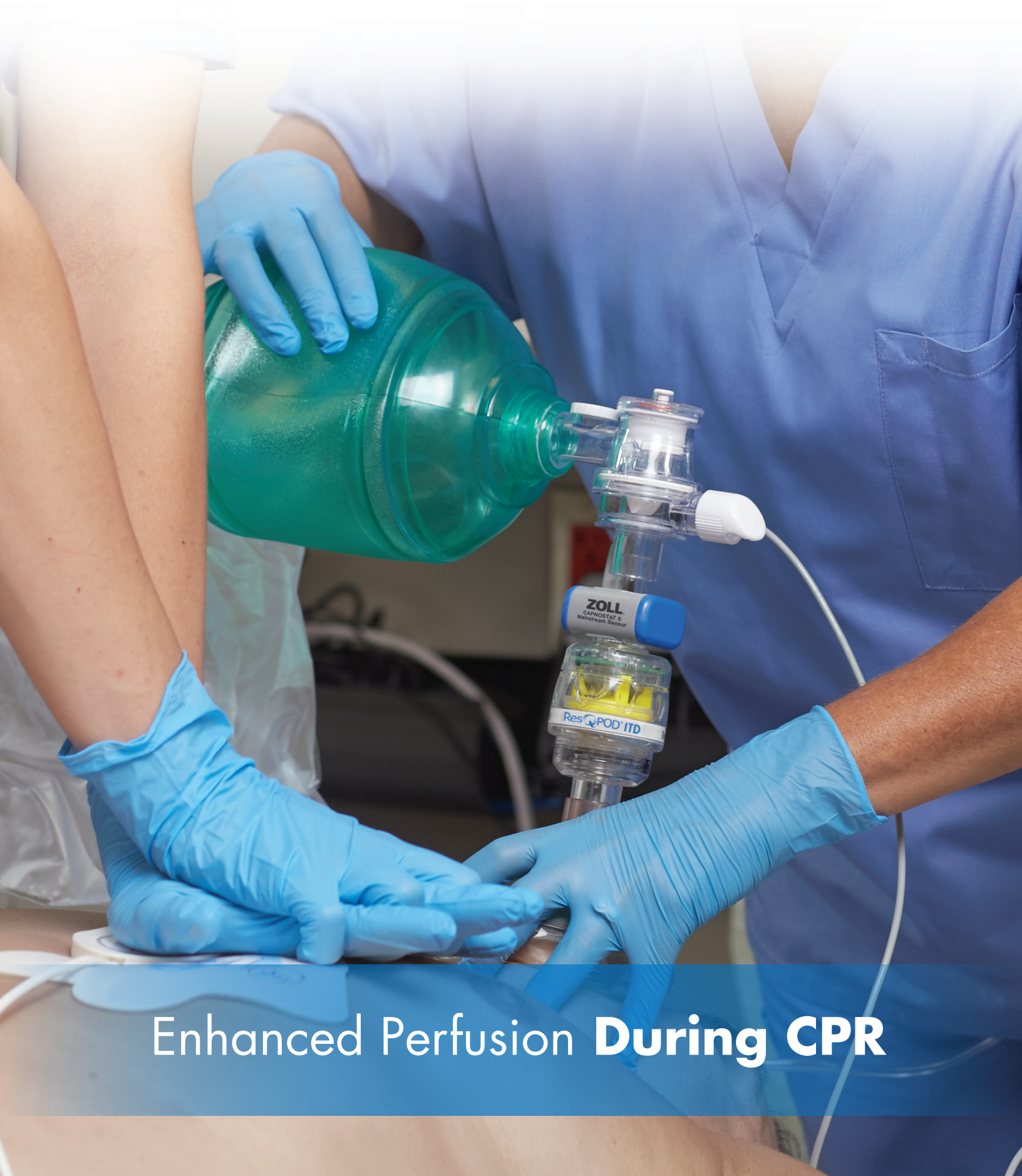
ResQPOD® ITD 10

ZOLL®



Enhanced Perfusion **During CPR**

Improve Perfusion During CPR

Over the past 15 years, we've seen little improvement in survival-to-discharge rates among patients experiencing in-hospital cardiac arrest. But today, a focus on high-quality CPR and adoption of new technologies are helping many systems improve their outcomes. ZOLL's resuscitation platform is designed to help hospitals achieve the highest level of CPR quality, improving overall outcomes.

