**NLS 5501 Data Table**

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| **Author** | **Model** | **Study design** | **Objective** | **Main Results** |
| **Two finger (TF) vs. two thumb (TT) technique** |
| Whitelaw *et al{Whitelaw 2000 213}* | Manikin | Randomized | CPR with TF vs. TT  | No difference between both groups |
| Martin *et al*{Martin 2020 133} | Manikin | Randomized | CPR with TT and TF  | TT higher CC depth, chest release force, and CC duty cycle |
| Reynolds *et al*{Reynolds 2020 133} | Manikin | Randomized | Term and preterm manikin | No difference in change in heart rate or cardiac output |
| Dorfsman *et al*{Dorfsman 2000 1077} | Manikin | Randomized | CPR with TT vs. TF  | TT higher systolic, diastolic, and mean blood and pulse pressure |
| Christman *et al*{Christman 2011 F99} | Manikin | Randomized | CPR with TT vs. TF | TT greater CC depth, correct finger position, less variability |
| Pellegrino *et al*{Pellegrino 2019 104} | Manikin | Randomized | TF vs. TT for lone responder | TT higher mean compression depth; TF higher percentages of compression fraction and complete recoil |
| Jiang *et al*{Jiang 2015 531} | Manikin | Randomized | CPR with TF vs. TT technique | TT higher mean compression depths; TF significant lower fractions of correct hand position |
| Jo *et al*{Jo 2017 462} | Manikin | Randomized | CPR with OTT vs. TF technique | Over-the-head two-thumb greater CC depth, more effective CC, complete recoil, and lower fatigue score  |
| Cheung et al{Cheung 2020 559} | Manikin | Randomized | CPR with TT vs. OTT technique | No significant difference in effective CC depth or rate |
| Udassi *et al*{Udassi 2010 712} | Manikin | Randomized | Lone rescuer TT vs TF  | No significant difference in mean % effective breaths; Delivered compressions/min were lower with TT; TT significantly higher CC depth and compression pressure |
| Huynh *et al*{Huynh 2012 658} | Manikin | Randomized | TT vs. TF on either table vs. radiant warmer vs. floor | TT had higher CC depth on floor; Decay in CC over time greater with TF on the floor and radiant warmer; Providers favored table over radiant warmer over floor |
| Lee *et al*{Lee 2020 e700} | Manikin | Randomized | CPR with TF vs. TT technique | TT higher CC depth, longer hands-off time, finger strength |
| Saini *et al*{Saini 2012 690} | Newborn | Randomized | TF vs. TT during CPR in neonates of various gestational ages | TT significantly higher proportion of correct finger placements |
| **Novel finger/hand positions vs. TF or TT technique** |
| Yang *et al*{Yang 2019 1217} | Manikin | Randomized | Flexed two-finger (FTF) vs. TT vs. TF | TT had highest adequate CC depth and longest hand-off time |
| Kim *et al*{Kim 2016 997} | Manikin | Randomized | TF with right vs. left hand and index-middle vs. middle-ring fingers | CC depth significantly greater with TF index-middle fingers regardless of the hand |

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| Jung *et al*{Jung 2019 261} | Manikin | Randomized | Knocking finger (KF) vs. TF vs. TT  | KF highest total CC frequency; TT highest correct CC depth |
| Paek *et al*{Paek 2019 e0226632} | Manikin | Randomized | Three-finger pinch (PT) vs. plate-assisted device (PAT) vs. TF technique | PT and PAT improved CC depth |
| Rodriguez Ruiz *et al*{Rodriquez-Ruis 2019 1529} | Manikin | Randomized | TT vs. new two-thumb vs. KF | No differences between any variables analyzed  |
| Na *et al*{Na 2015 e70} | Manikin | Randomized | Vertical two‐thumb (VTT) vs. TT | VTT generated significantly higher pressure |
| Park *et al*{Park 2018 1} | Manikin | Randomized | Palm presser vs. TF technique | Palm presser resulted in greater mean CC depth, deep compressions, and better correct hand position |
| Smereka *et al*{Smereka 2018 159} | Manikin | Randomized | nTT vs. TF by novice physicians | nTT had highest effective compression efficiency |
| Smereka *et al*{Smereka 2018 761} | Manikin | Randomized | nTT vs. TF technique by nurses | nTT less fatigue, better CC fraction and CC depth |
| Smereka *et al*{Smereka 2017 e5915} | Manikin | Randomized | nTT vs. TF technique by paramedics | nTT highest percentage of correct CC rate; CC depth lowest with TF  |
| Smereka *et al*{Smereka 2017 604} | Manikin | Randomized | nTT vs. TF vs. TT by paramedics with <1-year experience | Incorrect decompressions increased with TT |
| Smereka *et al*{Smereka 2016 589} | Manikin | Randomized | nTT vs. TF vs. TT by novice physicians with <1-year experience | TF had highest percentage of recoil and fastest CC rate |
| Smereka *et al*{Smereka 2017 1420} | Manikin | Randomized | nTT vs. TF vs. TT technique by EMS | nTT highest systolic and diastolic blood and pulse pressure |
| Ladny *et al*{Ladny 2018 e9386} | Manikin | Randomized | 2 thumbs-fist vs. nTTT vs. TF vs. TT | nTTT higher systolic blood pressure, participations preferred nTTT |
| Lee *et al*{Lee 2018 372} | Manikin | Randomized | TT + compression assist device (Reheart) vs. TT technique | Proportion of compression on target area higher with Reheart; No difference in CC rates or depth |
| Fakhraddin *et al*{Fakhraddin 2011 15} | Manikin | Randomized | TF vs. TT vs. TIFM | TT and TIFM with similar performance while TF was inferior |
| Jang *et al*{Jang 2018 36} | Human | Observational | TT vs One Hand | One Hand position greater prevalence of inappropriately fast CC rate. No difference in depth between both techniques. |

CPR=cardiopulmonary resuscitation, CC=chest compression, TF=2-finger technique, TT=2-thumb technique, nTT=novel 2-thumb technique, OTT=Over-the-head two-thumb encircling technique, PT=Three-finger pinch technique, PAT=plate-assisted technique, VTT=Vertical two‐thumb, TIFM=Thumb and index finger method