

Update on SLEEP APNEA

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Masks or Interfaces

- 90% of compliance issues
- Comfort and size improving over the years
- Must invest time and effort to really know the equipment and its components
- Must be able to take the mask apart and put it together, clean it, order parts
- Game: what parts are missing and what is their purpose

Monitoring of PAP: Control or Clinical Data

- **Subjective control** of OSAS: patient sleeps more soundly at night, feels better during day
- **Semi-objective:** spouse reports no snoring, snorting, gasping, and less restless sleep at night, and less sleepy, more energetic, and less grouchy during day
- **Face to face visit** with clinician needed: days **31 to 90** after PAP set up
- **Objective control:** how *AHI controlled better* on ordered PAP, and *overnight oximetry* shows a more normal pattern

Monitoring Data on CPAP

- Needed to prove **compliance** or sufficient usage during the trial period of 3 months
- But also need useful **clinical** information
- Look at: dates and duration of data, at least one month is necessary
- **Compliance:** *over 4 hours for at least 21 of 30 days*; minimum “dosage” of PAP
- Look at **control:** AHI (Apnea Hypopnea Index) ideally < 10 , normal < 5

Monitoring Data on CPAP

- Also have data on **leaks**, but numbers different depending on the manufacturer
- Confirm **settings** on the CPAP machine: *pressure, humidity*
- Compliment this clinical data with overnight oximetry while on PAP
- Target areas to improve and plan
- Medicare now requires visits every 6 months

Monitoring Reports

- **Duration and period:** *at least 30 days* for certification for insurance purposes
- **Percentage of days** during month with over **4 hours** per night: need *at least 70%* or minimum of **21 days**
- For control: confirm PAP settings and look at crude **AHI**: good **less than 10** and normal or very good is less than 5
- AHI: Apnea Hypopnea Index

Leak Component

- Four possible ways to short circuit the pressure from the machine before it reaches the back of the throat
- Normal vents CO2 escape, intentional leak
- Around mask (mask leak)
- Mouth leak: nasal pillows, nasal mask
- Escape valve not put on correctly (FFM)
- Oxygen ports (FFM, Nasal mask) no caps
- A few minutes of large leak not a problem for OSA control, though problematic if wake up patient or bed partner

Examples of Monitoring Reports

Pt/PAP Days % Comp Leak AHI

A)	9cm	28	100%	15min	15
B)	19cm	96	42%	2 hrs	9
c)	10cm	32	84%	7min	3
D)	5cm	61	68%	1.2 hrs	7

Nocturnal Oximetry: 5 yr old

Oximetry: Comprehensive Report

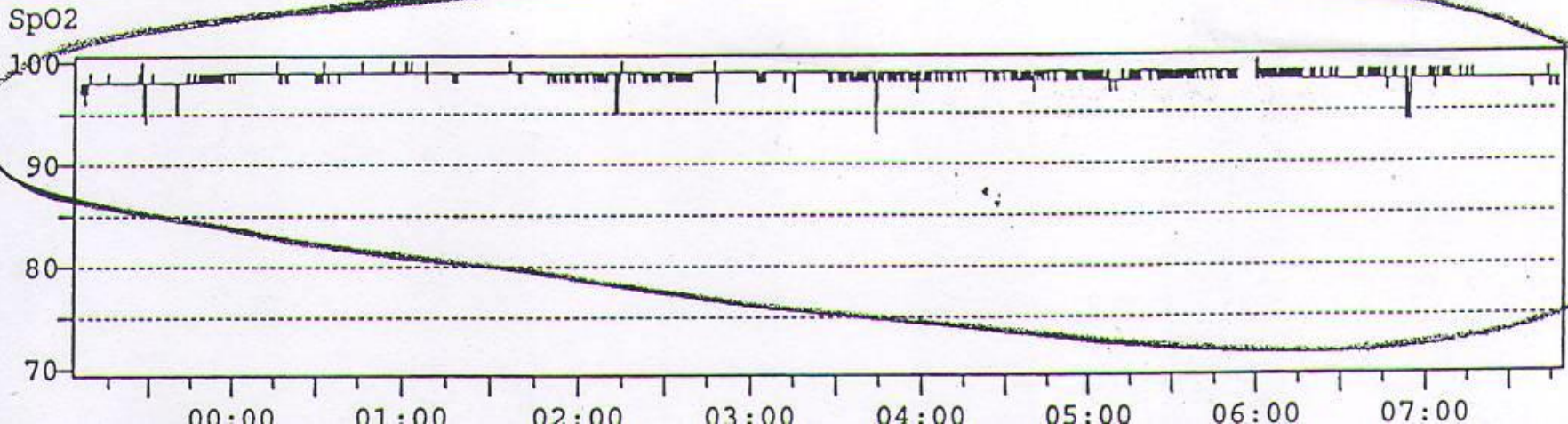
Recording time: 08:43:12
Excluded sampling: 00:06:48
Total valid sampling: 08:36:24

