

Clinician's Guide to PAP Adherence

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Learning Objectives

- Review statistics related to Positive Airway Pressure (PAP) and Obstructive Sleep Apnea (OSA)
- Discuss ways to monitor adherence to PAP
- Evaluate Barrier to Adherence to PAP
- Describe strategies which promote for successful adherence to PAP
- Provide additional related resources

Studies show that patients having OSA typically go undiagnosed for up to 10 years with steadily increased use of healthcare resources

- **Co-morbidities associated with OSAS:**
 - **Diabetes**
 - **Hypertension**
 - **Heart Disease**
 - **Stroke**

CPAP TREATMENT FOR OSA

- **OSA** occurs in an estimated 5% of the adult population.
- **CPAP** is a first line treatment for **moderate to severe OSA**.
- CPAP is almost **100% effective** when used regularly but **adherence is a challenge**.
- The provision of CPAP involves **more than simply selling a CPAP device and mask**: it involves:
 - education
 - monitoring,
 - support
- This is often a shared responsibility among
 - the **patient**
 - the **sleep physician**
 - the **sleep clinic**
 - **Equipment provider**

CPAP adherence

- **Adherence** refers to the degree that an individual follows a recommended illness-related recommendations
- **Adherence failure :**
 - use of CPAP for less than 4 h / night on 70% of nights
 - And/or lack of symptomatic improvement.
- **5-50%** of OSA patients **reject CPAP within the first week** .
- **12 to 25%** of the remaining patients often **discontinue its use at 3 years**

Benefits of CPAP adherence

- **CPAP:**
 - reduces **daytime sleepiness, depression, cardiovascular morbidity/mortality, accidents**
 - improves some measures of **cognitive performance** and improves perceptions of **quality of life,**
- **Reduces healthcare utilization**
- **Adherence to CPAP treatment is the largest factor impacting on the effectiveness of OSA treatment**

The basic requirements are:

- **Staff** who are appropriately trained
- A choice of **CPAP equipment** which meet individual patient needs
- **A CPAP initiation service** which provides patients with **adequate information**, education and follow-up.
- An infrastructure that enables **timely and efficient communication with sleep clinics and referring doctors** about their patients

Assessment of CPAP adherence

- To assess CPAP adherence and treatment efficacy, CPAP manufacturers have implemented **tracking systems** that monitor CPAP efficacy
 - residual sleep-disordered breathing
 - hours of CPAP use
 - mask leak
- **CPAP adherence tracking now is a requirement for Medicare and other payers to continue reimbursement for CPAP.**

There are several different **methods to transmit CPAP adherence tracking data**

- Most systems use cards (**smart card-SD cards**), **memory sticks**, **download cable** or **wireless transmission**.
- CPAP adherence profiles are not standardized between the **different proprietary tracking systems** and the reports are not yet easily exportable to electronic medical records.