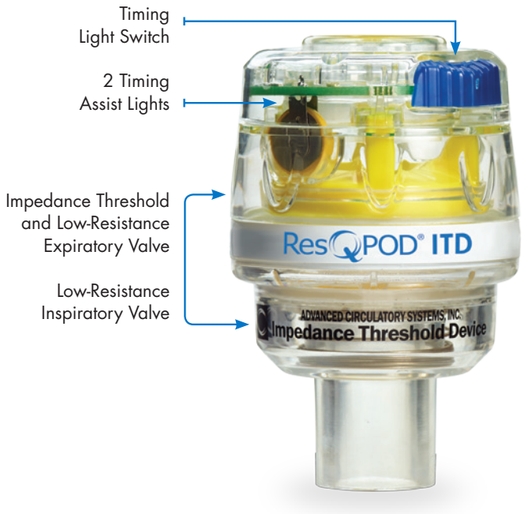
ZOLL's ResQPOD® ITD 10 Increases Perfusion During High-Quality CPR

The ResQPOD impedance threshold device (ITD) is a simple, non-invasive device that delivers intrathoracic pressure regulation (IPR) therapy during basic or advanced life support CPR to improve perfusion. The ITD lowers intrathoracic pressure during the recoil phase of CPR by selectively restricting unnecessary airflow into the chest. This vacuum increases preload, lowers intracranial pressure, and improves blood flow to the brain and vital organs. Pre-clinical studies have shown that the ResQPOD ITD 10:

- Doubles blood flow to the heart[1]
- Increases blood flow to the brain by 50%[2]
- Doubles $EtCO_2$[3]

When used with high-quality CPR, the ITD has been shown in clinical studies to improve survival by 25% or more.[4]

A Simple Solution for More Effective Resuscitation



ResQPOD® ITD 10

Attached to a facemask or other airway adjunct, the ResQPOD ITD contains airway pressure–sensing valves to selectively prevent air from entering the chest during chest wall recoil. This enhances the vacuum that pulls blood back to the heart, increasing preload. Patient ventilation and exhalation are not restricted. When used with an advanced airway, timing lights flash at 10 per minute and guide ventilations at the Guidelines-recommended rate to discourage hyperventilation.

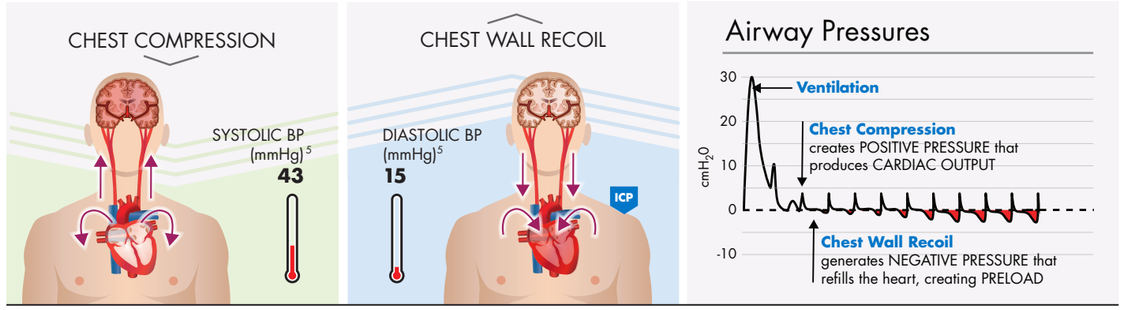
ResQPOD Features and Benefits

- Easy to integrate into resuscitation protocols
- Can be used during BLS and ALS care
- Compatible with all airway adjuncts and ventilation sources
- Timing lights guide ventilations at 10/minute
- Compatible with automated CPR devices
- Cost effective

Enhancing Perfusion During CPR

The ResQPOD ITD enhances circulation during basic or advanced life support CPR. This simple, non-invasive device regulates pressures in the chest and improves blood flow to the heart and brain.