Highest pulse: 140
Lowest pulse: 57
Mean pulse: 94

Highest SpO2: 100%
Lowest SpO2: 93%
Mean SpO2: 98.6%

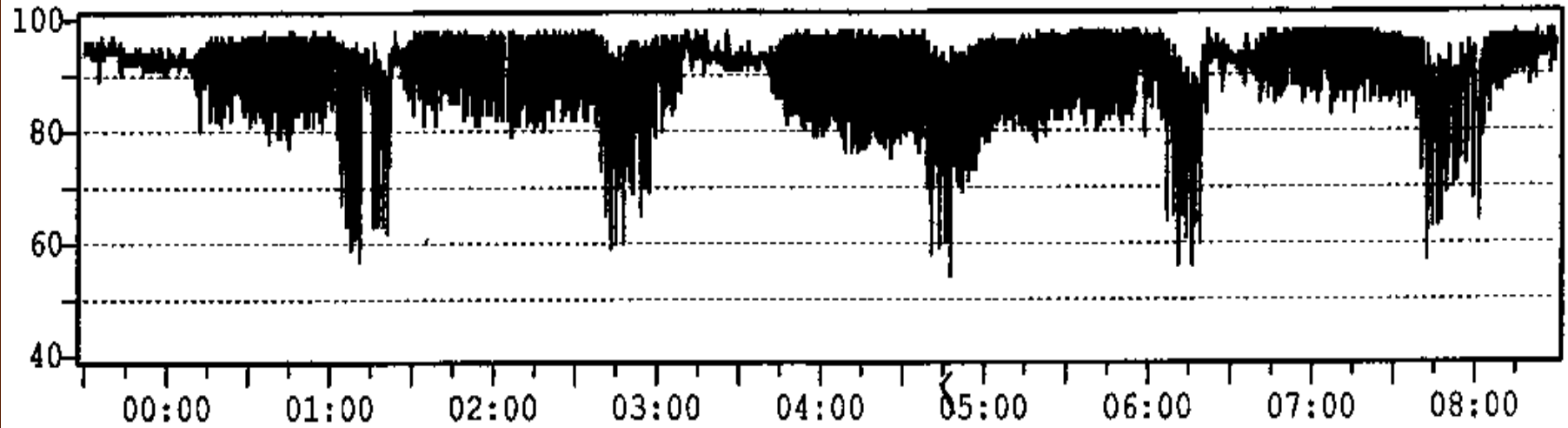
*5 years old
Child*

Time with SpO2 < 90: 0:00:00, 0.0%
Time with SpO2 < 80: 0:00:00, 0.0%
Time with SpO2 < 70: 0:00:00, 0.0%
Time with SpO2 < 60: 0:00:00, 0.0%
Time with SpO2 < 88: 0:00:00, 0.0%

