**Web extra material**

**Supplement 1.** Summary of the included studies that assessed the 20mSRT performance of 9–17 year olds.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Reference** | **Country** | **Year of testing** | **Sex** | **Age range**  **(years)** | **Sample range** | **Total sample size** | **Sampling strategy** | **Sampling base** |
| ACHPER w1 | Australia | 1994 | B+G | 9–16 | 46–104 | 1140 | P | S |
| ASC w2 | Australia | 1993 | B+G | 12–16 | 301–542 | 3842 | NP | N |
| Booth et al. w3 | Australia | 1997 | B+G | 9–15 | 122–491 | 3934 | P | S |
| Booth et al. w4 | Australia | 2004 | B+G | 9–15 | 58–375 | 3143 | P | S |
| Cooley & McNaughton w5 | Australia | 1998 | B+G | 11–16 | 339–636 | 6161 | P | S |
| Hardy et al. w6 | Australia | 2010 | B+G | 9–15 | 114–720 | 5021 | P | S |
| Jenner et al. w7 | Australia | 1988 | B+G | 11–12c | 264–283 | 1094 | NP | S |
| Lloyd & Antonas w8 | Australia | 1998? | B+G | 11–12 | 69–71 | 280 | NP | S |
| McIntyre w9 | Australia | 1999–00, 2009 | B+G | 10 | 41–48 | 178 | NP | C |
| Mulkearns et al. w10 | Australia | 1996–98 | G | 9–10 | 66–79 | 145 | NP | C |
| Okely et al. w11 | Australia | 1996 | B | 14a | 51–51 | 51 | NP | C |
| Vandongen et al. w12 | Australia | 1990 | B+G | 10–12b | 162 | 972 | NP | C |
| Baquet et al. w13 | Belgium | 1997 | B+G | 12–16 | 51–81 | 455 | NP | S |
| Beunen et al. w14 | Belgium | 1990 | B+G | 9–17 | 211–423 | 5281 | P | S |
| Cardon et al. w15 | Belgium | 2002? | B+G | 9–10c | 111–186 | 591 | P | S |
| Heyters & Marique w16 | Belgium | 1994, 2004 | B+G | 10–17 | 90–306 | 6418 | P | S |
| Lefèvre et al. w17 | Belgium | 1993, 1997 | B+G | 12–17 | 166–288 | 5535 | P | S |
| Ortega et al. w18 | Belgium | 2006–08 | B+G | 13–15 | 40–44 | 170 | P | C |
| Poortmans et al. w19 | Belgium | 1984–85 | B+G | 12–16 | 41–82 | 347 | P | S |
| Seghers & Rutten w20 | Belgium | 2007 | B+G | 11–12 | 69–90 | 318 | P | C |
| Telama et al. w21 | Belgium | 1994–95 | B+G | 12–15 | 423–700 | 2225 | NP | S |
| Vandendriessche et al. w22 | Belgium | 2010? | B+G | 9–11b | 132–235 | 1018 | P | S |
| Verstraete et al. w23 | Belgium | 2002, 2004 | B+G | 9–11c | 77–221 | 1000 | P | S |
| Hobold w24 | Brazil | 2001? | B+G | 9–17 | 92–136 | 951 | P | C |
| Pieta w25 | Brazil | 1998? | B+G | 9–14 | 83–108 | 585 | NP | C |
| Ribeiro et al. w26 | Brazil | 2006 | G | 9–17 | 54–236 | 1290 | P | C |
| Léger et al. w27 | Canada | 1981 | B+G | 9–17 | 155–404 | 5584 | NP | S |
| Leone et al. w28 | Canada | 2009–11 | B+G | 9–12 | 128–277 | 1828 | P | S |
| Massicotte w29 | Canada | 1989–90 | B+G | 9–17 | 75–402 | 5210 | P | N |
| Reed et al. w30 | Canada | 2004 | B+G | 10–11 | 51–59 | 219 | P | C |
| Veldhuizen et al. w31 | Canada | 2005–09 | B+G | 9–15c | 40–1012 | 15217 | P | C |
| Voss et al. w32 | Canada | 2005–07, 2011 | B+G | 10–15c | 49–189 | 951 | NP | S |
| Jurimae & Saar w33 | Estonia | 2001? | B+G | 10–16b | 44–62 | 419 | P | C |
| Jürimäe & Volbekiene w34 | Estonia | 1992 | B+G | 11–17 | 133–294 | 3188 | NP | S |
| Jürimäe et al. w35 | Estonia | 2002 | B+G | 11–17 | 108–234 | 2559 | NP | S |
