Supine REM
- Oxygenation
 - Lowest saturation (nadir)
 - Time below 90%
 - Index of how frequently the desaturations occurred
- Heart rate – pay attention to variability as a marker for SNS activation
- Limb Movements
- Sleep Doctor’s “impression” and recommendations

Comparing one sleep study to another:

- Compare apples to apples
 - PSG to a PSG
 - How long since the last PSG?
 - Same lab?
 - Same reading doctor?
 - PSG to HST, or HST to PSG – not apples to apples = tough to make conclusions
 - HST to HST
 - How long since the last HST?
 - Same device?
- Was anything different from the last study (baseline) to this study?
 - Weight gain?
 - Different sleep posture?
 - Different recording/sleep time?
 - Look at more than just the AHI
 - Change in apneas?
 - Hypopneas?
 - O2 saturation?

Thanks to Dr. Jamison Spencer for compiling this helpful summary

JamisonSpencer.com