

Patient information

Non Invasive Ventilation (NIV) Lumis for Home Use

Physiotherapy -Liverpool Sleep and Ventilation Service

What is Non-Invasive Ventilation (NIV)?

NIV is a treatment which may help with your breathing, using a machine and a mask. The aim of this ventilation is to make sure that you get a good deep breath, when your own breathing is not deep enough.

NIV is usually given through a mask over your nose and mouth. When you breathe in, the machine delivers a supported breath to make sure you get enough air and oxygen.

What is it used for?

There are many different reasons why NIV therapy may be needed, including:

- bone problems that make the chest small.
- muscle problems that make taking a deep breath hard.
- being very overweight.
- where the brain does not tell you to breathe.
- lung conditions that cause shallow breathing.

It can also be used alongside other treatments to prevent breathlessness and shallow breathing when you are lying down. Without treatment this may lead to a strain on your heart, or daytime sleepiness.

If you are unsure about the reason why you have been given the machine please ask the doctor or physiotherapist.

Will I be seen by a Doctor, Nurse or Physiotherapist?

The whole medical team is involved in your care. Following an assessment to determine your need for the machine, you will be invited to spend approximately four nights in hospital. During this time, you will have a full explanation about the machine and how to use it. A mask will also be chosen and fitted.

Whilst your ventilator is equipped with a modem, it is **not** routinely monitored. We may use this to access your data if you have a problem or upon review in clinic.

Once discharged from hospital, a member of the NIV team will check your progress with the machine. They will telephone you to discuss this, before you are reviewed as an outpatient by a Chest Medicine doctor.

You will also receive a list of contact numbers so that you can call us.

How do I use it?

The NIV machine you have been given operates from the mains electricity, and must be plugged in **at all times**.

Turning your machine on and off:

To turn the machine on, press the Start/Stop button on top of the machine.

To turn the machine off, press the Start/Stop button on top of the machine.

If you are in 'Confirm Stop' mode, you must then turn the dial to select 'Yes' and press the dial once.

'Power Save' Mode for use when off

Power Save mode uses less power while the machine is plugged in but not being used. To turn Power Save mode on, press and hold the Start/Stop button for three seconds. The screen will go black.

To exit Power Save mode, press the Start/Stop button once and the screen will light up again ready for machine use.

During use of the machine:

Once the machine begins to deliver air, take your time to fit the mask securely.

Ensure you are in a comfortable position to allow sleep.

If the machine is set with a 'ramp' function, the ventilator will slowly come up to your treatment pressures when you start the air flow.

When is it used?

Once established the machine must be worn each night for approximately six hours or more. If you regularly have a daytime nap, the machine may be worn at this time.

Can I use oxygen with the machine?

Yes: This will be discussed with you at your assessment.

What equipment will I be given?

- Ventilator
- Mask
- Tubing

- Filters
- Exhalation valve (this gets rid of carbon dioxide as you breathe out, we will point this out to you).
- Oxygen connector (if required).
- Humidifier (if required).

Masks

There are many different types and sizes of masks available.

During your first assessment for mask ventilation you will be measured for an appropriate mask.

Once discharged from hospital with your equipment it is important to take care of your mask.

It is best to wash your mask every two -three days in warm soapy water, and hand wash the headgear weekly.

Nasal mask



Nasal pillows



Full face mask



Oronasal mask



Total face mask



Magnetic mask fastenings

Please be aware that masks with magnetic fastenings are contraindicated in anyone with medical implants that interact with magnets (such as pacemakers) or metallic implants (such as stents and valves).

If you have any concerns or would like to see the full list of contraindications for magnetic mask fastenings, please speak to your clinician or contact the ventilation team via the contact numbers provided.

Mask Fit Test

You can check how well the mask is fitting with the Mask Fit test. This test can be done when you first put the mask on before each use. Fit the mask to your face before running the test below.

Press the 'home' button to access the home screen of the machine. You will see a box labelled 'My Options'.

Select 'My Options' by turning the dial until this is highlighted, then press the dial. You will see an option called 'Run Mask Fit': turn the dial to highlight 'Run Mask Fit', and press the dial once again.

