



Bi-level positive airway pressure therapy factsheet



Introduction

Bi-level positive airway pressure therapy is a type of breathing support that can help your child breathe if they have central sleep apnoea, also known as hypoventilation.

When asleep, children with central sleep apnoea sometimes stop breathing for 10-30 seconds at a time.

Central sleep apnoea can cause issues with:

- breathing
- the heart
- behaviour
- learning
- general development.



About this equipment

The Bi-level machine treats central sleep apnoea by pushing pressurised air through a mask and into the lungs, opening the airways.

Bi-level therapy is like continuous positive airway pressure (CPAP), with some differences.

In CPAP, the air pressure stays the same when breathing in and out.

In Bi-level therapy, the air pressure is higher when breathing in than when breathing out.

Before starting bi-level therapy

A sleep medicine doctor will see your child to decide whether they need to use Bi-level therapy.

When your child starts Bi-level therapy, they will be fitted with a mask. Your child can practice wearing the mask without the machine for short periods during the day to help them get used to the feeling.

Your child may be admitted to the hospital for 3-4 nights so their treatment team can:

- set the machine up
- check how your child is using it
- give you information and education about the therapy.

Your child may be eligible for government support to help with the cost of medical equipment, including a discount on electricity to run the machine. Speak to your child's doctor for more information.

The Bi-level therapy machine

Bi-level therapy is a treatment that is used while your child is sleeping, including during naps and at night. It is important to:

- use the Bi-level machine every time your child sleeps
- make sure it travels with your child wherever they are sleeping overnight, including in the emergency department
- keep the machine clean and working well.

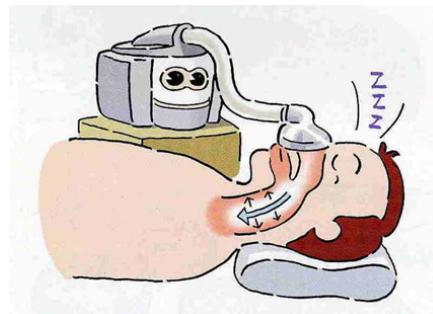
The bi-level therapy machine is made up of the following parts:

- **machine** – the device that pressurises the air
- **hose** – a hollow tube that connects the machine to the mask, allowing air to flow through
- **mask** – there are many types and shapes of masks that connect to the hose and sit over the mouth, nose, or both to create a seal
- **filter** – to remove dust and debris from the air
- **humidifier** – helps to keep the air moist so your child is comfortable and their airways do not dry out and bleed.

You may be able to rent a machine from your child's hospital to try before you buy one.

Speak to your child's treating team about hiring and buying bi-level therapy equipment.

Most bi-level therapy machines will plug into the wall and do not run on batteries. If there is a power failure, your child's machine will not work.



Care of the device

Take good care of your child's Bi-level therapy machine and mask to make sure it works properly and lasts for as long as possible.

Do not clean the equipment with products that can cause damage, including:

- bleach
- alcohol
- chlorine-based mixtures
- conditioner
- moisturiser
- strong household cleaners.

Clean the body of the bi-level therapy machine by wiping it gently with a clean, damp cloth.

Mask cushion and frame

Your child's Bi-level therapy mask should last 12-24 months or longer if it is cared for properly.

Wipe down the mask with a damp cloth after every use, and wash by hand at least once a week.

To clean the cushion and frame:

1. follow the instructions given by your child's treatment team or the equipment manufacturer to take the mask apart
2. hand-wash the cushion and frame in warm water with a mild dishwashing detergent
3. let the parts air-dry away from direct sunlight
4. check for damage before putting the mask back together.

Headgear

To clean the headgear:

1. take the headgear off the frame
2. gently hand wash in warm, soapy water
3. rinse thoroughly in clean water only, no soap or bleach
4. let the parts air-dry away from direct sunlight
5. check for damage before putting the mask back together.

Tubing

Clean the tubes once a week.

To clean the tubes:

1. follow the instructions given by your child's treatment team or the equipment manufacturer to take the tubing apart
2. hand-wash the tubing and connectors using soapy water
3. rinse thoroughly with clean water
4. hang the tubing up to air-dry away from direct sunlight
5. check for holes or splits before putting it back together when the tubing is dry.

If the tubing is damaged, it must be replaced before using the machine again.

Filters

Check your machine's instructions to see if the filter is disposable or reusable. For reusable filters, cleaning instructions may differ depending on the machine.

To clean the filter:

1. remove at least once a week and gently brush off any visible dust or debris
2. rinse and squeeze the foam filter under running water
3. wash the foam filter in warm, soapy water and air-dry away from direct sunlight
4. when the filter is completely dry, place it back into the machine.

Filters need to be replaced every six months.

Bacteria filter

If your child's mask has a bacteria filter, you should replace it every 7-10 days or sooner if it becomes dark in colour.

If you rent a machine, using a bacterial filter between the machine and the tubing is important. This filter needs to be changed every 14 days.

Humidification chamber

The humidification chamber must be emptied every morning and washed at least once a week.

The chamber should be filled using distilled water. This water is available from the chemist and some supermarkets.

If your child uses bi-level therapy equipment with a mask and distilled water is unavailable, you can use boiled water that has been cooled down.

To empty the humidification chamber:

1. pour out any remaining water and rinse under flowing water
2. refill with fresh water before use each night.

Wash the humidification chamber in warm water with mild dishwashing detergent and air dry out of direct sunlight.

To look after the humidification chamber:

- always empty the chamber before moving the machine, as spilled water can destroy the electrical circuits and damage the machine
- tip out any excess water that collects in the tubes, and change the settings to stop water collecting
- change the filter immediately if it gets wet
- sit the chamber next to the bed, lower than the level of your child's head, to stop water flowing through into your child's airways
- check the water levels before turning the machine on, making sure it is topped up to the maximum level each night
- use the lowest setting when your child's room is cool and dry
- use a higher setting when your child's room is warm and moist.



Cleaning schedule

Follow the cleaning schedule below to ensure your child's equipment works well and lasts as long as possible.

1. every day – wipe down mask, empty and refill humidification chamber
2. every week – clean mask, tubing, and humidification chamber and brush off filter
3. every two weeks – replace the anti-bacterial filter
4. every six months – replace the reusable filter.



Management

Treatment time

Bi-level therapy is usually a long-term treatment. Your child will have regular appointments with their sleep or respiratory doctor and regular sleep studies to ensure everything works well.

The treatment team will take 3D photographs of your child's face every 2-3 years. This is to make sure the mask is not pressing on the top teeth as they grow.

When to seek help

Call an ambulance on Triple Zero (000) or go to the nearest emergency department if your child is showing signs of breathing issues like:

- difficulty breathing
- rapid breathing
- noisy breathing
- a dusky blue colour around the lips
- stopping breathing.

Disclaimer

This factsheet is provided for general information only. It does not constitute health advice and should not be used to diagnose or treat any health condition.

Please consult with your doctor or other health professional to make sure this information is right for you and/or your child.

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