The Mask Experience

1 AARC or AAST CEU credits
Agenda

- Objectives
- CPAP Therapy adherence
- Mask role in Positive Airway Pressure (PAP) Therapy
- Types of Masks
- Strategies to Improve Possible Solutions
- Patient Interface in Clinical Practice
- Mask Follow-up
- Conclusion
Agenda

✓ Objectives
Objectives

• Describe the challenges the OSA patient has to be compliant to his or her CPAP therapy
• Describe why your patient needs to be compliant to CPAP therapy
• Identify the types of masks, and understand their benefits and drawbacks
• Identify how to choose the right mask to help your patient be compliant to CPAP therapy
• Discuss recent research evidence
Agenda

- **Objectives**
- **CPAP Therapy Adherence**
CPAP therapy adherence

How is OSA treatment adherence defined?

• > 4 hours of use, >70% of time\(^1\)

• Based on this definition, Kribbs et al, described that 54% could be inconsistent users\(^1\)

• Patient adherence to therapy is not ideal but similar to maintenance medications\(^2\)

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1 Kribbs, et al., Objective Measurement of Patterns of Nasal CPAP Use by Patients with OSA. *American Review of Respiratory Disease* 1993:147 No. 4
Why > 4 hours of use?

Higher CPAP usage associated with lower symptoms, improved daytime functioning and quality of life

ESS = Epworth Sleepiness scale

Epworth Sleepiness Scale (ESS), Multiple Sleep Latency Test (MSLT), and Functional Outcomes of Sleep Questionnaire (FOSQ).

Stradling & Davies, SLEEP, 2000
Adherence predictors

• Unrelated to adherence
  • Disease severity
  • Age
  • Prescribed PAP pressures

• Claustrophobia has been consistently predictive of poor adherence\(^1\)

• Demographic factors influence adherence patterns
  • African American race has a lower nightly usage of 1 hour\(^2\)


2. Billings et al, *Race and residential Socioeconomics as Predictors of CPAP Adherence*
Poor CPAP adherence - Patients at risk

- “Adults with reduced nasal cross-sectional area
- Claustrophobia at treatment initiation
- Persons expressing low belief in ability to use CPAP and/or unable to identify reasons for using CPAP or outcome expectation
- Persons who experience difficulties with CPAP at initial exposure or have a negative experience with CPAP during early home treatment period”

Common side effects reported during CPAP therapy

Rosenthal, L. Physiological Process of OSA, Sleep, 2005
Agenda

- Objectives
- CPAP Therapy Adherence
- Mask role in Positive Airway Pressure (PAP) Therapy
Mask role in PAP therapy

• “Regular review of patients to address any issues related to the use of their CPAP machine and interface is necessary to ensure ongoing tolerance and compliance.”


• “The patient should be carefully fitted with an appropriate mask with the goals of minimizing leak, maximizing comfort, and compensating for significant nasal obstruction”

  Berry RB et al NPPV Titration Task Force of the American Academy of Sleep Medicine (AASM)
Mask role in PAP therapy

Normal Breathing through the nose

Flow
Pressure
Mask role in PAP therapy

Leaks might lead to ineffective therapy and to sleep fragmentation
Mask role in PAP therapy

Mouth breathing

Patient inhaling through the nose but exhaling through the mouth
Normal breathing period through the nose (first 20 seconds) followed by a second period of mouth expiration (patient switching from mouth exhalation to nose inhalation).

Mask role in PAP therapy

**Temporary air leaks**

- Discomfort and treatment intolerance
- Adverse effects (eye irritation, mouth dryness, nasal symptoms)
- Trigger failure
- Failure in automatic CPAP titration
- Decrease in ventilation effectiveness

**Large air leaks**

- Optimal CPAP not achieved
- Loss of patient triggering
- Failure of CPAP control
- Sleep fragmentation
- Greater requirement of oxygen
- Inefficacy of CPAP treatment

*Arch Bronconeumol 2004;40(11):508-17*
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- Types of Masks
Mask Types

**Nasal Mask**
This type of mask is focused on fit and comfort

**Full-face Masks**
Those who breathe through their mouths will find several effective options in this group of masks

**Minimal-contact Masks**
These masks are designed for those who prefer alternative solutions but still demand comfort and effectiveness
Examples of Different Mask options

**Nasal**
- TrueBlue
- Wisp

**Full Face**
- Amara
- Amara Gel

**Minimal Contact**
- Nuance
- Nuance Pro
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The right mask is crucial to PAP success

- A mask or interface that fits properly and meets the needs of the patient is an important consideration when discussing CPAP adherence.

