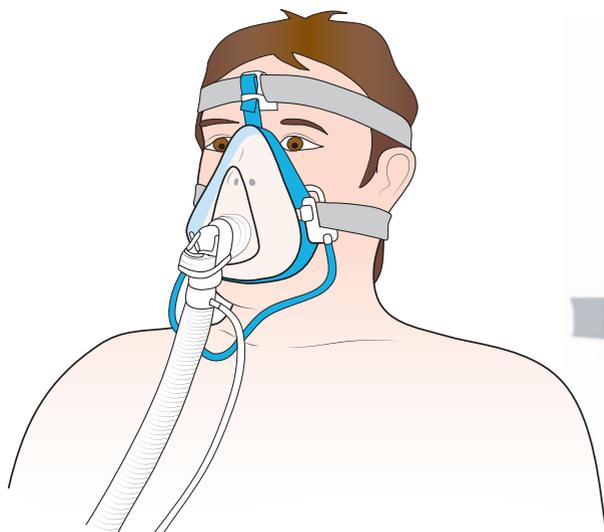


# Home Non-invasive Ventilation Support Service



## Information for patients

Chronic Obstructive Pulmonary Disease  
Service





## **What is non-invasive ventilation (NIV) and how does it work?**

Non Invasive ventilation (NIV) is also referred to as Bi-level Positive Airway Pressure (BIPAP). It is a treatment to help with your breathing. If your breathing becomes difficult and your muscles tire, it can lead to a build-up of carbon dioxide (CO<sub>2</sub>) in your blood. Carbon dioxide can make your blood acidotic which is very dangerous for your body. In addition you may not have enough oxygen in your blood.

NIV is used to support breathing in chronic obstructive pulmonary disease (COPD), infections (e.g. pneumonia), respiratory failure, muscle weakness, chest wall disorders and sometimes if breathing is limited by obesity.

NIV must be worn every night during sleep. It provides support for the lungs through a secure mask fitted carefully over the nose and/or mouth. A strap over your head will hold the mask firmly in place. The mask is attached by a tube to the ventilator (breathing machine). This blows air into the lungs to help you breathe in and out easier, and helps support the muscles which make your lungs work. It doesn't breathe for you, but gently assists each breath that you take. By assisting your breathing, NIV can increase the oxygen levels and decrease the carbon dioxide levels in your blood.

## **What are the benefits of NIV?**

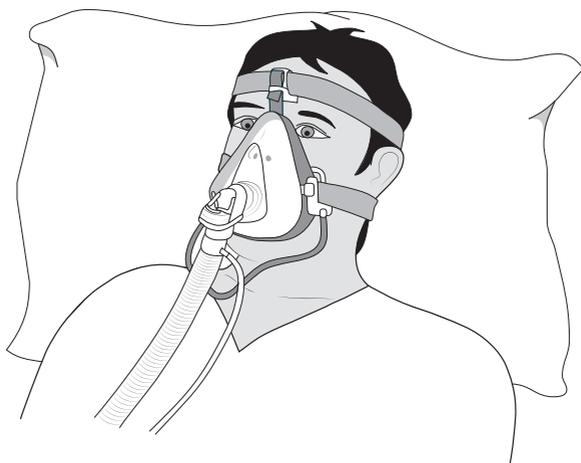
NIV can improve sleep quality leading to better energy and concentration levels during the day. It can reduce the effort of breathing because your chest muscles don't have to work as hard; so it helps you feel less breathless. This could mean you may be able to perform more daily tasks. You may also feel brighter on waking and headache free if this was a problem previously. It can also decrease the likelihood of being re-admitted to hospital.

## How do I get used to the mask?

It may take you a while to get used to wearing the mask at night. The selection of the mask is influenced by face, mouth and nose shape, breathing pattern, nasal physiology and level of comfort. Some people find they don't feel comfortable keeping the mask on all night, as it makes them feel claustrophobic (trapped). Some people need time to get used to the feeling of the mask on their face and to find the best position to sleep in. Some people may also need time to get used to the noise from the NIV machine, although this is soft and rhythmic. However, most people find that they do get used to wearing the mask.

If you are struggling to breath in time with the mask when you turn the machine on at full pressure, the COPD nurses can show you how to use the ramp button. This will start the machine at a much lower pressure and build up to your set pressures. This can help you get used to the sensation of the mask.

If you have been in hospital and have been deprived of sleep for a while, you may find you sleep deeply on the first night at home, as your body catches up with sleep. You may also experience vivid dreams for a few nights. This will stop as your body adjusts to having a normal night's sleep and you get used to wearing the mask.



## **How long do I need to use NIV?**

It is recommended that you use NIV for at least a minimum of 5 hours a night, although use will vary for each person. For some people overnight use is adequate, other people may find benefit from using NIV for periods during the day.

