

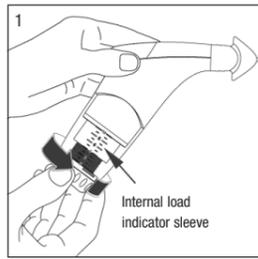


## Getting used to your Medic Plus

### Diagram 1: Adjusting the Medic Plus

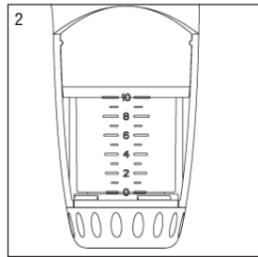
Remove the Medic Plus and nose-clip from the packaging. Holding the Medic Plus upright, practise adjusting the training load: Rotate the load adjustment knob clockwise to increase the training load; rotate the load adjustment knob anticlockwise to reduce the training load.

Notice that a numbered scale is visible on the side of the Medic Plus. As the load adjustment knob is rotated, the internal load-indicator sleeve will move up or down, indicating your current training load on this scale.



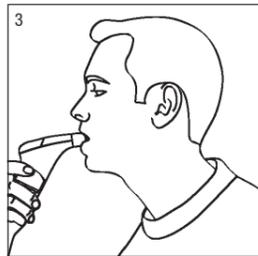
### Diagram 2: Load 0

Now set the Medic Plus to load 0. At this load the base of the internal white sleeve should be aligned with the lowest load on the scale, as shown in the diagram. **Note: Do not attempt to reduce the load below 0 as this may damage the adjustment thread.**



### Diagram 3: Placing the Medic Plus in your mouth.

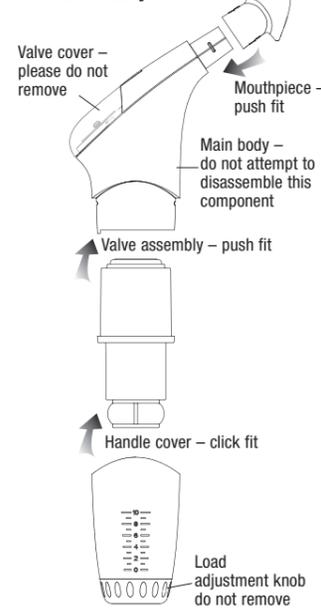
Make sure you are sitting or standing upright and feel relaxed. Holding the Medic Plus by the handle, place the mouthpiece in your mouth so that your lips cover the outer shield to make a seal, and the mouthpiece bite blocks are gripped between your upper and lower teeth.



6

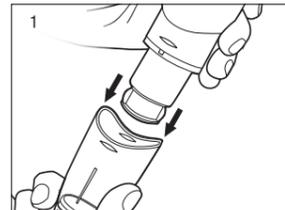
## Medic Plus assembly

### General Assembly

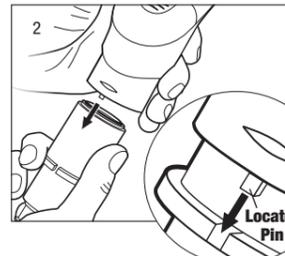


**If you need to train below load setting "0" remove valve assembly and/or spring as shown below:**

**Diagram 1:** Gently pull to remove handle cover. (When re-assembling handle cover a gentle twist may be required to locate the valve assembly into the load adjustment knob.)



**Diagram 2:** Gently pull to remove valve assembly. **Do Not Twist** main body or valve assembly as it is possible to damage the locator pin indicated below. To re-assemble, line up the locator pin with the slot and relocate.



**Note:** Whilst the POWERbreathe Medic Plus can be disassembled further into its component parts (with the exception of the main body) – **This is not recommended** as small parts can easily be misplaced. However, if your condition means that you need to start at the absolute lowest load then you will need to follow instructions as shown within diagrams 1 to 6.

10

## Getting used to your Medic Plus

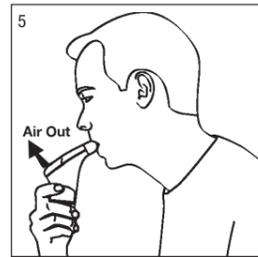
### Diagram 4: Inhaling through the Medic Plus.

Breathe out as far as you can then take a fast, forceful breath in through the mouth. Take in as much air as you can, as quickly as you can, straightening your back and expanding your chest.



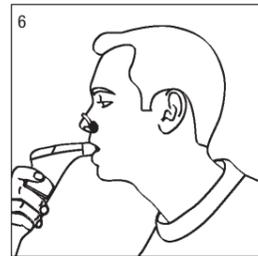
### Diagram 5: Exhaling through the Medic Plus.

