**Supplemental Table 1.** Age and sex adjusted comparison of pQCT radial measurements between Fontan and control subjects a

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| **Radial Outcome** | **Fontan****Mean ± SD** | **Control****Mean ± SD** | **Fontan – Control** **(95% CI)** | **P-****value** | **Effect sizec** |
| Trabecular BMD (mg/cm3) | 214.39 ± 23.48 | 241.70 ± 27.68 | -32.00 (-60.11, -3.90) | 0.029\* | 1.12 |
| Trabecular CSA (mm2) | 207.46 ± 48.29 | 168.82 ± 78.02 | 17.59 (-49.41, 84.59) | 0.580 | 0.26 |
| Total BMD (mg/cm3) | 277.36 ± 25.63 | 323.41 ± 42.56 | -40.12 (-80.88, 0.65) | 0.053 | 0.96 |
| Total CSA (mm2) | 207.46 ± 48.29 | 224.87 ± 87.95 | -38.48 (-112.60, 35.64) | 0.282 | 0.55 |
| Cortical BMDb (mg/cm3) | 1098.34 ± 39.41 | 1112.84 ± 34.32 | -7.11 (-50.38, 36.15) | 0.726 | 0.2 |
| Cortical CSAb (mm2) | 57.96 ± 11.71 | 60.87 ± 11.32 | -6.55 (-16.94, 3.84) | 0.195 | 0.58 |
| Cortical BMCb (mg/mm) | 63.72 ± 13.47 | 67.54 ± 11.41 | -7.43 (-19.02, 4.17) | 0.188 | 0.61 |
| Cortical thicknessb (mm) | 2.49 ± 0.35 | 2.73 ± 0.30 | -0.36 (-0.70, -0.03) | 0.033\* | 1.07 |
| Periosteal circb (mm) | 31.05 ± 3.18 | 30.84 ± 3.06 | -0.46 (-3.27, 2.34) | 0.725 | 0.15 |
| Endosteal circb (mm) | 15.40 ± 2.94 | 13.70 ± 2.72 | 1.83 (-1.18, 4.83) | 0.210 | 0.64 |
| Total BSI (mg2/mm4) | 16.21 ± 4.85 | 22.81 ± 7.38 | -7.67 (-14.89, -0.46) | 0.039\* | 1.09 |
| PSM (mm3) | 169.91 ± 49.76 | 165.20 ± 42.81 | -13.68 (-59.53, 32.18) | 0.531 | 0.3 |
| SSI (mm3) | 139.25 ± 39.33 | 140.46 ± 36.23 | -15.61 (-54.08, 22.85) | 0.396 | 0.43 |

a Differences, 95% CI, and P-values are calculated from linear regression adjusting for age and sex. b Geometrical parameters are also adjusted for radial length. c Effect size is calculated as absolute difference in means divided by pooled standard deviation at baseline (Cohen’s d). \* indicates statistical significance at p<0.05.

SD: standard deviation, CI: Confidence intervals, BMD: bone mineral density, CSA: cross-sectional area, circ: circumference, BMC: bone mineral content, BSI: bone strength index, SSI: strength strain index, PSM: polar section modulus, pQCT: peripheral quantitative computed tomography

**Supplemental Table 2.** Age and sex adjusted comparison of pQCT tibial measurements between Fontan and control subjects a

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| --- | --- | --- | --- | --- | --- |
| **Tibial Outcome** | **Fontan****Mean ± SD** | **Control****Mean ± SD** | **Fontan – Control** **(95% CI)** | **P-value** | **Effect size c**  |
| Trabecular BMD (mg/cm3) | 224.74 ± 19.42 | 253.55 ± 40.85 | -26.07 (-60.75, 8.61) | 0.130 | 0.73 |
| Trabecular CSA (mm2) | 637.38 ± 85.67 | 644.13 ± 170.48 | -24.12 (-147.95, 99.72) | 0.684 | 0.17 |
| Total BMD (mg/cm3) | 264.54 ± 18.71 | 300.70 ± 48.27 | -30.76 (-70.50, 8.98) | 0.120 | 0.73 |
| Total CSA (mm2) | 772.08 ± 100.20 | 791.90 ± 191.13 | -38.39 (-177.67, 100.89) | 0.566 | 0.25 |
| Cortical BMDb (mg/cm3) | 1081.45 ± 43.09 | 1084.44 ± 33.02 | -6.82 (-47.51, 33.86) | 0.724 | 0.19 |
| Cortical CSAb (mm2) | 202.36 ± 31.03 | 201.88 ± 46.33 | -3.72 (-47.37, 39.93) | 0.858 | 0.09 |
| Cortical BMCb (mg/mm) | 218.81 ± 34.91 | 218.50 ± 47.96 | -5.03 (-50.60, 40.53) | 0.816 | 0.12 |
| Cortical thicknessb (mm) | 4.40 ± 0.49 | 4.49 ± 0.80 | -0.17 (-0.92, 0.58) | 0.632 | 0.25 |
| Periosteal circb (mm) | 59.77 ± 4.79 | 58.89 ± 5.52 | 0.47 (-5.09, 6.04) | 0.858 | 0.09 |
| Endosteal circb (mm) | 32.14 ± 4.41 | 30.66 ± 4.52 | 1.55 (-3.26, 6.36) | 0.500 | 0.35 |
| Total BSI (mg2/mm4) | 54.51 ± 12.07 | 72.50 ± 27.46) | -16.62 (-38.87, 5.64) | 0.132 | 0.7 |
| PSM (mm3) | 1181.94 ± 275.87 | 1122.38 ± 299.27 | 49.10 (-251.00, 349.21) | 0.732 | 0.17 |
| SSI (mm3) | 996.03 ± 219.57 | 945.61 ± 238.65 | 35.29 (-199.21, 269.78) | 0.753 | 0.16 |
| Muscle CSA | 4443.10 ± 871.30 | 4028.90 ± 666.29 | 328.53 (-405.91, 1062.97) | 0.356 | 0.43 |
| Muscle CSA/BSA | 3381.07 ± 346.31 | 3257.99 ± 371.62 | 134.19 (-248.85, 514.22) | 0.463 | 0.38 |
| Muscle Density | 82.64 ±1.59 | 83.51 ± 1.20 | -1.13 (-2.40, 0.13) | 0.076 | 0.8 |
| IMAT | 1225.88 ± 460.63 | 919.68 ± 214.37 | 271.15 (-64.90, 607.21) | 0.106 | 0.75 |
| Fat CSA | 1162.12 ± 529.08 | 1240.97 ± 391.90 | -132.86 (-565.32, 299.61) | 0.523 | 0.3 |

a Differences, 95% CI, and P-values are calculated from linear regression adjusting for age and sex. b In addition, tibial geometrical parameters are adjusted for tibial length. c Absolute difference in means divided by pooled standard deviation at baseline (Cohen’s d).

SD: standard deviation, CI: Confidence intervals, BMD: bone mineral density, CSA: cross-sectional area, circ: circumeference; BMC: bone mineral content, BSI: bone strength index, SSI: strength strain index, PSM: polar section modulus, IMAT: intermuscular adipose tissue, pQCT: peripheral quantitative computed tomography