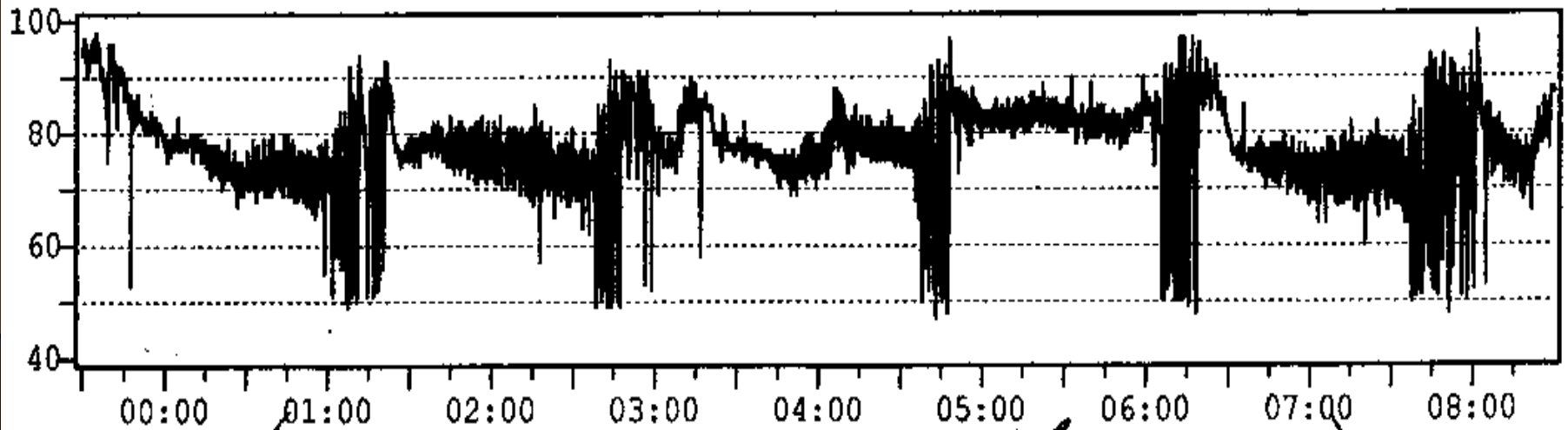


Oximetry Strip: Severe OSA

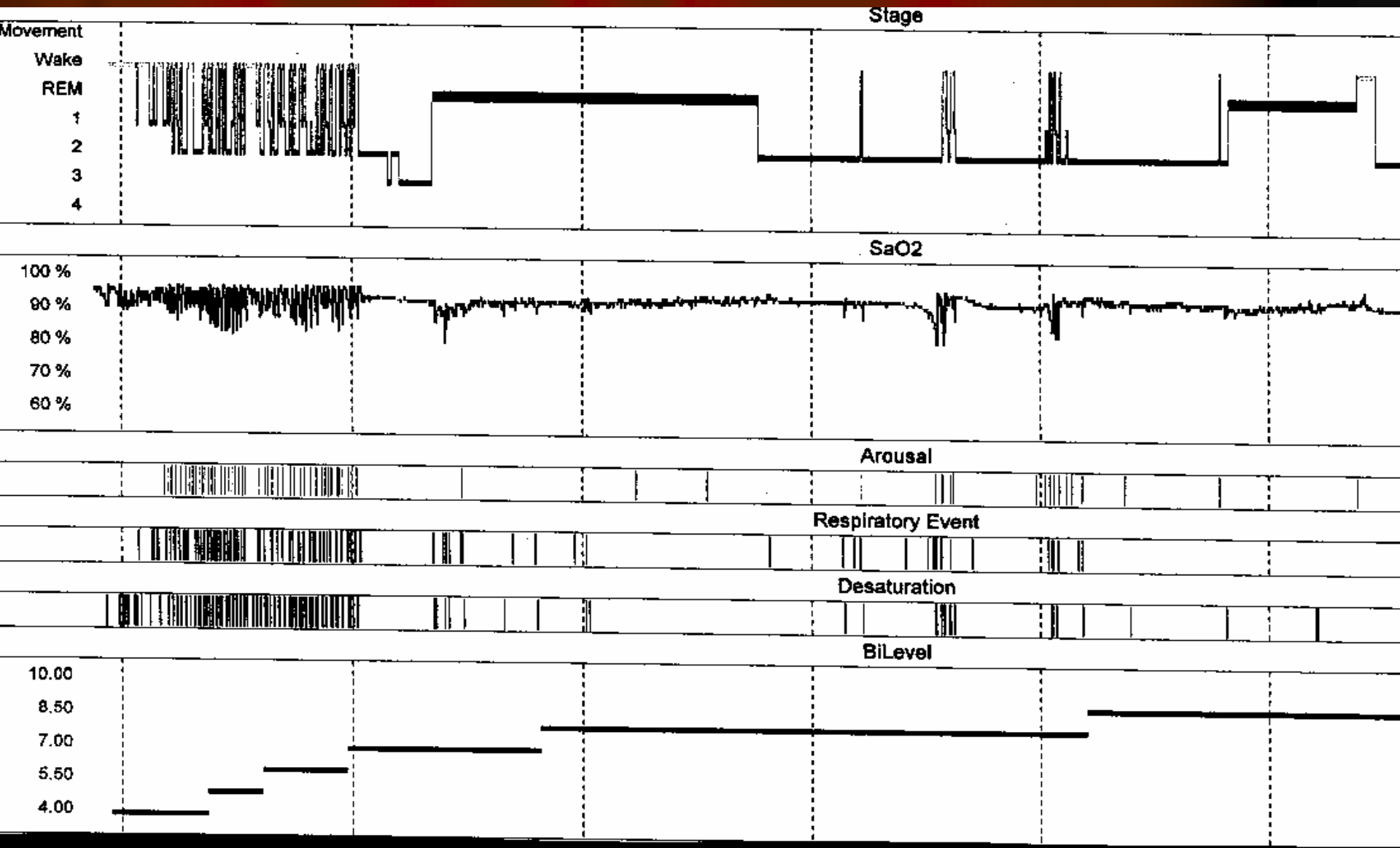
SpO2



Pulse



PSG: Titration Study



Parts of a Mask

- **Headgear:** holds mask onto face or head; Medicare replaces *1 per 6 months*
- **Mask:** interface or device that is connected to PAP device; Medicare replaces *1 per 3 months*
- **Cushion:** pad between mask and face or nose; for nasal mask and pillows Medicare replaces *2 per month*; for full face mask Medicare replaces *1 per month*

Sleep Apnea & Surgery: Questions

- How severe is the Sleep Apnea?
- Is surgery outpatient or inpatient?
- What type of anesthesia is being used: local or general, and how fast does it wear off and patient wake up?
- Are *sedatives or narcotics* being used as premedications or post operatively?
- Big problem: after surgery in OSA patient

Sleep Apnea & Surgery: Screening

- All patients before surgery should be screened for sleep apnea via history and physical exam
- If high probability of sleep apnea, other heart or lung diseases, general anesthesia necessary, surgery not emergent, then evaluation indicated before surgery
- This the rule before bariatric surgery
- If surgery emergent then monitor in hospital with oximetry, document any respiratory problems post op, head elevation, and consider CPAP therapy
- If known sleep apnea but patient not treated, then could refer back for treatment, observe closely after surgery

Sleep Apnea Screening: Stop-Bang

- Snore loudly consistently at night
- Tired, fatigue, sleepy during day
- Observed apneas, stop breathing at night
- Pressure: Hypertension
- BMI over 35, Obesity
- Age over 50
- Neck Circumference over 16 inches
- Gender Male

Monitoring After Surgery

- SpO₂ < 90% Over 3 episodes
- Respiratory Rate < 8/min Over 3 episodes
- Apnea Stop Breathing >10 sec One

