



## Northern Virginia Sleep Diagnostic Center

8503 Arlington Boulevard • Suite 340 • Fairfax, Virginia 22031 • (703) 645-2244 • Fax: (703) 645-0711  
21785 Filigree Court • Suite 213 • Ashburn, Virginia 20147 • (703) 858-3711 • Fax: (703) 724-9758

**NAME:** Diviney, Ryan

**D.O.B.** 9/21/1989

**ORDERING PHYSICIAN:** Halper, James M.D.

**SERVICE DATE:** 12/12/2012

**INTERPRETING PHYSICIAN:** Diccico, Barry M.D.

**Location:** Ashburn

### POLYSOMNOGRAM

**INDICATIONS:** The patient is a 23 -year-old male with a height of 6 feet 1 inch, weighing 171 pounds with a BMI of 23.

**IMPRESSION:** No evidence for obstructive sleep apnea hypopnea with an overall normal apnea hypopnea index (AHI) of 2/hour, no snoring and a desaturation nadir of 91%

#### RECOMMENDATIONS:

Suggest clinical correlation.

Patient should not drive when fatigued or feeling drowsy.

Rule out hypothyroidism if not done to date.

Suggest close clinical follow-up.

**PROCEDURE:** The patient underwent a 16-channel polysomnogram following the AASM guidelines. Recorded channels included: EEG (international 10-20 electrode placement), eye movement, chin EMG, nasal and oral airflow, ECG, respiratory effort, oximetry, body position, snoring sound, pulse rate and limb movement. All events are scored according to the current AASM criteria. Hypopneas have a 30% reduction in airflow and are accompanied with a 3% desaturation or an arousal and are calculated within the Apnea Hypopnea Index (AHI). A respiratory effort-related arousal (RERA) is defined by an increase in respiratory effort or flattening of the nasal pressure waveform lasting at least 10 seconds leading to an arousal from sleep. These events are calculated in the Respiratory Disturbance Index (RDI).

**DATA:** Lights out occurred at 10:13:11 PM. Total sleep time recorded was 390.5 minutes with a total time in bed of 442.0 minutes. The calculated sleep efficiency was 88.3%. Latency to sleep onset was shortened at 0.0 minutes. REM latency was normal at 113.5 minutes. Lights on occurred at 5:35:11 AM.

Sleep architecture revealed 1.7% Stage N1 sleep, 93.3% Stage N2 sleep, 4.4% Stage N3 sleep and 0.6% Stage R sleep.

There were a total of 16 respiratory events during sleep including 0 obstructive apneas, 5 central apneas, 0 mixed apneas, 11 hypopneas and 0 RERAS. The mean duration of respiratory events was 11.9

---

• Barry S. Diccico, M.D., ABIM Sleep Certified

- Richard A. Swift, M.D., D,ABSM, ABIM Sleep Certified
- Maura P. Foley, M.D., D,ABSM, ABIM Sleep Certified
- Thomas J. Lo Russo, M.D., D,ABSM, ABIM Sleep Certified
- Kevin Glass, M.D., D,ABSM, ABIM Sleep Certified

**NAME:** Diviney, Ryan

**D.O.B.:** 9/21/1989

**SERVICE DATE:** 12/12/2012

**AGE/SEX:** 23 M

seconds with a maximal duration of 16.5 seconds. The AHI in Stage R was 0.0 events per hour with an AHI in non-REM sleep of 2.3 events per hour. The overall AHI for the recorded sleep period was 2.5.

The baseline oxygen saturation during sleep was 98% in stage 2 sleep. The mean oxygen saturation during respiratory events was 94% with a minimum desaturation to 91% following a central apnea supine in stage 2 sleep at 4:22 AM. The mean oxygen saturation for the entire recording time was 97. There were 0 periods of SpO<sub>2</sub> below 88% for five minutes.

The AHI while sleeping in the supine position was 2.5. All sleep time was supine.

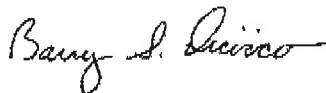
No snoring was noted by the technician.

Six-lead EKG monitoring revealed normal sinus rhythm. The average heart rate during sleep was 64/minute.

The total number of Periodic Limb Movements (PLMS) recorded during sleep was 0 with 0 associated with arousal. This resulted in a PLMS index of 0/hour.

No bruxism was noted.

There were a total of 78 arousals recorded during sleep. Of these, 7 were associated with respiratory events without desaturations, 6 were associated with respiratory events with desaturations, 0 were due to limb movements and 65 were spontaneous. The overall arousal index was 12.0 per hour during sleep.



Diccico, Barry M.D.

**PSG NORMALS:** Sleep efficiency is defined as the total sleep time divided by the total time in bed and normally is 85% or greater. It may be reduced by the "first night effect" due to sleeping in an unfamiliar environment. Sleep latency is defined as the time from lights out to the first epoch of sleep and should be less than 30 minutes. REM latency is usually between 70 to 120 minutes. A shortened REM latency can be seen in sleep apnea, depression, narcolepsy and the withdrawal of a REM suppressing medications. The normal percentages for sleep stages are: **Stage N1 – 5%, Stage N2 – 50%, Stage N3 – 20% and Stage R sleep is 25%.** During a sleep study many patients may not achieve all stages of sleep with stage N3 and REM sleep commonly reduced. The percentage of REM sleep changes very little with age. The AHI is the number of apneas and hypopneas per hour of sleep: an AHI < 5 is normal, 6-15 is mild, 16-30 is moderate and >30 is severe. The AHI can be affected by body position, it is typically worse in the supine position. The PLM index is the number of limb movements per hour of sleep. Normal is >5, 5 to 24 is mild, 25 to 49 is moderate and >50 severe. Not all leg movements are associated with arousals. One cause of an increased arousal index is upper airway resistance syndrome. During an ideal CPAP or BI-LEVEL (BIPAP) titration study one looks for periods of time during which the patient sleeps supine and also during periods of REM sleep since during these periods apnea may be at its worse.

---

• Barry S. Diccico, M.D., ABIM Sleep Certified

• Richard A. Swift, M.D.,D,ABSM, ABIM Sleep Certified • Maura P. Foley, M.D.,D,ABSM, ABIM Sleep Certified  
• Thomas J. Lo Russo, M.D.,D,ABSM, ABIM Sleep Certified • Kevin Glass, M.D.,D,ABSM, ABIM Sleep Certified