

## **Information for Patients using Non Invasive Ventilation (NIV)**

### **The Gwent Sleep & Ventilation Centre Aneurin Bevan University Health Board**

#### **How does NIV work?**

People receiving NIV need to wear a cushioned mask which is connected to an air pump machine. This mask either fits over your nose alone, or over both the nose and mouth; a strap holds the mask firmly in place but it can be easily removed, to enable you to eat and drink for example.

With NIV, a slightly pressurised airflow is blown into the mask while you breathe; the strength of the pressure varies during the breathing cycle. The airflow is strongest when you breathe in, to help you take in as much air as possible. Airflow pressure is lower when you breathe out.

This continual positive pressure helps to 'splint' the airways open, enabling more air to get in and out of the lungs. This treatment is known as BIPAP / NIV.

#### **How does it help?**

When we breathe in, we take oxygen out of the air to keep us alive - this oxygen is transferred to our blood in our lungs. The body then uses the oxygen and produces a waste gas called carbon dioxide, which we breathe out.

Some people with severe lung disease have problems getting sufficient oxygen in to the body. If their oxygen level drops below a certain level, it is relatively easy to give extra oxygen for them to breathe. However, in some conditions, the extra effort of trying to keep the oxygen up in the blood results in the person tiring. They may also have the additional problem that they are not expelling carbon dioxide from the blood efficiently.

This is more difficult to deal with. It is a particular problem with diseases that cause obstruction to our airways, such as chronic obstructive pulmonary disease (COPD). Because the airways are narrowed, it is harder to get oxygen into the lungs and carbon dioxide out.

The aim of using NIV is to increase your oxygen level and particularly to help you breathe out more carbon dioxide. It also takes some of the effort out of breathing because your chest muscles don't have to work as hard; so it helps to ease the feelings of breathlessness.

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

It is recommended that you use NIV for at least 6 hours a night, although use varies for each individual. For some the overnight use is adequate, other people may find benefit from using NIV for periods during the day, particularly if sleeping.

## **How should I fit the mask?**

The mask should be comfortable for continued overnight use. It is important that the head straps are not too tight as this can cause the skin to develop sores. The mask should provide a snug fit, with no air leaks. When taking the mask off and on always undo the straps, as the headgear will not retain its shape if continually stretched.

## **What can I do to make the treatment more comfortable?**

If your mask is causing friction, discomfort may be relieved by applying KY gel to the affected areas. Sometimes a small pad of soft material may help to reduce pressure, as long as skin is intact. If problems persist contact the Nurse Specialist.

Occasionally you may feel bloated as a result of swallowing air; this can be alleviated by eating at least 2 hours before applying NIV.

## **How do I know if the treatment is not working properly?**

If your condition appears to be worsening, or if you experience any of the following, you should contact the Sleep Centre or your GP.

- Headaches on waking
- Increasing shortness of breath
- Unusual snoring
- Excessive sleep during the day

## **What if I am ill?**

If you notice that your breathing is more difficult over a gradual period, it may be that your treatment needs adjustment in which case you should contact the Nurse Specialist. However, if you feel your symptoms have worsened, or you may have a chest infection with a change sputum it is advisable to visit your GP.

If you need urgent medical help call 999, and ensure the ambulance crew are aware that you use NIV, and oxygen (if applicable).

**IF YOU ARE BEING ADMITTED TO HOSPITAL, IT IS ESSENTIAL THAT YOU BRING ALL YOUR EQUIPMENT INTO HOSPITAL WITH YOU.**

## **Unapproved cleaning methods**

Do not clean, disinfect or sanitize your NIV machine or accessories using either an Ozone related cleaning product or Ultraviolet light. These are not legally marketed

for use and their safety and effectiveness is unknown. Approved cleaning methods are as detailed below.

### **How do I clean the equipment?**

Before cleaning unplug the NIV machine. You should only use a mild detergent for cleaning such as washing up liquid. Do not use bleach or other cleaning products. Inspect the device and electric cable for damage.

Do not use if there is a fault, you should contact the Nurse Specialist.

### **DAILY**

The machine should be wiped with a damp cloth, the mask wiped inside and out.

### **WEEKLY**

The air tubing can be washed and rinsed with clear water then hung to dry.

