# **Supplementary Table 6: Extracted data for studies with shoulder extension data.**

Isometric (ISO) and isokinetic (IKO) data of concentric (Con) and Eccentric (Ecc) movement types. Age ranges (AR) included. Outcomes are relative to the described measurement unit; where available, effect sizes were extracted or calculated (Cohen's d).

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| --- | --- | --- | --- | --- |
| **Title**  | **Movement Type**  | **Measurement Unit**  | **Outcomes**  | **Effect Size (Cohen’s d)** |
| Murray, et al., 1985  | Isometric  | kg-cm  | Males: Young 0° = 812±40 Old 0° = 755±30Females: Young 0° = 536±30 Old 0° = 359±23 | Young 0° = 6.9Old 0° = 13.2  |
| VanHarlinger, et al., 2015  | Isometric  | Kg  | Males: AR: 20-24 = 19.6±5.0 AR: 25-29 = 17.9±3.3 AR: 30-34 = 17.9±4.1 AR: 35-39 = 19.1±3.6 AR: 40-44 = 18.7±4.2 AR: 45-49 = 14.1±5.4 AR: 50-54 = 14.7±5.3 AR: 55-59 = 15.6±3.1 AR: 60-64 = 15.6±4.3Females: AR: 20-24 = 9.9±3.2 AR: 25-29 = 7±2.8 AR: 30-34 = 8.5±2.7 AR: 35-39 = 8.4±3.7 AR: 40-44 = 7.5±3.5 AR: 45-49 = 10.6±2.8 AR: 50-54 = 7.2±2.6 AR: 55-59 = 6.9±3.2 AR: 60-64 = 7.2±1.7 | AR: 20-24 = 1.94AR: 25-29 = 3.30AR: 30-34 = 2.85AR: 35-39 = 2.97AR: 40-44 = 2.67AR: 45-49 = 0.65AR: 50-54 = 1.42AR: 55-59 = 2.81AR: 60-64 = 2.49  |
| Ferreira, et al., 2020  | Isometric  | Nm/kg  | Males: Right = 1.06±0.14  Left = 1.00±0.13Females:  Right = 0.84±0.13 Left = 0.78±0.10 | Right = 1.57Left = 1.69  |
| Huberman, et al., 2020  | Isometric  | Ibs  | Males: 53.25±14.52Females:  54.41±14.57 | 0.08  |
| Hughes, et al., 1999  | Isometric  | Nm  | Males:Flexed 30°:  AR: 20-29 = 77±21 AR: 30-39 = 64±12 AR: 40-49 = 69±12 AR: 50-59 = 59±12 AR: 60+ = 55±13Flexed 60°:  AR: 20-29 = 86±20 AR: 30-39 = 71±22 AR: 40-49 = 82±15 AR: 50-59 = 68±11 AR: 60+ = 62±11Flexed 90°:  AR: 20-29 = 87±21 AR: 30-39 = 78±17 AR: 40-49 = 81±17 AR: 50-59 = 70±16 AR: 60+ = 64±12Females:Flexed 30°:  AR: 20-29; 38±15 AR: 30-39; 48±14 AR: 40-49; 36±14 AR: 50-59; 27±10 AR: 60+; 24±9Flexed 60°:  AR: 20-29; 45±18 AR: 30-39; 54±18 AR: 40-49; 39±14 AR: 50-59; 32±13 AR: 60+; 28±9Flexed 90°:  AR: 20-29; 46±16 AR: 30-39; 55±20 AR: 40-49; 38±11 AR: 50-59; 36±13 AR: 60+; 27±8 | Extension: Flexed 30°: AR: 20-29 = 1.86AR: 30-39 = 1.33AR: 40-49 = 2.75AR: 50-59 = 2.67AR: 60+ = 2.38 Flexed 60°: AR: 20-29 = 2.05AR: 30-39 = 0.77AR: 40-49 = 2.87AR: 50-59 = 3.27AR: 60+ = 3.09 Flexed 90°: AR: 20-29 = 1.95AR: 30-39 = 1.35AR: 40-49 = 2.53AR: 50-59 = 2.13AR: 60+ = 3.08    |
| Andrews, et al., 1996  | Isometric  | N  | Males: AR: 50-59 = 320.7±54.4 AR: 60-69 = 280.1±56.7Females: AR: 50-59 = 180.6±38 AR: 60-69 = 153±34.7 | AR: 50-59 = 2.57AR: 60-69 = 1.65  |
| Marcondes, et al., 2019  | Isokinetic:60°/s180°/s  | Percent Body Mass  | Males: 60°/s = 126.8±11.6 180°/s = 215.9±19.2Females: 60°/s = 93.1±9.9 180°/s = 145.1±14.1 | 60°/s = 2.91180°/s = 3.69  |
| Cahalan, et al., 1989  | Isokinetic:60°/s180°/s300°/s  | N, Nm  | Males: N = 77±16.5 60°/s = 88.5±19.5 180°/s = 74±16.5 300°/s = 62±15.5Females: N = 38±6.5 60°/s = 40±8 180°/s = 32.5±7 300°/s = 26.5±6 | N = 2.3660°/s = 2.45180°/s = 2.52300°/s = 2.29   |