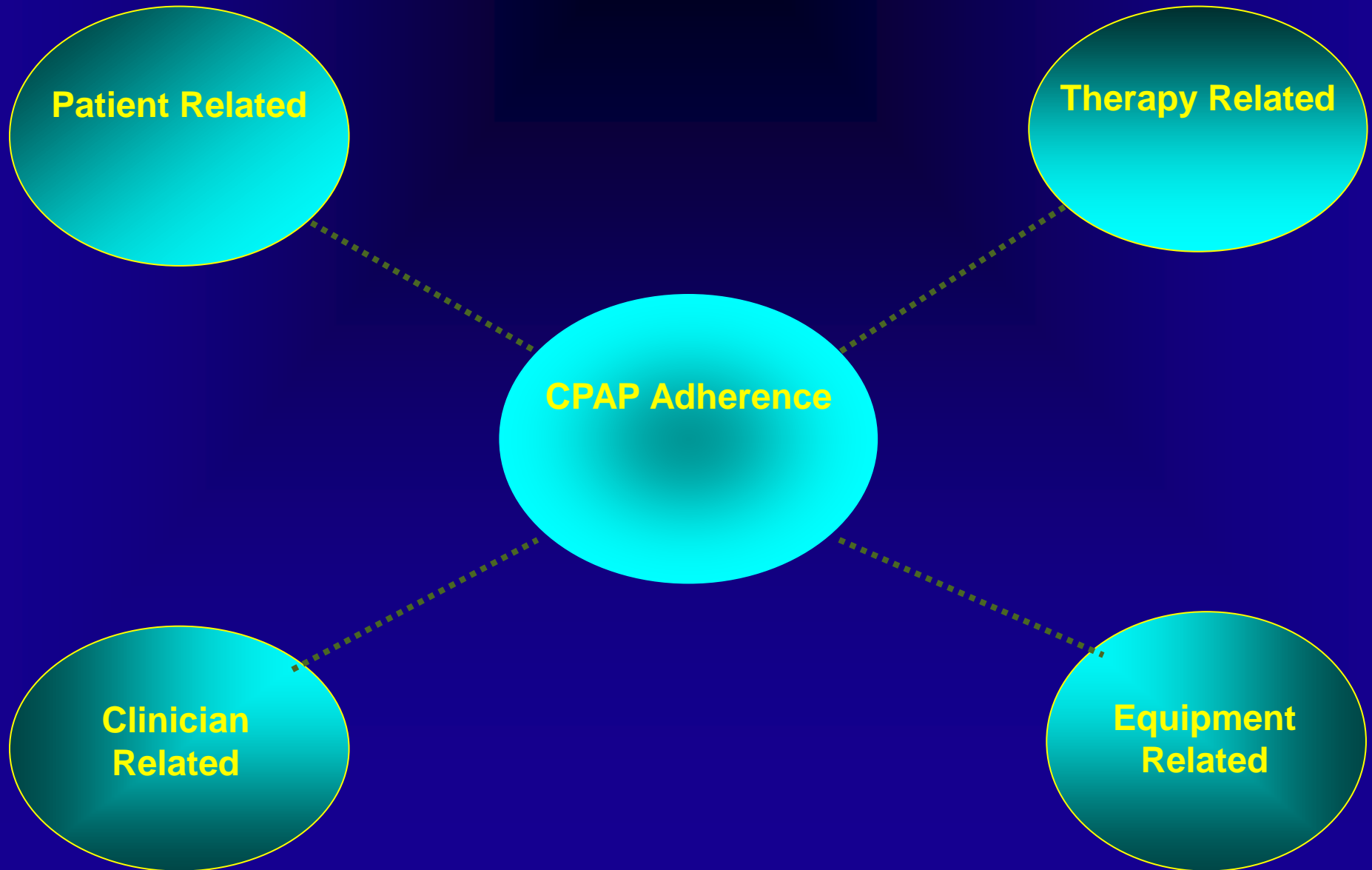
- This USB **Smart Stick Memory Card** is designed for use with Fisher & Paykel CPAP Machines.
- The Smart Stick works as a miniature USB drive capable of transferring therapy data from a Smart Stick without the need for a separate card reader.
- To review data on the card software, like Fisher & Paykel's ,Performance Maximizer Software, is required.





Barriers to CPAP Adherence

Barriers to CPAP Adherence



Equipment Related Barriers

- Complexity of therapy/device
- Excessive mask leak
- Portability/Battery backup
- Device noise
- Hose length
- Improper mask fit



 Med Equipment Direct.com



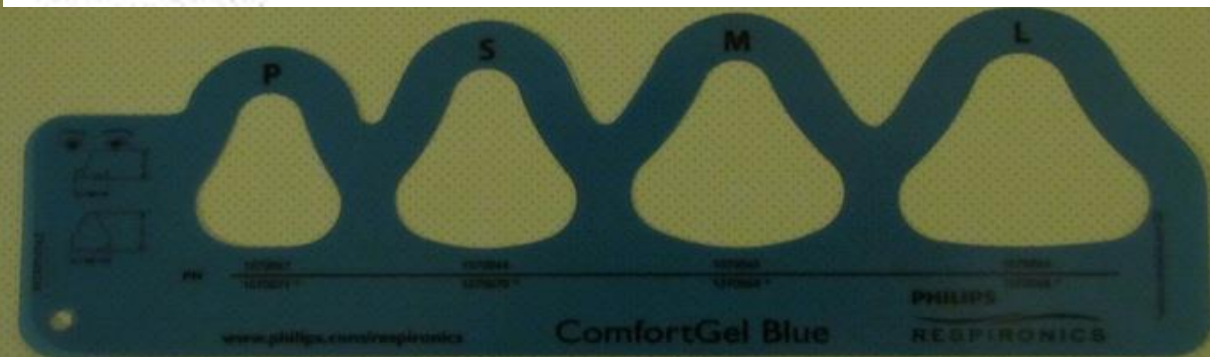
Older
Pre-2007



2007-08
'M' Series



2009-11
PR System One



Therapy Related Barriers

- **Adverse reactions that go unaddressed**
 - Nasal dryness or dry eyes
 - Nasal congestion
 - Skin irritation
 - Bloody nose
- **Expense of therapy**
- **Governmental policies (reimbursement, licenses of clinicians and drivers)**
- **Adherence decreases over time**

