

Respiratory care for you and your patients

Smart Breathing Training since 1997



POWERbreathe Respiratory Muscle Training - The Drug Free Solution

POWERbreathe is a Class 1 Medical Device. It is a pressure threshold loading device that is drug-free, has no side-effects or drug interactions and is clinically proven and beneficial for the following medical conditions.

COPD

The most up to date systematic review on Respiratory Muscle Training from 2011:-

Impact of inspiratory muscle training in patients with COPD: what is the evidence?

R. Gosselink, J. De Vos S.P. van den Heuvel, J. Segers, M. Decramer, G. Kwakkel

"IMT improves inspiratory muscle strength and endurance, functional exercise capacity, dyspnoea and quality of life. Inspiratory muscle endurance training was shown to be less effective than respiratory muscle strength training. In patients with inspiratory muscle weakness, the addition of IMT to a general exercise training program improved P_{I,max} and tended to improve exercise performance".

POWERbreathe IMT has been widely used in patients with COPD as a standalone therapy or for pulmonary rehabilitation.

In randomised controlled trials, IMT has also been shown to deliver:

- Improvements in quality of life by 21% (Beckerman et al 2005)
- Improvements in dyspnoea by 36% (Beckerman et al 2005)
- Reduction in primary care consultations by 23% (Beckerman et al 2005)
- POWERbreathe training is 10 times more effective than oxitropium bromide for improving exercise tolerance and quality of life in patients with COPD (Oga et al., 2000; Beckerman et al., 2005).

Heart Failure

POWERbreathe IMT is clinically proven and beneficial for patients with heart failure and heart disease as a standalone therapy or for cardiac rehabilitation.

In patients with chronic heart failure, IMT has been shown to:

- Improve exercise tolerance by 19% (Laotaris et al 2004 and Dall'Ago et al 2006)
- Improve quality of life by 16% (Laotaris et al 2004 and Dall'Ago et al 2006)

Because the cardiovascular strain of POWERbreathe training is very low, it is suitable for even the most physically compromised patients, and is particularly helpful in patients who are too ill for rehabilitation.

Asthma

POWERbreathe IMT is clinically proven and beneficial for patients with asthma to help reduce inhaled therapies, for exercise induced asthma and for improvements in exercise.

Laboratory studies found:

- Asthma symptoms improved with IMT by up to 75% in 3 weeks (McConnell et al 1998)
- Patients with asthma experienced improvement of symptoms, quality of life and a reduction in the consumption of medication of up to 79% (Weiner et al 1992)

POWERbreathe for other conditions where dyspnoea is present

Because POWERbreathe IMT influences dyspnoea directly at a cortical level, it is also helpful in managing other conditions where dyspnoea is present, including:

- Elderly people
- Neuromuscular disease
- Parkinson's disease
- Prio-polio
- Spinal cord injury
- Sleep apnoea
- Exercise-induced paradoxical vocal chord dysfunction (VCD)



Drug free, evidence based and clinically proven

Visit: powerbreathe.com for research references

**POWERbreathe
Medic
Available
through the NHS
PIP Code:
232-1040**



How POWERbreathe Respiratory Muscle Training works

In much the same way as you might use weights to increase arm muscle strength, POWERbreathe strengthens lung muscles by creating a resistance against the in-breath.

Training in this way means that even patients who cannot walk can increase the strength of their lung muscles, improving general breathing during periods of recovery and improving QoL in patients with the symptoms of diseases such as COPD, asthma and cystic fibrosis.

The theory behind the different models is the same.

All models use the principles of pressure threshold training. Mechanical models use a resistance calibrated spring. The valve is only released when the patient creates enough pressure to open the valve at the pre-set pressure.

KH-Series models use an electronic variable pressure threshold valve.

The more resistance, the harder the muscles work but it is important to maintain full volume, diaphragmatic breaths before gradually increasing the level of resistance.

With nearly 20 years of research and the POWERbreathe being used by health practitioners and Sports and Fitness Professionals alike, the exceptional results have made POWERbreathe the Gold Standard in RMT.

The POWERbreathe Medic is available for prescription through the NHS if on the local formulary.

- Drug Free, Class 1 Medical Device - no side effects or drug interactions
- Simple and easy to use
- Various protocols depending on patient type. 30 breaths, twice a day at 40% of MIP being standard
- Increase in quality of life



Can be implemented as either a standalone intervention or as part of a rehabilitation programme



POWERbreathe KH-Series, the world’s most advanced intelligent breathing improvement training system.

Originating from the same breathing training concept as the mechanical series, the innovative POWERbreathe KH-Series delivers a superior breathing training experience. The KH-Series has been designed specifically for use by healthcare professionals for inspiratory muscle training and assessment in patients with dyspnoea, including patients with asthma, COPD, bronchitis, cystic fibrosis, emphysema, heart disease, neuromuscular disease and Parkinson’s disease.

The POWERbreathe KH-Series is also suitable for use with disposable filters and can be used bedside, on the ward or for single patient use at home under medical supervision.

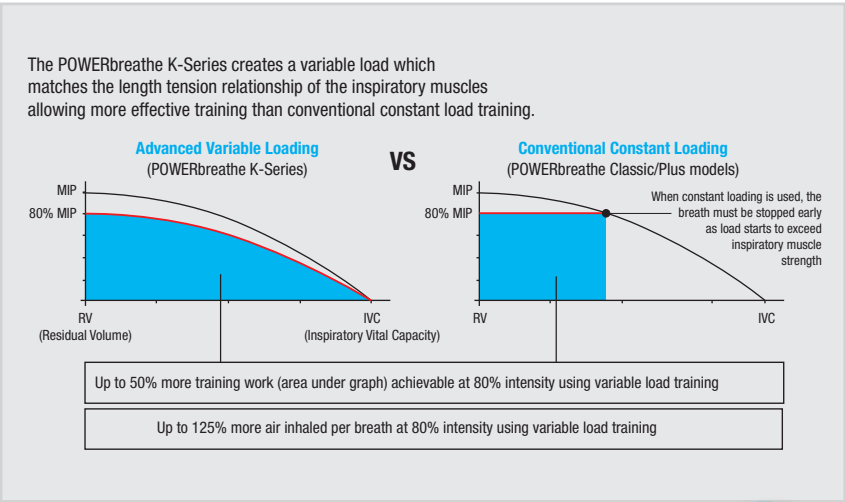
When breathing in the lung muscles start to lose strength. The POWERbreathe Plus and Classic models are set at a single and adjustable resistance which means the user will not be able to breathe past a certain point. This leaves a significant proportion of each breath wasted (see chart). To overcome this limitation, the intelligent KH-Series reduces the resistance towards the end of the in-breath allowing the lung muscles to be exercised throughout the entire breath.

