Sleep SMART
CPAP Masks

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Overview

Selection of Mask Interface

Nasal Masks and Nasal Pillows

Full Face Masks

Sizing and Fitting

Cleaning Guidelines

Troubleshooting
Selection of Mask Interface

- AirFit P10 Nasal Pillows Mask
- AirFit N20 Nasal Mask
- AirFit F20 Full Face Mask
# Selection of Mask Interface

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Nasal Pillows</th>
<th>Nasal Mask</th>
<th>Full Face Mask</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial Hair</td>
<td>Good</td>
<td>Less Good</td>
<td>Less Good</td>
</tr>
<tr>
<td>Dentures</td>
<td>Good</td>
<td>Less Good</td>
<td>Less Good</td>
</tr>
<tr>
<td>Low to Moderate Pressures</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Higher Pressures</td>
<td>Less Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Mouth Leak</td>
<td>Less Good</td>
<td>Less Good</td>
<td>Best</td>
</tr>
<tr>
<td>Claustrophobia*</td>
<td>Less Good*</td>
<td>Next Best*</td>
<td>Best*</td>
</tr>
<tr>
<td>Nasal Congestion</td>
<td>Less Good</td>
<td>Less Good</td>
<td>Best</td>
</tr>
</tbody>
</table>

*Claustrophobia may be related to different issues:

a) Pressure and/or the act of breathing while using PAP (try Full Face Mask)
b) Mask size, or sense of something touching the face (try a smaller mask like a Nasal or Nasal Pillows Mask)
c) Need to have unobstructed line of vision (try a Nasal Pillows Mask)
Selection of Mask Interface

Initial Mask Selection Questions

Before you start, determine for each subject:

1. Does he or she have chronic sinus congestion (a Full Face Mask may be needed)
2. Are facial features smaller or larger, ie: nose and mouth (helps determine mask size)
3. Is patient claustrophobic (Full Face Mask helps pressure/breathing issues; smaller masks for facial sensitivity)
4. Is patient’s face easily irritated (argues for Nasal Pillow Mask, where less facial surface area makes contact with the mask)
5. Seasonal or year round facial hair (Full Face Mask may not seal ideally over the facial hair, so other mask options may work better)
6. Does patient have dentures, which generally are not worn during sleep (suggests that Nasal Pillows may work better than Nasal Mask or Full Face Mask, each of which has a ridge that depends on support from natural teeth and gums to make an effective seal)
Resmed AirFit P10 Nasal Pillows Mask

Nasal Pillow Mask

Pros
- Smallest of all masks
- Fits directly into the nares
- Good for sensitive skin
- Good for facial hair
- Good for patients with dentures

Cons
- Only work well with lower or moderate pressures
- Direct flow of air into the nares
- Nasal dryness occasionally arises
- Mouth leaks may occur (in which case a chinstrap can be tried)
- May not work well for patients who often have severe nasal or sinus congestion.
  (Other subjects, with mild or only occasional congestion, may report that PAP through nasal pillows helps to maintain patency of their nasal airway).
Adjustment

1. To achieve a comfortable fit, adjust the split straps by spreading them apart to loosen or draw them closer together to tighten.
Disassembly
1. Holding the top of the mask tubing, squeeze and pull the pillows away from the mask frame.
2. Remove the headgear from the stabilizers by holding the fabric end of each strap and pulling out to reveal the buttonhole, then sliding over the node and off the end of each stabilizer. The mask is now disassembled.
Reassembly

1. With the gray side facing out, insert each end of the headgear strap over the stabilizers through the buttonholes. Secure in place by wrapping each strap end up and around the nodes. Holding the split straps, pull the headgear from the stabilizer to ensure it is tightly secure around the nodes. Ensure the headgear strap is not twisted.

2. Attach the pillows to the mask frame by inserting the top and bottom clips into the correct slots (shorter clip into top slot, longer clip into bottom slot) on the mask frame. The mask is now reassembled.

3. Ensure the inner walls of the nasal pillows are not compressed or collapsed. If they are, squeeze each nasal pillow so they return to the correct shape. Refer to link below for assistance.