Nasal pillow



Nasal mask



Full face mask



Total face mask



Patient Related Barriers

- Health literacy
- Ambivalence
- Lack of family or other social support.
- Patient economics
- Lack of reimbursement
- Psychological variables - claustrophobia
- Physical limitations
- Less severe factors/Little or no perceived benefit from therapy
- Use of prescription/non-prescriptions drugs or alcohol

Claustrophobia

- **Claustrophobia** is a form of specific phobia that entails extreme anxiety and panic elicited by closed spaces.
- **Almost one-third of sleep apnea patients endorse CPAP-related claustrophobia** and may lead to non-compliance.
- CPAP-related claustrophobia was perceived as **one of the largest deterrents to CPAP therapy.**

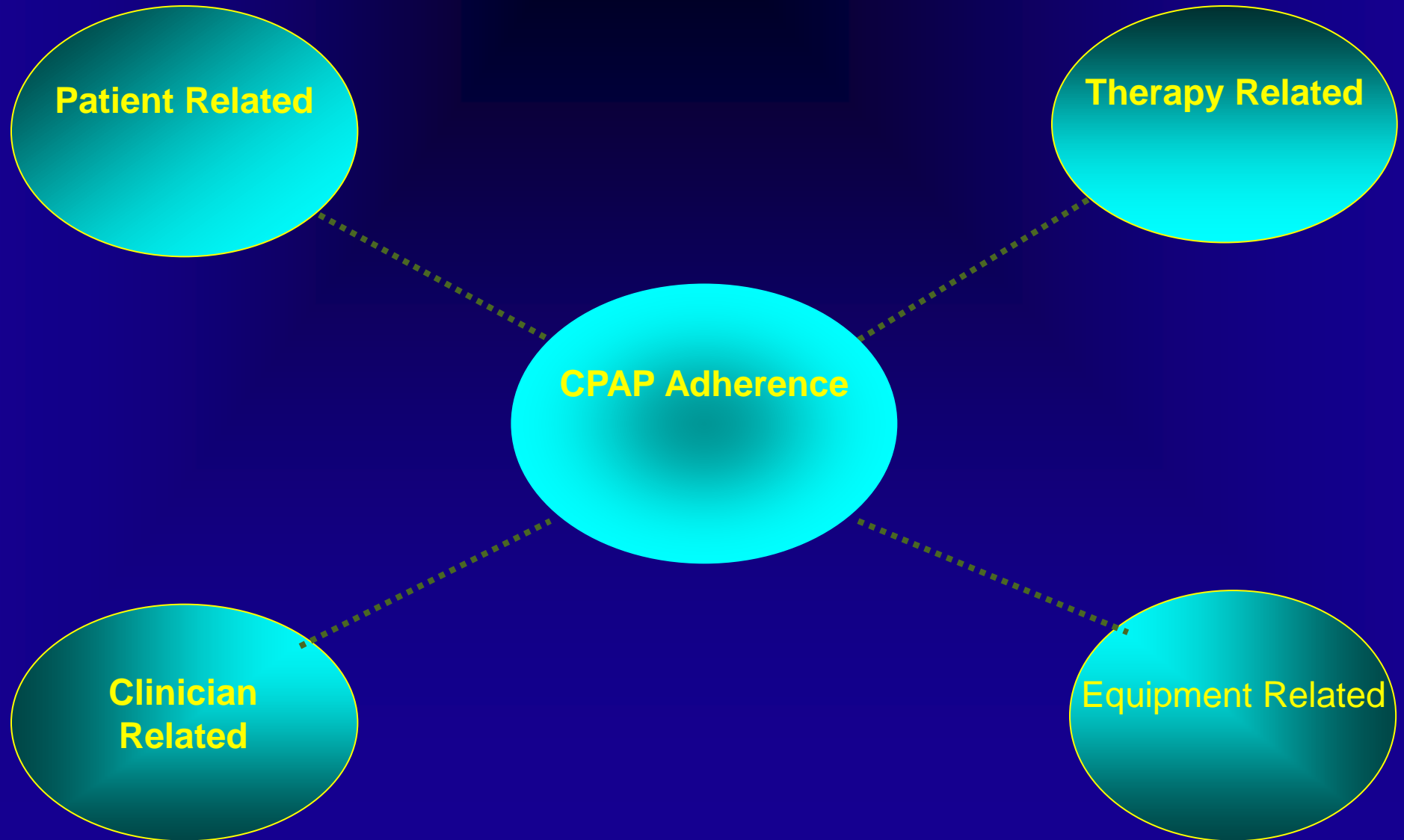
Clinician Related Barriers

- **Poor patient relationship**
- **Lack of clinician follow-up**
- **Expression of doubt** concerning therapeutic potential or creating falsely elevated expectations
- **Unwillingness/inability** of clinician to educate patient
- **Lack of knowledge** on patient's medical history, and other medication the patient may be taking

The Barrier No One Wants to Talk About - \$ Reimbursement

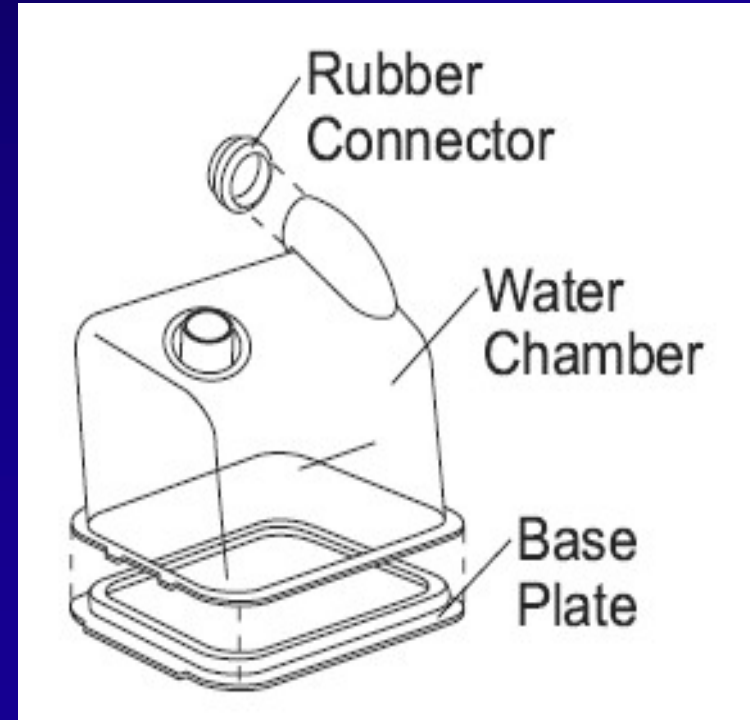
- Reimbursement from CMS and Private Insurance is a Troubling Barrier.
- Reimbursement for CPAP/BiPAP and other respiratory interventions has been cut dramatically over the past 20 years.
- Such reductions leave fewer resources for
 - Proper equipment