Modifications and technological advances applied to the KH-Series offer:

- Electronic Variable Resistance
- A wide range of testing capabilities including MIP and PIF Test Functions
- Multi User Option
- KH2 Breathe-Link Medic live feedback software
- There are patient dedicated and healthcare professional dedicated models available in the KH Series (see pages 16 & 17)

“We have achieved fantastic results by using this device as the step between breathing retraining and formal pulmonary rehabilitation.”

Kate Martin
Therapy Team Lead / Clinical Specialist
BreathingSpace



Major 6 Nation Multi-Centre COPD study concludes that POWERbreathe KH-Series performance matches “Gold Standard” clinical laboratory system. (PubMed - PMID: 23421970)

The ultimate device for testing, monitoring and analysing any Respiratory Muscle Training programme.



KH2 WITH BREATHE-LINK™
MEDIC • LIVE FEEDBACK SOFTWARE

Designed and developed for healthcare professionals

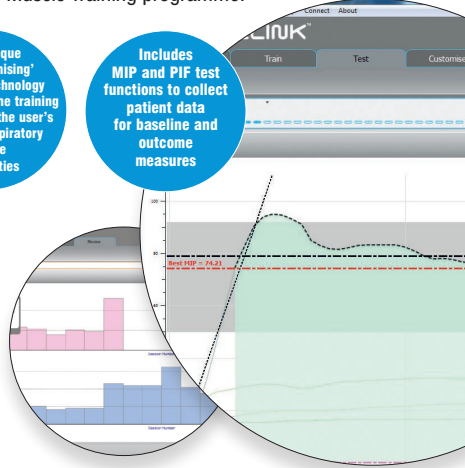
The NEW POWERbreathe KH2 includes several innovative features including MIP and PIF test functions, allowing practitioners to collect patients’ training data via the portable hand held KH2 device. The advanced KH2 model allows the results to be viewed in real-time using the revolutionary Breathe-Link Medic software.

Development of the POWERbreathe KH-Series advanced electronically controlled valve allows average load, power and inhaled volume to be viewed instantly.

The POWERbreathe KH2 is the ultimate device for testing, monitoring and analysing any Respiratory Muscle Training programme.

Uses Unique ‘Auto Optimising’ RMT/IMT Technology which adapts the training resistance to the user’s personal inspiratory muscle capabilities

Includes MIP and PIF test functions to collect patient data for baseline and outcome measures



Advanced Smart Breathing Training Features Include:

- KH2
- Auto IMT
- Training Intensity
- Training Guidance
- Endurance Programme
- Training Results
- Breathing Energy
- Strength Index
- MIP PIF
- RMT
- Washable Valve
- Rechargeable
- Multi-user Filter Option
- Breathe-Link Software
- Breathe-Link Pro-View
- Breathe-Link Custom
- Breathe-Link Patient Data

See page 16 & 17 for a full description of the KH-Series Smart Breathing Training features or visit powerbreathe.com

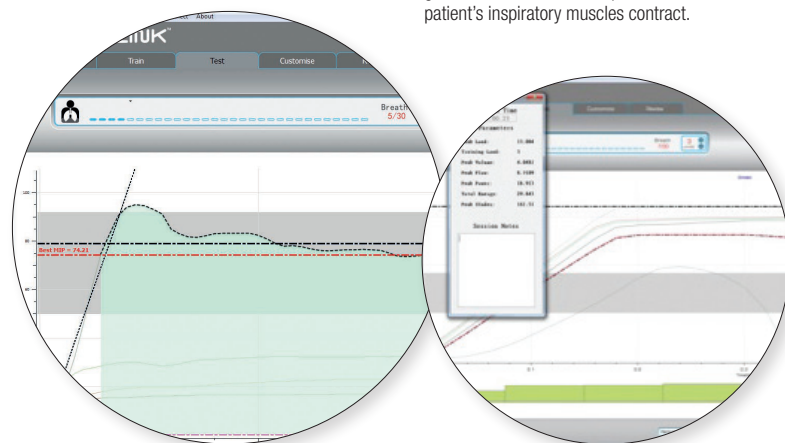
Train, test, record and analyse

Test Modes

MIP Test with Breathe-Link Medic Software

Maximum Inspiratory Pressure (MIP) test. A test that measures the strength of the muscles used in breathing.

Real-time / Live feedback provides healthcare professionals detailed analysis of each breath to help respiratory and pulmonary rehabilitation assessment.

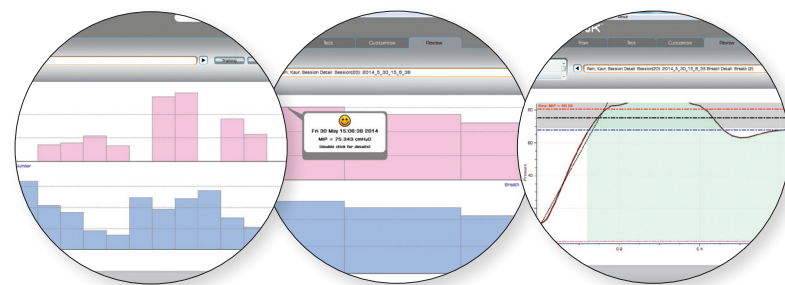


New feature

To ensure accurate and repeatable MIP results, the **POWERbreathe KH2 Breathe-Link Medic software has introduced the QC MIP mechanism.**

The maximum 1 second average value of 3 manoeuvres that vary by less than 20% is recorded.

Test Results



MIP Test Results with Breathe-Link Medic Software

Results Level 1

Multi-Level Analytic Review System to monitor patient progress and help assess respiratory muscle conditions

Level 1: Session by Session graphical view of historical tests.

Results Level 2

Breath by breath detail of tests performed is recorded allowing healthcare professionals the ability to identify trends and improvements.

