

## ***Purpose***

The purpose of Bi-Level Positive Airway Pressure (BiPAP®) therapy is to provide your airways with supporting pressure so they do not collapse. The airways relax during sleep and this can cause them to collapse, which can cause you to stop breathing and wake up. When this happens repeatedly, your time spent in restful sleep is decreased. Having your sleep continually interrupted can cause daytime sleepiness and puts additional stress on your heart and other major organs. By keeping your airways open you can breathe without being awakened, which means you can get more restful sleep.

Because BiPAP® machines provide positive pressure to your airways, they require a prescription to be dispensed. Your BiPAP® machine and its supplies are being supplied to you in conjunction with the prescription obtained from your physician.

Always read and abide by all manufacturers' operating instructions.

## ***Types***

BiPAP® machines come in two basic types: preset and auto-adjusting. Preset, or standard, BiPAP® machines have two preset airway pressures that remain constant during therapy. Auto-adjusting BiPAP® machines adjust the airway pressures based on your individual response to the treatment. Most BiPAP® machines have a ramping feature that starts the pressure out at a lower level when treatment is initiated and slowly builds the pressure up to the prescribed level. This ramping feature can help some people gradually adjust to the pressure. An additional Spontaneous/Timed (S/T) mode can cycle a pressure cycle based on a minimum breath per minute (BPM) control.

BiPAP® machines are electrical devices that take in the air from the room, pass the air through a filter, and then provide it back to you in the form of pressurized air. This pressurized air travels through a breathing tube and is applied to your airways by a mask, oral device, or nasal pillows. The airway pressure is expressed as centimeters of water pressure (cmH<sub>2</sub>O).

In most cases a humidifier may be added to your BiPAP® machine in order to moisten the air. Humidifiers are usually only provided when mucous membranes of the nose and mouth become dry and uncomfortable with use.

All BiPAP® machines are supplied as part of a treatment plan from your physician. Your physician's treatment plan includes the following prescription:

Inspiratory Pressure: \_\_\_\_\_  
Expiratory Pressure: \_\_\_\_\_  
Ramp: \_\_\_\_\_  
Unit and Model: \_\_\_\_\_  
Mask Type: \_\_\_\_\_  
Mask Size: \_\_\_\_\_  
BPM: \_\_\_\_\_

## Accessories

In order to apply the pressure generated by your BiPAP® machine, you must wear an oral appliance, nasal pillows, or a mask over the nose and mouth or the nose. The choice of the device is decided upon by which method best fits your facial features and provides the most comfortable fit.

There are many different kinds of masks, nasal pillows, and oral devices to choose from to facilitate a good seal and maintain comfort. If a headgear appliance is used to secure the mask or nasal pillows, it should be snug enough for a good fit in all sleeping positions. A chin strap may be needed to help keep your mouth closed during use.

Your supplies, which include your mask, tubing, humidifier, and filter have a useful life that varies depending upon use and will need to be replaced periodically. We will contact you occasionally regarding your supply needs.

## S/T Mode

In the Spontaneous/Timed mode, you have control over your respiratory rate as long as it exceeds the BPM setting. The BPM setting determines the minimum respiratory rate delivered by the unit. If the unit does not detect a spontaneous breath within the interval determined by the BPM setting, a machine-triggered breath will be delivered.

## Use

The most important part of using your BiPAP® machine is to understand your prescription and use the machine every night as prescribed by your physician. BiPAP® machines and their accessories must be used and applied in a very specific manner. Your BiPAP® machine has been preset to comply with your prescription. Do not make any changes to the settings. If you have concerns or questions about your BiPAP® settings, please call us immediately.

Your BiPAP® machine needs to be placed on a flat, sturdy surface that does not obstruct the air inlets. To prevent the obstruction of air intake, the BiPAP® machine should be placed at least 6 inches from any wall, draperies, furniture, or other objects.

The BiPAP® machine should be plugged into a grounded electrical outlet. Fill and attach the humidifier with *distilled water* if you have been prescribed one. If using a humidifier, attach the humidifier hose to the BiPAP® machine. Attach the breathing tubing to the BiPAP® machine air outlet and to your mask, oral device, or nasal pillows.

