

Non-invasive ventilation (NIV) at home – Nippy 3+

Information for patients

This leaflet answers some of the questions you may have about how to use your NIV machine at home. If you have any queries or concerns, do not hesitate to speak to a member of staff in the NIV team.



What is non-invasive ventilation?

It is a treatment that can help you breathe more easily if your breathing problem is getting worse. It involves you using a cushioned mask that fits over your mouth and nose (Figure 1) or just your nose (Figure 2) connected to a Nippy machine. Each machine is set up to suit your individual needs.

Figure 1
Full face mask



Figure 2
Nasal mask



Why do I need NIV?

When you breathe normally you take in oxygen for your body to use and breathe out the waste gas carbon dioxide. Breathing in enough oxygen and blowing out enough carbon dioxide might have become more difficult for you.

NIV helps you to take bigger breaths by blowing in extra air from the machine as you breathe in. It provides a small amount of pressure as you breathe out, to keep your lungs open. This helps correct your oxygen and carbon dioxide levels.

What are the benefits?

It supports but does not take over your breathing, giving your tired muscles time to relax.

You do not need sedation so you are awake and able to do chest physiotherapy and talk. You can easily take off the mask to eat and drink.

What are the risks or side effects?

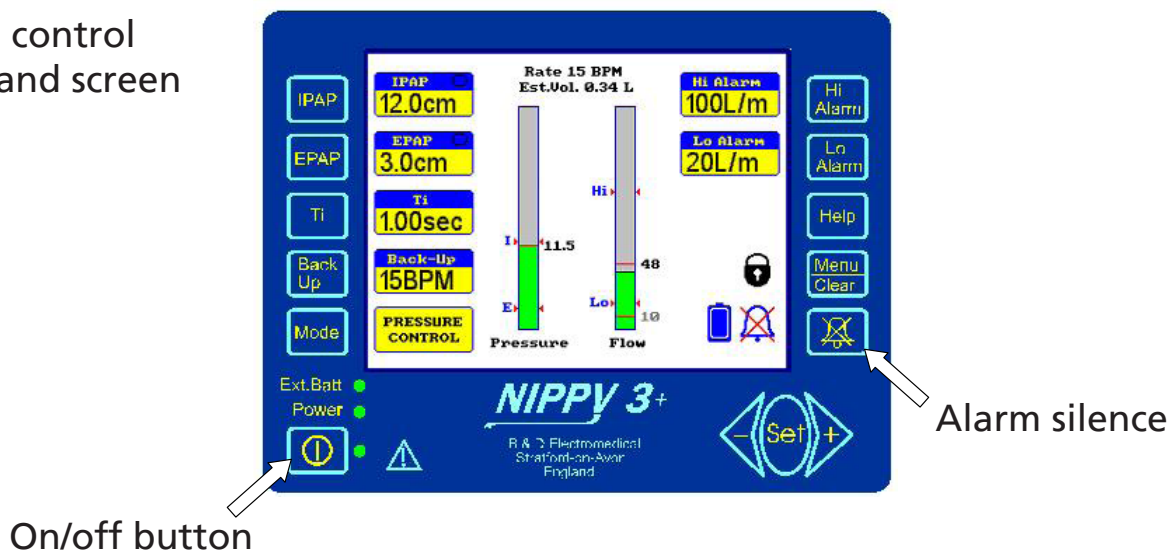
- Trapped wind/stomach bloating. If this happens the settings on your machine may need to be changed.
- Pneumothorax (lung collapse), if you use the machine at high pressures. This is very rare and is where air leaks and becomes trapped between your lung and chest wall. You may get a sudden sharp chest pain followed by pains when you breathe in. You may also become breathless. You will need to attend your local A&E urgently if this happens as you may need the air draining.
- You may find it difficult to clear secretions such as spit and phlegm from your throat and nose when you wear the mask. You may need to remove the mask for a few minutes to spit it out.
- Air may leak from around the mask and cause eye discomfort.
- The mask may cause sore skin on your face or make your skin break down over the bridge of your nose. If you find this is a problem, you may need to try different masks or liners to find a comfortable fit.
- The face mask may make you feel claustrophobic.