Now breathe out slowly and passively through your mouth until your lungs are empty, letting the muscles in your chest and shoulders relax. Pause until you feel the urge to breathe again. Repeat this exercise until you feel confident about breathing through the Medic Plus. **Note: do not pant – if you start to feel light-headed, slow down and pause at the end of your breath out.**



### Diagram 6: Using the nose-clip.

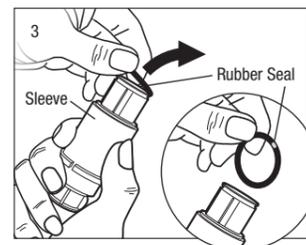
Now put the nose-clip on so that it pushes your nostrils together, as shown in the diagram. Continue to practise taking a forceful breath in then breathing out slowly and fully. Note: the nose-clip will help you to breathe through your mouth rather than your nose. However, it is not essential and some people find it more comfortable to train without the nose-clip.



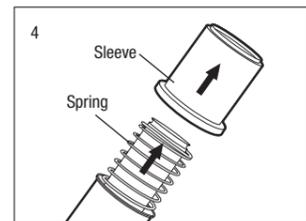
7

## Medic Plus assembly

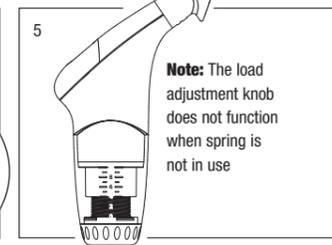
**Diagram 3:** To remove the calibrated spring from the valve assembly gently peel back and remove the rubber seal.



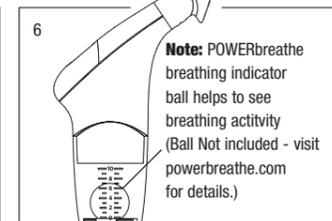
**Diagram 4:** Carefully remove the sleeve and then remove the spring. Then replace the sleeve **before** re-fitting the rubber seal.



**Diagram 5:** Shows Medic Plus re-assembled with the valve assembly in place but without the calibrated spring.



**Diagram 6:** Shows the Medic Plus re-assembled but without the complete valve assembly and with the POWERbreathe breathing indicator ball.



**IMPORTANT**  
Please keep all the POWERbreathe Medic Plus components not being used in a safe place, for use later on and for warranty purposes.

11

## Training with Medic Plus

### Guidance for patients

Please follow the instructions below unless instructed to do otherwise by your doctor. Before commencing the exercises, please ensure that you have read the precautions section on page 4 of this manual.

### Finding your correct training load:

The recommended POWERbreathe RMT routine is 30 breaths twice a day.\* In order to get the most from the training, these exercises should be completed at a load that is as hard as possible, without causing discomfort.

For the first day of training, set your Medic Plus to load 0 (see Diagram 1 - "Getting used to your Medic Plus").

Some individuals may find the exercises very challenging at this load. If you find you are unable to complete 30 breaths at this load, take a short rest then start again until you have accumulated a total of 30 breaths.

If you found it difficult to complete 30 breaths at load 0, continue to train at this load twice a day for the first week.

If you found you could easily complete 30 breaths at load 0, the next day you should set your Medic Plus to load 1. Complete the exercises again. By this method, continue to increase the training load by 1 setting each day, until you are only just able to complete 30 breaths of training. Once you have reached this point, continue to train at this load twice a day for one week.

After one week of training with the Medic Plus at the same load, increase the training load by half a turn. Continue to train at this load for a further week. From this point onwards you should aim to increase the load by half a turn each week.

**For an example of a typical training diary and to download/print blank diary pages, to keep a record of your progress visit: [powerbreathe.com](http://powerbreathe.com)**

*\* The 30 breath twice daily training regimen is a high intensity training regimen that has been found to be very effective in people who train to improve their general fitness (Romer & McConnell, 2003). Though more intense, this regimen has the great advantage of being much shorter than the more traditional "Low intensity training" regimens that have been used in clinical studies. Recent evidence suggests that the benefits of low and high intensity training are similar (Gosselink et al, 2010), so we recommend the regimen that is least time consuming. However, if you are experiencing difficulties with the high intensity training, please refer to the section on "Low intensity training" on the following page.*

8

## Guidance for healthcare professionals

**Contraindications:** Please read the precautions section on page 4 of this manual in order to assess a patient's suitability for respiratory muscle training (RMT).

Patients should be instructed in the proper use of the POWERbreathe Medic Plus RMT before commencing training. Please familiarise yourself with the operation of the device prior to assisting a patient in its correct use referring to the sections "Getting used to your Medic Plus" and "Training with Medic Plus - Guidance for Patients". Guidance on training with Medic Plus is based on information published in the European Respiratory Society's 'Breathe' journal (McConnell et al, Inspiratory muscle training in obstructive lung disease; how to implement and what to expect. September. vol 2(1), pp39-49, 2005). Visit our website to download the full article.

