The “Can’t Use--Won’t Use” CPAP Problem

(White Paper)

#### Challenges:

**CPAP is first line primary therapy for OSA.[[1]](#endnote-1),[[2]](#endnote-2),[[3]](#endnote-3). It is highly effective and non-invasive, but CPAP compliance can be a problem. [[4]](#endnote-4) Researchers have reported a 46% CPAP non-compliance rate after 4 years. [[5]](#endnote-5) The breakdown is as follows: a) 31% of patients never started CPAP after being given the prescription and b) 15% discontinued CPAP after starting for a period of time up to 4 years. To be fair, the 46% non-compliance rate is similar to that seen for asthma and hypertension medications[[6]](#endnote-6),[[7]](#endnote-7) ---but can we do better?**

**Non-compliance makes control of hypertension, diabetes, arrhythmia, and, stroke difficult .[[8]](#endnote-8),[[9]](#endnote-9),[[10]](#endnote-10),[[11]](#endnote-11) It increases the primary provider’s workload. Clinic visits, return phone calls, and health care costs escalate. [[12]](#endnote-12)**

**The ideal alternative to CPAP should provide the benefits of CPAP and should be more acceptable. The ideal alternative should: 1) Control severe airway obstruction, 2) Have accurate objective ongoing measures of treatment effect/use, 3) Be non-invasive, and 4) Have a rapid onset effect.**

**Alternatives Commonly Tried:**

**1) Surgical Options:**

**Uvulopalatopharyngoplasty**

**It is not recommended for severe OSA *[[13]](#endnote-13)*, *[[14]](#endnote-14)*, *[[15]](#endnote-15)* It is by definition invasive, and once performed is often hard to reverse.**

**The American College of Physicians (ACP) recommends CPAP as initial therapy for OSA. [[16]](#endnote-16) Mandibular advancement devices are an alternative for those refusing CPAP.[[17]](#endnote-17) Surgical therapies are farther down on the ACP’s list of alternative non-emergency treatments.[[18]](#endnote-18)**

**Implanted neurostimulation devices. (Inspire is the only stimulator presently available)**

**Inspire is an implanted neurostimulation device for patients who can’t be treated with traditional OSA clinical methods. It can be costly and getting coverage through insurance may be difficult.**

**The medical limitations are as follows:[[19]](#endnote-19)**

**1) Because the therapy is invasive, it can’t be a first line treatment.**

**The patient must have documentation that they have tried and failed CPAP for at least 3 months.**

**CPAP failure is defined as:**

**1) Inability to eliminate OSA with CPAP (residual AHI>20)**

**2) Inability to use CPAP >5 nights/wk and more that 4 hr/night.**

**2) Patients must have an apnea-hypopnea index (AHI) of between 20 and 65.**

**3) No anatomical findings that would compromise the performance of upper airway stimulation. This requires a sedated endoscopic procedure. If the patient has lateral wall collapse in addition to anteroposterior collapse of the soft palate, that’s a contraindication.**

**4) Central and mixed apneas can’t account for more than 25% of the total AHI.**

**5) No implantable devices that could experience unintended interaction with the Inspire device**

**6) Patients who are, or who plan to become pregnant.**

**7) Patients who require magnetic resonance imaging (MRI).**

**8) Patients who are unable to operate the sleep remote device.**

**2) Mandibular Advancement Device Options (MADs):**

**Mandibular advancements devices (MADs) are non-invasive, but lack the objective treatment effect recording capabilities of CPAP units. There are no download data chips. This is important because of the larger variability in treatment effects from MADs compared to CPAP.[[20]](#endnote-20)**

**Like ENT surgery, mandibular advancement devices (MADs) are not recommended for severe OSA*[[21]](#endnote-21)*, *[[22]](#endnote-22)*, *[[23]](#endnote-23)*. If effective treatment is defined as an AHI<5/hr., MADs only correct 69% of severe apneics (AHI>30/hr.). This is contrast to 85% correction rate for CPAP in the same study.[[24]](#endnote-24)**

**Mandibular advancement devices are not recommended for patients with:[[25]](#endnote-25) a) Too few teeth or short clinical crowns, b) Moderate to severe periodontal disease, c) Moderate to severe temporomandibular disorders, or d) Severe gag reflex.**

**3) Weight Reduction Options:**

**Weight reduction decreases the apnea-hypopnea index (AHI) but is only recommended in conjunction with CPAP[[26]](#endnote-26) because of: 1) Slow onset of effect[[27]](#endnote-27), and 2) Difficulty achieving significant weight reduction to correct sleep apnea problem.**

**Something is needed immediately once the OSA diagnosis is made. Weight reduction alone would leave the patient unprotected for the 6 month to 1 yr. interval during which weight is gradually being lost.**

**Dietary weight reduction is difficult, and surgical weight reduction (bariatric surgery) -- brings with it the risk of intraoperative and postoperative complications including death.[[28]](#endnote-28) Bariatric surgery is more effective in decreasing the AHI in men than in women[[29]](#endnote-29), but the mortality rate is higher.** *[[30]](#endnote-30)* **The return of OSA (remission rate) two years after bariatric surgery is 40%, emphasizing the need for ongoing clinical follow-up.[[31]](#endnote-31) At present, bariatric surgery has been given only an “option” rating due to the lack of randomized studies and its potential for complications. [[32]](#endnote-32)**