| Kull & Jürimäe w36 | Estonia | 1992–93 | B+G | 16–17c | 43–131 | 339 | NP | C |
| Raudsepp & Jürimäe w37 | Estonia | 1994–95 | B | 10 | 55 | 55 | P | C |
| Raudsepp & Jürimäe w38 | Estonia | 1994–95 | G | 10 | 56 | 56 | P | C |
| Telama et al. w21 | Estonia | 1994–95 | B+G | 12–15 | 312–334 | 1290 | NP | S |
| Bauqet et al. w39 | France | 1992 | G | 10–10 | 49 | 49 | NP | C |
| Baquet et al. w40 | France | 1997 | B+G | 11–13 | 53–88 | 352 | P | C |
| Baquet et al. w41 | France | 1997, 2001 | B+G | 11c | 44–54 | 98 | NP | C |
| Brunet & Van Praagh w42 | France | 1984–85 | B+G | 9–10 | 40–43 | 83 | NP | C |
| Cazorla w43 | France | 1987 | B+G | 9–12 | 119–693 | 3642 | P | N |
| Cazorla et al. w44 | France | 1996–97 | B+G | 9–11 | 47–110 | 498 | P | S |
| Cazorla et al. w45 | France | 1999 | B+G | 11–14 | 92–212 | 951 | P | S |
| Ortega et al. w18 | France | 2006–08 | G | 13–14 | 44–46 | 90 | P | C |
| Georgiadis w46 | Greece | 1990–91 | B+G | 9–17 | 255–297 | 4814 | P | N |
| Manios et al. w47 | Greece | 2001–02 | B+G | 11c | 52–61 | 113 | P | C |
| Ortega et al. w18 | Greece | 2006–08 | B+G | 13–14 | 41–60 | 212 | P | C |
| Tambalis et al. w48 | Greece | 1997, 2007 | B+G | 9 | 2253–15219 | 66573 | P | N |
| Tambalis et al. w49 | Greece | 2014 | B+G | 9–17 | 490–20149 | 196370 | P | N |
| Tokmakidis et al. w50 | Greece | 2004 | B+G | 9–11 | 43–68 | 300 | NP | C |
| Barabás w51 | Hungary | 1990? | G | 14–17 | 49–130 | 389 | NP | C |
| Ortega et al. w18 | Hungary | 2006–08 | B+G | 13–15 | 52–59 | 279 | P | C |
| Telama et al. w21 | Hungary | 1994–95 | B+G | 12–15 | 100–114 | 439 | NP | S |
| Welk et al. w52 | Hungary | 2013 | B+G | 12–17 | 110–197 | 1348 | P | N |
| Cilia & Bellucci w53 | Italy | 1992 | B+G | 12–14 | 189–259 | 1363 | NP | S |
| Cilia et al. w54 | Italy | 1995 | B+G | 12–14 | 85–120 | 659 | NP | S |
| Cilia et al.w55 | Italy | 1997 | B+G | 12–17 | 109–404 | 2621 | NP | S |
| Cilia et al. w56 | Italy | 1997 | B+G | 15–17 | 44–68 | 173 | NP | C |
| Council of Europe w57 | Italy | 1985–86 | G | 14–17 | 44–79 | 264 | NP | S |
| Grassi et al. w58 | Italy | 2001 | G | 14–17 | 42–53 | 95 | NP | C |
| Ortega et al. w18 | Italy | 2006–08 | G | 16 | 43 | 43 | P | C |
| MoECSSaT w59 | Japan | 1998 | B+G | 9–17 | 885–1120 | 18508 | P | N |
| MoECSSaT w60 | Japan | 1999 | B+G | 9–17 | 701–1059 | 15354 | P | N |
| MoECSSaT w61 | Japan | 2000 | B+G | 9–17 | 606–1060 | 14514 | P | N |
| MoECSSaT w62 | Japan | 2001 | B+G | 9–17 | 657–1123 | 15423 | P | N |
| MoECSSaT w63 | Japan | 2002 | B+G | 9–17 | 636–1126 | 14796 | P | N |
| MoECSSaT w64 | Japan | 2003 | B+G | 9–17 | 676–1126 | 15619 | P | N |
| MoECSSaT w65 | Japan | 2004 | B+G | 9–17 | 706–1126 | 15610 | P | N |
| MoECSSaT w66 | Japan | 2005 | B+G | 9–17 | 765–1121 | 16510 | P | N |
| MoECSSaT w67 | Japan | 2006 | B+G | 9–17 | 782–1128 | 16771 | P | N |
| MoECSSaT w68 | Japan | 2007 | B+G | 9–17 | 765–1127 | 16285 | P | N |
| MoECSSaT w69 | Japan | 2008 | B+G | 9–17 | 788–1119 | 16989 | P | N |
| MoECSSaT w70 | Japan | 2009 | B+G | 9–17 | 807–1124 | 16850 | P | N |