NIV must be worn every night and you will need to wear this for life.

## **Are there any side effects or risks of using NIV?**

NIV can feel a bit strange to start with. However, most people get used to it fairly quickly. Common problems include:

- Air leaks or mask seal problems – a small leak from the bottom of the mask is common and will not affect the performance of the NIV machine. However, a large leak or a leak into the eyes can cause them to become red and sore. You can try gradually tightening the straps, but it can take a number of attempts to find the most comfortable and effective mask for you. Dentures can be a problem as a mask that fits well with dentures in place, may not fit once the dentures are removed at night.
- Soreness on the nasal bridge – soreness on the bridge of the nose is an indication that the mask or straps are too tight, or a poor fit. The mask may need to be refitted or replaced as the soreness can become worse over time. You may also need to wear protective dressings to aid healing and comfort.
- Throat dryness - a dry mouth is very common when using NIV, particularly when the mask covers the mouth. Usually sipping from a glass of water overnight can resolve this, but in severe cases humidification devices can be tried.
- Nasal problems - it is common to suffer from nasal stuffiness, sneezing or a runny nose when you first start NIV treatment. This should settle on its own.

- Trapped wind/ stomach bloating - There is a risk that some of the air being pushed into the lungs may go into your stomach instead. This may be uncomfortable and give you a full or bloated feeling. This could settle with time, however if not the pressure settings may need to be reduced on the NIV machine.
- Pneumothorax (lung collapse) - There is a small risk that the pressure used could cause damage to the lungs. This is very rare and is when air leaks and becomes trapped between the lung and the chest wall. You may get a sudden sharp chest pain followed by pains when your breath in and you may become breathless.  
**You will need to phone 999 to attend A&E if this happens.**

## **Are there any alternatives?**

There are no similar non-invasive alternatives to NIV treatment. It is unlikely that the oxygen and carbon dioxide levels in your blood will return to normal without any form of treatment. Having extra oxygen is not an alternative and in some people will actually make the carbon dioxide levels worse.

## **What is the NIV Support service?**

The NIV Support service seeks to provide support on discharge from hospital for adults with a Sheffield GP, who have been admitted to hospital and commenced on home NIV for their COPD.

The COPD nurses aim to provide 4 home visits which include; the day after discharge, 3 days after discharge, 1 week after discharge and 2 weeks after discharge. Not everyone will require all of the visits and the nurses aim to provide flexibility in the support you require.

## **What should I expect?**

Once discharged from hospital, you will be contacted by telephone by the hospital COPD nurses, to organise a convenient time to visit you that day.

The visit will take about 1 hour depending upon your needs.

### **The COPD specialist nurse will:**

- Do some routine checks of your blood pressure, heart rate, temperature, oxygen saturations and respiration rate.
- Check your medication and inhalers from hospital.
- Discuss your breathing / chest symptoms and general health.
- Assess how much you are able to perform your usual activities.
- Check the set-up of your machine and display settings. Talk to you about maintenance, cleaning, SD card monitoring etc.
- Ask you to demonstrate putting on the mask, adjusting and fitting the mask, turning the NIV machine on and off and how to add in oxygen therapy if you have this.
- Discuss and advise on how to use the NIV during the day, when unwell.
- Identify any problems or concerns you have and can help you access the services you need.
- Liaise with your GP or other health professionals as appropriate.
- Discuss options for pulmonary rehabilitation; stop smoking services and COPD support groups.
- Provide a contact number and emergency readmission number to use whilst under NIV Support service

## **Is there anything to watch out for?**

You will be familiar with your chest symptoms; usually breathlessness, cough and sputum production. If they start to worsen, rather than improve please contact the COPD nurses to inform them and consult your self-management plan.

Admission back to the hospital will always be available in case of an emergency.

## **How long does the service last for?**

The service is very short term and will usually last for 2 weeks in total. This will depend upon your own individual needs and the amount of support required.

## **What happens after the service?**

You will return to the care of your family GP, Practice nurse or Community nursing team. A follow up appointment will have been organised with your consultant in Brearley outpatients and to see an Oxygen Specialist nurse, if you also have oxygen at home.

## **Frequently asked questions**

### **Can I survive a night without my ventilator?**

Most patients can spend 1-2 nights off their NIV machine, however symptoms may worsen. If there is a problem with your NIV machine please contact Pulmonary Function Unit (PFU) on Tel: **0114 271 4784** as soon as possible.

### **Does my NIV need a service?**

Your NIV and equipment will be checked every 6-12 months. The SD card will be downloaded to help us to make changes to your NIV treatment.

