national Sleep Diagnostics
Sleep well, breathe easy.
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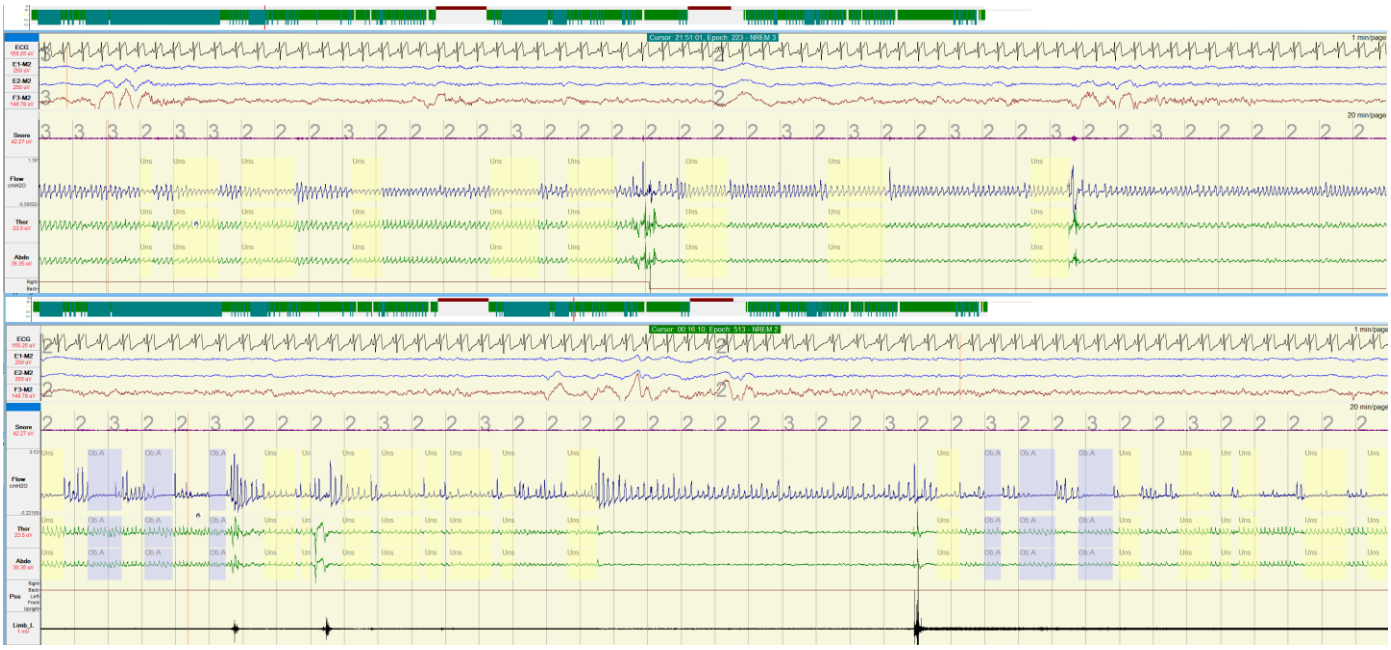
PATIENT: Jason Denniss
STUDY DATE: 17/07/2023
Date of birth: 27/09/1980 **Sex:** Male
Address: 12 Millicent Drive, NARRABRI NSW 2390
Location: Narrabri (Karen Carter Chemist)
Referral: Dr N. Erathnage, Maitland St Medical Ctre, NARRABRI NSW 2390
Weight: 92kg. **Height:** 183cm. **BMI:** 27.5kg/m² which is slightly overweight.
Epworth Sleepiness Score of **13** /24 is moderately sleepy.

Ambulatory Sleep Report: Cardio-Respiratory Function & EEG Monitoring

INDICATION: Jason Denniss undertook testing because of suspected obstructive sleep apnoea, with symptoms including: snoring, apnoea, gasping, breath holding, irregular breathing, broken sleep, many awakenings, restlessness, night sweats, restless legs, unrefreshed in the morning, daytime sleepiness, dry/sore throat, poor memory/concentration, excessive fatigue, drowsiness, microsleeps at work, drowsy driving, sleepiness when driving. Comorbidities: depression, reduced libido, erectile dysfunction. No medication listed. (HI)

SUMMARY: Jason Denniss had an abnormal sleep test: **a pattern of severe obstructive sleep apnoea** was seen, with **46.4 respiratory abnormalities per hour** (normally <5). There was some apnoeas, but largely hypopnoeas. Hypopnoeas were scored as unsure events, and hence the AHI is artificially low, and the correct metric is the respiratory disturbance index. This was due to poor oximetry on this night. An example is shown below.



