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## FAQs

**Is BiLevel the Same as BiPAP?** Yes – The term “BiPAP” stands for BiLevel Positive Airway Pressure and is trademarked by Respirationics.

**What is BiLevel Pressure?** BiLevel positive airway pressure is basically the same as having 2 levels of CPAP, one high pressure and one low pressure. When the patient inhales, the pressure “kicks up a notch” to the higher level. It is the increase in pressure that helps the patient inhale. This boost in pressure assists the patient to breathe making BiLevel CPAP assisted ventilation or non-invasive positive pressure ventilation.

**Note: CPAP assists in oxygenation where BiLevel CPAP is assisted ventilation and provides oxygenation.**

**What types of patients benefit from BiLevel CPAP therapy?** Spontaneous breathing patients that need help doing the work of breathing and the elimination of CO<sub>2</sub> retention.

**What is the FiO<sub>2</sub> when using the Flow-Safe II+® BiLevel CPAP device?** As with all Flow-Safe devices, the FiO<sub>2</sub> is determined by several variables such as respiratory rate, tidal volume, pressure settings, etc. In the CPAP mode the FiO<sub>2</sub> is approximately 70 - 75% for an adult patient with an average tidal volume.

**Can a nebulizer be used with Flow-Safe II+?** Yes, in the CPAP mode only a nebulizer can be placed in-line between the Flow-Safe II+ valve and the mask. The nebulizer output may affect performance in the BiLevel mode.

**What does Bilevel IPAP and EPAP mean?** IPAP stands for inspiratory positive airway pressure (pressure during inhalation). EPAP stands for expiratory positive airway pressure (pressure during exhalation).

**What is pressure support?** The difference between IPAP pressure and EPAP pressure = pressure support, (IPAP of 10 cmH<sub>2</sub>O - EPAP of 7 cmH<sub>2</sub>O = Pressure Support of 3 cmH<sub>2</sub>O).

**What is the maximum IPAP setting with the Flow-Safe II+?** Approximately 13 cmH<sub>2</sub>O.

**What is the Oxygen consumption rate?** In the CPAP mode a full D cylinder (2000 psi) should last about 40 minutes at 5 cmH<sub>2</sub>O. Consumption will be slightly higher in BiLevel CPAP mode due to the increase in the oxygen flowrate.

**Is BiLevel CPAP a better therapy than CPAP?** The common assumption is that BiLevel CPAP is better than CPAP in EMS and in acute care. Currently there is no clinical support for this assumption they are just different modes of therapy.

**What is the difference between Respiratory Distress and Respiratory Failure?**

- **Respiratory Distress** is abnormal respiratory rate or effort. The patient is near normal consciousness and is working hard to breathe but can maintain normal EtCO<sub>2</sub> values.
- **Respiratory Failure** is inadequate oxygenation and/or an increase in EtCO<sub>2</sub> regardless of the patient's breathing workload.

**What are the 2 types of Respiratory Distress & Failure?**

- Hypoxic is characterized by low oxygen levels determined by pulse oximetry or arterial blood gas (ABG).
- Hypercapnic characterized by high CO<sub>2</sub> levels determined by EtCO<sub>2</sub> or arterial blood gas.

**What are the black nipples on the Deluxe mask for?** The nipples can be used to provide additional oxygen by attaching oxygen tubing with flow at a few liters per minute.

**Can you measure EtCO<sub>2</sub> with Flow-Safe II+®?** Yes, however, to get the most accurate readings the cannula style gas sampling line needs to be used.

**Is Flow-Safe II+ MR Conditional?** Yes, up to 3 Tesla.

**How long can a patient stay on Flow-Safe II+?** The Directions for Use (DFU) do not limit the length of time a patient can utilize the device.

**How does Flow-Safe II+ change pressures in the BiLevel mode?** Within the clear elbow there is a red needle hub with about a ¼ of an inch of needle extending out one end, pointing toward a blue plastic block. The blue plastic block has 2 holes that lead to separate diaphragms one controlling IPAP the other EPAP. When the gas flow enters Flow-Safe II+ in the BiLevel mode the gas is directed through the needle. The air flow created when a patient breathes (the reason the patient must be breathing for the device to function) causes the gas flow exiting the needle to be directed towards one of the openings. When the patient inhales the gas, flow is pulled in the direction of the hole leading to the IPAP diaphragm. When the patient exhales the gas, flow is pushed in the direction of the hole leading to the EPAP diaphragm.

**Can we use any CPAP mask with the Flow-Safe II+?** The Flow-Safe II+ has been tested with the Mercury Medical Full Deluxe Face Masks. It is particularly important that clinicians use the recommended mask for BiLevel CPAP therapy for optimal performance.

**Can Flow-Safe II+ be used with a filter?** Yes, the filter can be placed in-line between the CPAP valve and mask. Mercury's Bacterial /Viral Filter #1055376 can be placed in-line. However, any filter with 22mm I.D. X 22mm O.D./15mm I.D will connect.

**Can Flow-Safe II+ be used with Covid-19?** Preliminary reports are indicating that CPAP and BiLevel CPAP can be very effective in the treatment of Covid-19 patients. Research has shown that Flow-Safe II+ can be just as effective as the Trilogy 100 Ventilator in CPAP mode. Having a disposable device can help reduce the spread of infection, eliminate cleaning of equipment and reduce cost.

**Does Flow-Safe II+ have any alarms?** The obvious answer is "no." However, any patient on CPAP should be a candidate for capnography. Capnography is an excellent alarm since it changes from breath-to-breath. Pulse oximetry is not an effective alarm due to the delay, which can be up to several minutes.

**Does Flow-Safe II+ have humidification capabilities?** Yes, by placing a heat and moisture exchanger (HME) between the mask and the Flow-Safe II valve. However, this will require an adjustment in the flow rate to maintain the same pressure due to the resistance created by the HME. A second option would be to use Flow-Safe II EZ with a continuous nebulizer.

**Can CPAP be billed for using Flow-Safe II+?** Yes, the CPT code for initiation and management is #94660.