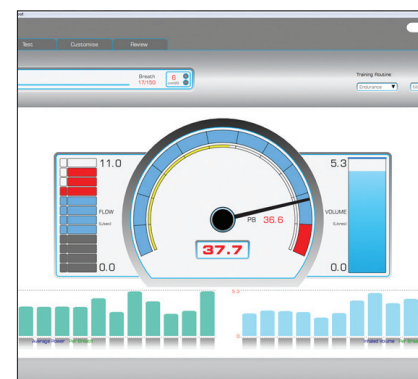
Results Level 3

Individual breaths in a session can be assessed.

Live Training Modes

Breathe-Link Medic Basic View Live

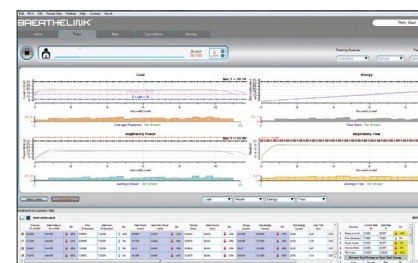
Graphical view of major breathing parameters to easily assess and encourage patient training performance. The goal is to maximise training performance against personal bests. Proven to increase user compliance of training regime.



Breathe-Link Medic Professional View Live

Professional view of major breathing parameters to easily assess and encourage the patient's training performance.

Analyse a training session breath by breath in real-time. Major breath parameters are plotted in real-time which include Power, Energy, Pressure and Flow.



"The feedback component on the KH2 really allows patients to positively map their progress."

Kate Martin
 Therapy Team Lead / Clinical Specialist
 BreathingSpace

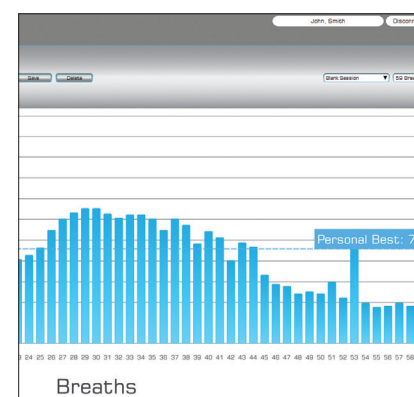
Custom Training

Simple Click and Drag System

Breathe-Link Medic Software offers a simple, easy to use, interactive environment which allows you to adjust the setting for each breath by simply clicking and dragging the bars on screen.

Allows professionals to create personalised training sessions to optimise patient training.

Flexibility to change the patient's training load for each individual breath.



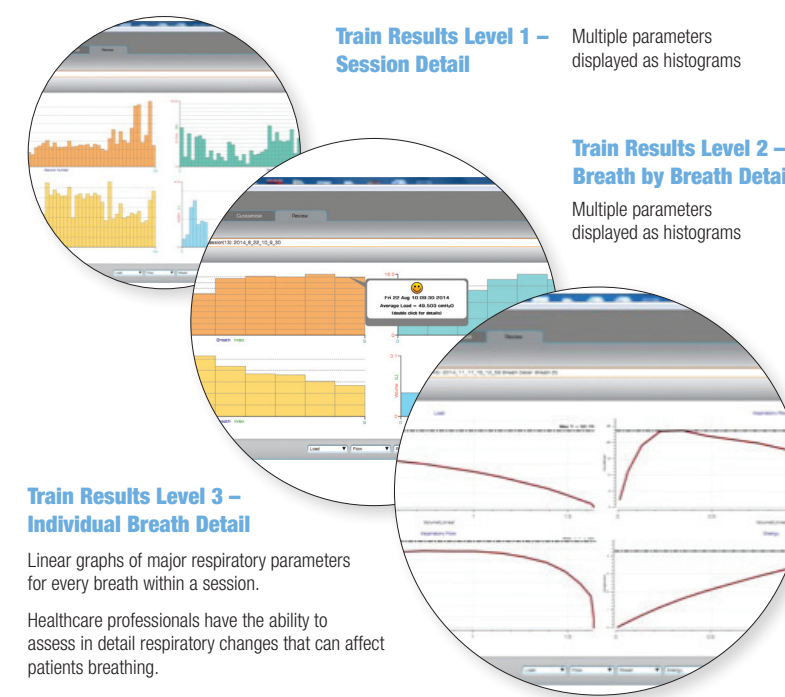
Training Results

Train Results Level 1 – Session Detail

Multiple parameters displayed as histograms

Train Results Level 2 – Breath by Breath Detail

Multiple parameters displayed as histograms



Train Results Level 3 – Individual Breath Detail

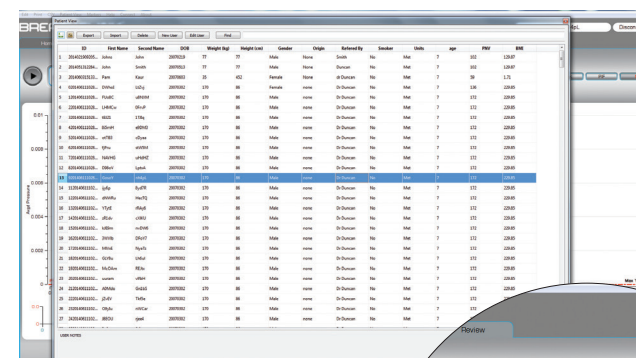
Linear graphs of major respiratory parameters for every breath within a session.

Healthcare professionals have the ability to assess in detail respiratory changes that can affect patients breathing.

