

Consultation conducted via Videoconferencing Telehealth

06/09/2022

Re: [REDACTED]

Diagnoses: 1. ADHD 2. anxiety 3. skin hypersensitivities 4. Sleep disturbance. 5. Chronic musculoskeletal

Thank you for referring [REDACTED] for an opinion of their sleep breathing and sleep quality, which the home sleep test successfully assisted me in providing this assessment.

Long standing anxiety and ADHD symptoms. Anxiety has been particularly impacting, feeling issues in how to relax, tension in limbs, and note immunologist has been monitoring his skin hypersensitivities. Variable sleep cycles. Issues with focus and concentration and memory. Feels sleep is very disrupted at the moment and busy brain. Ruminating thoughts. Also chronic pain "all over his body". Does wood cutting. Meds include diazepam 10mg per day, dexamphetamine up to 30mg per day, Prednisolone 9mg and codeine paracetamol. Has been on unregulated sources of cannabinoids which did not assist much.

Sleep study results:

Disturbed cycles of Non REM and REM sleep with prominent alpha waves in the non REM sleep indicating a hyperarousal state. Sleep fragmentation noted. Sleep time - 5.6 hrs. Nil obstructive sleep apnoea AHI 3% - 3 / hr. Mean oxygen sats - 97 %. Min oxygen sats 93%. In sinus rhythm - slight tachycardia mean pulse 85 per min.

Plan: Reassured nil sleep apnoea but note considerable sleep disturbance at night with hyperarousal state in sleep, driven by anxiety state and ADHD, driving like the focus concentration issues in the day. In view of the hyperarousal state at night which may be contributing to well being issues in the day, I suggest a trial of Cannabidiol CBD day and night. I am a TGA authorised prescriber and I can facilitate this therapy from my clinic. I have had a lot of success in CBD in those with anxiety and insomnia. I generally commence patients on CBD 100mg / ml, 0.25mls in the morning and before bedtime, after a week go up to 0.5mls morning and night and titrate as needed to up to 1ml / per night. Can take an extra 25mg in the day for anxiety. I suspect he may need more than 50mg at night. There is no THC in the CBD product so there is no legal issues with driving. Cost is an issue for him and he will explore this option. I have left matters open for the moment.

Yours sincerely,

Sleep Physician, :

Sleep study report to follow

Sleep Profiler PSG2 Study Report Summary

Patient Name

Study Ordered by

Sleep Specialist

MBChB BSc Hon MD FRCP UK
FRACP

Date of Night 1 30 Aug 2022

Date of Birth

Study Type

Diagnostic

CLINICAL HISTORY: 29 year old male

STUDY FINDINGS: The patient underwent a one-night overnight type II polysomnography.

NIGHT ONE - Sleep Disordered Breathing: Based on total sleep time of 5.6 hours and 3% desaturation criteria, the overall apnea-hypopnea index (AHI) was 3.6, supine AHI was 7.5, and non-supine AHI was 0.6. The NREM AHI was 2.4, and REM AHI was 9.3. The Overall AHI - 3% desats + arousals was 5.2. The oxygen desaturation index (ODI) was 3.6, the lowest respiratory event related desaturation was 93.0%, and the SpO2 was less than 90% for 0.0 minutes, and less than 88% for 0.0 minutes.

Sleep Architecture: The recording time of 10.5 hours and total sleep time of 5.6 hours resulted in a sleep efficiency of 53.3%. The patient fell asleep 154 minutes after the lights were turned off, started stage N3 16 minutes later, and entered his first REM cycle 130 minutes later. He slept 17.9% of the night in stage N1, 1.2% in light N2, 43.5% in total N2, 21.2% in slow-wave sleep (stage N3), and 17.3% in REM.

Awakenings and Arousals: The patient was awake for a total 139 minutes after initially falling asleep. He experienced an average of 5.8 awakenings > 30 sec and 2.0 awakenings > 90 sec per hour of sleep. He experienced an average of 9.5 cortical arousals, 20.0 autonomic activations, and 11.7 movement arousals per hour of sleep.

Other: He slept 43.2% of the night supine, while snoring 2.5% of the night above 40 dB and 0.6% above 50 dB.

Abnormal Sleep Patterns: The patient's sleep efficiency, percentage of time in stage N1, sleep latency, REM latency, and awakening index were outside age/gender-matched normative ranges.

CLINICIAN COMMENTS:

Disturbed cycles of Non REM and REM sleep with prominent alpha waves in the non REM sleep indicating a hyperarousal state. Sleep fragmentation noted. Sleep time = 5.6 hrs.

