**NLS 5505 Data Table**

**Table** ***Chest compression feedback devices***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Author** | **Model** | **Study design** | **Objective** | **Main Results** |
| **Auditory and visual Feedback Device** |
| Austin *et al{A*ustin 2017 1} | Manikin | Randomized | SkillGuide CPR Feedback Device (visual) vs. Metronome (auditory) | Metronome better CC rate vs. CC depth trend for better performance with feedback device, release/recoil: no differences |
| Kandasamy *et al*{Kandasamy 2019 793} | Manikin | Randomized | Custom designed real-time feedback software | Feedback device better CC rate, depth, recoil, and duty cycle |
| Andriessen *et al*{Andriessen 2012 274} | Manikin | Randomized | Rhythm of life aid (ROLA) | Feedback device reduced CC rhythm variability |
| Fuerch *et al*{Fuerch 2014 52} | Manikin | Randomized | NeoCue decision support tool | Feedback device increased time to decide to perform CC |
| Martin *et al*{Martin 2013 1125} | Manikin | Randomized | Custom designed real-time feedback software | Feedback device better CC rate, depth, recoil, and duty cycle |
| **Visual Feedback Device** |
| Kim *et al*{Kim 2020 114} | Manikin | Retrospective | SimPad PLUS with Skill-Reporter | Feedback device improved ratio of correct CC depth and rate |
| **Auditory Support Device** |
| Solevåg *et al*{Solevåg 2018 1} | Manikin | Randomized | CPR with 90/min vs. 120/min with and without metronome | Metronome had less variability in CC rate |
| Solevåg *et al*{ Solevåg 2016 1} | Manikin | Randomized | CPR with or without metronome | No difference in CC rate, CC force or CC pressure |
| Kim *et al*{Kim 2019 795} | Manikin | Randomized | CPR with or without metronome | Metronome had better CC rate performance |
| Roehr *et al*{Roehr 2014 444} | Manikin | Randomized | Musical pieces (105, 110, 120beats/min) | Abba’s SOS had best CC rate performance |
| Dold *et al*{Dold 2014 245} | Manikin | Observational | Musical pieces (110beats/min) | CC rate lower with music but less variability of CC |
| **Haptic Support Device** |
| Jeon SA *et al*{Jeon 2021 193} | Manikin | Randomized | Smartwatch (Metronome with vibration) | Smart watch associated with higher proportion of optimal CC duration, lower CC rate, and no difference in CC depth |
| **Real-time physiologic Feedback** |
| Chalak *et al*{Chalak 2011 401} | Piglet | Observational | ETCO2 to determine ROSC | An ETCO₂ cut-off value of 14 mm Hg was the most sensitive ETCO₂ value with the least false positives; area under the curve for ROC of 0.94 |
| Chandrasekharan *et al*{Chandrasekharan 2017 898} | Lamb | Observational | ETCO2 to determine ROSC | 100% sensitivity and 97% specificity for ETCO2 rise and ROSC |
| Hamrick *et al*{Hamrick 2014 e000450} | Piglets | Randomized | CPR with or without ETCO2 guidance | No difference in time to ROSC  |
| Hamrick et al{Hamrick 2017 e575} | Piglets | Randomized  | CPR with or without ETCO2 guidance | No difference in survival |
| Maher *et al*{Maher 2009 662} | Newborn | Retrospective | CC depth with 1/3 or 1/2 of anterior-posterior chest diameter | Systolic, mean arterial, and pulse pressures increased with CC at 1/2 anterior-posterior chest diameter |
| Stine *et al*{Stine 2019 e01871} | Newborn | Retrospective | Review of ETCO2 and time to HR>60/min | ETCO2 of 17-18mmHg had highest sensitivity and specificity for time to HR>60/min; area under the curve for ROC of 0.835 |

CPR=cardiopulmonary resuscitation, CC=chest compression, ROSC=return of spontaneous circulation, ETCO2= end-tidal carbon dioxide, HR=heart rate, ROC=receiver operator characteristic