| MoECSSaT w71 | Japan | 2010 | B+G | 9–17 | 822–1117 | 17323 | P | N |
| MoECSSaT w72 | Japan | 2011 | B+G | 9–17 | 823–1113 | 17024 | P | N |
| MoECSSaT w73 | Japan | 2012 | B+G | 9–17 | 916–1125 | 18062 | P | N |
| MoECSSaT w74 | Japan | 2013 | B+G | 9–17 | 742–1089 | 15947 | P | N |
| MoECSSaT w75 | Japan | 2014 | B+G | 9–17 | 920–1125 | 18147 | P | N |
| Jürimäe & Volbekiene w34 | Lithuania | 1992 | B+G | 11–17 | 66–150 | 1601 | NP | S |
| Jürimäe et al. w35 | Lithuania | 2002 | B+G | 11–17 | 214–426 | 4878 | NP | S |
| Brouwer et al. w76 | Netherlands | 2005–07 | B+G | 15–16c | 126–144 | 540 | P | S |
| Slinger et al. w77 | Netherlands | 2002–05 | B+G | 12–15 | 53–308 | 1043 | P | C |
| van Mechelen et al. w78 | Netherlands | 1987 | B+G | 12–16 | 101–285 | 1874 | P | N |
| Bronikowski & Bronikowska w79 | Poland | 2007? | B | 13–14c | 84–115 | 314 | NP | C |
| Maciaszek & Osinski w80 | Poland | 1999? | B+G | 13–14 | 297–371 | 668 | P | C |
| Mleczko et al. w81 | Poland | 1991–92 | B+G | 15–17 | 198–303 | 1431 | P | C |
| Pilicz et al. w82 | Poland | 1999 | B+G | 13–17 | 2055–3470 | 20482 | P | N |
| Coelho-Silva et al. w83 | Portugal | 2008–09 | B+G | 9–16 | 61–143 | 1654 | P | S |
| Marques-Vidal et al.w84 | Portugal | 2000–02 | B+G | 11–17 | 80–250 | 2169 | NP | C |
| Marta et al. w85 | Portugal | 2011 | B+G | 10–11c | 47–105 | 201 | NP | C |
| Mota et al. w86 | Portugal | 1998–00 | B+G | 9c | 59–61 | 120 | P | C |
| Rodrigues et al. w87 | Portugal | 1997–00, 2006 | B+G | 9–15c | 52–168 | 835 | NP | C |
| Santos et al. w88 | Portugal | 2008 | B+G | 10–17 | 486–1695 | 19346 | P | N |
| Silva et al. w89 | Portugal | 2008–09 | B+G | 10–17 | 179–493 | 5532 | P | C |
| Bovet et al. w90 | Seychelles | 2004 | B+G | 11–16 | 174–658 | 5371 | P | N |
| Cazorla et al. w91 | Seychelles | 1990 | B+G | 11–16 | 142–258 | 2542 | P | N |
| du Preez w92 | South Africa | 2005 | B | 11–11 | 45 | 45 | NP | C |
| du Randt w93 | South Africa | 1995–96 | B+G | 11–16 | 45–210 | 1166 | P | N |
| Du Toit et al. w94 | South Africa | 2003? | G | 15–16 | 46–81 | 127 | NP | C |
| Du Toit et al. w95 | South Africa | 2002 | G | 11c | 44 | 44 | NP | C |
| Pienaar & Viljoen w96 | South Africa | 2000–01 | B | 11–15 | 83–134 | 503 | P | S |
| Pienaar et al. w97 | South Africa | 2012 | B+G | 15–16c | 45–81 | 182 | P | C |
| Stadler w98 | South Africa | 2005 | G | 11–12 | 40–51 | 91 | NP | C |
| Van Gent et al. w99 | South Africa | 2000–01 | G | 11–15 | 92–117 | 510 | P | S |
| Brito Ojeda et al. w100 | Spain | 1993? | B+G | 12–17 | 41–50 | 388 | P | S |
| Castro-Pinero et al. w101 | Spain | 2006–07 | B+G | 9–17 | 45–171 | 1898 | P | S |
| Chillón et al. w102 | Spain | 1999–00 | B+G | 9–16 | 75–206 | 2224 | P | C |
| García Baena w103 | Spain | 1999 | B+G | 13–16 | 46–70 | 364 | P | S |
| Gulías-González et al. w104 | Spain | 2010 | B+G | 9–16 | 52–142 | 1494 | P | S |
| Ortega et al. w105 | Spain | 2001–02 | B+G | 13–17 | 78–290 | 2026 | P | S |
| Ortega et al. w18 | Spain | 2006–07 | B+G | 15 | 44 | 44 | P | C |
| Prat et al. w106 | Spain | 1984–85 | B+G | 10–17 | 199–267 | 3932 | P | S |