The tubing, mask and filters will be checked or changed and if there is a machine problem we may swap your NIV machine. Your NIV machine will be serviced every year. Please bring your NIV machine to these appointments to ensure checks and adjustments can be made if necessary.

### **My ventilator doesn't feel comfortable or gives me a breath at the wrong time. Is this ok?**

If your NIV machine doesn't feel right you should get in touch with PFU the next working day for arrangements to be made to check your NIV machine.

### **Do I need to bring my ventilator in the ambulance if I am admitted to hospital?**

Yes. You must insist that your NIV machine, mask and tubing come with you into hospital. This is very important to let the staff know that you have NIV at home. You will need to use this on the ward whilst an inpatient. If your condition is more severe you may be transferred onto a hospital machine that can deliver bigger pressures, until your condition improves and you can use your own NIV machine again.

## **Should I use my ventilator in the daytime?**

If you want to have a nap in the day or you have a chest infection, it may be good to use your ventilator during the day as well as at night. You won't become dependent on it – but you will gain relief from wearing it.

## **Can I use oxygen whilst on my ventilator?**

If oxygen is required it is important that this is used with your NIV machine. You will have a port attached to the tubing of your NIV machine and will be shown how to attach your oxygen tubing to this. You will be informed of the correct oxygen rate to be used.

## **Why does the machine keep alarming?**

Usually this is because there is too much air leaking from the sides of your mask.

## **I have dropped my ventilator, what should I do?**

If you drop your NIV machine, even if you think that it is working effectively please contact PFU. Our maintenance department may need to check its function and electrical safety as soon as possible.

## **If there is a power cut what should I do?**

Firstly don't worry. Unless you are very reliant on your NIV, you will not suffer any long term harm if you are unable to use your NIV for a few hours or for a night. Speak to your electric company to notify them if you have a power cut.

## **I am going on holiday should I take my ventilator with me?**

Whenever you travel or plan to stay away from home overnight, you should take your NIV with you. Most NIV machines can be used abroad by using a plug adaptor. If you are flying please ensure that your NIV is taken onto the aircraft as hand luggage to ensure it is not damaged or lost.

## **Other sources of information**

### **Pulmonary rehabilitation**

This is a specially designed programme for people with breathing problems, which combines exercise and education to help you become more in control of your breathing.

Contact: Active Programmes Team between 08.30am - 04.30pm

- Tel: 0114 307 8260

### **British Lung Foundation**

The British Lung Foundation exists to provide information and support for everyone living with a lung disease, and for the people who look after them.

- Telephone: 03000 030555
- <http://www.blf.org.uk>

### **Breathe Easy**

This is a support network of the British Lung Foundation. They provide information, support and friendships to all people living with a lung condition, their family, friends and carers.

They meet the second Wednesday of the month, 1.30 - 2.30 pm at:

Graves Health and Sports Centre, Bochum Parkway, Sheffield S8 8JR

- <http://www.blf.org.uk/support-in-your-area/breathe-easy-sheffield-support-group>
- Tel: 0114 2656182
- Email: [rgvscot@aol.com](mailto:rgvscot@aol.com)

## **Stop smoking service**

Yorkshire Smokefree Sheffield, Sorby House, 1st Floor, 42 Spital Hill  
Sheffield S4 7LG

- Tel: 0114 321 6149

## **Contact telephone numbers:**

Brearley Outpatient Department: **0114 226 9800**

Pulmonary Function Unit (PFU): **0114 271 4784**  
**0114 271 4044**

Oxygen Nurses: **0114 226 9175**  
**0114 226 9207**

Hospital COPD Nurses: **0114 226 6388**

**Clinical Lead for the service:** Dr A. Hamad

## NIV Record

		Sign/ Date
IPAP		
EPAP		
BPM		
Ti		
MASK MAKE & MODEL		
MASK SIZE		
HUMIDIFICATION		
LTOT RATE		
AMBULATORY O2 RATE		
Education of the patient: <ul style="list-style-type: none"> <li>• Use of NIV</li> <li>• Mask assembly</li> <li>• Applying mask</li> <li>• Applying oxygen</li> <li>• Cleaning, SD card &amp; maintenance</li> <li>• Self Management plan</li> <li>• Follow up appointment</li> </ul>		

## Oxygen Alert Card

Name: \_\_\_\_\_

**I have a chronic respiratory condition and I am at risk of having a raised carbon dioxide level in my blood during flare-ups of my condition (exacerbations)**

**Please use my \_\_\_\_\_ % Venturi mask to achieve an oxygen saturation of**

**\_\_\_\_\_ % to \_\_\_\_\_ % during exacerbations of my condition**

Use compressed air to drive nebulisers (with nasal oxygen at 2 l/min)

If compressed air is not available, limit oxygen-driven nebulisers to  
6 minutes





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