



# Mechanical Ventilation and Oxygen Therapy

## What does mechanical ventilation do?

A mechanical ventilator is a breathing machine that is used to replace or support normal breathing. For long-term mechanical ventilation at home, you will require a tracheostomy tube.

The goals of long-term mechanical ventilation at home are:

- To maintain your quality of life
- To stop you from getting sick
- To keep you fit.

## Why do I need mechanical ventilation?

Control of breathing is influenced by a combination of:

- Nerve centres in the brain that transmit impulses to the muscles of breathing via the spinal cord and spinal nerves
- Chemical centres in the brain and circulatory system which influence how fast and how deeply you breathe.

So, you may need long-term mechanical ventilation if you have problems with:

- Your nerve system (like a SCI, a head injury or a stroke)
- Your muscles and bones together
- Your heart and lungs.

## What about the actual mechanical ventilator machine?

A doctor will determine the ventilator settings which are best suited for you. It is important not to change the settings – contact your doctor if you are concerned about your breathing or the ventilator settings.

You and your carer(s) should check the ventilator settings regularly to make sure that they do not change drastically.

## Alarms

When a ventilator alarm sounds:

- You and your carer should respond immediately
- Find out what is causing the alarm before silencing it – are you disconnected from the ventilator? Are you having difficulty breathing? Do you need suctioning?
- If you cannot identify the problem, your carer should manually ventilate you (with your bag or Air-Viva) and call for assistance.

## Power supply

Your ventilator will have 3 power supply options:

1. Wall (electrical) power
2. External battery (like a car battery)
3. Internal battery.

You and your carer should thoroughly read your ventilator manual or further information on power supply and how to charge your ventilator batteries.

You should also make sure that you and your carer know what to do in case of a 'black-out' or power cut in your area. Notify your energy provider of your requirements.

## Cleaning and maintenance

Follow your ventilator manual for information on regular cleaning and maintenance of your ventilator. Your ventilator equipment supplier will also be able to provide you with information on cleaning and maintenance, including your ventilator circuit and equipment.

Take extra care when moving the ventilator to avoid dropping or bumping it (e.g. when transferring from your wheelchair to your bed).



## What about going out?

It is essential to have a special bag packed and ready for outings. It's important to keep this maintained and checked regularly. This bag should include:

- A portable suction unit
- Suction catheters
- Gloves
- Air-Viva (for manual bagging)
- A spare tracheostomy tube
- Wiping cloth (eg. wet ones)
- A plastic bag for rubbish.

## Oxygen therapy at home

Sometimes you may need to use oxygen at home with or without a mechanical ventilator. This can often be scary – you might feel that your condition is getting worse, or you're self-conscious about using the oxygen in public, or you fear the oxygen because it is flammable. This need not be the case.

## What does oxygen therapy do?

If you have a problem with your lungs and are unable to take deep breaths, oxygen may help to:

- Get extra oxygen to your body so it will function better
- Improve your quality of life
- Get a better night's sleep
- Improve your fitness level.

Oxygen is considered to be medication (like tablets) and so will be prescribed by your doctor. It is important not to change the oxygen settings – contact your doctor if you have any concerns.

## Some precautions with oxygen therapy

- Do not smoke or have any naked flames (like candles) in the same room as the oxygen

- Do not use greasy lubricants, oils and lotions with alcohol on or near the equipment
- Petroleum based products (like felt tip pens with petroleum based inks or petroleum based wax crayons) should not be used near the oxygen
- Do not use any item that could spark near the area (like friction toys, clothes made from synthetic fibres which produce static electricity)
- Polishing machines or vacuum cleaners which can produce sparks should be kept at least three metres away from the oxygen
- Other electrical appliances such as TV's, bed lamps, heaters and fans should be kept at least 3 metres away from the oxygen
- Check the oxygen cylinder regularly and place it in a stable position (including when you are in the car) where it cannot be accidentally knocked over.

The NSW Ventilator Dependent Quadriplegia Program provides funding for eligible clients to live in the community. To be eligible for the Program clients must be 24-hour ventilated and quadriplegic as a result of a traumatic brain stem or spinal cord injury from a traumatic or non-traumatic cause, be non-compensable or inadequately compensated and be assessed as medically stable. Referral to this program will be from local area health service or through the hospital.

## Obstructive sleep apnoea

This is a problem that is becoming more frequent as we age and increase size/weight. It is more common in people with high SCI and should be considered as part of your health checks when over the age of 40 or so.

People diagnosed with this condition are generally referred to a sleep clinic.



## Further information

- Contact your local doctor or breathing specialist
- Contact your ventilator or other respiratory specialist
- Contact your oxygen supplier
- For electricity emergencies/loss of supply phone your supplier, keep this number handy