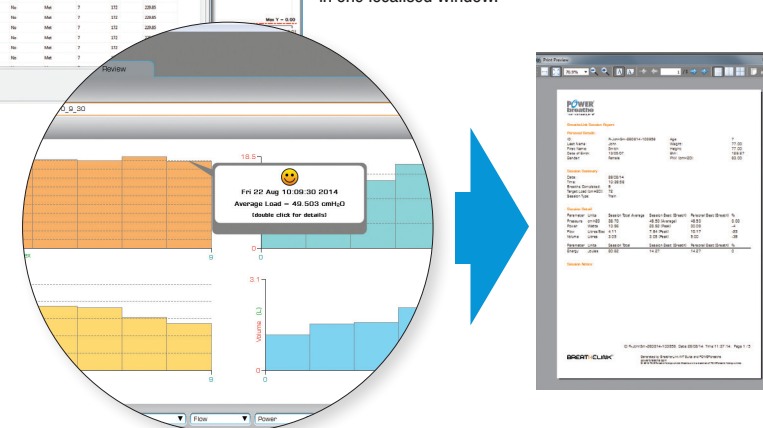
Patient Data

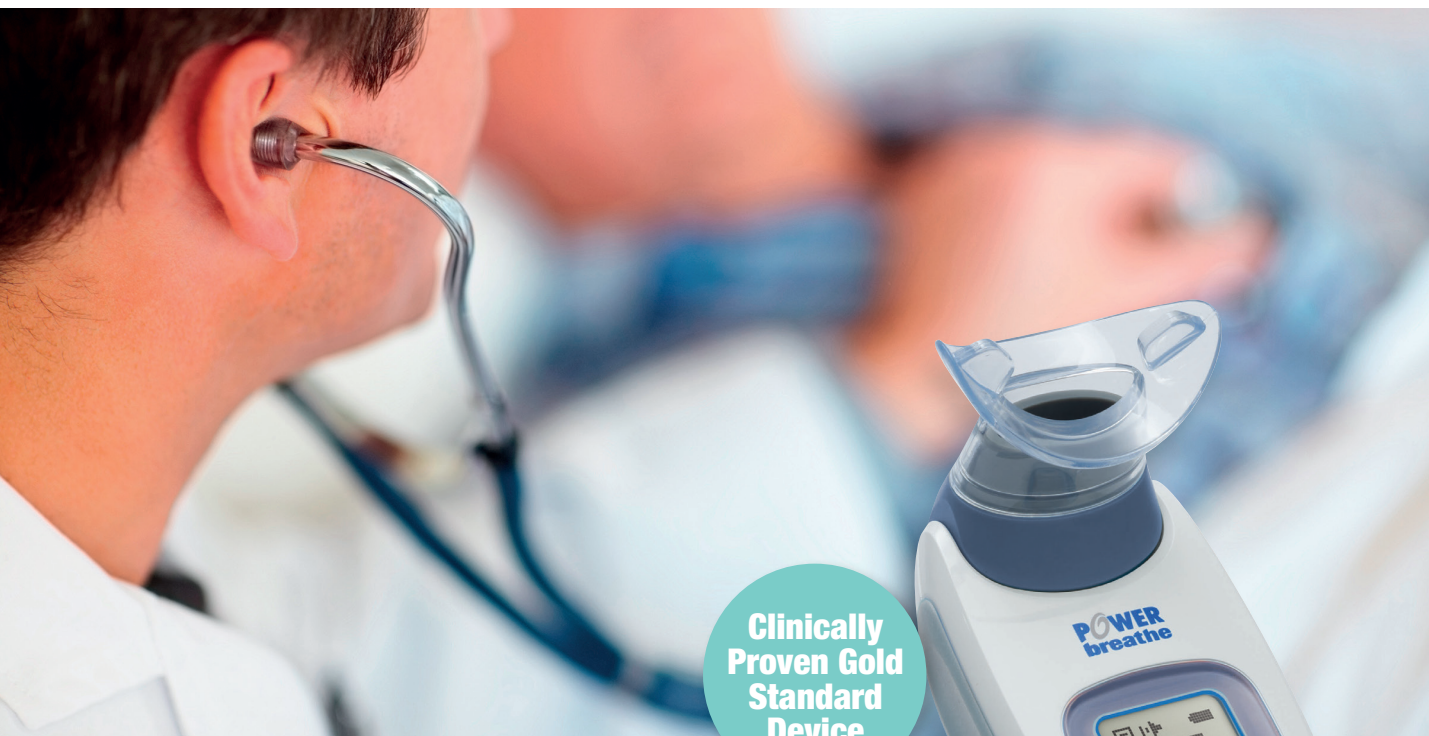
Breathe-Link Medic Patient Lists

Integrated patient view showing all registered patients on the Breathe-Link Medic software. The Patient View master control panel allows you to easily access and navigate patients RMT/IMT training data.



CSV (Comma Separated Values) file can be generated allowing easy integration to excel and other spreadsheet applications. Additional features include sort, search (second name only), edit, add and export/import user data in one localised window.





Clinically Proven Gold Standard Device

KH1

For healthcare professionals

The new POWERbreathe KH1 is a revolutionary inspiratory muscle training device designed specifically for the healthcare professional. The application of POWERbreathe in the healthcare and medical markets is now widely accepted and is used in such patient groups as COPD, Asthma, Cardiac.

By using the Maximum Inspiratory Pressure (MIP) test incorporated into the KH1, the patient can undertake a baseline measurement and train according to the scientifically proven 30 breaths twice a day protocol and re-measure the MIP to quantify the improvement.



- POWERbreathe KH1 features:**
- Manually adjustable variable training load (5-200cmH₂O)
 - Advanced electronic variable load training
 - Single breath test MIP
 - Single breath test (PIF/Flow Test)
 - Test results (PIF/Flow Test and MIP)
 - Current training results (Inhaled Volume, Power, Load)
 - Current training results (T-Index %)
 - Breathing pacing guidance (audible beep)
 - Interchangeable valve heads for multiple users
 - Single use TrySafe™ filter option available for testing
 - Compatible with oxygen adapter and facemask
 - Ergonomic design for adult and paediatric use

- Parameters displayed include:**
- Maximal Inspiratory Pressure (cmH₂O), highest 1 second average
 - Peak Inspiratory Flow (L/s)
 - Training load (cmH₂O)
 - Average Power (Watts)
 - Average inhaled volume (L)
 - T-Index (training intensity index)



Advanced Smart Breathing Training Features Include:

See page 16 & 17 for a full description of the KH-Series Smart Breathing Training features or visit powerbreathe.com



Clinically Proven Gold Standard Device

KHP2

Advanced technology to ensure patients reach their full potential



Offer your patients the chance to improve their breathing technique and increase their lung muscle strength and stamina. Following a Healthcare Professional consultation using the KH1 or KH2, whether it is for rehabilitation, pre-operative conditioning or symptom relief of lung function limiting diseases and conditions, the KHP2 can be used at home by the patient as part of a programme of Respiratory Muscle Training. Improvements can then be quantified and tracked after each subsequent consultation.

Benefits include the storing of 36 training sessions so patient compliance can be monitored.

The electronic, variable, tapered flow valve ensures the maximum training benefit (see chart on page 4).

POWERbreathe KHP2 is cost effective, easy to use, easy to clean and training improvements can be easily monitored.



