Respiratory medicine

Non invasive ventilation (NIV)

Who is the leaflet for? What is its aim?
This leaflet is intended to provide information on NIV for patients who may need to start or have started on treatment. It may also be of use for their relatives and/or carers.

What is NIV?
NIV is a method of assisting your breathing when you are in respiratory failure, usually due to an exacerbation of an underlying respiratory disease.

What is respiratory failure?
Respiratory failure is used to describe a problem with the lungs and breathing. It occurs in two parts:

- not enough oxygen in the blood
- too much waste gas (carbon dioxide) which turns the blood acid and acts like a poison

Too much carbon dioxide can cause a variety of symptoms such as headaches, twitching and drowsiness. If it builds to very high levels it can cause a loss of consciousness.

Poor levels of oxygen can be treated by providing extra oxygen, either by nasal cannulae or a mask. However, if there is a problem with high carbon dioxide levels then treatment by oxygen alone will usually not be enough and NIV is required.

How does NIV help?
NIV uses ‘positive pressure’ to blow a mix of oxygen and air into your lungs via a snugly fitting mask. It reacts to your own rate of breathing, blowing strongly when you take a breath in and then less strongly when you breathe out. It does not stop blowing but alternates between two pressures during breathing. This helps you to take bigger breaths with less effort and helps to rest your tired respiratory muscles. This helps return the balance of oxygen and carbon dioxide gases in the blood to normal.

How do you know if I need NIV?
You will have an arterial blood gas (ABG) test which is a blood test usually taken from your wrist. This is the best way of measuring carbon dioxide levels. If the carbon dioxide levels are high then it may be decided that a NIV should be trialled.
How do I use NIV?

You will usually be fitted with a mask which covers your nose and mouth and is attached by a head strap that keeps the mask in place. Because the machine blows air under pressure (a bit like putting your head out of the window in a moving car) the mask needs to be attached snugly to prevent leaks. A small dressing will be placed on the bridge of your nose to reduce the chances of it becoming sore. Each machine is set up specifically for the patient it is being used on so the amount of oxygen and strength of support you will receive may vary.

If you find either the mask or settings uncomfortable, please tell the nurse looking after you or the NIV specialist physiotherapist. Adjustments can usually be made to the NIV settings to improve comfort and effectiveness.

How long do I need to use NIV for?

For the first 24 hours you will be required to wear the NIV mask for as long as possible. As your condition improves use of the NIV can usually be reduced, through the day at first, and then stopped altogether. This may take a couple of days or a few weeks depending on the severity of your illness and the rate at which you recover. During this time ABG tests will be used to monitor your progress.

Sometimes, after stopping NIV, the respiratory failure may return. If this is the case then the NIV may be restarted. In some cases it may be recommended that you have a NIV machine at home to help prevent further episodes. If so you will be referred to Papworth Hospital’s Respiratory Support and Sleep Centre (RSSC).

We are now a smoke-free site: smoking will not be allowed anywhere on the hospital site. For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Other formats:

If you would like this information in another language, large print or audio, please ask the department where you are being treated, to contact the patient information team: patient.information@addenbrookes.nhs.uk.

Please note: We do not currently hold many leaflets in other languages; written translation requests are funded and agreed by the department who has authored the leaflet.