



Starting acute non-invasive ventilation (NIV)

This leaflet explains why you may need NIV in hospital, how it works and what it may feel like. We hope it will answer questions that you and your relatives may have about this treatment. Please do not hesitate to speak to the doctor, nurse or physiotherapist if you have further questions

What is NIV?

NIV stands for non-invasive ventilation and is a treatment that helps support your breathing. It is used when you are unable to breathe deeply enough or breathe out effectively on your own. Your muscles can become tired, stopping you from breathing so well. As you take smaller breaths, carbon dioxide (one of the waste gases from your lungs) can then start to build up. This can make your blood acidic and cause you to feel unwell, as well as being quite dangerous for your body. In some cases, this can be life threatening. The NIV machine is connected to a tight-fitting mask that sits over the nose and mouth. It supplies additional pressure to help you breathe more effectively. It can help your body to get rid of the excess carbon dioxide and it can also help improve the oxygen level in your blood.

Why might I need NIV?

NIV is a common treatment used mainly for chronic lung conditions, such as chronic obstructive pulmonary disease (COPD), as well as some other conditions when breathing worsens. When your breathing is not working as well as it should, carbon dioxide can build up in your blood. Too much carbon dioxide can make you feel unwell, but some patients may not have any symptoms.

It can cause:

- headaches
- sleepiness
- confusion
- difficulty breathing

Before starting NIV, you may also be started on nebulizers, steroids and antibiotics, if required. The aim of NIV is to reduce these symptoms by reducing the level of carbon dioxide in the blood and increasing the level of oxygen.

How does NIV work?

The NIV machine gently pushes air through a tight-fitting face mask and into your lungs. It gives you extra support when you breathe in and helps you breathe out. We will ask you to breathe as normally as possible and with each breath, the machine will provide air into your lungs at a set pressure. As you breathe out, you will notice a little resistance. This is to help keep your lungs open.

This can help you to:

- Take deeper breaths
- Get more air into your lungs
- Get rid of extra carbon dioxide
- Improve your oxygen levels. Additional oxygen can also be added if required

The treatment can also make you feel less short of breath.

What does the machine and mask look like?

If you would like to try NIV, we will fit a tight mask to your face, over your nose and mouth. It will be held in place with straps around your head. This mask will connect via tubing to the machine. There are different types of masks, so your healthcare team will choose one that fits you well and is comfortable.



Example NIV machine



Examples of NIV masks



Examples of NIV masks

How long will I have to wear the mask for?

When you first start NIV, you may need to wear the mask for most of the day and night. You will usually have short breaks to eat, drink, and take medicines. As you get better, you may be able to have longer breaks from the mask, and most people don't need to go home with NIV. The treatment is most effective when worn for a minimum of 6 hours overnight.

However, in some cases, patients still need their NIV at home when they are asleep, but your respiratory team will discuss this if you need it. Your healthcare team will regularly check how you are by doing blood tests and will advise you on how long you need to use NIV.

Are there any alternatives to NIV?

It is important that we treat your underlying lung condition effectively. Before we start this treatment, we will discuss alternative options with you; however, if despite appropriate medicines you are still struggling to get rid of waste gases (carbon dioxide), NIV is often the best treatment option. NIV can often avoid the need for breathing tube and a ventilator in the Intensive Care Unit (ICU). If after starting NIV, your blood acidity does not improve, you may be reviewed by a member of the ICU team; this type of ventilation is not suitable for everyone. Some patients may prefer not to try NIV, find the mask challenging to wear, or wish to stop treatment after starting. In those circumstances, a referral to the Palliative Care team is usually

required. In this scenario, medications can be used to help with the symptoms of breathlessness.

Is NIV uncomfortable?

NIV can feel strange or uncomfortable at first. The mask needs to fit quite tightly, and you may notice a strong flow of air when the machine is switched on. This can take some time to get used to. We will help you to get used to NIV by starting with gentler settings and adjusting them as you become more comfortable. There are also different types and sizes of masks. We can try a different mask if yours is uncomfortable or does not fit well. Please tell your nurse or doctor if it feels uncomfortable.