- Technology Features:**
- Auto-optimising training technology
 - Training intensity selector
 - Training guidance system
 - Training results display



Advanced Smart Breathing Training Features Include:

See page 16 & 17 for a full description of the KH-Series Smart Breathing Training features or visit powerbreathe.com



NEW



Medic **PLUS**+

New variable load range 9 - 78cmH₂O

The POWERbreathe Medic Plus is the second generation of POWERbreathe Medic RMT (Respiratory Muscle Training) devices and features a 65% improvement in airflow dynamics compared to the first generation POWERbreathe Medic.

POWERbreathe Medic is scientifically proven to strengthen the respiratory muscles, reducing breathlessness, improving exercise tolerance and enhancing quality of life in a wide range of patients. POWERbreathe offers an evidence-based, drug-free treatment for patients with a variety of medical conditions including COPD, Heart Failure, Asthma, Rehabilitation following Thoracic Surgery, Ventilator Weaning, Cystic Fibrosis and Neuromuscular Disease.

The POWERbreathe Medic Plus offers a lower entry load compared to the first generation POWERbreathe Medic, to suit patients who have severe breathing difficulties, where even the lightest resistance could prove too challenging. It features variable load settings from 0 - 10 levels and a variable load of 3 - 78cm/H₂O. (3cm/H₂O is the load without the removable spring. The load with the spring fitted then starts at 9 - 78 cm/H₂O.)

POWERbreathe Medic Plus incorporates the latest developments in technology together with comfortable ergonomic design to deliver:

- 65% improvement in airflow dynamics
- Easy to adjust resistance
- Easy to read resistance gauge
- Lower entry load to suit i.e. COPD users
- Variable load settings 0 – 10 levels
- Variable load range 9 – 78cmH₂O
- Anti-bacterial mouthpiece
- Anti-scratch materials
- Simple disassembly for cleaning
- Soft touch nose clip
- New mouth piece design is suitable for ages 7 and upwards

Medic

Available to patients on Prescription since 2006

The POWERbreathe Medic Inspiratory Muscle Trainer was approved for prescription in May 2006 after being rigorously assessed by the Prescription Pricing Authority, for clinical evidence, patient compliance and financial savings to the NHS. POWERbreathe Medic is also available from the NHS Supply Chain Respiratory Contract.

POWERbreathe Medic IMT has been taken up by medical professionals as an adjunct to pharmacological treatments. Used both as a standalone therapy or in conjunction with pulmonary rehabilitation, POWERbreathe Medic training can be completed with or without supervision.

COPD

In their 2005 study of the benefits of a 12 month programme of POWERbreathe training, Beckerman et al observed significant reductions in the use of healthcare resources. POWERbreathe reduced hospital bed days by 29% and GP consultations by 23% compared with placebo.

Asthma

Weiner et al observed an 86% reduction in hospitalisations/emergency room visits following inspiratory muscle training in moderate/severe asthmatics (from 1.4 to 0.2 per 3 months per patient). In three separate studies, Weiner et al. observed an average 51% reduction in β_2 -agonist consumption (from 3.9 to 1.6 puffs per day) after inspiratory muscle training, and in one study, corticosteroid use decreased ~80%.

POWERbreathe Medic:

- Available for prescription in the UK
- Pressure threshold training
- Mechanically adjustable variable load settings (10-90cmH₂O)
- POWERbreathe saves the NHS money and resources

Proven benefits of Inspiratory Muscle Training

- Inspiratory muscle strength up by 27%
- Reduces breathlessness up to 36%
- Improves quality of life up to 21%
- Improves exercise tolerance up to 28%
- GP visits reduced by up to 23%



NHS DRUG
TARIFF LISTING PART
IXA – APPLIANCES
Inspiratory pressure
threshold loading device
PIP CODE:
232-1040

Can easily be used by the patient straight out of the box.

“Integration of the POWERbreathe medic device alongside rehabilitation has yielded significant patient benefits.”

Kate Martin
Therapy Team Lead / Clinical Specialist
BreathingSpace

See page 18 & 19 to see clinical research or visit powerbreathe.com



POWERbreathe Better Breathing Products

POWERbreathe continues to expand its range of quality 'Better Breathing' training and respiratory care products by teaming up with leading researchers and developers to service the needs of consumers and professionals involved in healthcare, sport, fitness, education, research, corporate fitness, occupational health, uniformed services, life coaching/stress management and sleep therapy.



Shaker

Expectoration for adults and children

Shaker Medic PLUS+

for Hospitals / Clinics

Simple relief from excessive mucus and its associated problems

- Autoclavable to 134°C (273°F), multi-user, reusable, easy to use and affordable
- Improved air flow for higher intensity vibrations, produces positive expiratory pressure (PEP) to open the airways
- Increases expectoration, improves lung function and reduces dyspnoea
- For conditions such as COPD, Cystic Fibrosis, bronchiectasis and bronchitis



NEW

Autoclavable
multi-user option for
medical facilities

Shaker deluxe

Personal Mucus Clearance Device

- Respiratory device for mobilising pulmonary secretions such as mucus and catarrh
- Uses the latest innovative design technology
- Produces vibrations in the chest cavity to 'shake' stubborn mucus loose
- Aids expectoration, increases lung efficiency, helping to reduce breathlessness and fatigue
- Affordable, easy to use single user model, ideal for home healthcare or on the go

Product code: PBSO



Shaker classic

Personal Mucus Clearance Device

- Offers simple and convenient relief from excessive mucus
- Can be used for chronic conditions such as COPD, asthma, emphysema and acute problems like chesty coughs, flu and bronchitis
- Affordable, easy to use single user model which can be used at home or on the move



For more information and specifications on the Shaker range from POWERbreathe visit powerbreathe.com

Home Breathing Therapy

RESPIRON Home Therapy for Breathing Difficulties

NEW

- Fully adjustable resistance level
- Exercises and strengthens the breathing muscles
- Helps prevent bronchial and pulmonary infections
- Encourages deep breathing, which can aid in relieving excess mucus
- Excellent for lowering stress levels
- Easy to use and clean



flow-ball Breathing Exercise Device

- Exercises your breathing muscles
- Increases control and the stability of your exhaled breath
- Easy to use, effective and great fun
- Popular with children
- Available in 2 colours – Blue and Yellow



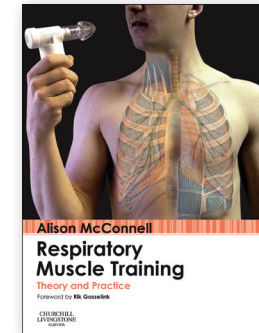
breathbuilder by POWERbreathe

Breath Builder Classic

- Exercises lungs and diaphragm muscles
- Helps you control inhalation and exhalation
- Builds a strong breathing mechanism
- Also beneficial to athletes, smokers and anyone with breathing difficulties
- Originally developed to help musicians and vocalists strengthen their diaphragm
- Colours vary