| Shklar and Dvir, 1995  | Isokinetic: 60°/s120°/s180°/s  | Nm  | Males: Con. 60°/s = 84.9±20.5 Con. 120°/s = 82.1±21.1 Con. 180°/s = 73.3±18.4 Ecc. 60°/s = 112.2±30 Ecc. 120°/s = 113.5±33.1 Ecc. 180°/s = 113.9±30.2Females: Con.60°/s = 38.7±9.1 Con.120°/s = 38±6.9 Con.180°/s = 35.5±7.3 Ecc.60°/s = 56.3±8.2 Ecc.120°/s = 58.1±9.6 Ecc.180°/s = 59.8±8.2 | Con. 60°/s = 2.25Con. 120°/s = 2.09Con. 180°/s = 0.11Ecc. 60°/s = 1.86Ecc. 120°/s = 1.67Ecc. 180°/s = 1.79  |
| Khalaf and Parnianpour, 2001  | Isokinetic:10°/s50°/s100°/s50°/s200°/s250°/s  | Nm  | Males:  10°/s = 92.75±19.22 50°/s = 86.15±13.37 100°/s = 73.28±15.07 150°/s = 66.54±11.61 200°/s = 58.23±11.33 250°/s = 53.32±12.78Female:  10°/s = 53.97±11.21 50°/s = 43.08±10.03 100°/s = 34.45±9 150°/s = 29.99±10.24 200°/s = 22.64±6.24 250°/s = 20.41±8.76 | 10°/s = 2.0250°/s = 3.22100°/s = 2.58150°/s = 3.15200°/s = 3.14250°/s = 2.58  |
| Mayer, et al., 1994  | Isometric; Isokinetic:Con. 300°/sCon. 240°/sCon. 180°/sCon. 60°/sEcc. 60°/sEcc. 120°/s Ecc. 180°/s Ecc. 240°/s  | Nm  | Males: ISO. = 93±24 IKO. Con. 300°/s = 55±15 IKO. Con. 240°/s = 56±14 IKO. Con. 180°/s = 57±12 IKO. Con. 60°/s = 67±16 IKO. Ecc. 60°/s = 78±17 IKO. Ecc. 120°/s = 89±19  IKO. Ecc. 180°/s = 77±10 IKO. Ecc. 240°/s = 74±14Females: ISO. = 54±12 IKO. Con. 300°/s = 32±7 IKO. Con. 240°/s = 31±9 IKO. Con. 180°/s = 32±8 IKO. Con. 60°/s = 38±10 IKO. Ecc. 60°/s = 44±9 IKO. Ecc. 120°/s = 55±16 IKO. Ecc. 180°/s = 57±10 IKO. Ecc. 240°/s = 49±6 | ISO. = 1.63IKO. Con. 300°/s = 1.53IKO. Con. 240°/s = 1.79IKO. Con. 180°/s = 2.08IKO. Con. 60°/s = 1.81IKO. Ecc. 60°/s = 2IKO. Ecc. 120°/s = 1.79IKO. Ecc. 180°/s = 2IKO. Ecc. 240°/s = 1.88  |
| Danneskiold-Samsoe, et al., 2009  | Isometric;Isokinetic:30°/s60°/s90°/s120°/s  | N, Nm  | Males (Nm):  AR: 20-29 = 72.1±19.5 (60°/s), 66.6±18.2 (90°/s), 64.6±18.5 (120°/s)  AR: 30-39 = 65.6±15.1 (60°/s), 59.6±16.1 (90°/s), 56.9±16.1 (120°/s)  AR: 40-49 = 64.0±15.3 (60°/s), 60.1±12.8 (90°/s), 56.7±13.1 (120°/s) AR: 50-59 = 58.2±7.2 (60°/s), 55.3±7.6 (90°/s), 47.8±5.2 (120°/s)  AR: 60-69 = 52.6±12.6 (60°/s), 51.1±11.3 (90°/s), 45.6±10.9 (120°/s) AR: 70-79 = 49.6±8.3 (60°/s), 44.8±6.2 (90°/s), 43.3±5.2 (120°/s)Males (N):  AR: 20-29 = 91.9±19.9 AR: 30-39 = 78.4±18.4  AR: 40-49 = 79.8±18.4  AR: 50-59 = 80.3±4.6  AR: 60-69 = 77.4±16.4  AR: 70-79 = 69.8±13.5Females **(**Nm):  AR: 20-29 = 33.6±6.8 (60°/s), 31.3±6.2 (90°/s), 31.8±6.6 (120°/s)  AR: 30-39 = 35.2±6.8 (60°/s), 31.9±8.1 (90°/s), 30.1±7.8 (120°/s)  AR: 40-49 = 34.6±6.7 (60°/s), 31.3±7.4 (90°/s), 30.4±7.0 (120°/s)  AR: 50-59 = 32.2±6.2 (60°/s), 29.7±6.8 (90°/s), 29.3±6.9 (120°/s)  AR: 60-69 = 30.4±6.0 (60°/s), 28.7±5.5 (90°/s), 28.3±6.3 (120°/s) AR: 70-79 = 27.2±6.1 (60°/s), 25.1±6.4 (90°/s), 23.7±5.4 (120°/s)Females (N):  AR: 20-29 = 43.5±8.5 AR: 30-39 = 47.7±8.5  AR: 40-49 = 46.3±14.3 AR: 50-59 = 43.7±8.7  AR: 60-69 = 41.7±10.1  AR: 70-79 = 37.7±9.3  | Nm: AR: 20-29 = 1.97 (60°/s), 1.94 (90°/s), 1.77 (120°/s) AR: 30-39 = 2.01 (60°/s), 1.72 (90°/s), 1.66 (120°/s)AR: 40-49 = 1.92 (60°/s), 2.25 (90°/s), 2.01 (120°/s)AR: 50-59 = 3.61 (60°/s), 3.37 (90°/s), 3.56 (120°/s)AR: 60-69 = 1.76 (60°/s), 1.98 (90°/s), 1.59 (120°/s)AR: 70-79 = 2.69 (60°/s), 3.18 (90°/s), 3.77 (120°/s) N: AR: 20-29 = 2.43AR: 30-39 = 1.67AR: 40-49 = 1.82AR: 50-59 = 7.76AR: 60-69 = 2.18AR: 70-79 = 2.38 |