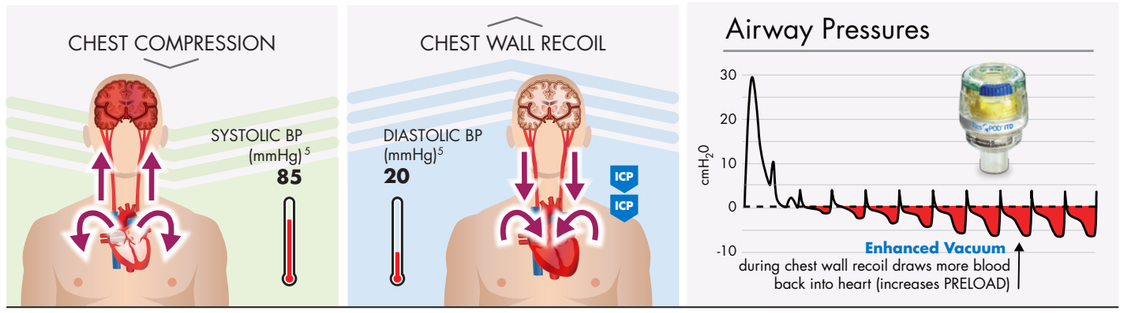
Conventional CPR



Conventional CPR—Limited Blood Flow

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.[6] Limited blood flow is due, in part, to the open airway. During chest wall recoil, air is drawn in and depletes the vacuum (negative pressure) that is needed to fill the heart. This limits cardiac output and blood circulated with compressions.

CPR with the ResQPOD® ITD 10



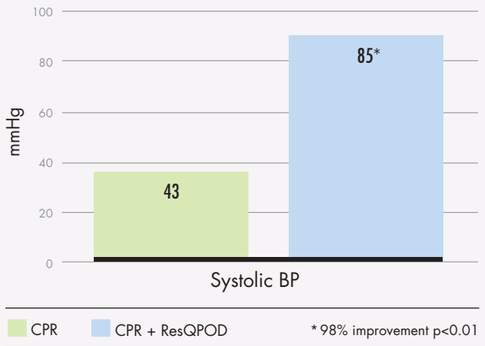
CPR with the ResQPOD ITD—More Blood Circulated

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).[7] As a result, more blood is circulated to the brain and vital organs until the heart can be restarted. When used with high-quality CPR, the ITD has been shown in clinical studies to improve survival by 25% or more.[4]

Studies Support Use of the ResQPOD ITD

Improved Blood Pressure with an ITD

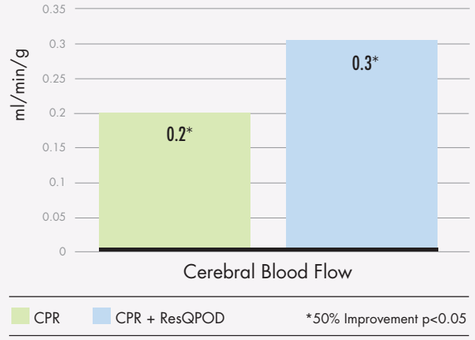
A CLINICAL STUDY SHOWED A 98% INCREASE IN SYSTOLIC BP WHEN AN ITD IS USED.



Pirrallo RG, et al. *Resuscitation*. 2005;66:13-20.

Improved Blood Flow to the Brain with an ITD

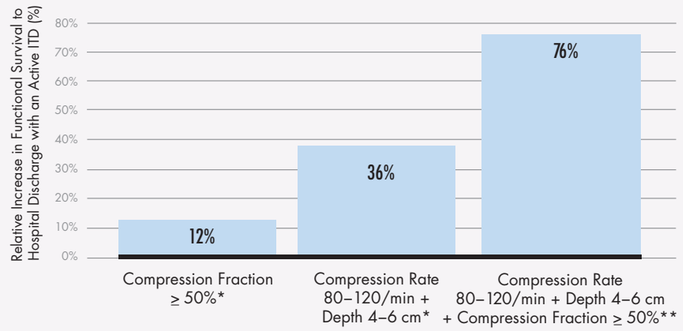
PRE-CLINICAL DATA SHOWED A 50% INCREASE IN BLOOD FLOW TO THE BRAIN AFTER 9 MINUTES OF CPR WHEN AN ITD IS USED.



