Table 1. Intra-class correlation (ICC), standard error of measurement (SEM) and standardized mean bias with 95% compatibility interval. Mean bias with limits of agreement set to ±1.96 standard deviations (SD). Values for SEM and mean bias are displayed in cm² with standardized mean bias being displayed in SDs. All values calculated for m. rectus femoris (RF) and m. vastus lateralis (VL) comparing ACSAuto to manual measurements. “Quadriceps” (Qa), “Quad” (Q) and separate image modes were used. “Manual” (M), “Fixed pixels” (F) and “Automatic” (A) outline-finder starting points. Freerun (fre) and manual scaling (ManRF) trials were compared as well.

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| Modality | ICC | SEM | Mean bias | Standardized mean bias |
|  | Quadriceps RF & VL | | |  |
| QaMRF | 0.993 (0.989,0.996) | 0.43 (0.36,0.52) | -0.18 (-1.15,0.78) | -0.06 (-0.10,-0.02) |
| QaFRF | 0.988 (0.981,0.993) | 0.38 (0.32,0.46) | -0.04 (-1.11,1.04) | -0.01 (-0.06,0.03) |
| QaARF | 0.983 (0.972, 0.99) | 0.32 (0.27,0.39) | 0.06 (-1.10,1.21) | 0.02 (-0.03,0.07) |
| QaMVL | 0.97 (0.951,0.982) | 0.77 (0.65,0.94) | -0.46 (-2.59,1.67) | -0.11 (-0.17,-0.04) |
| QaFVL | 0.968 (0.947,0.981) | 0.77 (0.66,0.94) | -0.24 (-2.46,1.97) | -0.06 (-0.12,0.01) |
| QaAVL | 0.975 (0.958,0.985) | 0.74 (0.63,0.91) | -0.12 (2.10,1.85) | -0.03 (-0.09,0.03) |
|  | Freerun Quadriceps RF & VL | | |  |
| FREQaMRF | 0.648 (0.469,0.775) | 1.89 (1.60,2.32) | -0.66 (-4.36,3.04) | -0.26 (-0.46,-0.07) |
| FREQaFRF | 0.412 (0.174,0.604) | 2.54 (2.15,3.12) | 0.07 (-4.67,5.17) | 0.03 (-0.29,0.35) |
| FREQaARF | 0.411 (0.173,0.604) | 2.54 (2.16,3.10) | 0.31 (-4.93,5.20) | 0.15 (-0.17,0.47) |
| FREQaMVL | 0.415 (0.178,0.607) | 3.55 (3.00,4.34) | -0.81 (-8.13,6.17) | -0.33 (-0.66,-0.01) |
| FREQaFVL | 0.269 (0.013,0.491) | 3.69 (3.12,4.51) | 3.20 (-6.02,11.88) | 1.17 (0.76,1.57) |
| FREQaAVL | 0.351 (0.104,0.557) | 3.88 (3.28,4.47) | 1.59 (-6.84,10.56) | 0.56 (0.13,0.76) |
|  | Quad RF & VL | | |  |
| QMRF | 0.994 (0.99,0.996) | 0.37 (0.31,0.45) | -0.18 (-1.08,0.71) | -0.06 (-0.10,-0.02) |
| QFRF | 0.989 (0.981,0.993) | 0.36 (0.31,0.44) | -0.11 (-1.10,0.89) | -0.03 (-0.08,0.01) |
| QARF | 0.981 (0.968, 0.988) | 0.55 (0.47,0.67) | -0.08 (-1.43,1.27) | -0.03 (-0.08,0.03) |
| QMVL | 0.969 (0.948,0.981) | 0.79 (0.67,0.96) | -0.19 (-2.40,2.02) | -0.04 (-0.11,0.02) |
| QFVL | 0.987 (0.978,0.992) | 0.68 (0.58,0.83) | -0.21 (-2.10,1.68) | -0.05 (-0.11,0.01) |
| QAVL | 0.987 (0.979,0.992) | 0.69 (0.59,0.84) | -0.18 (-2.02,1.66) | -0.04 (-0.10,0.01) |
|  | RF & VL | | |  |
| MRF | 0.993 (0.988,0.996) | 0.20 (0.17,0.24) | 0.37 (-0.06,0.79) | 0.15 (0.12,0.17) |
| FRF | 0.994 (0.99,0.996) | 0.15 (0.13,0.19) | 0.34 (-0.02,0.71) | 0.14 (0.12,0.16) |
| ARF | 0.993 (0.988,0.996) | 0.14 (0.12,0.17) | 0.39 (0.03,0.74) | 0.16 (0.14,0.17) |
| ManRF | 0.998 (0.996,0.999) | 0.12 (0.1,0.14) | 0.17 (-0.15,0.50) | 0.07 (0.05,0.09) |
| MVL | 0.992 (0.987,0.995) | 0.66 (0.56,0.80) | -0.31 (-1.85,1.23) | -0.07 (-0.11,-0.02) |
| FVL | 0.989 (0.982,0.994) | 0.60 (0.51,0.73) | -0.34 (-2.19,1.52) | -0.07 (-0.12,-0.02) |
| AVL | 0.993 (0.988,0.996) | 0.60 (0.51,0.73) | -0.28 (-1.79,1.23) | -0.06 (-0.10,-0.02) |
|  | Freerun RF & VL | | |  |
| FREMRF | 0.319 (0.072,0.528) | 2.26 (1.92,2.76) | -0.26 (-3.51,2.90) | -0.17 (-0.57,0.23) |
| FREMVL | 0.388 (0.15,0.583) | 4.50 (3.82,5.49) | -1.66 (-10.59,7.58) | 0.47 (0.11,0.83) |
|  | GM | | |  |
| MGM | 0.998 (0.978, 0.992) | 0.49 (0.17, 0.78) | -0.41 (-1.76, 0.94) | -0.12 |