The mask should be dismantled, washed and rinsed and left to dry naturally away from heat.

If you have a reusable filter this should be washed in mild detergent every 2 weeks, and replaced with a dry filter.

If you have disposable filters these will need to be replaced every 3-6 months.

### **The Outpatient Service is held in the Chest Clinic, St Woolos Hospital**

#### **Contact Numbers**

**Consultants** Dr Sara Fairbairn

**Secretary** Alan Dack - Tel. No: - 01633 - 238201

#### **Clinical Nurse Specialists**

Jeanette Richards/Laura Ryan – Tel. No: - 01633 – 656321- **CPAP**

Sam Jones - Tel. No: - 01633 – 656355 **NIV**

Amy Badham – Tel No: - 01633 656355 **NIV**

#### **Chest Clinic Sister**

Claire Acreman- Tel. No: - 01633 - 238186

For appointments contact the Booking Centre on: -  
Tel. No:- 01495 - 765055 (option 1 then option 4)

Mask/hose replacements can be obtained from Clinic Nurses, Chest Clinic, St Woolos Hospital, Tel. No:- **01633 238186**.

If your machine develops a fault or you are concerned regarding your treatment, contact the Nurse Specialist, Chest Clinic St Woolos

If you require replacement equipment, contact clinic nurses.

**PLEASE BRING ALL EQUIPMENT WITH YOU TO EVERY CLINIC APPOINTMENT MAKING SURE THAT IT HAS BEEN THOROUGHLY CLEANED.**

| Action Taken and Comments   | Date & Signature    |                  |
|---|---------------------|------------------|
| <u>Education of patient</u><br>Use of NIV<br>Cleaning<br>Mask assembly<br>Applying mask<br>Adding O <sub>2</sub><br>Info booklet<br>Contact numbers | <b>Demonstrated</b> | <b>Competent</b> |
| <u>Education of carers</u><br>Use of NIV<br>Cleaning<br>Mask assembly<br>Applying mask<br>Adding O <sub>2</sub><br>Info booklet<br>Contact numbers  | <b>Demonstrated</b> | <b>Competent</b> |
| OPD   |                     |                  |
| Abg/cbg<br>pre discharge<br>O <sub>2</sub> percentage<br>O <sub>2</sub> Organised rate  |                     |                  |

|                                    |   |  |
|------------------------------------|---|--|
| <b>Spirometry</b><br>pre discharge | Predicted FEV <sub>1</sub> FVC<br>Actual FEV <sub>1</sub> FVC<br>percentage predicted |  |
| TTH                                |   |  |
| Contact power supplier             |   |  |

**Please show this alert card at all times to  
Ambulance crew and hospital staff**



**OXYGEN ALERT CARD**

**Name:** .....

I am at risk of type 11 respiratory failure with a raised CO2 level,  
please use my    % Venturi mask to achieve an  
oxygen saturation of    %                    % during exacerbations

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

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

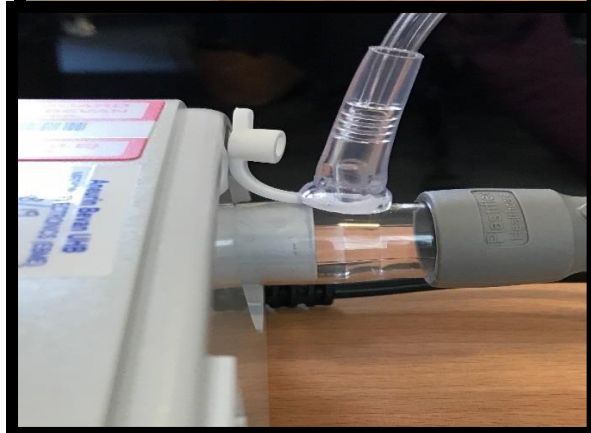
## Adding Oxygen Therapy



When oxygen is required you will see an additional port attached between the machine and tubing



To add oxygen remove cap as pictured



Attach oxygen tubing to port as shown

Leaflet produced by: Lyndsey Ward Respiratory ANP  
Sam Jones Respiratory Nurse Specialist NIV

**"This document is available in Welsh /  
Mae'r ddogfen hon ar gael yn Gymraeg".**