Do I still need to take my normal medication while using NIV?

Yes. Use your usual medicines as well as NIV to help your breathing condition. You can take off the mask for short periods of time so you can take your nebulisers, inhalers and pills.

Using your Nippy machine

Figure 3: control buttons and screen



How do I turn it on and off?

Place the Nippy machine on a clean flat surface (not on a carpet). Do not put it inside a bedside cabinet or anywhere where the air cannot move freely around it.

- Connect the power lead to the mains power connector at the back of the machine.
- Plug the other end of the lead into the mains power socket and switch the socket on.
- Press the on/off (power) button at the bottom left of the machine, below the screen (see Figure 3). The Nippy will then turn on. To turn it off, press the same button. Press the same button again after two seconds and the machine will turn off. This is a safety feature so that you don't switch the machine off by mistake.

Will I need to use oxygen with NIV at home?

We will decide if you need a small amount of oxygen running through your machine at night. If you do, the respiratory nurses will arrange for the oxygen concentrator machine to be delivered to your house. They will show you how to connect it to the Nippy machine before you leave hospital.

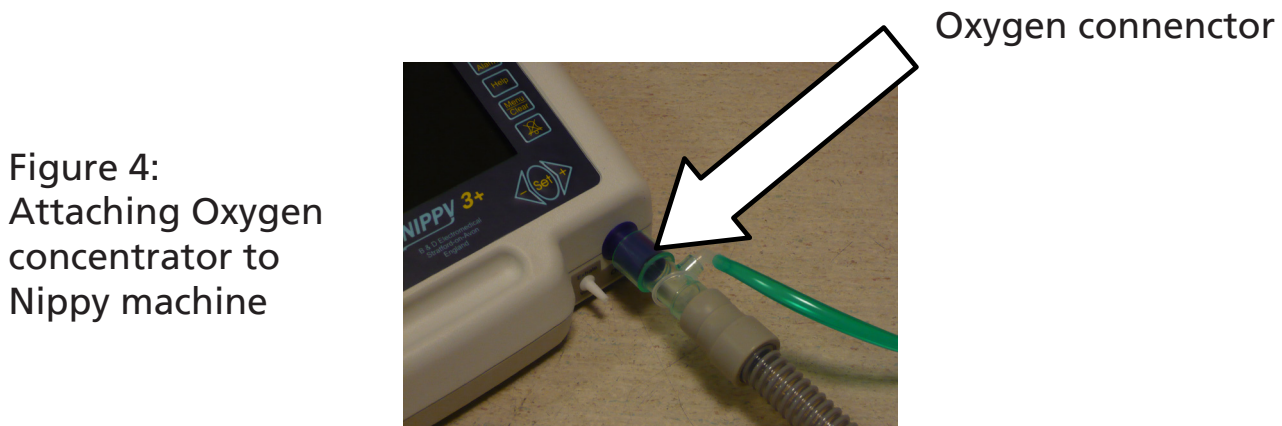


Figure 4:
Attaching Oxygen
concentrator to
Nippy machine

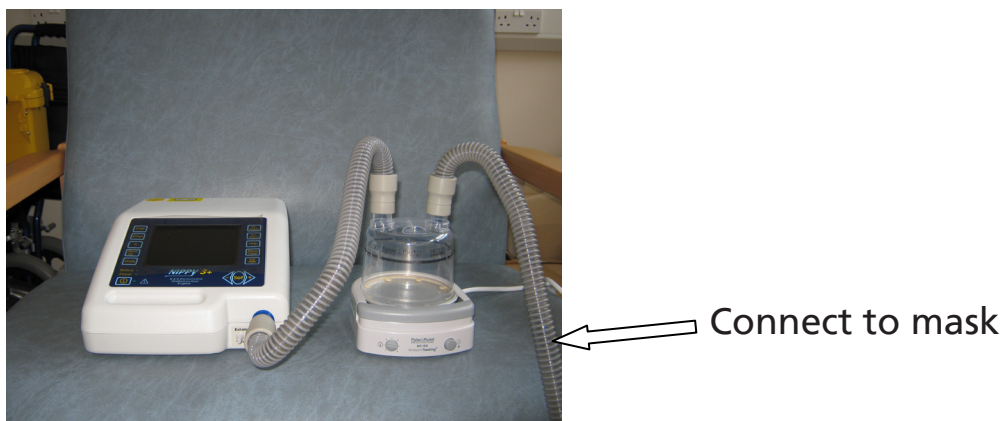
One end of your oxygen tube is connected to the Nippy (see Figure 4) and the other to your oxygen concentrator machine.