Lurie KG, et al. *Chest*. 1998;113:1084-1090.

Relative Increase in Survival with an ITD

A POST HOC ANALYSIS OF 6,199 PATIENTS SHOWED AN INCREASE IN SURVIVAL AS THE QUALITY OF CPR IMPROVED.



Yannopoulos D, et al. *Resuscitation*. 2015;94:106-113.

*p=0.05
**p=0.001

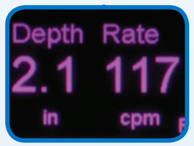
Significant Increase in Chance of Survival

A post hoc analysis of the ROC PRIMED data by Yannopoulos, et al. showed that less than 50% of the patients in the ROC study actually received acceptable-quality CPR, defined as a rate of 80–120 compressions/min, a compression depth of 4–6 cm, with a compression fraction of ≥ 50%.[8] However, as the quality of CPR improved, so did the survival impact of the ResQPOD ITD. And when acceptable-quality CPR was performed, patients who received the ResQPOD ITD had a significantly higher (76%) chance of survival compared to those who received high-quality CPR alone. This analysis demonstrates the importance of utilizing tools to help monitor CPR quality since it appears to have a dose-related impact on the ResQPOD ITD's effectiveness. The better the CPR quality, the more impact the ITD has on survival.

For further study information, please review our clinical summary at www.zoll.com/resqpodclinicalsummary.

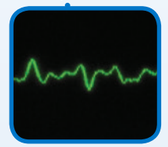
ZOLL Resuscitation Platform

ZOLL's resuscitation platform is designed to promote consistent, high-quality, high-perfusion CPR and high-current defibrillation for adults and pediatrics. Its technologies include Real CPR Help® to provide real-time feedback on compression quality, See-Thru CPR® to help reduce pause time by filtering the CPR artifact, and $EtCO_2$ to signal the earliest changes in patient condition. Utilizing these technologies to help achieve the highest quality CPR will ensure that you recognize the full benefit of the ResQPOD ITD.



Real-time depth and rate are displayed with each compression.

The release indicator shows rescuers whether they are releasing fully and fast enough to support cardiac refilling. A "Release Fully" prompt reminds rescuers not to lean on the chest ensuring proper recoil.



See-Thru CPR reduces pause time by filtering out CPR artifact and allowing clinicians to see if an organized rhythm is developing.

[1]Langhelle A, et al. *Resuscitation*. 2002;52:39-48.

[2]Lurie KG, et al. *Chest*. 1998;113(4):1084-1090.

[3]Yannopoulos D, et al.*Critical Care Med*. 2006;34(5):1444-1449.

[4]Idris AH, et al. *Circulation*. 2012;126:LBBS-22813-AHA.

[5]Pirrallo RG, et al. *Resuscitation*. 2005;66:13-20.

[6]Andreka P, Frenneaux MP. *Curr Opin Crit Care*. 2006;12:198-203.

[7]Aufderheide TP, et al. *Crit Care Med*. 2008;36(11):S397-S404.

[8]Yannopoulos D, et al. *Resuscitation*. 2015;94:106-113.

Studies available upon request. The generally cleared indication for the ResQPOD ITD available for sale in the United States (U.S.) is for a temporary increase in blood circulation during emergency care, hospital, clinic, and home use. Research is ongoing in the US to evaluate the long-term benefit of the ResQPOD for other specific indications. The studies referenced here are not intended to imply specific outcomes-based claims not yet cleared by the US FDA.

Products

PRODUCT	ORDER #
 ResQPOD ITD 10	12-0242-000

ZOLL MEDICAL CORPORATION

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