 - Patient education
 - ***Patient follow-up, to address compliance challenges.***
-

Intervention



Equipment/Therapy Interventions

- **Heated humidification** to relieve nasal dryness, running nose, nose bleeds
- **Nasal spray**
- **CPAP modalities:** auto-titrating or bilevel PAP
- **Refit interface**
- **Change mask type**
- **Comfort features**
 - Ramp
 - Quieter blower
 - Battery backup
 - Expiratory pressure relief



The Contour CPAP Pillow works with all major brands of CPAP masks!



The Contour CPAP Pillow Improves:

- **CPAP Ease of use**
- **Sleep Comfort for all CPAP users**
- **CPAP Compliance -**
- **Neck support and spine alignment**
- **Airway alignment**

The Contour CPAP Pillow Reduces:

- **Mask leaks**
- **Pressure on mask and face**
- **Mask discomfort**

Patient/Clinician Intervention

- Family/social support
- Bed partner's acceptance
- Suitable education and training on equipment
- Cognitive behavioral therapy, motivational enhancement therapy
- Rapid response to difficulties

Compliance Program

- ***“Patient education, close follow-up and intervention appear to improve long-term tolerance.”***
- **Education**
 - 1-Disease state**
 - What is their diagnosis
 - How severe is their OSA
 - How will it impact their lives
 - What are the potential co-morbidities
 - What should they expect
 - 2-Equipment**
 - How it works
 - How to inspect and replace when required
 - What support is available to ensure the patients success in therapy.