How to handle misshapen pillows
Resmed AirFit N20 Nasal Mask

Sizing the N20 Nasal Mask

1. Use the N20 Sizing Template
2. Align the three template sizes to the patient’s face
   - Small, Medium, Large
3. Following instructions on the sizing template, choose the correct size
4. The most comfortable sizing option will provide the best fit
Resmed AirFit N20 Nasal Mask

Pros
- Mask that fits over the nose
- Subject may tolerate better than full face mask due to claustrophobia with larger masks
- Can accommodate higher pressures

Cons
- Potential irritation of the bridge of the nose
- Subjects may experience air leaks from the mouth, or air leaks up towards the eyes
- Not good for subjects who have frequent nasal or sinus congestion
Fitting the N20 Nasal Mask

1. Unclip the magnetic clips.
2. With the mask held against the face, pull the headgear over the head.
3. Bring each of the magnets up to meet their corresponding clips on the frame.
4. Adjust the tabs on the upper headgear.
5. Adjust the tabs on the lower headgear.
6. Connect the device tubing to the mask elbow.
7. Connect the elbow to the mask.
8. Switch on the therapy device.
Resmed AirFit N20 Nasal Mask

Adjustment

1. If necessary, slightly adjust the position of the mask for the most comfortable fit. Ensure that the cushion is not creased and the headgear is not twisted.

2. Turn on the device so that it is blowing air.

3. To resolve any leaks at the upper part of the mask, adjust the upper headgear straps. For the lower part, adjust the lower headgear straps. Adjust only enough for a comfortable seal.

4. The upper strap adjustment is the key to seal and comfort.

5. Do not overtighten the lower straps because they mainly serve to keep the cushion in position.
Resmed AirFit N20 Nasal Mask

Removal

1. Twist and pull both magnetic clips away from the frame.
2. Pull the mask away from the face and back over the head.
Resmed AirFit N20 Nasal Mask

Disassembly
If the mask is connected to the device, disconnect the device air tubing from the short tube.

1. Undo the fastening tabs on the upper headgear straps. Pull the straps out of the frame. Keep the magnetic clips attached to the lower headgear straps to easily distinguish the upper and lower straps when reassembling.
2. Remove the elbow from the mask by pressing the side button and pulling the elbow away.
3. Hold the frame by placing the thumb over the side slot. Pull the cushion away from the frame.
Resmed AirFit N20 Nasal Mask

Reassembly

1. Push the cushion into the frame. The frame has a shape that allows the user to insert the cushion only one way.

2. With the ResMed logo on the headgear facing outside and upright, thread the upper headgear straps into the frame slots from the inside. Fold them over to secure.
Sizing the AirFit F20

1. Use the F20 Sizing Template.
2. The top of the Sizing Template should correspond to the top of the nasal bridge.
3. The lower part of the Sizing Template indicates which mask size is the best fit to the face. The size that aligns with the crease below the lower lip will be the best fit.
4. If the size aligns between sizes, it is recommended to select the larger option for greater comfort.
Resmed AirFit F20 Full Face Mask

**Full Face Interface**

**Pros**
- Primary mouth breather
- High pressure tolerance
- Claustrophobic participants (participant dependant)
- Sleeping on their back
- Good for facial hair (participant dependant)
- Difficulties due to allergies

**Cons**
- High prevalence of leak due to the amount of surface area to cover
- Air blowing into participants eyes
- Difficulty with sleeping on their side
- Mouth leaks may occur (in which case a chinstrap can be tried)
- Bulky
- Not ideal for stomach sleepers
Fitting the AirFit F20

1. Unclip the magnetic clips
2. With the mask held against the face, pull the headgear over the head. Ensure the top of the mask cushion is sitting comfortably at the top of the nasal bridge. The bottom of the headgear should settle comfortably at the top of the neck while the top of the headgear should sit on the crown of the head.
3. Bring each of the magnets up to meet their corresponding clips on the frame.
4. Adjust the tabs on the upper headgear.
5. Adjust the tabs on the lower headgear.
6. With the device still switched off, connect the device tubing to the mask elbow.
7. Connect the elbow to the mask.
Resmed AirFit F20 Full Face Mask

Adjustment
To ensure the fit will work with the therapy, do the following:

1. Switch on the device and position the patient as if they are about to begin therapy - that is lying down in bed.
2. Adjust the upper straps.
3. Adjust the lower straps.
4. Practice reseating the cushion
   a. Pull the mask away from the face.
   b. Allow the cushion to re-inflate.
   c. Resettle the inflated cushion so the cushion membrane is sitting at the top of the nasal bridge.
Resmed AirFit F20 Full Face Mask