You needlpm of oxygen running through your NIV machine.

Will I need to use a humidifier as well?

We might decide that breathing damp (humidified) air will help you if you have a productive sticky cough (you cough up phlegm/mucus) or a dry mouth.

Figure 5: Humidifier attached to Nippy machine.



Using a humidifier

Connect the humidifier to the Nippy machine using the tubing supplied (see Figure 5).

Remove the water chamber from the base of the humidifier, rinse the chamber with water and put it on a flat surface. Fill it no higher than the maximum fill line with water that you have first boiled in a kettle and then cooled.

Turn on the humidifier and set the dial to two – three (the higher the number, the more humid the air you breathe will be).

Important:

- Do not fill the chamber while it is still inside the humidifier.
- Only use water that you have first boiled then cooled to kill any bacteria.
- Change the water in your humidifier every day to prevent mould and bacteria growth.
- Do not put any chemicals or additives into the water as these may irritate your airway or damage the water tank.
- If you are getting moisture/water inside your mask and tubing the humidifier is set too high. Turn the dial down to a lower setting.

Cleaning your NIV machine

Keep the Nippy machine clean and dust free. Clean the tubing and mask once a week with warm soapy water and leave it to dry.

If you use a humidifier as well, change the water every day and clean the chamber with warm soapy water every week. To clean lime scale from the chamber, use a small amount of lemon juice in water and leave it in the chamber for three – four hours. Then clean it with warm soapy water and allow to dry before filling with water again ready to use.

One of the NIV team or the Chest Unit Physiologist can show you how to clean all the different parts of your machine and give you any new/replacement parts you may need.

Looking after your Nippy machine

Mask care

Always wash your face before putting on your mask, to remove facial oils and make-up. Do not put moisturiser on your face at night as this may stop the mask from sealing.

If you look after your mask it should last a year. If it breaks or starts to leak a lot, contact the Chest Unit for a new one.

Daily

- Take the mask cushion /nose pillows off the straps. Clean with warm soapy water, rinse and leave to dry.
- Do not use alcohol on the mask as this can damage it.
- Do not put it in the dishwasher or very hot water.

Weekly

- Take off the straps, wash in warm soapy water and leave to dry.

Tubing care

Clean the tubing before you first use it.

Weekly

- Detach the flexible tubing from the Nippy machine.
- Gently wash the tubing in warm water and a mild detergent.
- Rinse well.
- Hang it over a chair or the back of a door to drip dry.
- Check the tubing regularly for holes. These can cause a High Flow Alarm to sound.

Filter care

Figure 6: Nippy machine air filter.



The air filter at the back of the machine will get dusty as you use the machine (Figure 6). Clean it once a week by pulling off the black plastic guard, taking out the filter and shaking off any dust. Change it every three months and wash it if it becomes grey. Use warm soapy water and leave to dry. The Chest Unit can give you a new filter.

Important: do not let the filter get blocked with dust because this may affect how well the Nippy works.

What do I do if I have problems with my mask?

Generally, it is ok to have small leaks. You can make some small changes to stop big leaks.

