The PSG Report

SYDNEY SLEEP CENTRE

“Normal” values in a sleep lab

Average values for all ages:

- Sleep latency = 20 minutes
- REM latency = 113 minutes
- Arousal index = 21/hour (this value increases with age. Someone 30 yo has an index about 16/hr)
- Sleep efficiency = 84%
- Subjective report “same” or “worse sleep than normal”

- Sleep stages:

wake	= 46 minutes	(11% of SPT)
N 1	= 17	(4%)
N 2	= 165	(38%)
N 3	= 86	(20%)
REM	= 67	(16%)

(Mathur and Douglas, 1995)

SYDNEY SLEEP CENTRE

POLYSOMNOGRAPHIC DIAGNOSTIC DATA REPORT

Patient A

Test Date: 7/04/2011 **Test ID: 11-231**

Age: 41 **Sex: Male** **Height(m): 1.83** **Weight(kg): 95** **BMI(kg/m2): 28.3**

BP: 153/104 (pm) **135/87 (am)** **Race: Caucasian**

Ref Physician: A. DESAI **Score Technologist: J. Jing**

Parameters Measured: EEG, EOG, ECG, EMG-leg/chin, AIRFLOW, EFFORT, SAO2:

SUMMARY OF SLEEP PARAMETERS

Study Start Time: 9:44:02 PM **Study End Time: 6:01:01 AM**

Total Study Time (TIB):	**466.5 Minutes**	**7.8 Hours**	**933.0 Epochs**
Sleep Period Time (SPT):	**462.0 Minutes**	**7.7 Hours**	**924.0 Epochs**
Total Sleep Time (TST):	**431.5 Minutes**	**7.2 Hours**	**863.0 Epochs**

LATENCIES

Latency to Sleep Onset:	**4.8**	**Latency to Stage 3/4:**	**19.4**
Latency to Stage 1:	**-**	**Latency to Stage REM:**	**80.3**
Latency to Stage 2:	**4.8**		

SLEEP STAGES

	Minutes	%TIB
Stage 1	**0.0**	**0.0**
Stage 2	**229.5**	**49.2**
Stage 3	**86.0**	**18.4**
Stage 4	**0.0**	**0.0**
Stage REM	**116.0**	**24.9**
Stage Wake	**34.5**	**7.4**
Non-REM	**315.5**	**67.6**
Movement Time	**0.5**	**0.1**

Sleep Efficiency: 92.5 % **Sleep Maintenance:** 99.0 %

AROUSAL ANALYSIS

	Number	Index	REM	NREM
Arousals	407	56.6	121	286
Arousal associated w/Periodic Movement	0	0.0	0	0
Arousal associated w/Resp. Events	367	51.0	112	255

LEG MOVEMENTS

Movement Types	Total # of Movements	Index	# in REM	# in NON-REM
Isolated	72	10.0	33	39
Periodic	0	0.0	0	0
Isolated w/arousal	21	2.9	9	12
Periodic w/arousal	0	0.0	0	0

RESPIRATORY SUMMARY

	Apnoeas	Hypopnoeas	A+H	Central	Obstructive	Mixed
#Events	356	110	466	0	466	0
Index	49.5	15.3	*64.8*	0.0	64.8	0.0
# with Arousal	322	45	367	0	367	0
Index with Arousal	44.8	6.3	51.0	0.0	51.0	0.0
Mean Duration	30.5	19.8	28.0	-	28.0	-
Longest Duration	84.6	36.6	84.6	-	84.6	-

RESPIRATORY EVENTS RELATED TO SLEEP STAGES

	REM	NREM
# Apnoeas	113	243
Longest Apnoea Duration	84.6	57.4
Apnoea Index	58.5	46.2
# Hypopnoeas	18	92
Hypopnoea Index	9.3	17.5
Longest Hypopnoea	36.6	35.8
A+H Index	*67.8*	*63.7*