Table 2. Intra-class correlation (ICC) standard error of measurement (SEM) and standardized mean difference with 95% compatibility interval. Mean bias with limits of agreement set to ±1.96 standard deviations and minimal detectable change (MDC). Values are displayed in cm² with standardized mean bias being displayed in SDs. All values calculated for m. rectus femoris (RF) and m. vastus lateralis (VL) comparing investigator1 and investigator2. “Manual” (M), “Fixed pixels” (F) and “Automatic” (A) outline-finder starting points. “Quadriceps” (Qa), “Quad” (Q) and separate image modes were used.

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| Variable | ICC | SEM | MDC | Mean bias | Standardized mean bias |
|  | Quadriceps RF & VL | | | |  |
| QaMRF | 0.97 (0.938,0.986) | 0.24 (0.19,0.32) | 0.67 | 0.11 (-0.56,0.77) | 0.08 (-0.01,0.18) |
| QaFRF | 0.938 (0.873,0.97) | 0.36 (0.29,0.48) | 0.99 | 0.25 (-0.75,1.24) | 0.18 (0.04,0.33) |
| QaARF | 0.934 (0.869,0.969) | 0.35 (0.28,0.47) | 1.04 | 0.11 (-0.94,1.15) | 0.04 (-0.11,0.18) |
| QaMVL | 0.958 (0.913,0.98) | 0.72 (0.58,0.97) | 2 | -0.16 (-2.16,1.85) | -0.05 (-0.16,0.07) |
| QaFVL | 0.926 (0.85, 0.964) | 0.87 (0.69,1.16) | 2.4 | 0.47 (-1.93,-2.87) | 0.16 (0.00,0.31) |
| QaAVL | 0.984 (0.967,0.993) | 0.46 (0.37,0.62) | 1.27 | 0.4 (-0.87,1.67) | 0.13 (0.05,0.21) |
|  | Quad RF & VL | | | |  |
| QMRF | 0.972 (0.941,0.986) | 0.22 (0.18,0.30) | 0.62 | 0.32 (-0.31,0.94) | 0.24 (0.15,0.33) |
| QFRF | 0.959 (0.915,0.98) | 0.30 (0.24,0.40) | 0.82 | 0.19 (-0.63,1.00) | 0.14 (0.02,0.25) |
| QARF | 0.971 (0.940,0.986) | 0.22 (0.18,0.30) | 0.81 | 0.2 (-0.61,1.01) | 0.15 (0.03,0.27) |
| QMVL | 0.958 (0.913,0.98) | 0.66 (0.52,0.89) | 1.82 | 0.19 (-0.16,0.54) | 0.06 (-0.05,0.17) |
| QFVL | 0.976 (0.949, 0.988) | 0.49 (0.39,0.66) | 1.36 | 0.66 (-0.70,2.87) | 0.22 (0.13,0.30) |
| QAVL | 0.981 (0.96,0.991) | 0.44 (0.35,0.59) | 1.21 | 0.48 (-0.74,1.69) | 0.16 (0.08,0.23) |
|  | RF & VL | | | |  |
| MRF | 0.996 (0.993,0.998) | 0.11 (0.09,0.15) | 0.31 | 0.01 (-0.30,0.32) | 0.01 (-0.04,0.05) |
| FRF | 0.998 (0.996,0.999) | 0.09 (0.07, 0.13) | 0.25 | 0.06 (-0.19,0.30) | 0.04 (0.00,0.08) |
| ARF | 0.998 (0.996,0.999) | 0.08 (0.07,0.11) | 0.22 | 0.01 (-0.21,0.24) | 0.01 (-0.02,0.04) |
| MVL | 0.995 (0.991,0.998) | 0.43 (0.35,0.58) | 1.2 | 0.06 (-1.14,1.26) | 0.01 (-0.04,0.06) |
| FVL | 0.993 (0.985,0.997) | 0.26 (0.21,0.35) | 1.46 | 0.30 (-1.16,1.76) | 0.06 (0.03,0.09) |
| AVL | 0.996 (0.992,0.998) | 0.35 (0.28,0.48) | 0.98 | 0.29 (-0.69,1.27) | 0.06 (0.02,0.10) |