Turn on the power and wait for the BiPAP® machine to display that it is operational. The set airway pressures should be displayed and verified before using. Activate your BiPAP® pressure if it is not already on. When you first start BiPAP® therapy you will notice an unusual sense of pressure when breathing. Taking a few deep breaths when you start treatment may help you to adjust to the sensation. You should keep your mouth closed to prevent air leaving your mouth. A chin strap can be used to help keep your mouth closed.

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## ***Use (Continued)***

Wash your face to remove any excess facial oils and/or make-up prior to fitting the mask. Secure your mask, oral device, or nasal pillows and adjust as needed to ensure a comfortable, yet secure fit. Get into bed and adjust the tubing by routing either over the top of the headboard, across your shoulders, or over your chest. Make any final tension adjustments to your headgear. The first few times you are adjusting your headgear it may be beneficial to put it on in front of a mirror and connect the hose to the BiPAP® machine last.

If you are not using a ramping feature, the airway pressure will rise quickly to the preset value. If you are using a ramping feature, your pressure will rise gradually over the set delay period. If any symptoms of apnea reoccur during therapy, consult your physician immediately.

## ***Maintenance***

Keep your BiPAP® equipment clean and dust-free by wiping down with a damp cloth. Never use anything but a damp cloth to keep your equipment clean. Only qualified repair technicians should diagnose, perform maintenance, or repair any part of your BiPAP® machine. Call your provider if your BiPAP® machine is not functioning properly.

Each BiPAP® machine has an air intake filter located on the exterior of the unit. This filter is usually washable and should be cleaned at least weekly. Reusable filters are reusable foam and should be removed from the unit and cleaned with a vacuum cleaner or washed in warm soapy water, rinsed thoroughly, and dried before replacing. If the filter is disposable, dispose when the filter is discolored and replace with a new filter.

Each BiPAP® machine needs to have its pressure checked and calibrated on a regular schedule. Your BiPAP® provider will inform you when your BiPAP® machine needs to be inspected.

Your BiPAP® provider may also schedule visits to check on your treatment progress, sleeping improvement, and to record the hour meter reading. Your BiPAP® supplier will document this hour meter reading. The hour meter reading is used to schedule routine maintenance and can also be used to review your compliance with your prescribed BiPAP® treatment plan.

If you are admitted to a hospital or are prescribed any other form of medical treatment, always inform your BiPAP® provider immediately. Do not stop your BiPAP® therapy without consulting your physician and BiPAP® provider.

## ***Humidifier***

A humidifier can be added to a BiPAP® machine if a user has continued dryness of the nose, mouth, or throat. BiPAP® humidifiers are medical devices and require a prescription. A water-based lubricant can be used inside the nose to help with irritation; do not use petroleum-based products like Vaseline®. There are two basic kinds of BiPAP® humidifiers: passover and heated. Passover humidifiers direct the airflow of the BiPAP® machine directly over the top of the water in the chamber. This allows the air to pick-up moisture and is then directed out through the breathing tube to the user; no heat or additional electricity is used when using a passover humidifier.

Heated humidifiers require an electrical connection, either directly to the wall or through the BiPAP® machine, to heat the water. By heating the water the amount of humidity available to the user is increased. Heated humidifiers can also cause the added humidity to accumulate in the tubing, so a water trap should be used. Your respiratory therapy professional will direct you on what temperature setting is appropriate.

When filling the humidifier, only use *distilled water*; never use tap water to fill a BiPAP® humidifier. There will be markings on the humidifier for the level of the water; never overfill the humidifier. Never place anything in your humidifier except *distilled water*.

## ***Humidifier Cleaning***

Follow the below instructions for cleaning your humidifier **daily**:

1. Empty out the remaining water.
2. Wash your hands with disinfecting soap.
3. Submerge the *water chamber* in hot, soapy water.
4. Fill the *water chamber* with the soapy water and shake vigorously.
5. Rinse under hot tap water for at least 30 seconds to remove soap residue.
6. Place upside down on a clean paper towel and allow to air dry.

## ***Humidifier Disinfecting***

Follow the below instructions for disinfecting your humidifier **twice a week**:

1. Follow steps 1 through 5 above.
2. Using a clean container or bowl, soak the *water chamber* in a medical bacterial-germicidal disinfectant available through your BiPAP® provider for 30 minutes.
3. With clean hands, remove items from the disinfecting solution.
4. Rinse under hot tap water for at least 30 seconds.
5. Place upside down on a clean paper towel and allow to air dry.
6. Once the humidifier is dry, it can be reassembled.