RESPIRATORY EVENTS RELATED TO BODY POSITION

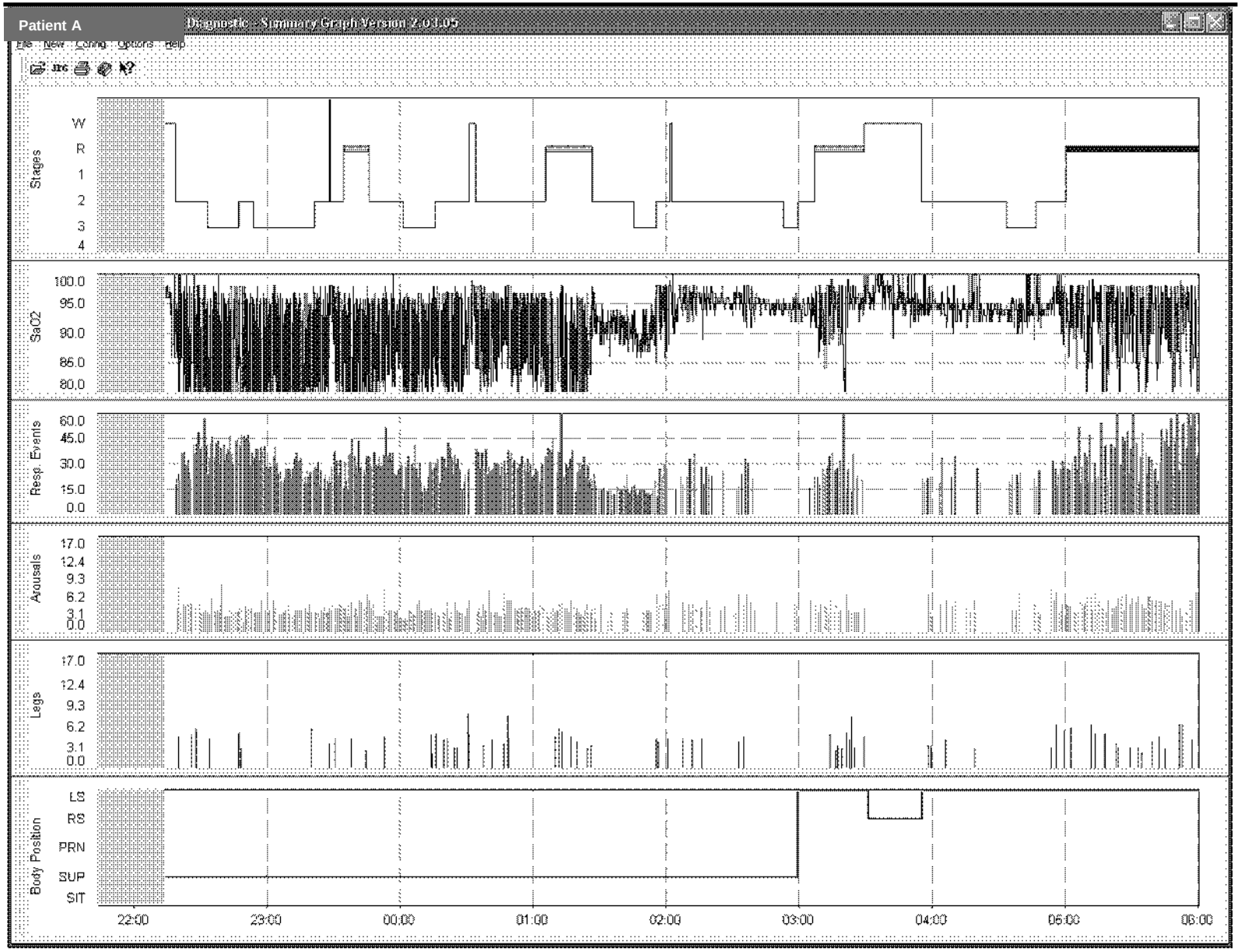
	Supine	Prone	Both Sides
Sleep Time (min)	276.2	0.0	155.3
# Apnoeas	285	0	71
Apnoea Index	61.9	-	27.4
# Hypopneas	69	0	41
Hypopnea Index	15.0	-	15.8

OXYGENATION

	Min O2	Max O2	Ave O2
Wake	**83.0**	**99.0**	**91.0**
REM	***67.0***	**99.0**	**83.0**
NREM	***73.0***	**99.0**	**86.0**

O2	<70	70-79	80-89	90+
%TIB	0.0	6.0	23.3	69.9

Patient A


Diagnostic - Summary Graph Version 2.01.05
File New Config Options Help
Stages
W
R
1
2
3
4
SaO2
100.0
95.0
90.0
85.0
80.0
Resp. Events
60.0
45.0
30.0
15.0
0.0
Arousals
17.0
12.4
9.3
6.2
3.1
0.0
Legs
17.0
12.4
9.3
6.2
3.1
0.0
Body Position
LS
RS
PRN
SUP
SIT
22:00
23:00
00:00
01:00
02:00
03:00
04:00
05:00
06:00

ST LUKES HOSPITAL SLEEP STUDY REPORT

Type of Study Performed: Diagnostic Sleep Study

Patient Name: Patient A
Date of Birth: 13/03/1970
Body Mass Index: 28.3 (kg/m^2)
Date of Study: 7/04/2011
Date Reported: 14/04/2011

Signals recorded:
Full supervised polysomnography, including EEG, EOG, submentalis EMG, ECG, sensor leads over the anterior tibialis, nasal pressure transducer and thermistor, inductive respiratory effort bands around the chest and abdomen, position recordings, finger probe oximeter, infra-red video monitoring and digital audio recording

Comments:

Sleep Quality:
Subjective sleep quality was worse than usual. Sleep efficiency was high. Sleep was severely fragmented. Adequate proportions of all sleep stages were seen.

Obstructive or Central Events:
Heavy snoring was noted. Continuous repetitive obstructive hypopnoeas and apnoeas were noted in NREM and REM sleep. Obstructive events were associated with severe oxygen desaturations and arousals.

Other abnormalities:
Periodic limb movements were not noted. There were no ECG abnormalities noted

Sleep Efficiency: 92.5%	**Arousal Index:** 56.6	**Min O_2 Sat'n:** 67.0%
AHI REM: 67.8	**AHI NREM:** 63.7	**AHI Total:** 64.8

Conclusion:

1. Very severe obstructive sleep apnoea
Early clinical review recommended

Anup Desai

Scoring Criteria

Apnea: reduction in airflow to 0-20% ≥ 10 seconds
Hypopnoea: > 50% reduction in airflow ≥ 10 seconds *or* a reduction in airflow of 20%-50% associated with an arousal or an oxygen desaturation of > 3%