Performing High Quality CPR with the ResQPOD

1. Begin chest compressions immediately
2. Avoid interruptions (CCF ≥ 80%)
3. Compress at the correct rate (100 – 120/min)
4. Push hard (at least 5 cm/2 inches)
5. Allow complete chest wall recoil
6. Don’t hyperventilate
7. Use tools to help you get it right
   • Timing lights on the ResQPOD ITD to guide ventilations
   • CPR feedback, like Real CPR Help®, to guide compression rate, depth and fraction
8. Remove secretions from ResQPOD by blowing out with the ventilation source.

Using the ResQPOD on a Facemask
1. Connect the ResQPOD to facemask.
2. Open airway. Establish and maintain tight face seal with mask throughout chest compressions; a head strap or 2-handed technique is recommended.
3. Connect ventilation source to top of ResQPOD, or mouthpiece if performing mouth to mask ventilation.
4. Perform CPR at recommended compression to ventilation ratio.
5. Place ETCO₂ detector between ResQPOD and ventilation source (preferred).

Using the ResQPOD on an ET Tube
1. Confirm ET tube placement and secure with commercial tube restraint.
2. Connect the ResQPOD to ET tube.
3. Connect ventilation source to the ResQPOD.
4. Perform continuous chest compressions.
5. Turn on timing assist lights. Ventilate asynchronously at timing light flash rate of 10/min.
6. Administer ET meds directly into ET tube.
7. Place ETCO₂ detector between ResQPOD and ventilation source (preferred).

The generally cleared indication for the ResQPOD is for a temporary increase in blood circulation during emergency care, hospital, clinic and home use. The version of the ResQPOD used in the ROC PRIMED Study is not yet approved for sale in the US. Research is ongoing in the US to evaluate the long-term benefit of the ResQPOD for indications related to patients suffering from cardiac arrest. This communication is not intended to imply specific outcome-based claims not yet cleared by the US Food and Drug Administration.
What is the ResQPOD?

Saving a life can mean so much more than simply restoring a pulse. The ResQPOD ITD substantially improves the odds a rescuer’s effort will return patients to a full life after sudden cardiac arrest.

The ResQPOD is an impedance threshold device (ITD) that enhances circulation during basic or advanced life support CPR by regulating pressures in the chest to improve blood flow to vital organs. The ResQPOD selectively prevents air from re-entering the lungs during chest wall recoil. This enhances the vacuum needed to pull blood back into the heart. As a result, more blood is circulated to vital organs until the heart can be restarted. A study showed that when the ITD was used with high-quality CPR, survival from cardiac arrest increased by 25% or more.¹

Research

The ResQPOD has been evaluated in over 50 pre-clinical studies. These studies show that the ResQPOD enhances circulation to the heart and brain, and significantly increases survival in both inhospital and prehospital cardiac arrest up to 75%.¹,²,³ An ITD is a Class II recommendation as a CPR adjunct in the 2010 American Heart Association Guidelines.

Data from the Resuscitation Outcomes Consortium (ROC) PRIMED Trial

The results of the ROC PRIMED study, published in the New England Journal of Medicine in 2011, originally showed no difference in survival when CPR was performed with an active vs. sham ITD.¹¹ Subsequently, then, Dr. Ahmed Idris, MD, a ROC investigator, presented and published data showing that the quality of CPR varied widely during the study and that the quality of CPR impacted survival.¹² At the AHA in 2014, Dr. Demetris Yannopoulos, MD presented a new analysis of the ROC PRIMED data showing that when CPR was performed at the recommended compression rate, depth and fraction, survival with the active ITD was significantly higher than with not was the sham ITD.¹³

How the ResQPOD ITD works

The ResQPOD ITD offers a simple solution for more effective resuscitation.

Conventional CPR

Limited Blood CPR

Even though High Quality CPR has been shown to increase survival, it only provides 25-40% of normal blood flow to the heart and brain.¹³ Limited blood flow is due, in part, to the open airway. During chest wall recoil, air is drawn in and wipes out the vacuum (negative pressure) that is needed to fill the heart. This limits cardiac output and blood circulated with compressions.

CPR with ResQPOD

More blood circulated

Attached to a facemask or other airway adjunct, the ResQPOD selectively prevents air from entering the lungs during the chest wall recoil phase (except when intended with ventilations). This enhances the vacuum, which pulls more blood back into the heart and lowers intracranial pressure (ICP).¹⁵ As a result, more blood is circulated to the brain and vital organs until the heart can be restarted. In studies, use of the ResQPOD with high-quality CPR improved survival 25% or more compared to high-quality CPR without an ITD.¹,2,9,15

Clinical studies have shown that the ITD
• Doubles blood flow to the heart⁵
• Increases blood flow to the brain by 50%³
• Doubles ETCO₂⁴

Pre-clinical studies have shown that the ITD
• Provides benefit in all arrest rhythms
• Increases blood pressure by 98%⁵
• Increases blood flow to the brain by 50%⁵
• Increases blood flow to the heart by 25% or more¹
• Doubles ETCO₂⁴

Conventional CPR

Limited Blood Flow

Air Flow
During chest wall recoil, air flows freely back into lungs, reducing the vacuum responsible for filling the heart.

Vacuum
Vacuum during chest wall recoil is weak, average range: -1 to -3 mmHG.

Heart Refilling
Heart refills only slightly.

Intracranial Pressure (ICP)
Increases during compression. Decreases slightly during chest wall recoil.

Patient Ventilation and Exhalation
Not restricted.

CPR with ResQPOD

More blood circulated

Air is selectively prevented from re-entering the lungs on chest wall recoil, enhancing the vacuum responsible for filling the heart.

Vacuum
Vacuum during chest wall recoil is stronger, average range: -3 to -8 mmHG.

Heart Refilling
Refilling of heart is doubled.

Intracranial Pressure (ICP)
Enhanced vacuum lowers ICP even further during chest wall recoil, resulting in less resistance to forward blood flow.²⁵

Patient Ventilation and Exhalation
Not restricted.