ResQGARD Caregiver Guide

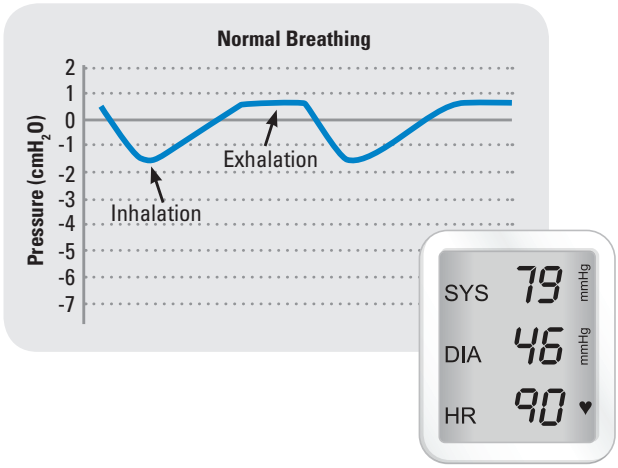
What is the **ResQGARD?**

The ResQGARD® is an impedance threshold device (ITD) that provides a safe, simple, and convenient way to treat hypotension in patients who are spontaneously breathing. By optimizing the relationship between the respiratory, circulatory, and nervous systems, it enhances circulation during states of poor perfusion. Studies[1-8] have shown that using the ResQGARD can increase blood pressure by up to 30% in patients with hypotension from a variety of causes, including:

- Blood loss or blood transfusion
- Dehydration
- Heat shock
- Early sepsis
- Drug overdose
- Renal dialysis
- Orthostatic intolerance

The Problem: Hypotension and Poor Perfusion

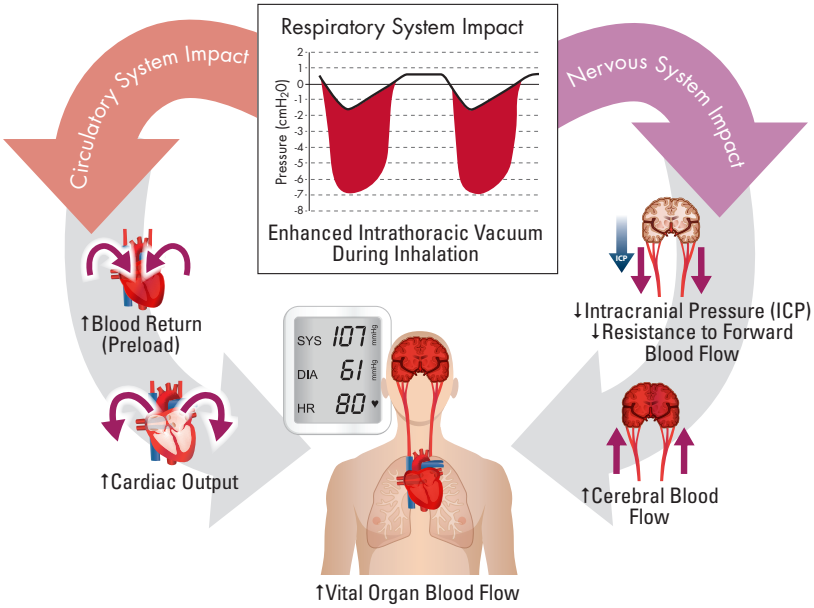
- During normal inhalation, the chest expands and the diaphragm moves down, creating a slight (approx. -1.5 cmH_2O) negative pressure (or vacuum) inside the chest. This vacuum pulls air into the chest and helps return some blood back to the heart.
- During exhalation, the chest comes in and the diaphragm moves up, creating a slight positive pressure (approx. 0.5 cmH_2O) that forces air out of the chest.
- As shock develops, eventually the body is no longer able to compensate, and the blood pressure drops.



The Solution: ResQGARD

During states of poor perfusion the ResQGARD enhances blood flow by creating a slight amount of therapeutic resistance only while the patient inhales. This enhanced vacuum:

- Draws more blood back to the heart. When preload is increased, it results in improved cardiac output on the subsequent contraction of the heart.
- Lowers intracranial pressure (ICP), which decreases resistance to forward blood flow to the brain, and results in increased cerebral blood flow.



The net result of both of these mechanisms is improved blood flow to vital organs.

Using the ResQGARD on a Facemask

1. Control life-threatening bleeding prior to placing the ResQGARD.
2. Check vital signs and assess the need to apply the ResQGARD.
3. Attach the ResQGARD to a facemask.
4. Important: Explain to the patient that they will feel slight resistance when inhaling and that this means the device is working to improve blood flow.
5. Hold the mask over the nose and mouth, maintaining a tight facemask seal. If desired, the ResQSTRAP can be used to hold the ResQGARD in place.
6. Instruct the patient to breathe normally.
7. If supplemental oxygen is desired, connect the oxygen tubing to the port and deliver up to 15 lpm.
8. Monitor vital signs frequently.
9. Remove the ResQGARD when the blood pressure rises to and stabilizes at an acceptable level, or if the patient does not tolerate.
10. Reapply if the blood pressure drops again.
11. End tidal carbon dioxide ($EtCO_2$) sensors may be placed on the ResQGARD's expiratory port if $EtCO_2$ monitoring is desired.

DO NOT use if the patient has chest trauma or uncontrolled bleeding. Remove if the patient develops respiratory distress.

[1]Smith et al. J Emerg Med 2011;41(5):549-558.
[2]Convertino et al. Respir Care 2011;56(6):846-857.
[3]Suresh et al. Prehosp Emerg Care 2012;16(1):173.
[4]Convertino et al. Crit Care Med 2007;35(4):1145-1152.
[5]Cook et al. J Trauma 2006;60(6):1275-1283.
[6]Metzger et al. Prehosp Emerg Care 2012;16:174.
[7]Yannopoulos et al. Crit Care Med 2006;34(12):S495-500.
[8]Convertino et al. Scand J Trauma Resus Emerg Med 2017;25(1):105.

The generally cleared U.S. FDA indication for the ResQGARD is for a temporary increase in blood circulation during emergency care, hospital, clinic and home use. Research is ongoing to evaluate the benefit of the ResQGARD for indications related to specific etiologies. The studies listed here are not intended to imply specific outcome-based claims not yet cleared by the U.S. FDA.

Printed in U.S.A. MCN CRP 1801 0058

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