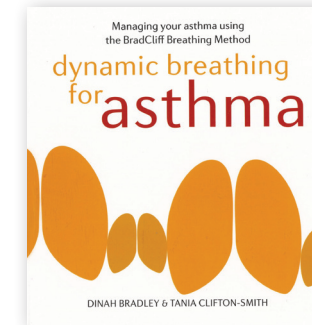


Better Breathing Publications



Respiratory Muscle Training Book

The "everything-you-need-to-know" guide to respiratory muscle training (RMT) by Professor Alison McConnell. Contents include: 1) Introduction to respiratory physiology and training theory; 2) How disease affects the respiratory muscles and the mechanics of breathing; 3) Insight into the disease-specific, evidence-based benefits of RMT; 4) Advice on the application of RMT as a standalone treatment and as part of a rehabilitation programme; 5) Guidance on the application of functional training techniques.



Dynamic Breathing for Asthma Book

Internationally recognised experts Dinah Bradley and Tania Clifton-Smith using the BradCliff Method have made this, the asthma sufferer's indispensable companion. In recent years, asthma patients may have been well informed about their drug management but less emphasis has been placed on physical coping skills and the importance of the correct use of the muscles of breathing. It takes you through a step by step breathing retraining process, which can help reduce medications, reduce stress levels, exercise comfortably and most importantly - breathe effectively.



Breathing Matters Book

Breathing Matters is a revolutionary book written by Dr. Jim Bartley, one of New Zealand's top ear, nose and throat surgeons, who believes that good breathing patterns can dramatically improve the lives of people with major diseases such as heart disease, asthma, depression and migraine. Breathing well helps us relax, normalises body biochemistry, reduces muscle pain and allows the re-establishment of normal posture and movement. Co-authored by internationally recognised authority on breathing disorders - Tania Clifton-Smith (Dip Phys)

Medical Accessories



POWERbreathe Spacer



POWERbreathe Single Use Try-Safe™ Filter for Testing



POWERbreathe Oxygen Mask Adapter



Adult Mask Small



Adult Mask Medium



Adult Mask Large

Try Before you Prescribe Medic Kit



POWERbreathe KH-Series Nose Clip



POWERbreathe Medic Nose Clip



POWERbreathe Mouthpiece for Medic and Medic Plus



K- Series Single Pack Valve Head Blister Pack




POWERbreathe Cleansing Tablets


POWERbreathe KH-Series features


Advanced Variable Load Training

The patented electronically controlled resistance valve provides a variable pressure threshold resistance, optimised to match the strength profile of the users' inspiratory muscles, to achieve maximum training effectiveness.

Training Features:


 **Auto IMT:** The POWERbreathe KH-Series Auto-optimising Inspiratory Muscle Training system automatically adapts to personal training requirements.

 **Manual Training Intensity:** The training intensity adjustment option allows resistance to be manually set from 5 to 200cmH₂O to suit personal training requirements.


 **Training Guidance:** The KH-Series training guidance system provides breathing pacing guidance, displays the number of breaths remaining in a training session and informs the user when the session is complete.


 **Warm-up & Cool-down mode:** Automatically sets the optimal resistance for inspiratory muscle warm-up and cool-down.


Training Feedback and Testing Features:


 **Training Results:** Provides detailed breathing training feedback including Load (cmH₂O), Power (Watts) and Inhaled Volume (Litres).


 **Strength Index (S-Index):** Calculates inspiratory muscle strength (cmH₂O) based upon peak inspiratory flow. Strength index is rated in comparison with predicted value.


 **Single Breath Test:** Measures inspiratory muscle strength, peak inspiratory flow rate and inhaled volume in a single breath. Rates inspiratory muscle strength (Poor, Fair, Average, Good, Excellent) in comparison with the predicted value.

 **Training Index (T-Index):** Displays the percentage effectiveness and effectiveness rating (Poor, Fair, Average, Good, Excellent) of your breathing training session based upon the amount of work you achieved.


 **Breathing Energy:** Measures the mechanical work of breathing during your breathing training session. Breathing energy combines the force exerted by your inspiratory muscles and the volume of air inhaled.


 **Respiratory Muscle Testing (RMT):** Maximum Inspiratory Pressure and Peak Inspiratory Flow tests for inspiratory muscle assessment.


 **Endurance Programme:** Endurance protocol. Perform a 150 breath training session to completely fatigue the breathing muscles.

 **Training History:** Displays a graphical history of your last 36 training sessions allowing you to review trends and previous personal best results


Stanard Features:


 **You and I Option:** Interchangeable Valve Head option for multiple users (Additional valve heads sold separately.)


 **Washable Valve:** The KH-Series valve head can be removed for cleaning using POWERbreathe Cleansing Tablets (sold separately).*

 **Rechargeable:** Rechargeable power system with auto power-off and charge level indicator.

















Breathe-Link Features:

 **Breathe-Link Software:** PC and Mac connectivity via USB enables real time training and performance testing. Select specific training and testing parameters and then assess inspiratory muscle condition, training progress and try and beat previous scores.