Nil obstructive sleep apnoea AHI 3% = 3 / hr. Mean oxygen sats = 97 %. Min oxygen sats 93%. In sinus rhythm slight tachycardia mean pulse 85 per min

Sleep clinician

Signature:

Date:

4 Sep 2022

Study Review:

The overnight EEG and other signals have been reviewed by
FRCP UK FRACP.

, Sleep Specialist MBChB BSc Hon MD

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Study Results

Patient Name		Ordered by	Sleep Specialist MBChB BSc Hon MD FRCP UK FRACP
Date of Birth		Gender	Male

N1: Diagnostic

Normal Ranges

Study Date	30 Aug 2022	Low/High
Study Time	11.9h	-
Excluded Time	1.5h	-
Recording Time	10.5h	-
Sleep Time	5.6h	4.2h / 7.1h
Sleep Efficiency (%)	53.3%	73.2% / 93.3%
Sleep Time Supine (%)	43.2% (2.4h)	-

Sleep Architecture

Wake	46.7% (4.9h)	-
Stage R (REM) Total	17.3% (1.0h)	14.6% / 28.4%
Phasic	8.4% (0.5h)	8.6% / 15.0%
Stage N1	17.9% (1.0h)	1.8% / 7.5%
Stage N2 Total	43.5% (2.4h)	41.0% / 68.9%
Light	1.2% (0.1h)	7.3% / 20.9%
Stage N3 (SWS)	21.2% (1.2h)	5.6% / 32.2%
Sleep-NOS	0.0% (0.0h)	-

Latencies

Sleep Latency	154m	3.5m / 36.0m
REM Latency	130m	43.0m / 121.5m
Stage N3 Latency	16m	-
Wake after Sleep Onset	139m	0.0m / 45.0m

Sleep Continuity

Cortical Arousals/hr	9.5	7.4 / 22.1
Microarousals/hr - other	7.2	-
Autonomic Activations/hr Overall	29.9	11.4 / 36.0
(Forehead) Non-REM	18.3	-
REM	27.1	-
Movement Arousals/hr	11.7	-
Awakenings/hr ≥ 30 sec	5.8	2.4 / 5.6
≥ 90 sec	2.0	0.9 / 1.9
Spindle Duration (min)	15.9	2.2m / 13.1m

Respiratory

Overall AHI - 3% desat + arousals (events)	5.2 (29)	< 5
Supine (events)	9.6 (23)	-
Non-supine (events)	1.9 (6)	-
NREM (events)	4.1 (19)	-
REM (events)	10.3 (10)	-
Overall AHI - 3% desat (events)	3.6 (20)	-
Supine (events)	7.5 (18)	-
Non-supine (events)	0.6 (2)	-
NREM (events)	2.4 (11)	-
REM (events)	9.3 (9)	-
Apnea Index (events)	0.2 (1)	-
Obstructive Index (events)	0.2 (1)	-
Mixed Index (events)	0.0 (0)	-
Central Index (events)	0.0 (0)	-
Oxygen Desat $\geq 3\%$ Index	3.6 (20)	-

Desaturation

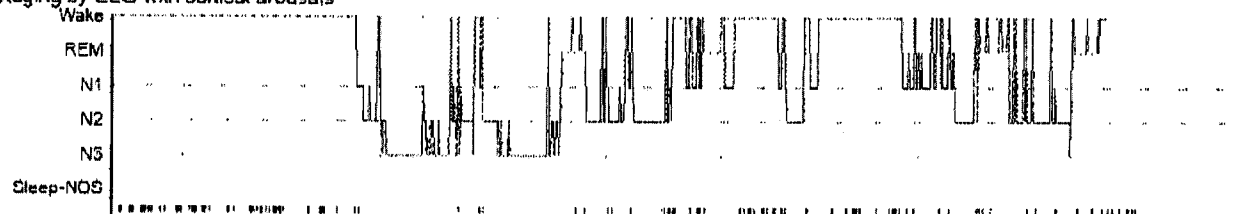
Sleep time SpO2 < 90%	0m	-
Sleep time SpO2 < 88%	0m	-
Lowest desaturation respiratory	93.0%	-
Mean SpO2 ± 1 S.D.	97 \pm 0.9%	-

Snoring		
> 40dB > 50dB		Max
Overall	2.5% 0.6%	17.9% 9.0%
Supine	1.9% 0.9%	31.2% 13.1%
Non Supine	2.9% 0.3%	14.1% 7.4%
Cardio		
Mean ECO \pm 1 S.D. (BPM)	83 \pm 7.4	-
Mean Pulse \pm 1 S.D. (BPM)	85 \pm 7.4	-
Max Pulse Min Pulse (BPM)	127 66	-

