ZOLL®

GETTING TO HIGH-QUALITY CPR

With Confidence, Consistency, and Results

Success Depends on Your CPR Quality

High-quality CPR is the cornerstone of a system of care that can optimize resuscitation outcomes. The 2013 CPR Quality Consensus Statement from the American Heart Association (AHA)[1] and the AHA and European Resuscitation Council 2015 Guidelines[2,3] underscore just how important CPR quality is. To deliver high-quality CPR, providers need to focus on depth, rate, limited interruptions, and release. ZOLL has solutions that are just right—enough information to improve CPR performance without being distracting—so that rescuers can reach and maintain proficiency in each of these four critical areas.

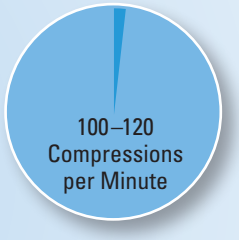
Depth

The Guidelines recommend a depth greater than 2 inches but not more than 2.4 inches (5 to 6 centimeters). Compressions move blood through the body to protect vital organs. Adequate depth is required to essentially trap the heart between the sternum and spine and effectively squeeze the blood out.

How ZOLL technology helps: If a rescuer does not deliver compressions at an adequate depth, an audible and visual prompt to "Push Harder" will be initiated. Once proper depth is reached, it's reinforced with a "Good Compressions" message. ZOLL's professional defibrillators also display depth numerically.

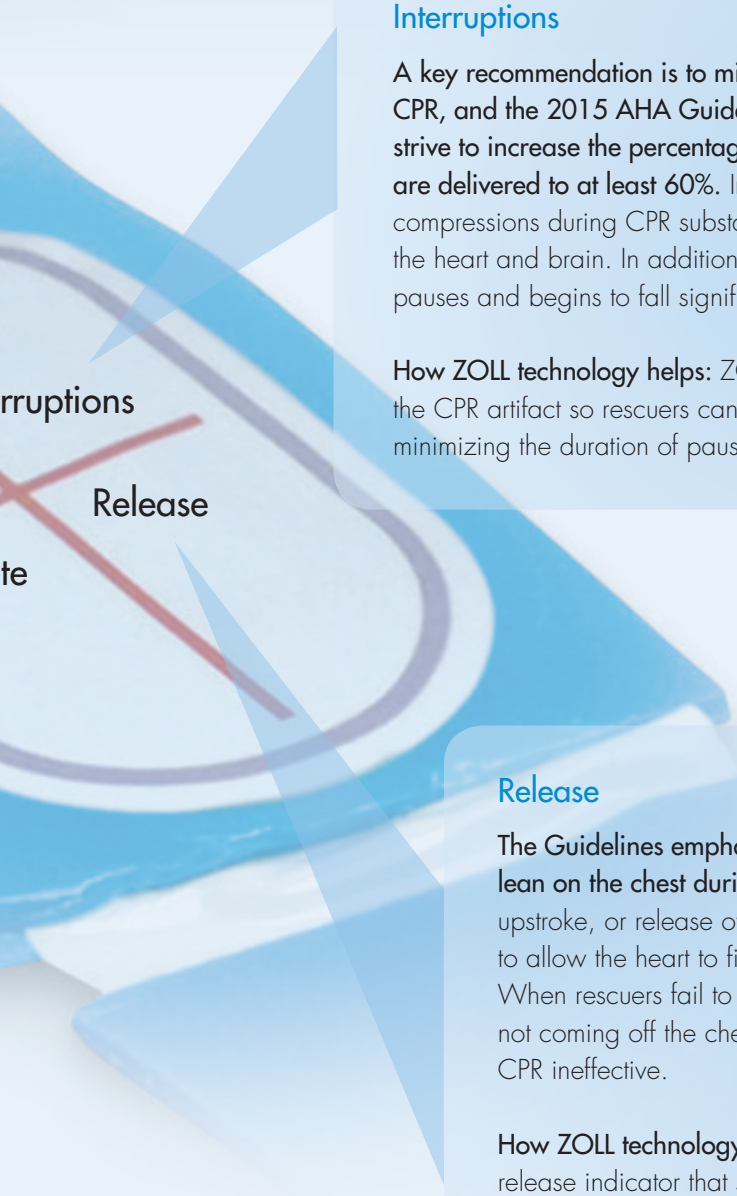
Rate

The Guidelines now recommend a compression rate between 100 and 120 compressions per minute. A rate of at least 100 compressions per minute is necessary to achieve perfusion sufficient to support minimal circulation, while a rate that is too fast often results in inadequate depth or leaning.

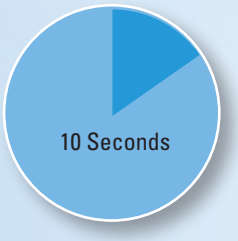


How ZOLL technology helps: An easy-to-follow metronome beep helps rescuers achieve the correct rate. ZOLL's professional defibrillators also display the rate numerically.