- There have been many changes in interface technology, and a wide variety of styles are currently available to assist in patient compliance.
The selection of the appropriate patient interface is a major factor in PAP therapy success\(^{(1,2)}\)

\[ \text{Your choice is crucial} \]

The selection of the appropriate patient interface in the early stages of therapy can result in long-term adherence\(^{(1,4)}\)

\[ \text{Timing is crucial} \]

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1. Massie & Hart CHEST 2003; 123:1112–1118,
To optimize patient adherence and therapy adherence, several criteria have to be taken into consideration when selecting a patient interface:

- Patient medical condition and pathology
- Patient morphology
- Patient psychosocial issues
- Patient personal preferences
Patient medical condition and pathology

- Evaluation of the patient/circumstances may help focus the clinician on a specific type of mask.

- Items to investigate are:
  - Newly diagnosed with no PAP experience
  - Compliant CPAP user
  - Mouth breathing patterns
  - Facial muscular diseases
  - Clinical situation (chronic or acute)
Patient’s Facial morphology
Patient morphology

- Different styles of mask may be chosen due to variations in facial structure or features
  - Nare narrowness and/or deviated nasal septum
  - "Eagle nose," flat nose, narrow nose, flat face, short or protruding upper or lower jaw
  - Symmetry of face, teeth, nose format, moustache, beard...
  - Nose bridge pain, nose bridge scars, burns, deformation
  - Skin sensitivities
Patient psychosocial issues
Patient psychosocial issues

- Discontinuation of PAP therapy may be due to:
  - Anxiety
  - Feeling of claustrophobia
  - Self image
## Psychosocial Questions

<table>
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<tr>
<th>Patient psychosocial questions:</th>
<th>Suggested Mask Type</th>
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<tbody>
<tr>
<td>Are you looking for less contact on your face?</td>
<td>minimal contact</td>
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Patient personal preferences
Patient personal preferences

• Understanding of the social/cultural environment
• Involves the patient in the decision making process.
  • Desire for improved visibility
  • Dissatisfaction with aspects of standard alternatives
  • Preference for less facial contact, fewer pressure points, or less bulk
Enhancing therapy adherence and efficacy

- Mask Issues
  - Skin abrasions
  - Rash
  - Conjunctivitis, mask leaks

- Corrective actions may include:
  - Mask fit/resize
  - Select non-allergenic material, protective skin covering
  - Select alternative mask
## Tips for Patient Comfort

<table>
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<tr>
<th>Mask Issues</th>
<th>Correction Tips</th>
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| Skin Irritation or Red Marks| • Mask may be too tight  
• Sensitivity to mask material  
• Mask is stiff from age  
  • Loosen headgear  
  • Resize mask  
  • Soak in warm soapy water  
  • Change to a different type of mask material  
  • Use a protective skin covering  
  • Replace Mask |
| Air Leaks                    | • Change position of the forehead adjuster if available  
• Loosen headgear and reseat mask by lifting the cushion away from the face and allowing it to create a new seal  
• Be sure headgear straps are positioned correctly  
• Resize mask to support a proper fit  
• Consider a different mask type |
| Claustrophobia               | • Let user become desensitized to the mask  
• Empower patient in the decision process  
• Try a minimal-contact mask to decrease bulk around the face |
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Nasal mask

• Due to the limited number of studies available comparing various interface types, the optimum form of CPAP delivery interface remains unclear.

• The large majority of studies evaluating the effectiveness of CPAP in the treatment of OSA have used nasal masks, and, therefore, these have emerged as the interface of first choice during CPAP titration studies.

Full face mask

• The **face mask can not be recommended as a first line interface**, but may be considered if nasal obstruction or dryness limits the use of a nasal mask.

  *Chai CL, Pathinathan A, Smith BJ Cochrane Database Syst Rev. Issue 4, 2011*

• AASM Recommendations to Improve Patient Comfort and Patient-NPPV Device Synchrony:
  - If **mouth leak** is present and is causing significant symptoms (e.g., arousals) use of an **oronasal* (Full face) mask or chin strap** may be tried. Heated humidification should be added if the patient complains of dryness or significant nasal congestion.


* Oronasal mask = Full face mask
Pillows mask

• **Nasal pillows** interface are potentially useful alternatives when patients are unable to tolerate conventional nasal masks.

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What to remember?

1. There are 3 types of mask:
   - Nasal
   - Full face / total face
   - Minimal contact (pillows)

2. Selection of the right mask type to ensure:
   - Therapy effectiveness
   - Therapy acceptance
   - Less side effects (discomfort, claustrophobia, air leaks, etc.)
CEU certificate

• To obtain your CEU certificate log on to
  • https://www.ganesco.com/philips-attendee/login.php
  • Log in or create a log in if you are a new user
  • Complete the evaluation and print out your certificate.

• If you are claiming AARC credits, you must compete the evaluation within 30 days or you will not receive credit for the program.