Initiation of CPAP treatment should also include **general advice** on lifestyle and medical issues

- Patients who **smoke** should be advised to stop.
- **Alcohol** should be avoided.
- Avoided nocturnal **sedatives or sleeping tablets**.
- Advice regarding **body weight** and its interaction with OSA should be provided if appropriate.
- Patients should be informed about the impact of **sleeping position** on sleep apnea severity.

Ongoing Management of CPAP Usage:

- It is suggested that approximately **7, 30, 60 days** and approximately **12 months** after treatment initiation are appropriate times.
- At this time the provider should
 - 1- Determine the **patient's usage from the meter of the CPAP device** and calculate the average daily hours of CPAP usage.
 - 2- **Check the device and humidifier** for satisfactory operation.
 - 3- **Check filters, mask and head-gear** for satisfactory condition and advise the patient of any faults and suggested remedial actions.

Exposure therapy for claustrophobic reactions to CPAP

- If an alternative, less confining interface such as nasal pillows are not effective, then *Exposure Therapy* may be considered.
- Claustrophobia is composed of two “core” fears: **fear of restriction**, and **fear of suffocation**.
- ***Exposure therapy*** is indicated for individuals with sleep apnea who are unable to tolerate CPAP devices due to **anxiety reactions**.
- **CONTRAINDICATIONS** :unstable psychiatric symptoms, inability to maintain a therapeutic relationship.

RATIONALE FOR INTERVENTION

- The phobic individual **confronts the feared object or situation** either imaginably or in real life (in vivo).
- The individual is supported in experiencing these feared situations in a **gradual manner**, and **over time the anxiety decreases**.
- The effectiveness of exposure therapy stems from **learning to tolerate and manage anxiety without the need to escape** or avoid the phobic stimulus,
- Exposure therapy **increases the individual's perception of control over fear**

Patient handout describing exposure steps for home practice.

- Do not try wearing CPAP during sleep until you are comfortable with it during the daytime.
 - If your machine has a **RAMP button**, you may use this function to keep the pressure at a low level during practices.
- 1-Turn the CPAP airflow ON. **Hold mask over your nose**, and practice breathing with machine on while awake. While you are doing this, keep your mouth closed and breathe regularly through your nose. Start with short periods of time (1–5 min) and **gradually build up to longer periods of time**.
 2. Turn the CPAP airflow ON and wear the **mask over your nose with the straps on your head**. Practice breathing with CPAP on while awake. **Wear CPAP for longer periods of time until you can have it on for 15–20 min comfortably**.
 3. Take a **nap during the day with CPAP machine and mask on**. It is not important whether you fall asleep or not – the goal is to rest comfortably in your bed with the CPAP on.
 4. **Wear CPAP at night when you go to sleep**. If you experience claustrophobia or uncomfortable feelings, go to previous step until comfortable. Then proceed to next step.

Dr. Heuer's Variation of a Compliance Enhancement Plan

- Ensure that all barriers discussed above are minimized.
 - Proper interface
 - Humidification
 - Ramp and Auto-titrating
 - Proper education and follow up
- Ask patient to try the PAP for 5 minutes on first night
- Ask them to gradually increase to 10 mins on second night, 15 minutes on third night, etc.
- One homecare company found that 77% of the patients were compliant by 5th night, versus less than 50%

Take Home Points

- Untreated OSA has serious consequences to the individual patient. Those around them and society.
- Given the nature of PAP involving blowing air at over 100 LPM into the patients face/airway, it's no surprise that many barriers exist.
- However, there are strategies which can off-set many of the barriers and enhance compliance.
 - CMS \$ Reimbursement will continue to be a challenge
- However, overcoming these barriers requires careful planning and commitment to success by multiple stakeholders, including the patients and clinicians who serve them.

Selected References

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- ▣ Spriggs's Essentials of Polysomnography: A Training Guide and Reference for Sleep Technicians: Endee, ed 3, Jones & Bartlett, 2020.
- ▣ Vensel-Rundo J & Downey R, Polysomnography, *Handb Clin Neurol.* 2019;160:381-392.