Board Certification of Physicians and Practice History

- Hospital Websites for Leesburg & Villages Hospital: cfhalliance.org
- American Board of Medical Specialties: certificationmatters.org/is-your-doctor-board-certified/search-now.aspx
- Florida Dept of Health: <http://ww2.doh.state.fl.us/IRM00profiling/searchform.asp>
- Do not use HealthGrades & other internet rating sites: unreliable, expensive, and obtain information from above free sources

Accreditation of Sleep Centers

- American Academy of Sleep Medicine:
www.sleepcenters.org or email: accreditation@asmnet.org
- Accreditation: time consuming & expensive
- The Village Sleep Lab: first accredited sleep center in the area, reaccredited recently
- Other accrediting agency: The Joint Commission on Accreditation of Health Care Organizations

Certification of Sleep Technologists

- **Board of Registered Polysomnographic Technologists**
(Look for RPSGT after name)
- Our 3 sleep technologists certified and registered
- Other organizations offer certification:
Respiratory Therapy, Neurology Technicians, American Academy of Sleep Medicine

Books

- *The Promise of Sleep* by William Dement
- *Sleeping Well* by Michael Thorpy
- *No More Sleepless Nights* by Peter Hauri
- *A Woman's Guide to Sleep Disorders* by Meir H. Kryger
- *Restless Legs Syndrome* by Robert H. Yoakum
- *Say Good Night to Insomnia* by Gregg D. Jacobs

Websites

- **The Village Sleep Lab: www.VillageSleepLab.com**
- National Sleep Foundation: www.sleepfoundation.org
- American Sleep Apnea Association: www.sleepapnea.org
- Restless Legs Syndrome Foundation: www.rls.org
- American Academy of Sleep Medicine:
www.sleepeducation.com
- Commercial: www.talkaboutsleeeep.com
- Commercial: www.MyResmed.com
- Commercial: www.Respironics.com
- Semi-Commercial: mayoclinic.org/mcitems/mc1200-mc1299/mc1234-60.pdf