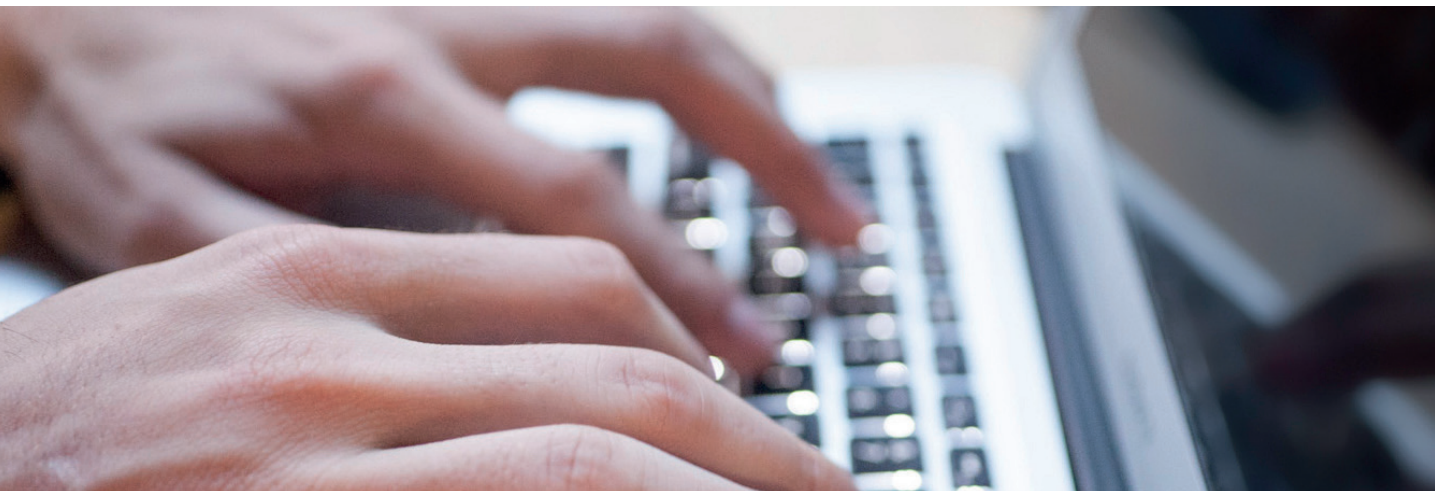
 **Breathe-Link Custom:** Allows you to create and upload your own personalised breathing training sessions.

 **Breathe-Link Pro-View:** Use the Breathe-link Pro-View for advanced, detailed, simultaneous plotting and analysis of all inspiratory muscle training data.

POWERbreathe KH-Series comparison chart

Icon	Features	Explanation of features	KH2	KH1	KHP2
Training Features					
	Advanced variable load training	The electronically controlled resistance valve provides a variable pressure threshold resistance. optimised to match the strength profile of the inspiratory muscles for maximum training effectiveness.	●	●	●
	Auto-optimising IMT technology	The POWERbreathe KH-Series Auto-optimising Inspiratory Muscle Training system automatically adapts to your personal training requirements.	●	●	●
	Manual training intensity option	The training intensity adjustment option allows resistance to be manually set from 5 to 200cmH ₂ O to suit your personal training requirements.	●	●	●
	Breathing pacing guidance	Buzzer indicates when the user should inhale in order to optimise breathing patterns and prevent hyperventilation	●	●	●
	Current training session breath counter	Displays number of breaths remaining in current training session	●	●	●
	End of training session indicator	Alarm indicates that training session is over	●	●	●
	Warm-up mode	Can be used to warm-up the inspiratory muscles prior to exercise			
	Cool-down mode	Can be used to cool-down the respiratory muscles after exercise			
	Custom mode	Personalise your training session created using Breathe-Link PC software	●		
Training Feedback and Testing Features					
	Load (cmH ₂ O)	Measure of the resistance to inhalation and is equivalent to the weight being lifted	●	●	●
	Power - current session average (watts)	Current session average power (watts)	●	●	●
	Inhaled volume - average per breath (litres)	Current session average volume (litres)	●	●	●
	PIF/Flow	Peak Inspiratory Flow (litres/sec)	●	●	
	Volume	Maximum inhaled volume (litres)	●		●
	MIP	Maximal inspiratory muscle strength (cmH ₂ O)	●	●	
	MIP rating	Comparison with population normal values based upon user stats (Age, Height, Weight, Gender)	●	●	
	S-Index	Index of inspiratory muscle strength (cmH ₂ O)	●	●	
	S-Index Rating (poor, fair, average, good, excellent)	Comparison with population normal values based upon user stats (Age, Height, Weight, Gender)	●	●	
	Test mode (S-Index - Single breath test)	Measures inspiratory muscle Strength Index	● ¹	● ¹	
	T-Index - current session (%)	Training Index (%) [Measure of training session effectiveness]		●	
	T-Index rating (low, med, high)	Rating of training session effectiveness		●	
	Graphical T-Index history	Graph of previous 36 Training Index results			
	Breathing energy (joules)	Measures the mechanical work of breathing during your breathing training session. (Joules)	●		●
	Graphical breathing energy history (last 36 sessions)	Graph of previous 36 Breathing Energy results			●
	Session number	Number of training sessions completed			
	Test mode (PIF/Flow)	Measures Peak Inspiratory Flow	●	●	
	Test mode (MIP)	Measures Maximal Inspiratory Pressure (highest 1 sec average)	●	●	
	Endurance Programme	Perform a 150-breath session to completely fatigue the inspiratory muscles	●		
	Graphical load history (last 36 sessions)	Graph of previous 36 training load results			●
	Graphical power history (last 36 sessions)	Graph of previous 36 average power results			●
	Graphical volume history (last 36 sessions)	Graph of previous 36 average volume results			●
Breathe-Link Features					
	Breathe-Link PC software for real-time breathing measurement and analysis	Real-time breathing measurement & analysis software for PC Maximises training & test performance in real-time. Stores results for analysis. Import and Export .ble files allowing data to be shared amongst Breathe-Link users.	●		
	PC graphical view	Easy to understand live test, feedback graphs to monitor each breath, with visual feedback to help improve your performance.	●		
	Breathe-Link custom training mode	Allows you to create and upload your own personalised breathing training sessions.	●		
	Training statistics review	Review the details and trends of your Breathe-Link training sessions.	●		
	Breath-Link ProView advanced analytics	For a detailed, simultaneous plotting & analysis of all inspiratory muscle training data.	●		
	Print/PDF generator	Keep detailed high resolution records of each session. Share training history for analysis in printed or PDF format.	●		
	Live real-time performance monitoring	See real-time test and training performance live on screen.	●		
	Bacterial/viral filter spacer	Allows the connection of POWERbreathe TrySafe™ bacterial/viral filters for multi-person use/testing.	●	●	●

● Indicates Features Included ●¹ Note 1: For the KH1 model, S-Index test result is output following a PIF test.



Knowledge Base

Scientific research supporting the clinical use of IMT that led to the POWERbreathe Medic being made available for prescription by the NHS in the UK

Clinical use of IMT - Heart Failure

Inspiratory Muscle Training Improves Blood Flow to Resting and Exercising Limbs in Patients With Chronic Heart Failure (Chiappa et al; Journal of the American College of Cardiology; 2008)

"In patients with CHF and inspiratory muscle weakness, inspiratory muscle loading results in marked reduction of blood flow to resting and exercising limbs. Inspiratory muscle training improves limb blood flow under inspiratory loading in these patients."