## ***BiPAP® Accessory Cleaning***

Follow the below cleaning instructions **after each use** of your BiPAP® machine:

1. Make sure the BiPAP® machine power switch is turned off.
2. Wash your hands with disinfecting soap.
3. Remove the headgear from your mask, oral device, or nasal pillows.
4. Disconnect the connection tubing, and disassemble all washable supplies.
5. Wash all items in hot water with dishwashing soap.
6. Rinse under hot tap water for at least 30 seconds to remove soap residue.
7. Place upside down on a clean paper towel and allow to air dry. Tubing can be hung-up for draining and drying.
8. Once all the pieces are dry, they can be reassembled.

## ***BiPAP® Accessory Disinfecting***

Follow the below instructions for disinfecting your BiPAP® supplies **once a week**:

1. Make sure the BiPAP® machine power switch is turned off.
2. Wash your hands with disinfecting soap.
3. Remove the headgear from your mask, oral device, or nasal pillows.
4. Disconnect the connection tubing, and disassemble all washable supplies.
5. Wash all items in hot water with dishwashing soap.
6. Rinse under hot tap water for at least 30 seconds to remove soap residue.
7. Using a clean container or bowl, soak the water chamber in a medical bacterial-germicidal disinfectant available through your BiPAP® provider for 30 minutes.
8. With clean hands, remove items from the disinfecting solution.
9. Rinse under hot tap water for at least 30 seconds.
10. Place upside down on a clean paper towel and allow to air dry. Tubing should be vigorously shaken to get rid of the water pooled in the ridges and then hung-up for draining and drying.
11. Once all the pieces are dry, they can be reassembled.

To prevent possible risk of infection from contaminated cleaning solutions, always prepare fresh disinfecting solution for each cleaning cycle and discard solution after each use.

Hand wash your headgear and/or chin strap weekly or as needed in warm soapy water. Do not place your headgear or chin strap in a washing machine. You can add baking soda to the warm soapy water to remove fabric odors. There is no need to disinfect your headgear and/or chin strap.

## Safety

The safe use of a BiPAP® machine requires it to be used as instructed, which includes the following safety precautions:

- If you are using supplemental oxygen, ensure that there is a functional smoke detector in the residence. Contact your local fire department to see what the legal requirements are for smoke detectors in the home.
- If you are using supplemental oxygen, follow all safety and operating instructions.
- BiPAP® machines are not life support devices and will not operate during a power failure.
- Ensure that BiPAP® tubing is routed and secured so that it does not become entangled and/or damaged.
- Ensure that the BiPAP® machine is positioned at least 6 inches from any wall, draperies, furniture, and any other objects.
- Ensure that air intake areas are kept free from obstruction.
- Ensure that the BiPAP® machine is kept dust-free.
- Never immerse the BiPAP® machine or heater in water.
- Never wear your BiPAP® mask unless it is connected to the BiPAP® machine and the unit is turned on and therapy activated.
- Never add, remove, or disable any feature, part, or function of your BiPAP® machine.
- Never allow any untrained person or child to touch or manipulate your BiPAP® machine.
- Do not use any aromatic additive with your BiPAP® therapy such as eucalyptus oil, teatree oil, or mentholated ointments.
- Do not block the exhalation port on the BiPAP® mask.
- Do not clean any parts with alcohol.
- Do not use the BiPAP® machine if any signs of malfunction are present, such as a change in sound, reduction in air flow, odor accompanying air flow, limited or lack of response to breathing, etc.
- Do not try to fix, repair, or lubricate the BiPAP® machine.
- Do not use an extension cord when connecting the BiPAP® machine.
- Do not under any circumstances, cut or remove the round grounding plug from the power cord plug.
- Do not use any three (3) prong to two (2) prong electrical adapters.
- Do not plug into an electrical outlet controlled by a light switch.

In order to ensure care and provide operator safety, make sure you follow these safety guidelines:

- Use nightlights to increase vision around areas of use.
- Wipe up any water or slippery floor spills.
- Remove tripping hazards (loose floorboards, uneven floors, throw rugs, extension cords, clutter, etc.)
- Install grab bars, use bath mats with suction cups, and use an elevated toilet seat to prevent falls.