Supplemental Table 1. Linear regression models explaining bone characteristics in a cohort of males with severe childhood-onset obesity and the age-matched control subjects.

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| **Coefficient (95% CI)\*** | **WB BMD (g/cm2)** | ***P*** | **WB BA (cm2)** | ***P*** | **LS BMD (g/cm2)** | ***P*** | **LS BA (cm2)** | ***P*** |
| Age (yr) | 0.006 (-0.018 – 0.029) | 0.6 | **55 (2.7 – 108)** | **0.040** | 0.01 (-0.02 – 0.05) | 0.5 | 0.9 (-0.7 – 2.6) | 0.2 |
| Relative fat mass (%) | -0.003 (-0.001 – 0.007) | 0.1 | **11 (1.5 – 20)** | **0.026** | 0.005 (-0.001 – 0.01) | 0.091 | 0.05 (-0.2 – 0.3) | 0.7 |
| Estradiol (pM) | 0.002 (0 – 0.004) | 0.09 | 1.9 (-2.7 – 6.4) | 0.4 | 0 (-0.003 – 0.003) | 0.9 | 0.09(-0.05 – 0.2) | 0.2 |
| Free testosterone (pM) | 0 (-0.001 – 0.001) | 0.8 | -0.1 (-1.5 – 1.5) | 0.9 | 0 (0 – 0.001) | 0.3 | -0.01 (-0.05 – 0.03) | 0.7 |
| INSL3 (ng/mL) | -0.006 (-0.16 – 0.15) | 0.9 | -110 (-450 – 240) | 0.5 | 0.1 (-0.1 – 0.3) | 0.3 | -5.4 (-16 – 5.1) | 0.3 |
| Osteocalcin (ng/mL) | -0.001 (-0.007 – 0.006) | 0.8 | 2.5 (-11 – 17) | 0.7 | -0.004 (-0.013 – 0.006) | 0.4 | -0.1 (-0.6 – 0.3) | 0.6 |

\*, 13 case subjects and 14 control subjects with all explaining variables measured were modelled together. WB, whole body; BMD, bone mineral density; BA, bone area; LS, lumbar spine; INSL3, insulin-like 3.