**Note:** Some patients may be unable or unwilling to use the mouthpiece. In this case, the Medic Plus mouthpiece may be replaced with a facemask attached to a Medic Plus spacer, to allow training.

**Setting the training load:** Clinical research indicates that inspiratory muscle training (IMT) loads must exceed 30% of the patient's maximal inspiratory muscle strength in order to be effective. There is also evidence that heavier loads yield greater improvements in inspiratory muscle strength.

If you have access to a means of measuring inspiratory muscle strength such as a POWERbreathe KH1 or KH2 device, you may set the initial training load to 30-40% of Maximal Inspiratory Pressure (MIP) using the conversion table on pg16. The training load should then be increased by half a turn each day for the next 7-10 days up to 60% of baseline MIP.

The patient should train at this load for 1 week. Thereafter, the training load should be increased weekly to maintain the training load at approximately 60% of the patient's new inspiratory muscle strength.

**Note:** at 60% MIP training will be strenuous and it may take some time before the patient is able to complete 30 breaths without taking a break.

## Training with Medic Plus

### Achieving good training technique:

When you inhale through your Medic Plus, you should breathe in as deeply and as quickly as possible. When you exhale, breathe out slowly and gently until your lungs are completely empty. Try to squeeze out as much air as possible towards the end of the breath to ensure your lungs are completely empty. Pause until you feel the urge to breathe in again before inhaling again (Approx 3-4 secs).

You will notice that it becomes harder to completely fill your lungs as you continue to breathe during a training session. This is because your breathing muscles are becoming tired. If you can no longer take a satisfying breath, take a short break before continuing your training. If you find you are unable to complete a breath early in your training session, the load may be set too high. In this case, simply decrease the training load by half a turn, then continue your training session. **Note:** Training should feel challenging. At the end of the 30 breaths training, you should aim to feel as if you cannot continue further.

If you feel out of breath, light-headed or you need to cough, take a short break. As soon as you have recovered, continue the training session until you have completed a total of 30 breaths. If you miss a training session, simply complete the session as soon as possible. If you miss it by more than

12 hours, ignore the missed session and carry on with your next training session as normal.

### Maintaining your breathing:

After 4-6 weeks your breathing muscles should have improved substantially and you should feel less breathless during activity. At this stage you will not need to use your Medic Plus every day to maintain your improved breathing. Training with your Medic Plus just 3 times a week should be sufficient to continue to enjoy a better lifestyle.

**"Low intensity training"** – If you are experiencing difficulties with the training, you may wish to progress to a less intense, longer training regimen that has proven very effective for people who suffer from respiratory conditions. If so, you could consider trying the 15 minutes continuous breathing on a low load setting (consult your medical practitioner if in doubt).

**If the lowest load setting "0" is too heavy for you to start with, then POWERbreathe Medic Plus allows you to train without using the calibrated load spring or the complete valve assembly to train at the absolute lowest load. See pages 10 - 11, diagrams 1 - 6.**

9

## Guidance for healthcare professionals

### Teaching good training technique:

The first few days are the most challenging for the patient who will require careful and sensitive coaching, including the allowance of short breaks. They should be encouraged to tolerate the breathless sensation induced by training, and to increase the training load progressively. Typically, increases in load of 5-10% per week can be achieved.

It is advisable to encourage patients to train across the full extent of their vital capacity in order to train the full range of motion of the inspiratory muscles. As the patient's inspiratory muscles fatigue, they may find it hard to achieve higher lung volumes towards the end of inspiration. At these higher lung volumes the inspiratory muscles are weakest and will be most prone to the effects of fatigue. Patients should be warned to expect this and should be discouraged from training beyond the point where they are able to achieve a 'satisfying breath'.

Patients should also be encouraged to inhale against the load as rapidly as possible in order to maximally recruit their inspiratory muscles. Patients should breathe with a combination of diaphragmatic and chest wall movement in order to utilise all of their inspiratory muscles during training. Patients may require breaks during a training session in order to cough, or because they feel too breathless. It is

important that the duration of these is minimised in order to maintain the training stimulus, but this too must be handled sensitively, and supported by an explanation of why it is important to minimise the duration of these enforced 'rest' periods.

### Maintenance training:

After 4-6 weeks of training, the patient's inspiratory muscles should have improved substantially and they should feel less breathless during exercise. At this stage it is not necessary to train with Medic Plus every day in order to maintain improved breathing. Training with Medic Plus three times a week will be sufficient to maintain the training effects.

### POWERbreathe Medic Plus - Accessories

A range of accessories to help patients/users with special needs are available, for example:

- Spacer
- Oxygen Mask Adapter
- Masks
- POWERbreathe Filters

For more information please visit: [powerbreathe.com](http://powerbreathe.com)

13