Removal
1. Twist and pull both magnetic clips away from the frame.
2. Pull the mask away from the face and back over the head
## Troubleshooting

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequent Awakenings</td>
<td>Try to determine cause, and respond as listed below if any of these more specific problems are identified. Contact Sleep SMART CareTeam.</td>
</tr>
<tr>
<td>Air leak from mask seal with nose or face</td>
<td>Tighten headgear that holds mask, within tolerated range; change from nasal pillows or full face mask (which tend to leak more especially with high pressures) to nasal triangle mask. Contact Sleep SMART CareTeam.</td>
</tr>
<tr>
<td>Air leak through mouth</td>
<td>Add chin strap; if chin strap does not eliminate mouth leak, replace mask with a full face mask that covers the mouth (if no contraindication to full face mask). Contact Sleep SMART CareTeam.</td>
</tr>
<tr>
<td>Dry mouth / Nasal dryness</td>
<td>Add chin strap as these could suggest mouth leak; consider increase in humidifier setting. Contact Sleep SMART CareTeam.</td>
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<td>Mask uncomfortable</td>
<td>Adjust headgear to improve fit; loosen headgear just short of allowing leaks at edges of mask; change to different mask type or model. Contact Contact Sleep SMART CareTeam.</td>
</tr>
<tr>
<td>Nose stuffiness</td>
<td>Increase humidification; consider chinstrap as congestion can occur with mouth leak; consider full face mask (if no contraindication). Contact Contact Sleep SMART CareTeam.</td>
</tr>
<tr>
<td>Too much pressure</td>
<td>Determine if leak is a factor. Verify that Ramp is in Auto Mode. Contact Contact Sleep SMART CareTeam.</td>
</tr>
<tr>
<td>Not getting enough air with PAP</td>
<td>Turn Ramp off. Turn EPR off, if it has been on (on is the Sleep SMART default position). Contact Contact Sleep SMART CareTeam.</td>
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<td>Difficulty exhaling</td>
<td>Verify EPR is ON and set to 3. Verify Ramp is ON. Contact Contact Sleep SMART CareTeam.</td>
</tr>
<tr>
<td>Air swallowing / Bloating (Aerophagia)</td>
<td>Verify EPR is ON and set to 3.. Elevate the head by adding pillows. Contact Contact Sleep SMART CareTeam.</td>
</tr>
<tr>
<td>Facial sensitivity / Desensitization</td>
<td>Consider switching to less obtrusive mask (e.g., nasal mask instead of full face mask, or nasal pillows instead of nasal triangle mask). Contact Contact Sleep SMART CareTeam for desensitization techniques.</td>
</tr>
<tr>
<td>Condensation in mask/tubing</td>
<td>Increase tube temperature setting by 1-2 degrees and contact Contact Sleep SMART CareTeam.</td>
</tr>
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Cleaning Procedures

Hospitalized subjects, attendant family members, or legally authorized representatives should receive instruction on how to clean and maintain masks, tubing, and humidifier Chambers. They also need to know how and when to ask for new supplies. The following sections demonstrate the type of instructions that the local site’s Sleep SMART team should teach enrolled subjects who are randomized to the PAP arm.

**Mask Cleaning (Daily)**
Your mask and headgear should only be gently hand washed.
1. Remove headgear from mask.
2. Thoroughly clean the mask cushion in warm water using mild soap. Soap should be free of antibacterial agent, moisturizers or added scents. Recommended - plain Ivory® bar soap or baby shampoo.
3. The soap will help dissolve the facial oils.
4. Rinse thoroughly with warm water and allow to air dry during the day.

**Mask Cleaning (Weekly)**
1. Hand wash the headgear with instructions stated above.
Climateline Air Tube Cleaning (Weekly)

1. Remove the Climateline Air tube from the back on the aCPAP device.
2. Prepare a solution of 50 parts water and 50 parts white distilled vinegar.
3. Completely submerge the Climateline Air tube in the solution
4. Let Climateline Air tube soak for approximately 10 minutes.
5. Rinse thoroughly with warm water and allow to air dry during the day.
Questions?