

Obstructive Sleep Apnea and CPAP Respirator

What is obstructive sleep apnea?

- Obstructive Sleep Apnea is a common sleep disorder. Studies showed that 4% of middle-aged men and 2% of middle-aged women in Hong Kong suffer from this disease.
- It occurs when tissues in the throat collapse and block the air passage resulting in temporary suspension of breathing (apnea) during sleep. People with this disorder will wake up due to lowered oxygen concentration in blood. They regain normal breathing after waking and fall asleep again. As such breathing pauses can happen repeatedly from tens to hundreds of times throughout the night, sleep quality will be heavily affected. This results in marked daytime sleepiness and impaired daily activities and work performance.
- If sleep apnea is not treated properly, it will overload the heart and lung function and may increase the risk of complications like hypertension, heart disease and stroke. Anyone who is suspected to suffer from sleep apnea should seek advice from doctor to decide if any investigation or treatment is needed.

What is CPAP respirator?

- Continuous Positive Airway Pressure (CPAP) respirator is a common device for treatment of moderate obstructive sleep apnea. Patients should use the CPAP respirator whenever they sleep.
- The respirator generates pressurized air which passes into the upper respiratory tract through the mask to keep the airway open throughout the breathing cycle.



Types of CPAP respirator

- There are two types of CPAP respirator, namely fixed-pressure CPAP respirator and auto-CPAP respirator. Fixed-pressure CPAP respirator delivers air at a preset level of air pressure while auto-CPAP respirator will automatically adjust the air pressure of the air supplied according to user's need.
- When the user's airway collapse, auto-CPAP respirator will increase the pressure of air supplied to the airway accordingly. After the airway becomes open, the respirator will respond by decreasing the air pressure. As the user is not exposed to a constantly high pressure, auto-CPAP respirators are more comfortable than fixed-pressure CPAP respirators. However, they are more expensive.

Basic accessories of CPAP respirator

Basic accessories of a CPAP respirator include a nasal/face mask, headgear, connecting tubing, respirator and humidifier.

- Affix a nasal/face mask to user's nose or face through a headgear, and connect it to the respirator through the connecting tubing. Switch on the respirator to generate pressurized air. The air then enters the upper airway through the tubing and mask and keeps the airway open.



- In addition, a humidifier can be connected to the respirator in order to minimize irritation to the airway by dry air.

Maintenance and care of respirator accessories

The procedures for maintenance and care of accessories from different brands may vary. It is advisable to refer to manufacturer's instruction.

Accessories	Frequency of care	Ways to care
Nasal / Face Mask	Daily	<ul style="list-style-type: none"> - Clean with diluted detergent and water. - Hang to dry but avoid exposure to sunlight. - Ensure it is dry before use.
Headgear & connecting tube	Weekly	<ul style="list-style-type: none"> - Clean with diluted detergent and water. - Hang to dry but avoid exposure to sunlight. - Ensure it is dry before use.
Humidifier	Daily	<ul style="list-style-type: none"> - To reduce the risk of contracting Legionnaires' disease, use only sterile water to fill up the humidifier (Do NOT use distilled water or tap water). Sterile water is available from most dispensaries. - Never leave stagnant water in the humidifier. Empty the water tank, keep all surface dry and change the sterile water daily.
	Regularly	<ul style="list-style-type: none"> - Clean and maintain the humidifier according to manufacturer's instructions. After cleaning or disinfection, rinse the humidifier with sterile water or cooled freshly boiled water. - For more information on Legionnaires' disease, please visit the webpage of the Centre for Health Protection (https://www.chp.gov.hk/en/healthtopics/content/24/2117.html).
Respirator	Regularly	<ul style="list-style-type: none"> - Unplug the system and clean with a cloth moistened with mild detergent and water. - Let the respirator dry completely before plugging in the power cord.
Dust filter	Regularly	<ul style="list-style-type: none"> - Clean or replace the dust filter according to manufacturer's instruction.

Important points to note when purchasing and operating a CPAP respirator:

1. Before using CPAP respirator, sleep apnea patients should consult their doctors for assessment and prescription of the treatment plan.
2. Before choosing a respirator, one has to consider factors such as: the noise that may be generated, the size and weight of the respirator, international voltage compatibility and suitability for travelling and adequacy of space for placing the respirator beside the bed.
3. Apart from the price of the respirator, one should also consider the frequency of replacing the accessories and their prices.
4. Obtain information from the suppliers regarding maintenance details such as the scope of maintenance, availability of rental service during repair, and the price of replacement of components, etc.
5. Some suppliers offer home trial service. Users may rent a respirator and try it out before deciding to purchase.
6. Choose fit and comfortable nasal mask/face mask.
7. Seek and follow doctor's professional advice regarding the use of CPAP respirator. Follow the manufacturer's instructions in the operation manual to ensure the device is properly operated. Contact the supplier for regular maintenance.
8. Users should attend regular check up and seek medical advice if discomfort is experienced.



Medical Device Division

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Revised in January 2020