

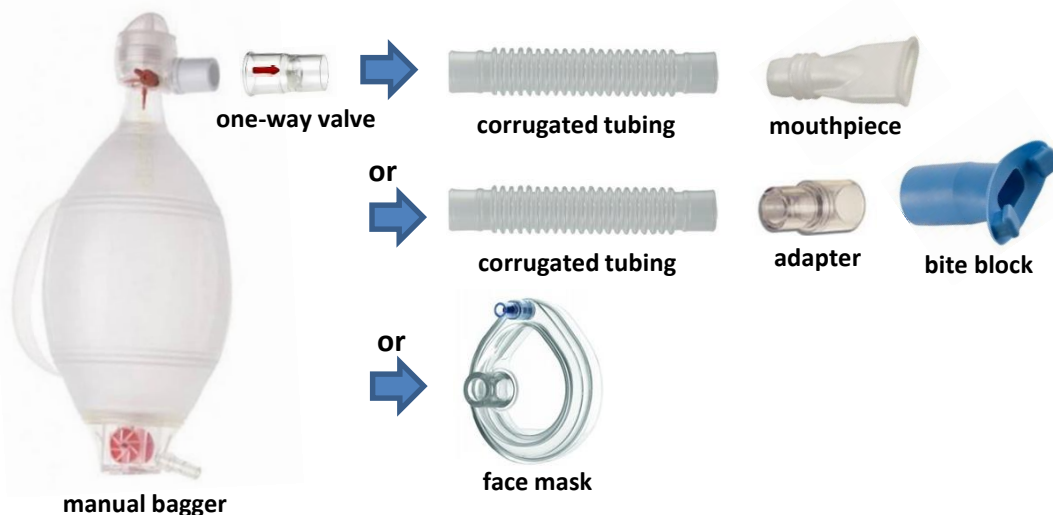
Breath Stacking Techniques with a Manual Bagger

The technique of increasing your lung volume is also called lung volume recruitment (LVR). By breath stacking, you may be able to take a deeper breath.

Lung volume recruitment can be applied to either:

1. **Exercises:** this technique increases overall lung expansion, as well as improves range of motion in your chest wall.
2. **Cough Assist:** this technique generates a stronger cough by building a larger breath that results in a greater expulsion of air that can loosen and clear secretions to your mouth.

The manual bagger is adapted with a one-way valve and mouthpiece, bite block, or face mask. Either technique can be performed independently or with an assistant.



For optimal success and safety, if performing with an assistant, confirm your assistant can:

- Communicate with you
- Assist you with the removal of secretions (i.e. suctioning)
- Contact emergency help (911) if you are in distress

The manual bagger has been adapted and is **not to be used for resuscitation

User must be alert, cooperative with respiratory manoeuvres and be able to communicate

Absolute Contraindications:

- Presence of hemoptysis, untreated or recent pneumothorax, nausea, asthma and recent lobectomy
- Increased Intracranial Pressure (ICP)
- Impaired Consciousness

Relative Contraindications:

- Therapy following meals
- History of Pneumothorax
- Pleural Effusion
- Cardiac Instability
- Users with long standing thoracic cage restriction may have severely reduced thoracic compliance and will require **slow incremental** insufflations during LVR period.
- Bullous emphysema or risk of pneumothorax or pneumomediastinum

Exercises

Recommended to be performed on an empty stomach.

1. Allow some resting time between repetitions to prevent hyperventilation
2. Ensure equipment is assembled correctly
3. In sitting or supine position, fit mouthpiece securely in mouth (past the teeth with lips tight). If using a mask, hold the mask securely over the chin and nose bridge to create a tight seal around nose and mouth.
4. Squeeze the manual bagger to administer a breath, while synchronizing with breathing efforts.
5. Do not exhale between breaths.
6. Deliver 2 to 3 'stacked' breaths. (Stop if you encounter resistance, as lungs may be full.)
7. Put manual bagger down.
8. Continue to hold your breath for up to 10 seconds or as tolerated and exhale slowly.
9. This attempt is considered 1 repetition, repeat steps 1 to 8 when ready.

If able, perform 5 repetitions, 3 times a day.

Cough Assist

1. Follow steps 1 to 7 above.
 2. Quickly blast air out of mouth via a cough or 'huff' to expel secretions to mouth. You can also direct your assistant to perform a coordinated manually assisted cough with hand(s) over the abdomen or chest to augment expulsion of air.
 3. Repeat procedure as required or tolerated until secretions are cleared.
- **Discontinue if you experience discomfort, irregular heart rate, and/or nausea.

For a video demonstration of this technique and other information:

www.technologyforliving.org