The machine will begin to blow air. Adjust the mask seal and straps until the screen displays the fit is 'good'.

To stop the mask fit test, press Start/Stop.

Please ensure that you start your ventilation treatment after this test.

To do this, press the home button at the bottom of the machine, then the Start/Stop button

Information about my equipment

Ventilator:

It is important that your machine is placed on a firm, flat surface and it should be kept clean and dust-free.

If you use a humidifier with your ventilator it is important that the ventilator is kept on a level surface to prevent water spillage.

Filters:

At the side of your machine is an air filter cover, which hinges downwards to open. Check the air filter and replace it every six months.

The air filter may need to be replaced sooner if blocked or punctured.



If you are not using a humidifier, a round white bacterial filter attaches to the back of your machine. This must be thrown away and replaced monthly.



Oxygen

The ventilator delivers pressurised air. Oxygen can be added using an oxygen concentrator machine, and oxygen tubing.

Oxygen Connections:

Oxygen can be connected to the Lumis ventilator in two ways:

Standard Tubing

You will have a green plastic connector, and your oxygen tubing fits onto this (see picture below).

The oxygen connector fits onto your standard grey ventilator tubing.



Climate Line Oxygen Tubing

If you are using Climate Line tubing, you will not have a bacterial filter. The oxygen tubing fits onto the Climate Line tubing.

Make sure the cap is taken off the oxygen connector point, as in the picture below.



For all NIV and oxygen users:

1. Turn the ventilator on before turning the oxygen on.
2. Turn the oxygen off before turning the ventilator off.
3. Do not leave oxygen running when the ventilator is off.

If you are being discharged home with oxygen please ensure that you know how many hours per day you should be wearing your oxygen.

Tubing:

You may have standard or Climate Line tubing.

Please wash either type of tubing in warm soapy water every week, and ensure the tubing is dry before reconnecting to the ventilator.

Standard tubing:

Take the tubing off for cleaning by holding it at the cuff and pulling it away.

Climate Line tubing:

To remove the Climate Line tubing, squeeze the release buttons on the top and bottom of the tubing cuff. The tubing may then be pulled off the machine.

To reconnect the Climate Line to the ventilator, line up the tubing connector with the connector port. The tubing clicks into place.

Exhalation valve:

This is a vital part of the circuit set up. This will be pointed out to you when the machine is set up.

On NO account must this exhalation valve be covered or blocked.

Headgear:

Please wash your headgear once a week. It is also important that you do not over tighten the headgear.

Over-tightening the mask is tight doesn't necessarily mean it will work any better.

If you are having problems, just let us know and we will check your mask.

Preventing pressure sores:

If you need further pressure care advice, please ask for our leaflet 'Preventing Pressure Sores whilst using NIV Masks'.

Humidification

What is humidification?

Some patients who use the NIV machine can develop a very dry sensation in their nose and mouth whilst using the machine.

If you develop symptoms of dryness please contact the Physiotherapist who can arrange for you to have an additional piece of equipment, called a humidifier, which may help you to overcome this.

A humidifier adds moisture to the air that you breathe, and fits into the side of your machine. Clean, cold tap water must be used each day.

The humidifier chamber must be removed, opened and filled to the water level mark. It may then be closed and inserted into the machine for use.

Removing the humidifier chamber

To remove the humidifier chamber, hold it at top and bottom and press gently. The chamber may then be pulled out.

The chamber must be opened and emptied daily, and wiped with a disposable cloth. It must be washed weekly with warm soapy water. After washing, the chamber should air dry.

The chamber may also be opened and washed in a dishwasher on the delicate or glassware cycle (less than 65°C).

Adjusting the Humidity Level

You can adjust the humidity level for comfort. Press the 'home' button to access the home screen of the machine. You will see a box labelled 'My Options'.

Select 'My Options' by turning the dial until this is highlighted then press the dial.

You will see an option called 'Humidity Level': turn the dial to highlight 'Humidity Level', and press the dial once again.

Turn the dial to adjust the humidity level, and press the dial again to accept this. The levels are one to eight, where one is the lowest (coolest and driest) and eight is the highest (warmest and wettest).

Please ensure that you start your ventilation treatment afterwards. To do this, press the home button at the bottom of the machine, then the Start/Stop button.