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| --- | --- | --- | --- | --- | --- |
| Modality | ICC | SEM | MDC | Mean bias | Standardized mean bias |
|  | Quadriceps RF & VL | | | |  |
| QaMRF | 0.976 (0.951,0.988) | 0.21 (0.17,0.29) | 0.74 | 0.00 (-0.74,0.74) | 0.00 (0.21,0.36) |
| QaFRF | 0.943 (0.883,0.972) | 0.35 (0.28,0.47) | 0.98 | -0.02 (-0.95,1.00) | -0.02 (-0.15,0.12) |
| QaARF | 0.951 (0.899,0.976) | 0.30 (0.24,0.41) | 0.91 | -0.15 (-1.06,0.75) | -0.12 (-0.26,0.01) |
| QaMVL | 0.990 (0.978, 0.995) | 0.62 (0.26,0.93) | 1.72 | -0.09 (-1.81,1.63) | -0.03 (-0.13,0.08) |
| QaFVL | 0.955 (0.908,0.978) | 0.68 (0.54,0.91) | 2.19 | 0.00 (-2.19,2.19) | 0.00 (-0.14,0.14) |
| QaAVL | 0.984 (0.967,0.993) | 0.40 (0.32,0.54) | 1.08 | -0.22 (-1.30,0.86) | -0.07 (0.14,0.01) |
|  | Quad RF & VL | | | |  |
| QMRF | 0.980 (0.958,0.990) | 0.19 (0.15,0.26) | 0.56 | 0.15 (-0.41,0.70) | 0.11 (-0.03,0.19) |
| QFRF | 0.963 (0.923,0.982) | 0.28 (0.22,0.37) | 0.73 | -0.03 (-0.76,0.70) | -0.02 (-0.13,0.08) |
| QARF | 0.971 (0.941,0.986) | 0.24 (0.19,0.32) | 0.82 | 0.05 (-0.86,0.77) | 0.03 (-0.08,0.15) |
| QMVL | 0.984 (0.966,0.992) | 0.48 (0.29,0.63) | 1.32 | -0.31 (-1.62,1.01) | -0.10 (-0.18,-0.02) |
| QFVL | 0.982 (0.962,0.991) | 0.44 (0.35,0.60) | 1.18 | -0.15 (-1.33,1.04) | -0.05 (-0.12,0.03) |
| QAVL | 0.985 (0.969,0.993) | 0.39 (0.31,0.53) | 1.07 | -0.13 (-1.20,0.93) | -0.04 (-0.11,0.02) |
|  | RF & VL | | | |  |
| MRF | 0.989 (0.978,0.995) | 0.14 (0.11,0.19) | 0.38 | -0.20 (-0.58,0.18) | -0.15 (-0.21,-0.10) |
| FRF | 0.994 (0.987,0.997) | 0.11 (0.08,0.14) | 0.29 | -0.24 (-0.53,0.05) | -0.18 (-0.22,-0.14) |
| ARF | 0.996 (0.991, 0.998) | 0.09 (0.07,0.12) | 0.24 | -0.22 (-0.46,0.02) | -0.16 (-0.20,-0.13) |
| MVL | 0.986 (0.971,0.993) | 0.57 (0.46,0.77) | 1.49 | -0.80 (-2.29,0.68) | -0.17 (-0.23,-0.11) |
| FVL | 0.992 (0.983,0.996) | 0.44 (0.35,0.59) | 1.56 | -0.74 (-2.30,0.83) | -0.16 (-0.20,-0.11) |
| AVL | 0.993 (0.985,0.997) | 0.41 (0.33,0.55) | 1.13 | -0.51 (-1.65,0.62) | -0.11 (-0.16,-0.06) |
|  | GM | | | |  |
| MGM | 0.997 (0.987, 0.999) | 0.26 (0.12, 0.34) | 0.72 | -0.03 (-0.74, 0.69) | -0.01 |

Table 3. Intra-class correlation (ICC) standard error of measurement (SEM) and standardized mean difference with 95% compatibility interval. Mean bias with limits of agreement set to ±1.96 standard deviations and minimal detectable change (MDC). Values are displayed in cm² with standardized mean bias being displayed in SDs. All values calculated for m. rectus femoris (RF) and m. vastus lateralis (VL) comparing two measurements of investigator 1. “Manual” (M), “Fixed pixels” (F) and “Automatic” (A) outline-finder starting points. “Quadriceps” (Qa), “Quad” (Q) and separate image modes were used.