TREATMENT RECOMMENDATIONS:

As there was a pattern of severe obstructive sleep apnoea, with significant symptoms & significant comorbidities, a trial of effective treatments is generally recommended. If more accurate oximetry is required, the test can be repeated. However given major symptoms, and a pattern of obstructive sleep apnoea, there is enough information here to declare that obstructive sleep apnoea is that likely cause of the symptoms, and a trial of treatment is recommended. Are there any reversible factors? Consider a trial of CPAP or MAS.

Dr. Peter Solin. Sleep & Respiratory Physician.

Home sleep tests are effective in diagnosing significant sleep apnoea, unless there is signal inconsistency or lack of supine sleep. Review by a sleep disorders physician is generally recommended unless not readily or expeditiously available, particularly if there are: more than just mild abnormalities; significant health comorbidities or complex clinical history; significant sleepiness affecting work or driving; difficulties with treatment; complex sleep apnoea; major hypoxaemia.

Reversible treatments for snoring & obstructive sleep apnoea comprise: 1. Weight loss esp. if BMI>25; 2. Nasal saline spray & relief of any congestion with anti-allergy or decongestant sprays; 3. Body positioning more upright & on the side, and avoiding sleep on back; 4. Minimization of: alcohol intake, cigarette smoking, caffeinated beverages, sedatives & pain relievers; 5. Nasal dilators eg breathe-rite strips, and, chin supports such as chinstraps.

General treatments: Regularise sleep times; adequate sleep time; sunlight exposure; daytime exercise; minimising shiftwork variation; treat anxiety/depression.

Further treatments comprise: 1. CPAP: particularly if presence of cardiovascular risk factors, major obesity or other significant co-morbidities, & when more severe abnormalities are noted (such as a high AHI/RDI count or major oxygen desaturations, or significant sleepiness/malaise/fatigue); **2. MAS: mandibular advancement splints:** preferably for milder forms of sleep apnoea, or supine positional symptoms, or CPAP intolerance; **3. Surgeries:** nasal patency 'unblockage'; tonsillectomy; selective oro-pharyngeal trimming 'UPPP' and variants; or jaw advancement, tongue or facial surgeries; **4. Other:** Provent Nasal Valves.

CPAP treatment guidelines: CPAP can be obtained or rented through a local supplier such as the testing Agent or Pharmacy. Initially an Automatic Unit would be required, with recommendation that up to one week of fixed pressure is also offered during the trial period to ascertain tolerance to both automatic and fixed inspiratory pressure treatment modes. Excessive mask leakage requires mask refit or alternate interface, assuming that mouth leakage is not present or has been overcome with chin strapping. Downloadable data shows usage, efficacy & can be used for licensing requirements. Medical supervision of CPAP is recommended.

Safety whilst driving should be considered particularly if sleepiness or drowsiness affects driving, and further important information on nationally agreed medical standards for the purposes of driver licensing are contained in Assessing Fitness to Drive 2012 http://www.austroads.com.au/assessing-fitness-to-drive

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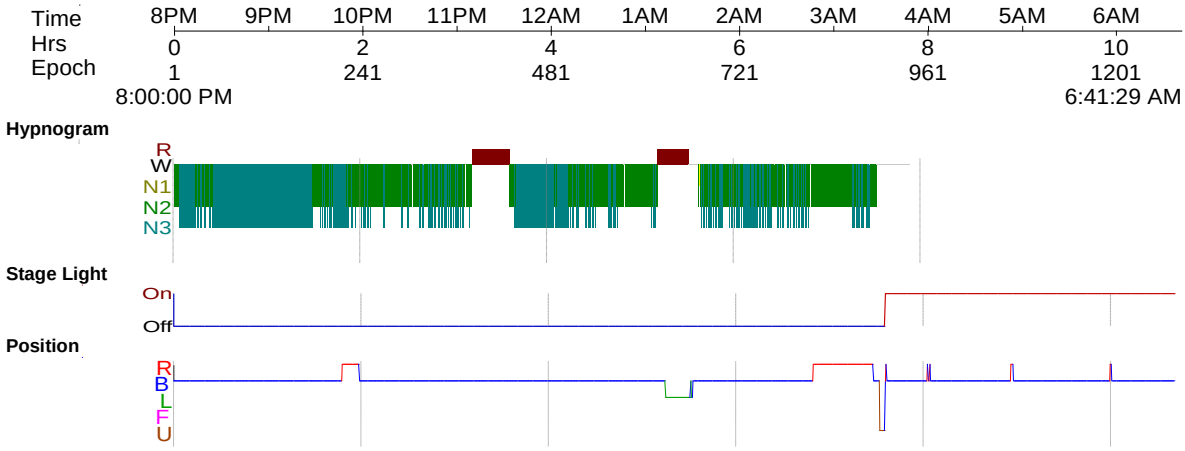
EEG Analysis of Sleep & Wakefulness, & Body Positioning:

Full sleep architecture analysis; two periods of REM, both partially noted whilst supine, with normal initiation of sleep. Total sleep time (TST) of 7:18.0hrs with normal sleep efficiency of 96.2% & normal sleep latency of 1.0mins. Slow wave was normal at 40.3% of TST. REM was near normal at 10.2% of TST, with a normal REM latency of 191.0mins. Sleep architecture was relatively intact. Minimal awakenings after sleep onset, totalling 8. Body position was predominantly supine, with supine sleep representing 85.3% of TST.