**Even with significant weight reduction, elimination of OSA is not assured.[[33]](#endnote-33) A large meta-analysis of surgical weight loss effect concluded: "Patients should not expect a cure of OSA after surgical wt. loss. These patients will likely need continued treatment for OSA to minimize its complications.” [[34]](#endnote-34) Follow-up PSG studies after weight reduction are recommended before CPAP is discontinued to confirm a decrease in the AHI to a level below which there is no longer a cardiovascular risk.[[35]](#endnote-35), [[36]](#endnote-36)**

**4) New CPAP Equipment Options:**

**New developments in mask fit, humidity, pressure, rainout, and air leak have improved comfort—but have not significantly changed compliance. [[37]](#endnote-37)**

**5) Medication Option:**

**There are no present medications that have reliably corrected OSA.[[38]](#endnote-38)**

**6) Giving Up Option:**

**Giving up by saying that “non-correctible factors are present” is not an acceptable solution. Non-correctable factors have not been shown to play a significant role in CPAP compliance. Neither age, sex, nor OSA severity has reliably predicted CPAP use. [[39]](#endnote-39),*[[40]](#endnote-40)*, [[41]](#endnote-41),[[42]](#endnote-42),[[43]](#endnote-43),[[44]](#endnote-44),[[45]](#endnote-45),[[46]](#endnote-46),[[47]](#endnote-47)**

**What We Suggest: Provide education, understanding, tolerance, & rapid correction of equipment problems**

**The first hurdle is the acceptance of change. Change requires a readiness to change, a perception that benefits outweigh costs, and the confidence to try. Recommendations for treatment follow AASM guidelines. It is the responsibility of sleep providers to provide guidance based on AASM guidelines.**

**1) CPAP Compliance: Compliance improvement rests on four areas:1) Rapid problem correction, 2) Physician tolerance 3) Support of any success, and 4) Correction of erroneous ideas.**[[48]](#endnote-48)

**a) Rapid correction of problems**

**Most patients decide whether or not to use/continue CPAP within 1week of starting therapy.[[49]](#endnote-49)**

**b) Tolerance**

**Patients expect guidance from their sleep specialist on the best therapy.**

**Treatment however remains patient’s choice—not the physician’s choice[[50]](#endnote-50). It is the physician’s obligation only to point out the risks and benefits of various options.**

**Arguing closes the door to the normal sequence of change. People change when ready. They may not yet be in the “action” state of change.**

**Change occurs in an ordered sequence and it is unusual to jump stages:[[51]](#endnote-51)**

1. **Precontemplation –Not thinking about change**
2. **Contemplation – Actively thinking but not trying**
3. **Preparation – Beginning to make changes slowly**
4. **Action – Actively engaged in regular behavior change**
5. **Maintenance – Maintaining change**

**Leaving the door always open allows progression.**

**c) Support any success.**

**No one was born with a CPAP mask on their face. It takes a variable amount of time to adjust. The best solution is to have the patient put the unit on each night, and not to worry about duration of use. Duration will improve rapidly if the equipment is set correctly. If there are equipment problems, correct them in the first week.**

**d) Correct erroneous ideas**

**Erroneous ideas influence compliance. Consider the following major erroneous idea: " I don't feel sleepy therefore I don't have OSA".**

**Now consider the following validated information:**

**1) 83% of unscreened and untreated OSA patients (AHI>5) don’t perceive themselves as being sleepy. [[52]](#endnote-52)**

**2) Absence of subjective sleepiness doesn't rule out cardiovascular risk.[[53]](#endnote-53)**

**What is the likely outcome if the patient is not given this information? What is likely to happen if the patient believes that no sleepiness means no risk? Doesn’t it make sense for the sleep specialist to spend the time and give information such as this to the patient?**

**The problem with our approach is that it requires extra time spent by sleep specialists. It does not lend itself to a high input/output model.**

**If however the sleep specialist is allowed extra face-to-face time with the patient, the results can be rewarding.**

**1) The physician-patient bond is strengthened. [[54]](#endnote-54)**

**2) CPAP compliance increases.[[55]](#endnote-55)**

**3) Referring health provider looks like a hero in the eyes of his/her patients[[56]](#endnote-56)**

**4) Solution Evaluator: If a time/education/tolerance driven sleep specialist is what you are looking for -- here is what to ask:**

**1) What is the face-to-face sleep specialist’s time allotment for new and recheck visits?**

**2) How happy and informed are the patients when they return from the sleep center visit?**

**3) What is the CPAP compliance rate when sent to different sleep centers?**

**4) Are the sleep specialists full-time or part-time?**

**5) Are the sleep physicians board certified and working in an AASM accredited center?**

**6) What happens when the first treatment tried by the sleep specialist doesn’t work? Do they give up? Is the problem back on your shoulders?**

**7) Is there a follow-up policy for residual sleep problems?**

**8) Are the treatment options given following AASM guidelines?**

**Further Information**

**Call us at Iowa Sleep is 515-225-0188.**

**We hope this helps.**

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