How long will my accessories last?

- Air filter: replace every six months.
- Bacterial filter (if used): replace monthly.
- Masks: most masks are designed to last a year.
- We may advise you to replace the cushion and head straps more frequently, where applicable.
- Tubing: replace if worn or split.
- Oxygen connector: replace if breaks.
- Humidifier chamber: replace if broken, or if it becomes unable to be cleaned.

Feeling Unwell?

If you are feeling unwell and need medical advice please contact your own G.P. who will be able to assess and advise you.

If you are taken acutely unwell and require admission to hospital please take your ventilator and this booklet with you.

Vomiting or Nausea/Sickness

If you use a mask which covers your mouth, there is a risk of aspiration if you vomit (vomit going into your lungs).

This risk is higher if you vomit regularly or without warning. In most cases we will try to reduce this risk by using a nose mask, but this is not always possible.

If you use a mask which covers your mouth and are unable to remove the mask yourself, we will discuss having a second person in the room with you that can assist.

You may prefer not to have someone that can immediately help, and in that case it is important that you understand and accept the risk that this poses.

It is important to understand that there have been incidents where people have died due to this happening.

We will discuss this with you when the ventilator is issued, and during outpatient clinics. Please contact us if you have any concerns at any time, or if your health or your ability to remove the mask changes.

Power Failure

Your machine runs off mains power. If there is a risk of your electricity supply being disrupted please let us know; this may be due to power cut, or personal supply e.g. you are on a meter. This could pose a serious risk to your health.

It would be advisable to contact your electricity supplier to arrange a priority supply. This means they are aware you have a ventilator and in the event of a power cut they will restore power to your home as a priority.

If you lose power to your ventilator an alarm will sound to warn you. If you do not remove the mask and tubing there is a risk you will suffocate. If you are unlikely to hear the alarm please discuss how this will be managed with your clinician.

Travelling abroad with your Non-Invasive Ventilator

Most machines can be used abroad if using a plug adaptor. You must carry your machine as hand luggage.

If you are unsure about travelling please contact the physiotherapists for advice. A leaflet may be supplied called 'Travelling with your Ventilator' if required.

Equipment and Machine settings

Ventilator

Model:

Serial no.

Humidifier: Yes / No

Model:

Serial no.

Machine settings:

| | |
|------------------|--|
| Date | |
| IPAP | |
| EPAP | |
| BPM | |
| Mode | |
| TV | |
| Ti | |
| Rise Time | |
| Oxygen | |
| Alarms | |

Feedback

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

Further information

Physiotherapy Ventilation Team

For any queries/advice about the machine, e.g., if you are unsure about the use of your machine or masks, please contact one of the physiotherapists at Aintree Hospital.

Telephone Hospital Switchboard on 0151 525 5980 and ask for Bleep 3334

Available: Mon – Fri, 9 am - 4 pm.

Please be aware that we are working on the ward, and we will answer your call as soon we can. Please stay on the line until we respond.

Machine Maintenance and repair

For a breakdown or fault with the machine, please contact an engineer at Deva Medical on:

Office hours: 01928 565 836

Out of Hours Emergency Number: 0772 088 3276

Your ventilator should be serviced yearly by Deva Medical. They will contact you when the service is due, to arrange a convenient time to visit your home and carry out the service.

For replacement equipment:

Please do not telephone for replacement equipment. This must be requested by letter or email sleep.lab@liverpoolft.nhs.uk ensuring you state exactly the equipment you require.

Address:

**The Sleep Laboratory
6th Floor Aintree Hospital
Longmoor Lane
Liverpool
L9 7AL**

Please ensure that you have a spare mask, filters and tubing at all times in case of accidental breakage or wear and tear at all times. Please also allow at least two weeks for the postal delivery of requested equipment.

For Out of Hours Advice Only

You may contact Ward 6 Ventilation Inpatient Centre for urgent advice only on

Tel:0151 529 3602

Text phone number: 18001 0151 5293602

Author: Ventilation Inpatient Centre Therapy Team

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All Trust approved information is available on request in alternative formats, including other languages, easy read, large print, audio, Braille, moon and electronically.

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