DESCRIPTION

The Breather is a respiratory device that promotes respiratory muscle training (RMT) against a resistance by breathing through different sized orifices, thereby increasing respiratory muscle strength. As resistance is applied during both components of the breath cycle, The Breather increases inspiratory as well as expiratory muscle strength by causing hypertrophy of the respiratory muscle fibers, and thickening and increased velocity of the diaphragm. RMT also improves laryngeal function, supporting speech quality and swallow efficiency [1–3].

PATIENT IDENTIFICATION - Who is The Breather for?

Patients experiencing abnormal respiratory function impacting activities of daily living including: dyspnea and/or activity intolerance as well as decreased breath support for phonation and safe swallowing should be considered for RMT.

Target Patient Groups [4]:

- Respiratory (COPD, asthma, chronic lung disease)
- Cardiac (congestive heart failure, coronary artery disease, hypertension)
- Neuromuscular (Parkinson’s, multiple sclerosis, myasthenia gravis, Pompe’s)
- Pre-and post-operative (major thoracic and abdominal surgery, neurosurgery)
- Healthy ageing

Note: Successful application does require patient cooperation and motivation. In patients who have experienced an acute exacerbation, or chest infection, clinical judgement should be applied regarding the risk of provoking excessive fatigue of the inspiratory muscles. In this situation, reducing the intensity and/or frequency of RMT may be prudent.
CLINICAL EVIDENCE - Does RMT really work?
The effectiveness of RMT is supported by a growing body of scientific and medical evidence across a steadily increasing range of diseases and disorders. For a collection of clinical evidence, including frequent updates and discussions of emerging data, please see references attached to this document or visit pnmedical.com/clinical-evidence.

CONTRA-INDICATIONS - When not to use The Breather
During initial training, we recommend careful monitoring for episodes of acute exacerbation or excessive fatigue. Caution is advised before initiation of therapy for: active hemoptysis, untreated pneumothorax, recent esophageal surgery, acute upper airway stenosis (true vocal fold mass, vocal fold paralysis in adducted position, subglottic stenosis), recent oral, facial or skull trauma / surgery, acute sinusitis, epistaxis, hemodynamic instability, tympanic membrane rupture or acute middle ear pathology (otitis, labyrinthitis).

GETTING STARTED - How to use The Breather

Patient & Clinician Training Videos
Three short videos you or your patients can view at any time. Below are direct links to a few of the videos in the series.
- Lesson 01: Who Takes This Course & Why
- Lesson 02: Using & Cleaning The Breather
- Lesson 03: Foundational Protocol for Your Breather

All videos are available on pnmedical.com/training. For bonus material, newsletter, offers and updates, users of The Breather or other RMT devices can freely join The Breather Club (TheBreather.com/Join).

Equipment
- One Breather per patient (single patient use - permanent marker to label with patient’s name)
- Pulse Oximeter and/or manometer is optional.
- Watch with second hand to monitor respiratory rate.
- Soapy water to clean The Breather per manufacturer’s instructions on package insert.
- Nose clips (single patient use) as indicated to limit air flowing through nose during RMT.

Before you begin
- If you or your patient has access to the Internet, we recommend to watch our easy to follow free video training course - http://www.pnmedical.com/courses/the-breather/.
- Also or if no access to Internet, read the manufacturer’s instructions on package insert.
  NOTE - The online training is more in-depth than the manufacturer’s instructions included.
- If the patient is on continuous oxygen, ensure that it is on during RMT. If oxygen is ordered PRN, use it if patient becomes short of breath as RMT is exercise.
- Introduce The Breather to the patient with explanation of RMT. Demo with your own Breather.
- Position patient to maximize diaphragmatic breathing.
- Begin with the easiest settings by rotating both inhale and exhale dials so the #1 aligns with the arrow at the top of The Breather.
  NOTE - inhale and exhale dials function independently.
FIRST SESSION

- **NOTE** – this information below is also in the training course in Lessons 1 and 2.
- Instruct the patient to hold mouthpiece with lips, not teeth as this may cause undue jaw pressure and inadequate lip seal.
- Ask patient to breath in and out through the mouthpiece (not the nose). Instruct to inhale deeply and forcefully for 2-3 seconds, slight pause (under a second), then exhale forcefully for 2-3 seconds.
- Cue the patient to listen for a strong ‘wind’ sound for audio biofeedback as a strong, audible airflow should be heard for inhale and exhale. It’s most helpful for the therapist to demonstrate with their own **Breather**.
- The patient should slightly remove **The Breather** from the mouth to swallow normally to prevent saliva buildup in **The Breather**.
- If the patient has difficulty NOT breathing through their nose, it may be helpful to pinch the nose with fingers during initial instruction.
- If necessary or preferred, a nose clip may be used.
- Monitor vital signs as needed including oxygen saturation (using a pulse oximeter) as well as overt signs of hypoxemia.
  - If extreme respiratory distress during or after RMT occurs, avoid re-initiation of RMT until medical clearance can be obtained.
- Obtain baseline for tolerated breaths per set and number of sets.
  - You should ask your patient frequently for feedback including:
    - How do you feel? Do you feel out of breath or lightheaded?
  - You should also observe:
    - Each inhale / exhale should be able to be forcefully maintained for 2-3 seconds.
    - Inspiratory resistance should cause an outward movement of the stomach on all inhalations. If inward movement of the stomach occurs on a few, but not all inhalations, this could be a sign of fatigue; the patient should rest more between breaths or sets, or decrease the setting temporarily.
    - Expiratory resistance should not cause puffing of the cheeks. If patient cannot eliminate this, the patient may need to rest more between breaths or decrease setting temporarily. The therapist may also hold patient’s cheeks or have patient hold his cheeks. (A demo may be necessary.)
- **NOTE** – Transient light headedness may occur at training onset
  - This is a normal response to a forced inspiratory/expiratory maneuver. It is short lived and self limited. If experienced, the subject may resume the session after such symptoms have resolved. In order to optimize patient comfort, performance and safety we recommend he or she uses **The Breather** while sitting comfortably on a chair.
RECOMMENDED PROTOCOL

RMT target:
One morning and one evening session with 2 sets of 10 breaths per session 6 days per week.

Intensity:
At least 60% of maximum effort. The correct setting should allow you to tolerate a set of 10 breaths, but it should feel challenging without causing fatigue. Note that the settings for inhalation and exhalation need to be determined and set independently. For more information, see Lesson 2.
If using a manometer, the correct setting is around 60% to 80% of maximum inspiratory/expiratory pressure (MIP/MEP).

Ongoing therapy:
After maintaining training at baseline for approximately 1 week, increase resistances. When resistance is increased, repetitions may decrease initially then gradually increase again throughout the week.

Documenting progress:
Keep an RMT diary to note number of reps and sessions, settings, and other comments.

This guide was created to give you the general Breather protocol. For patient specific use cases for personalized treatment plans, please contact our office by phone or email: 877-414-4449 or Care@pnmedical.com. You can also watch our therapist only in-service video (pnmedical.com/go).