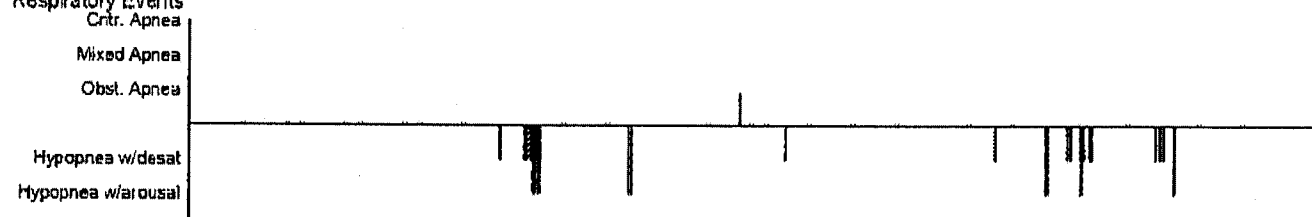
Patient Name [REDACTED]
 Date of Night 1 30 Aug 2022

Gender Male
 Date of Birth [REDACTED]

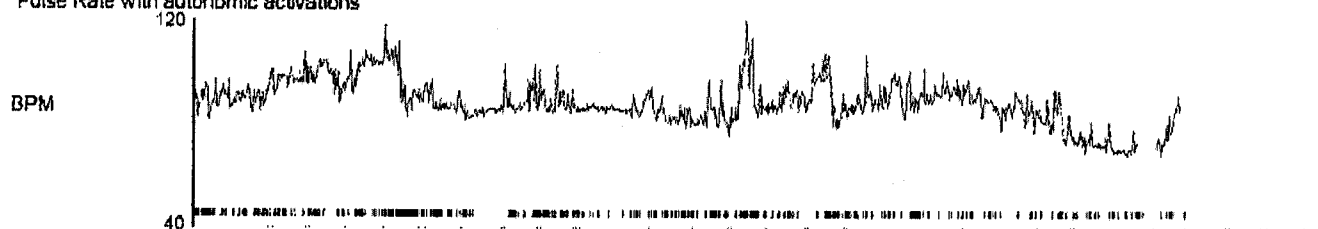
Sleep Staging by EEG with cortical arousals



Respiratory Events



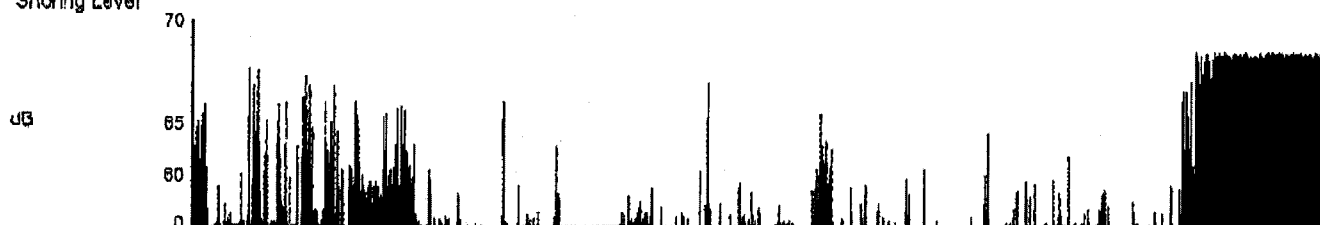
Pulse Rate with autonomic activations



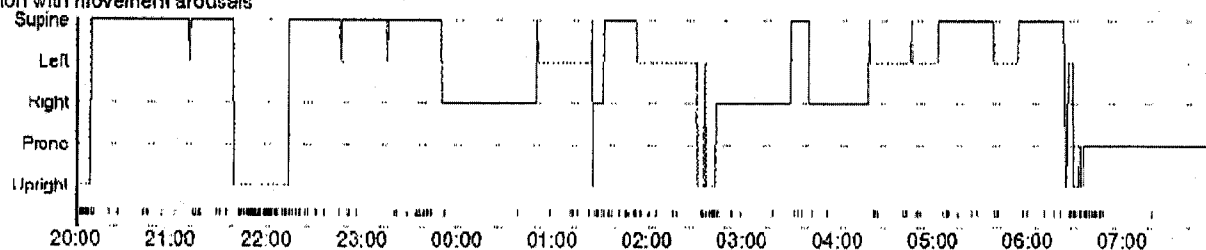
Oxygen Saturation with desaturation events



Snoring Level



Head Position with movement arousals



Sensor Impedance Values

EEG	[REDACTED]
LEOG	[REDACTED]
REOG	[REDACTED]