| Rivas w107 | Spain | 1987 | B+G | 9–17 | 88–303 | 3849 | NP | C |
| Sainz w108 | Spain | 1986–89 | B+G | 10–15 | 69–180 | 1300 | NP | S |
| Sainz w109 | Spain | 1990–94 | B+G | 9–17 | 54–671 | 6658 | P | S |
| Tercedor & Delgado-Fernandez w110 | Spain | 1995 | B+G | 10 | 124–160 | 284 | P | C |
| Torrijos-Nino et al. w111 | Spain | 2010 | B+G | 9–10c | 93–347 | 876 | P | S |
| Ureña w112 | Spain | 1995–96 | B+G | 14–16 | 99–106 | 613 | NP | C |
| Boddy et al. w113 | UK (England) | 1999–2010 | B+G | 9–10b | 104–1213 | 27942 | P | C |
| Boreham et al. w114 | UK (N Ireland) | 1989–90 | B+G | 12–15 | 251–258 | 1015 | P | S |
| Lewitt et al. w115 | UK (Wales) | 2007 | B+G | 13 | 97–141 | 238 | P | C |
| Liverpool City Council w116 | UK (England) | 2000–03 | B+G | 11–12b | 610–1123 | 3466 | NP | C |
| Mahoney w117 | UK (N Ireland) | 1990–91 | B+G | 12 | 50–53 | 103 | NP | C |
| Mahoney & Boreham w118 | UK (N Ireland) | 1989? | B+G | 9–11c | 57–87 | 299 | P | S |
| Nichols & Riddoch w119 | UK (N Ireland) | 1986 | B+G | 12–15c | 44–163 | 474 | P | S |
| Ranson et al. w120 | UK (Wales) | 2009–10 | B+G | 9–11c | 95–164 | 821 | NP | S |
| Riddoch et al. w121 | UK (N Ireland) | 1988–89 | B+G | 11–16 | 208–237 | 2407 | P | N |
| Sandercock et al. w122 | UK (England) | 1998, 2008 | B+G | 10c | 145–158 | 618 | NP | C |
| Sandercock et al. w123 | UK (England) | 2006–10 | B+G | 10–16 | 60–933 | 7354 | NP | S |
| Sandercock et al. w122 | UK (England) | 2014 | B+G | 10c | 150–157 | 307 | NP | C |
| Twisk et al. w125 | UK (N Ireland) | 1992–93 | B+G | 15 | 229–230 | 459 | P | S |
| Watkins w126 | UK (N Ireland) | 1989–90, 1999–01 | B+G | 12–15 | 251–532 | 3032 | P | N |
| Beets & Pitetti w127 | USA | 1999–01 | B+G | 10–17 | 41–63 | 365 | NP | S |
| Beets et al. w128 | USA | 2001–02 | B+G | 10–15 | 71–2787 | 34524 | P | C |
| Carrel et al. w129 | USA | 2008–10 | B+G | 9–17 | 132–2015 | 17634 | NP | S |
| Chun et al. w130 | USA | 1997 | B+G | 12 | 116–120 | 236 | NP | C |
| Liu et al. w131 | USA | 2010? | B+G | 11–13c | 103–121 | 672 | NP | C |
| Lloyd et al. w132 | USA | 2001? | B+G | 11 | 44–67 | 111 | NP | C |
| Mahar et al. w133 | USA | 1995 | B+G | 10c | 98–111 | 209 | NP | C |
| Welk et al. w134 | USA | 2002? | B+G | 9–16b | 43–68 | 519 | NP | C |
| Welk et al. w135 | USA | 2009–10 | B+G | 11–17 | 62–187 | 1504 | NP | C |
| Welk et al. w136 | USA | 2011–14 | B+G | 10–17 | 1897–12143 | 110931 | NP | S |
| Wolford w137 | USA | 1997 | B+G | 10–11c | 43–57 | 195 | NP | C |

Note: aIndicates multinational study; bAge reported as an age range; cAge reported as a mean and standard deviation; ?=indicates year of testing not reported; MoECSSaT= Ministry of Education, Culture, Sports, Science and Technology; B=boys; G=girls; P=Probability sampling; NP=non-probability sampling; N=national sample; S=state/provincial sample; C=community sample (e.g. local, city or school level); some studies reported data for children outside of the target age range (e.g. <9 and >17 years of age), however this table only reports the data for 9–17 year olds.

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