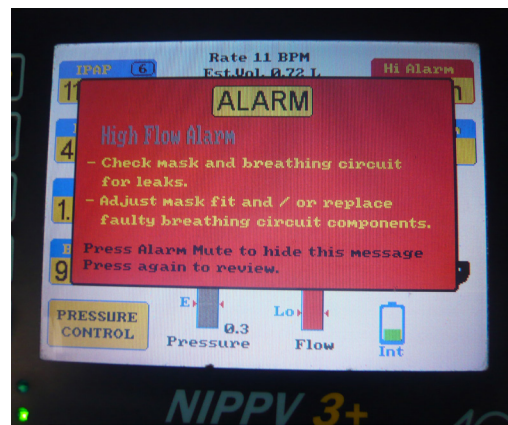
- If your mask leaks, pull the mask cushion directly away from your face and set it gently back into place. This allows the cushion to create a new seal on your face.
- If you have leaks around your eyes, adjust the side straps.
- If you have leaks around your lips, adjust the lower straps.
- If you can feel too much pressure on the bridge of your nose, loosen the side straps.
- If you get a sore on the bridge of your nose, please contact the Chest Unit for advice.

What do I do if the alarm sounds?

To turn off the alarm sound, press the 'silence' button on the bottom right of the machine. This will turn off the noise for two minutes. The alarm sounds for three reasons.

1. **High Flow Alarm.** There may be a leak around your mask, a crack in the tubing or the tubing may have come away from the machine. You will see the High Flow Alarm message on the screen (Figure 7).

Figure 7: High Flow Alarm on Nippy screen.



Try refitting your mask and making sure it is on securely. Check all tubing is connected and there are no holes.

2. **Low Flow Alarm.** The tubing may be blocked. If you have fallen asleep, your head may drop forwards and block the airflow. You will see the Low Flow Alarm message on the screen.

Check that nothing is blocking the tube. If you are also using a humidifier, check for water in the tubing. Try tilting your head back to allow the air to flow freely. If your mouth is open and you wear a nose mask, make sure you are wearing your chin strap.

3. **Power Disconnect Alarm.** The Nippy has been unplugged from the mains power supply. If you are using it at the time, it will automatically start to run off the battery.

If you have checked all of the above and the alarm is still sounding, please contact the Chest Unit.

Using the battery

- Keep the Nippy connected to the mains power supply whenever possible so it keeps charging the battery and is always ready for use, such as when you go out or if there is a power cut.
- Do not use the machine when it is in the blue carry case. If you need to use the Nippy when you are out, contact the Chest Unit and they will give you a travel bag.
- To check the battery charge level, press the 'Set' button twice while the Nippy is on. It will then show how much time is left on the battery.
- The Nippy will alert you when it is unplugged from and reconnected to mains power by sounding an alarm and showing a message on the screen.
- An alarm will sound when there is only one hour left on the battery. This means you must plug it into the mains power supply as soon as possible. You will hear short, high-pitched beeps.

Who can I contact with queries and concerns?

Before you go home someone from the NIV team or Chest Unit will show you how to fit your mask and use and understand your Nippy machine.

If you have any problems with your machine at home, please contact the Respiratory Physiologists in the Chest Unit.

Tel: 020 3299 4743 or 020 3299 3364
Email: kch-tr.CPAPkings@nhs.net

Your Nippy machine settings

Machine model -----
Serial number -----
IPAP (cm/H2O) -----
Trigger -----
EPAP (cm/H2O) -----
Trigger -----
Ti (secs) -----
Back up rate (bpm) -----
Mode -----
High alarm (lpm) -----
Low alarm (lpm) -----
Alarm sensitivity -----
Mask: -----
Oxygen Yes/No
Flow rate ____ l/min

PALS

The Patient Advice and Liaison Service (PALS) is a service that offers support, information and assistance to patients, relatives and visitors. They can also provide help and advice if you have a concern or complaint that staff have not been able to resolve for you. They can also pass on praise or thanks to our teams.

PALS at King's College Hospital, Denmark Hill, London SE5 9RS

Tel: 020 3299 3601

Email: kch-tr.palsdh@nhs.net

PALS at Princess Royal University Hospital, Farnborough Common, Orpington, Kent BR6 8ND

Tel: 01689 863252

Email: kch-tr.palspruh@nhs.net

If you would like the information in this leaflet in a different language or format, please contact our Communications and Interpreting telephone line on 020 3299 4826 or email kch-tr.accessibility@nhs.net