Inspiratory Muscle Training in Patients With Heart Failure and Inspiratory Muscle Weakness (Dall'Ago et al; Journal of the American College of Cardiology; 2006)

"In patients with CHF and inspiratory muscle weakness, IMT results in marked improvement in inspiratory muscle strength, as well as improvement in functional capacity, ventilatory response to exercise, recovery oxygen uptake kinetics, and quality of life."

Clinical Use Of IMT - Asthma

Inspiratory Muscle Training In Patients With Bronchial Asthma (Weinar et al; Chest; 1992)

"We conclude that specific inspiratory muscle training, for six months, improves the inspiratory muscle strength and endurance, and results in improvement in asthma symptoms, hospitalizations for asthma, emergency department contact, absence from school or work, and medication consumption in patients with asthma."

Drug-free treatment for dyspnoea

POWERbreathe IMT is suitable for treating dyspnea in a wide range of patients, including those with severe exercise intolerance and cardiovascular risk factors.

- Reduce dyspnoea by 36%¹
- Improve quality of life by 21%¹
- Improve exercise tolerance by 28%¹
- Reduce consumption of β_2 -agonists by up to 79%²
- Reduce primary care consultations by 23%¹

Supporting research:

¹The Effects of 1 Year of Specific Inspiratory Muscle Training in Patients With COPD (Beckerman et al; Chest; 2005)

²Inspiratory Muscle Training In Patients With Bronchial Asthma (Weinar et al; Chest; 1992)

Clinical Use Of IMT - COPD

The Effects of 1 Year of Specific Inspiratory Muscle Training in Patients With COPD (Beckerman et al; Chest; 2005)

"The study showed that during IMT in patients with significant COPD, there is an increase in exercise capacity, improvement in quality of life, and decrease in dyspnea. The study also provides evidence that long-term IMT can decrease the use of health services and hospitalization days."

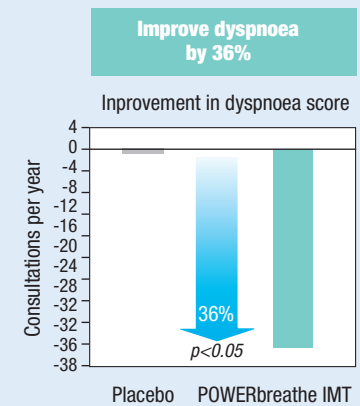
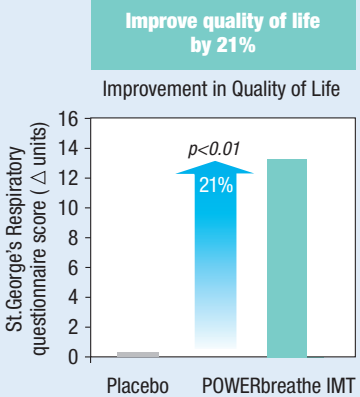
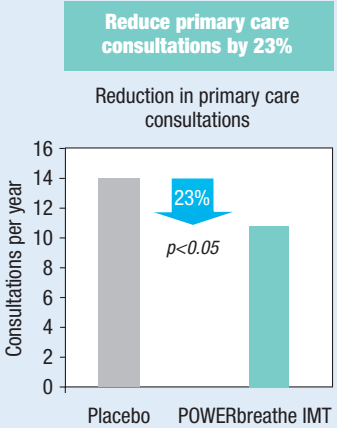
Effects of controlled inspiratory muscle training in patients with COPD: a meta-analysis (Lotters et al; European Respiratory Journal; 2002)

"Inspiratory muscle training is an important addition to a pulmonary rehabilitation programme directed at chronic obstructive pulmonary disease patients with inspiratory muscle weakness. The effect on exercise performance is still to be determined."

POWERbreathe IMT saves NHS money and resources

Key facts and figures

COPD



Reduced Healthcare Resources

In a 2005 study of the benefits of a 12-month programme of POWERbreathe RMT, researchers observed significant reductions in the use of healthcare resources.

Supporting research:

The Effects of 1 Year of Specific Inspiratory Muscle Training in Patients With COPD (Beckerman et al; Chest; 2005)

Reduced Hospitalisations

Weiner et al observed an 86% reduction in hospitalisations/emergency room visits following respiratory muscle training in moderate/severe asthmatics.

Supporting research:

Inspiratory Muscle Training In Patients With Bronchial Asthma (Weinar et al; Chest; 1992)

Reduced β_2 -agonist Consumption

In three separate studies, Weiner et al. observed an average 51% reduction in β_2 -agonist consumption (from 3.9 to 1.6 puffs per day) after respiratory muscle training, and in one study, corticosteroid use decreased ~80%.

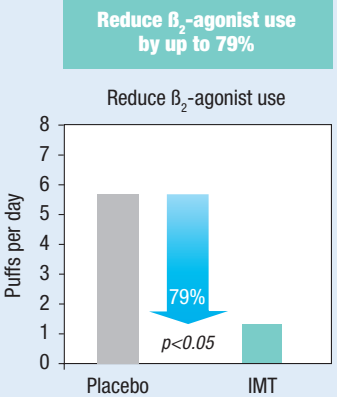
Supporting research:

Inspiratory Muscle Training In Patients With Bronchial Asthma (Weinar et al; Chest; 1992)

Specific Inspiratory Muscle Training in Patients With Mild Asthma With High Consumption of Inhaled 2-Agonists (Weiner et al; Chest; 2000)

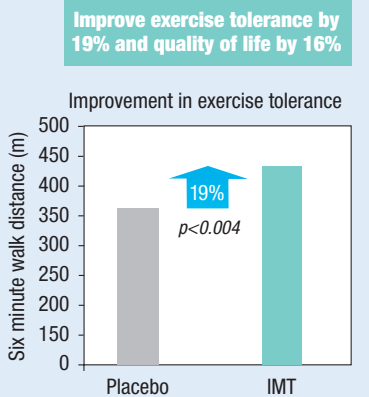
Influence of Gender and Inspiratory Muscle Training on the Perception of Dyspnea in Patients With Asthma (Weiner et al; Chest; 2002)

Asthma



- FEV¹ improved by 14% (p<0.005)
- Absence from school/work reduced by ~95%² (p<0.005)
- Emergency hospitalisations reduced by ~75%² (p<0.005)

Heart Failure



*References cited above may be accredited at www.powerbreathe.com

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