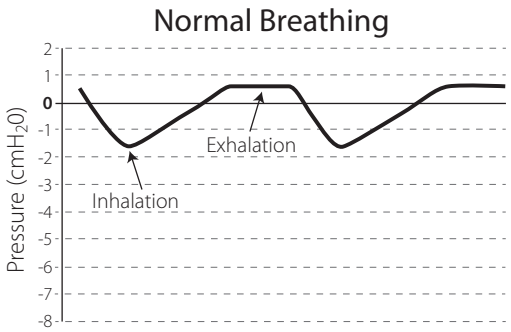
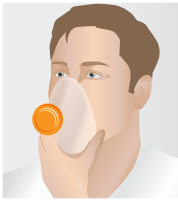
How the ResQGARD® Works During Hypotension

The ResQGARD impedance threshold device (ITD) enhances circulation during basic and advanced life support care. This simple, non-invasive device regulates pressures in the chest during breathing to improve blood flow to the heart and brain.

The Problem: Hypotension



The Solution: ResQGARD®

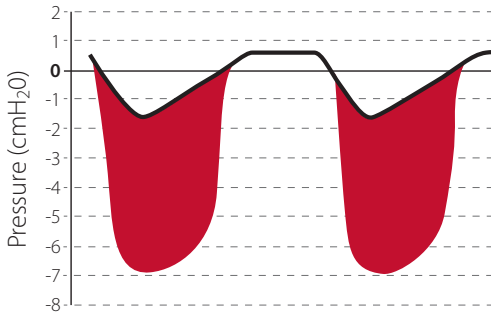


Circulatory System Impact

↑Blood Return (Preload)

↑Cardiac Output

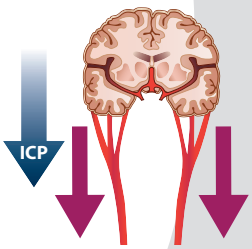
Respiratory System Impact



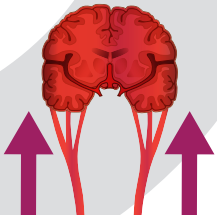
Enhanced Intrathoracic Vacuum During Inhalation

↑Vital Organ Blood Flow

Nervous System Impact



↓Intracranial Pressure (ICP)
↓Resistance to Forward Blood Flow



↑Cerebral Blood Flow

Advanced Circulatory®
Perfusion on Demand

How it Works

The Problem: Hypotension

During normal inhalation the chest expands and the diaphragm moves down, creating a slight negative pressure (or vacuum) inside the chest (approx -1.5 cmH_2O). 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

The ResQGARD ITD optimizes the relationship between the respiratory, circulatory and nervous systems to enhance circulation during states of poor perfusion.[1-7]

The ResQGARD creates 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 the vital organs.

References

[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.

The generally cleared 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 US FDA.

Advanced Circulatory®

1905 County Road C West
Roseville, MN 55113 USA
Phone: 651-403-5600
Toll-free: 877-737-7763

info@advancedcirculatory.com
AdvancedCirculatory.com

49-0965-000, 01