Real CPR Help® technology is built into the ZOLL defibrillator electrodes, which include a single-use soft sensor that gathers CPR data and transfers it to the defibrillator. There are no extra pieces and nothing to remember to add. Just place the electrode and the CPR help is automatically enabled.



Interruptions



A key recommendation is to minimize interruptions in CPR, and the 2015 AHA Guidelines urge rescuers to strive to increase the percentage of time compressions are delivered to at least 60%. Interruptions in chest compressions during CPR substantially reduce blood flow to the heart and brain. In addition, shock success is directly tied to pauses and begins to fall significantly after a pause as brief as 10 seconds.

How ZOLL technology helps: ZOLL's patented See-Thru CPR® technology filters the CPR artifact so rescuers can see if an organized rhythm develops, thereby minimizing the duration of pauses.

Release

The Guidelines emphasize that rescuers should not lean on the chest during compressions. The full upstroke, or release of a compression, is necessary to allow the heart to fill for the next compression. When rescuers fail to release the compression by not coming off the chest, pressure builds—making CPR ineffective.

How ZOLL technology helps: ZOLL provides a release indicator that shows the rescuer whether he or she is fully releasing and doing so fast enough to support filling the heart for the next down stroke. A "Release Fully" prompt reminds rescuers not to lean.

IPR Therapy to Improve Perfusion

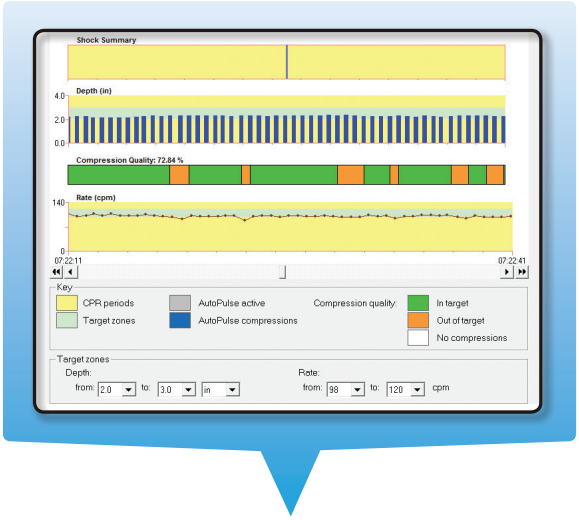
When coupled with high-quality CPR, ZOLL's ResQPOD® ITD (impedance threshold device) delivers intrathoracic pressure regulation (IPR) therapy to increase preload, lower intracranial pressure and improve vital organ blood flow. The ResQPOD ITD has been shown in clinical studies to increase survival by 25% or more.[4]

CPR Quality Review

All ZOLL products with Real CPR Help not only provide real-time CPR feedback but also record CPR performance data for easy download to ZOLL RescueNet® Code Review software for post-event review, analysis, and debriefing. Review is recommended as part of staff training and quality improvement and is considered in accreditation surveys from The Joint Commission. Code Review enables rescuers to see events as they occurred, providing ECG, vital signs, and the depth and rate of compressions for a full post-event analysis of the rescue. It automatically captures and organizes all resuscitation data for case-by-case review, quality assurance assessment, trending of program results, and attachment to patient electronic records. The comprehensiveness of this software is unmatched in the industry.

Get More from an Electrode

Rescuers shouldn't settle for "just electrodes" when they can use ZOLL's multifunction OneStep™, CPR Stat-padz®, and CPR-D-padz® electrodes. The real advantage lies in the electrodes' CPR sensors, which enable real-time CPR feedback (Real CPR Help) without the need to add additional parts or pieces that are easily forgotten or left behind. The single-use sensor also reduces the possibility of transmitting infection from bodily fluids.



Code Review

Pediatric Support

The R Series® is the only defibrillator to provide a pediatric electrode with a built-in CPR sensor. It is difficult to judge how hard one is pushing when performing CPR on a child, so the CPR Dashboard reports the actual depth and rate of compressions delivered. A CPR timer gauges the CPR periods for optimal ventilation, a metronome activates during manual mode when the rate falls below 100 compressions per minute, and an idle timer keeps staff aware of interruptions that compromise perfusion.

[1] Meaney PA, et al. *Circulation*. 2013 Jul 23;128(4):417-35.

[2] 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation*. 2015;132[suppl 2]:S313-S589.

[3] European Resuscitation Council Guidelines for Resuscitation 2015. *Resuscitation*. 2015;95:1-312.

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

"Studies available upon request. The generally cleared indication for use for the ResQPOD ITD 10 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. The studies referenced here are not intended to imply specific outcomes-based claims not cleared by the U.S. FDA."

ZOLL MEDICAL CORPORATION

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