Appendix 1. Muscle size and strength test data for each group (C = Control, FS = Foot strengthening exercise, MSW = Minimalist shoe walking) at each testing session. Data are group averages ± standard deviation for each measurement. Seven muscles were measured (ABDH = Abductor Hallucis, FDB = Flexor Digitorum Brevis, FDL = Flexor Digitorum Longus, FHB = Flexor Hallucis Brevis, QP = Quadratus Plantae, TA = Tibialis Anterior, TP = Tibialis Posterior). Three strength tests were conducted (Doming, GT = Great toe flexion, LT – Lateral toes flexion).

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| --- | --- | --- | --- | --- | --- | --- |
|  | Group | Week 0 | Week 4 | Week 8 | Within group  p value | Week 0 – Week 8  % change |
| ABDH  (cm2) | C | 2.22 ± .45 | 2.22 ± .43 | 2.20 ± .42 | .704 | -.90 |
| FS | 1.98 ± .57 | 2.08 ± .54 † | 2.19 ± .55 \*‡ | .000 | 10.61 |
| MSW | 2.08 ± .61 | 2.17 ± .54 | 2.22 ± .54 \*‡ | .031 | 6.73 |
| FDB  (cm2) | C | 2.05 ± .22 | 2.06 ± .21 | 2.04 ± .23 | .687 | -.49 |
| FS | 1.83 ± .46 | 1.89 ± .50 † | 2.04 ± .50 \*‡ | .000 | 11.48 |
| MSW | 2.06 ± .35 | 2.11 ± .36 † | 2.17 ± .35 \*‡ | .000 | 5.34 |
| FDL  (cm2) | C | 1.79 ± .51 | 1.82 ± .50 | 1.80 ± .45 | .438 | .56 |
| FS | 1.62 ± .46 | 1.67 ± .47 | 1.82 ± .45 \*‡ | .000 | 12.35 |
| MSW | 1.60 ± .34 | 1.67 ± .35 | 1.77 ± .32 \*‡ | .004 | 10.63 |
| FHB  (cm) | C | 1.60 ± .23 | 1.61 ± .24 | 1.60 ± .22 | .516 | 0 |
| FS | 1.33 ± .22 | 1.42 ± .21† | 1.52 ± .23 \*‡ | .000 | 14.29 |
| MSW | 1.56 ± .20 | 1.58 ± .17 | 1.61 ± .20 \* | .035 | 3.21 |
| QP  (cm2) | C | 1.76 ± .45 | 1.75 ± .41 | 1.75 ± 41 | .875 | -.57 |
| FS | 1.70 ± .35 | 1.80 ± .33† | 1.95 ± .33 \*‡ | .000 | 14.71 |
| MSW | 1.84 ± .41 | 1.94 ± .44† | 2.02 ± .46 \*‡ | .002 | 9.78 |
| TA  (cm) | C | 2.65 ± .31 | 2.62 ± .29 | 2.60 ± .27 | .100 | -1.89 |
| FS | 2.38 ± .31 | 2.44 ± .31† | 2.51 ± .31 \*‡ | .000 | 5.46 |
| MSW | 2.53 ± .22 | 2.56 ± .25 | 2.62 ± .26 \*‡ | .028 | 3.56 |
| TP  (cm) | C | 1.83 ± .26 | 1.89 ± .25 | 1.88 ± .24 | .07 | 2.73 |
| FS | 1.84 ± .29 | 1.93 ± .27† | 2.03 ± .29 \*‡ | .000 | 10.33 |
| MSW | 1.78 ± .29 | 1.89 ± .29† | 1.96 ± .27 \*‡ | .000 | 10.11 |
| Doming  (kg) | C | 7.53 ± 2.26 | 9.22 ± 3.17 | 8.14 ± 3.31 | .082 | 8.10 |
| FS | 4.98 ± 2.10 | 7.66 ± 3.93† | 10.28 ± 4.31\*‡ | .000 | 106.43 |
| MSW | 6.28 ± 3.03 | 8.44 ± 3.63† | 9.47 ± 4.16 \* | .003 | 50.80 |
| GT  (kg) | C | 6.03 ± 2.90 | 6.58 ± 2.29 | 6.38 ± 2.35 | .483 | 5.80 |
| FS | 5.27 ± 2.34 | 6.18 ± 2.52† | 7.14 ± 3.99 \* | .005 | 35.48 |
| MSW | 4.68 ± 0.97 | 5.81 ± 1.95† | 6.98 ± 2.35 \*‡ | .000 | 49.15 |
| LT  (kg) | C | 5.81 ± 2.33 | 5.56 ± 2.21 | 5.87 ± 2.27 | .477 | 1.03 |
| FS | 5.13 ± 2.27 | 5.26 ± 3.01 | 6.85 ± 3.22 \*‡ | .000 | 33.53 |
| MSW | 4.62 ± 1.91 | 4.93 ± 1.97 | 5.70 ± 1.80 \*‡ | .022 | 23.38 |

†significantly different than week 0 at week 4 (p<.05), \*significantly different than week 0 at week 8 (p<0.05), ‡significantly different than week 4 (p<.05)