Respiratory Events

Total Respiratory Disturbance Index (RDI) is severe at 46.4

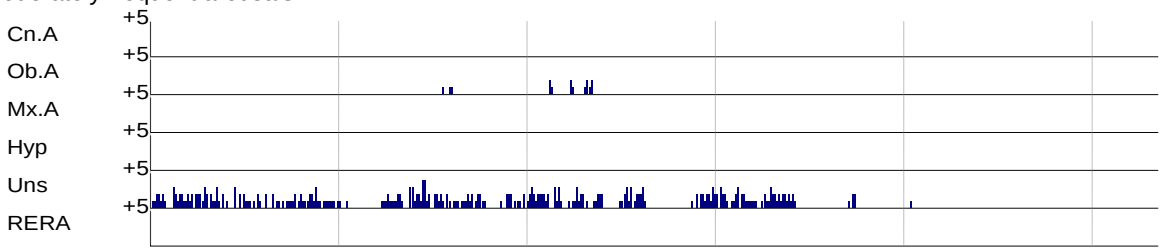
Generally RDI of 5-15 is mild, 15-30 is moderate, 30+ is severe, 50+ is very severe)

Total Sleep AHI = 2.1 **Longest apnoea = 32 sec.**

OD ≥ 3 % = 0 **Events averaged 22 sec.**

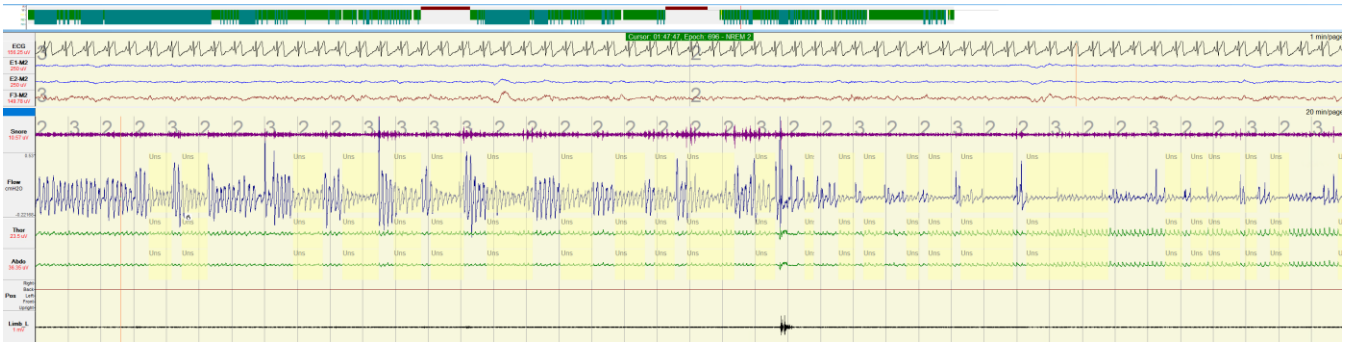
***UNSURE* = 44.4** *RDI = AHI + RERA + Unsure classified events.*

Frequent respiratory events observed in both REM and Non-REM in primarily a supine position. Events were mainly marked as unsure events due to SpO2 dropout – but were most likely to be hypopneas.. These respiratory events caused moderately frequent arousals.



Sound & Snoring:

Full results: Mild-moderately loud snoring observed.



Leg Movements:

Infrequent leg movements observed.

Pulse Oximetry (SpO_2) & ECG:

Artefactual results. Normal sinus rhythm; baseline heart rate of 68 bpm.

Analysis in accordance with AASM 2009 (alternate criteria) using 3% desaturation. EEG, ECG, Pulse Rate, Oro-nasal airflow, Respiratory Effort, Oximetry, Body Position, Snoring. **Apnoea:** airflow Cessation for ≥10sec. **Obstructive Apnoea:** no airflow in nasal pressure with continued respiratory effort. **Central Apnoea:** no airflow in nasal pressure with no respiratory effort. **Hypopnoeas:** ≥10 sec, ≥ 50% breathing decrease from baseline (airflow or effort), or <50% amplitude reduction in breathing in association with arousal or 3% desats. **Mixed Apnoea:** mixture of obstructive & central. **RDI (Respiratory Disturbance Index):** Sum of respiratory events (AHI + RERA) divided by **total sleep time (TST)**, per hour.