Are there any risks or side effects?

Some people have side effects from NIV. These are usually mild and we can often offer solutions to help.

You may experience:

- discomfort from the mask
- redness or soreness on your face
- a dry mouth or nose
- air leaking around the mask
- trapped wind or bloating

Please tell your nurse or doctor if you have any of these problems. We can check your mask and machine settings and try to make you more comfortable.

There is a small risk that the pressure used to give you a deep breath could cause damage to your lungs. In some people, this pressure may cause a small hole (a pneumothorax) in the lung, allowing air to leak out. This would require a tube to be inserted into your chest.

What happens when I am on NIV?

The masks used for non-invasive ventilation are tight fitting. This means that it will be difficult for you to talk, eat and drink. When you are first put on non-invasive ventilation, it is important that you rest and let the non-invasive ventilation help you breathe. It is normal for you to catch up on lost sleep at this stage. Rest will help your body to recover more quickly. You can sleep with the mask on. You will also be monitored, with a finger probe to measure your oxygen levels and a blood pressure cuff to monitor your blood pressure. Other treatments may be given alongside the NIV. Once you start to improve, the nursing staff will remove your mask for short periods of time. This will allow you to eat and drink, and talk to your visitors. You can still communicate with staff while wearing the mask. If you need help or want the mask removed, let a member of staff know.

Where will I be while I am having NIV?

NIV may be started in the Emergency Department (A&E), the Higher Monitoring Unit (HMU), or on the respiratory ward. These are designated areas within the hospital for caring for patients with breathing difficulties.

How will I be monitored while I am on NIV?

You will be closely monitored when NIV is first started. We may take blood tests from your ear or wrist to check your oxygen and carbon dioxide levels and see how well the NIV is working.

Will I need NIV when I go home?

Most people who need NIV because they suddenly become unwell, do not need to use it forever. As you recover, your breathing may improve enough for you to stop NIV. Some people continue to have problems with their breathing and may benefit from using NIV at home, often while they sleep. If we think you may need NIV at home, we will discuss this with you. You will be given more information and support before you leave hospital. If you have needed NIV during a previous hospital stay, you may be more likely to need it again if you become unwell in the future.

Relevant contact details/further information:

- Ask any doctor, nurse or physiotherapist involved in your care
- Dr Sunit Raja (Acute NIV Lead Consultant)
- Respiratory Medicine Team 0118 322 6676
- Asthma + Lung UK: <https://www.asthmaandlung.org.uk/> or Call 0300 222 5800
- Find your local Breathe Easy support group at: <https://www.blf.org.uk/support-for-you/breathe-easy>

How do I make a comment about my visit?

Patient Advice and Liaison Service (PALS) and Complaints exist to engage with patients, relatives and advocates who have complaints, concerns or enquiries. The team always try to resolve patient complaints or concerns promptly and effectively as informal concerns.

Contact PALS on 0118 322 8338 or Rbb-tr.PALS@nhs.net.

How do I make an urgent comment about my visit / care?

The Call 4 Concern (C4C) service has been developed as part of a patient safety initiative to provide patients and families with the facility to call for immediate help if they feel they are not receiving adequate attention.

The Critical Care Outreach (CCO) team is available 24 hours a day, and help support ward teams in the care of patients who are unwell or deteriorating. The team can be contacted directly if the patient and/or their family or carer feel there is an emergency. You can directly access the CCO team via the internal hospital telephone number, Ext. 7053 or by dialling 0777 475 1352.

This leaflet is printed privately for the Chest Fund. It was set up for the purpose of providing respiratory services that would otherwise not be available through National Health Service resources. Our Pleural Suite was largely equipped through the fund and many other areas in the department have also benefited from equipment and staff training.

If you would like to contribute please scan the QR code to donate direct to the fund online, alternatively, cheques should be made payable to:



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Please ask if you need this information in another language or format.

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