% Good Signal: EEG 95% LEOG 96% REOG 94% Pulse 95% Airflow 93% SpO2 88%

Patient Report Night 1

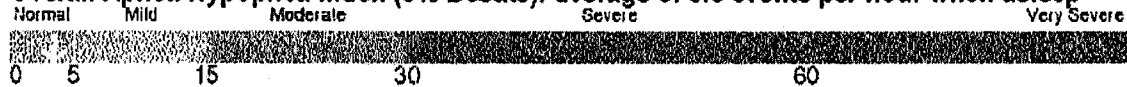
Patient Name

Date of Night 1

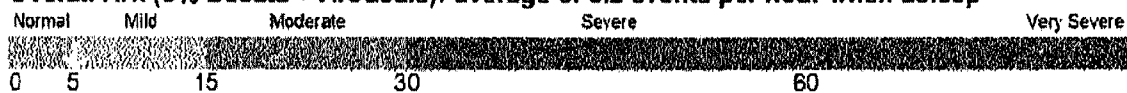
30 Aug 2022

SLEEP APNEA SEVERITY

Overall Apnea Hypopnea Index (3% Desats): average of 3.6 events per hour when asleep

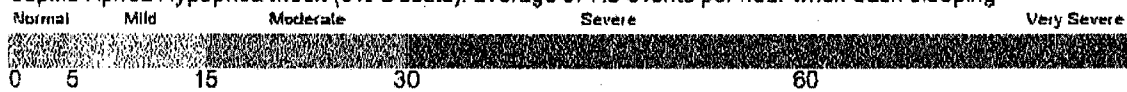


Overall AHI (3% Desats + Arousals): average of 5.2 events per hour when asleep

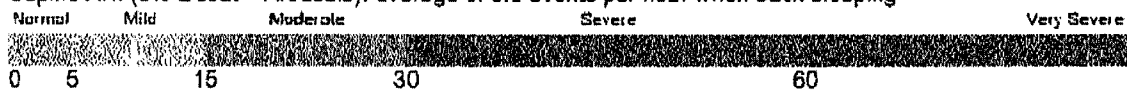


Positional Severity

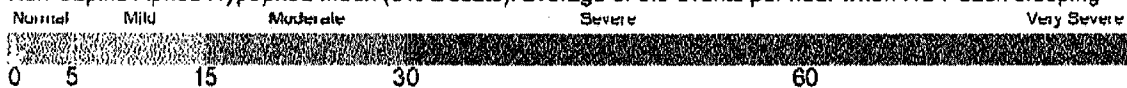
Supine Apnea Hypopnea Index (3% Desats): average of 7.5 events per hour when back-sleeping



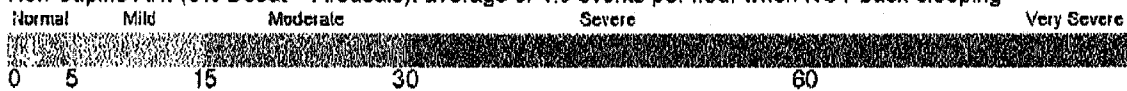
Supine AHI (3% Desat + Arousals): average of 9.6 events per hour when back-sleeping



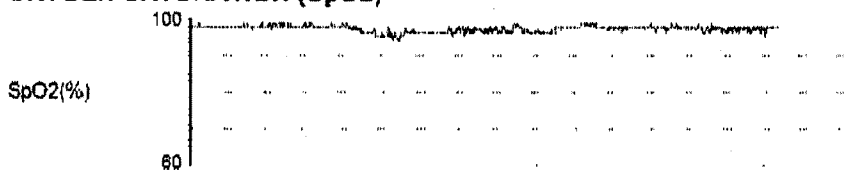
Non-Supine Apnea Hypopnea Index (3% Desats): average of 0.6 events per hour when NOT back-sleeping



Non-Supine AHI (3% Desat + Arousals): average of 1.9 events per hour when NOT back-sleeping



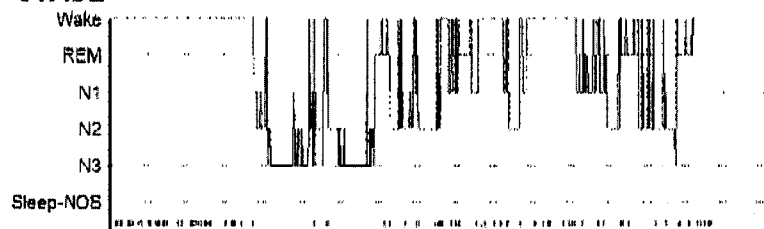
OXYGEN SATURATION (SpO2)



Average SpO2 level: 97.4%

Lowest SpO2 level: 93.0%

SLEEP STAGE



REM - dreaming 17.3%

N1 - very light 17.9%

N2 - moderate 43.5%

N3 - very deep 21.2%

SNORING



Snoring time > 40 dB: 2.5%

Snoring time > 50 dB: 0.6%