

Table S1. Sex differences in linear regression for LVM, LVEDV, LVESV, LVM indexed height, and LVM indexed height<sup>2.7</sup>.

|  | <b>Boys</b> |          | <b>Girls</b> |          |
|--|-------------|----------|--------------|----------|
|  | $\beta$     | <i>P</i> | $\beta$      | <i>P</i> |
| <b>LVM(g)</b>  |             |          |              |          |
| BMI(kg/m <sup>2</sup> )                                    | 2.82        | <0.001   | 2.47         | <0.001   |
| Age(years)   | 4.75        | 0.030    | 5.14         | 0.005    |
| SBP(mmHg)  | 0.40        | <0.001   | 0.26         | <0.001   |
| DBP(mmHg)  | -0.04       | 0.74     | 0.28         | 0.004    |
| Waist circumference(cm)                                    | 0.94        | <0.001   | 0.90         | <0.001   |
| VFA(cm <sup>2</sup> )                                      | 0.29        | <0.001   | 0.29         | <0.001   |
| Fat mass(kg)   | 1.91        | <0.001   | 1.82         | <0.001   |
| <b>LVEDV(mL)</b>   |             |          |              |          |
| BMI(kg/m <sup>2</sup> )                                    | 1.50        | <0.001   | 1.53         | <0.001   |
| Age(years)   | 2.99        | 0.085    | 4.05         | 0.007    |
| SBP(mmHg)  | 0.17        | 0.013    | 0.14         | 0.021    |
| DBP(mmHg)  | -0.12       | 0.19     | 0.04         | 0.58     |
| Waist circumference(cm)                                    | 0.52        | <0.001   | 0.57         | <0.001   |
| VFA(cm <sup>2</sup> )                                      | 0.13        | <0.001   | 0.18         | <0.001   |
| Fat mass(kg)   | 0.92        | <0.001   | 1.13         | <0.001   |
| <b>LVESV(mL)</b>   |             |          |              |          |
| BMI(kg/m <sup>2</sup> )                                    | 0.43        | <0.001   | 0.46         | <0.001   |
| Age(years)   | 1.31        | 0.051    | 1.13         | 0.060    |
| SBP(mmHg)  | 0.06        | 0.024    | 0.04         | 0.061    |
| DBP(mmHg)  | -0.02       | 0.52     | 0.03         | 0.32     |
| Waist circumference(cm)                                    | 0.14        | <0.001   | 0.17         | <0.001   |
| VFA(cm <sup>2</sup> )                                      | 0.03        | <0.001   | 0.05         | <0.001   |
| Fat mass(kg)   | 0.26        | <0.001   | 0.34         | <0.001   |
| <b>LVM indexed height(g/m)</b>                             |             |          |              |          |
| BMI(kg/m <sup>2</sup> )                                    | 1.82        | <0.001   | 1.66         | <0.001   |
| Age(years)   | 1.66        | 0.29     | 1.96         | 0.14     |
| SBP(mmHg)  | 0.22        | <0.001   | 0.15         | 0.004    |
| DBP(mmHg)  | -0.06       | 0.43     | 0.15         | 0.026    |
| Waist circumference(cm)                                    | 0.57        | <0.001   | 0.57         | <0.001   |
| VFA(cm <sup>2</sup> )                                      | 0.18        | <0.001   | 0.18         | <0.001   |
| Fat mass(kg)   | 1.20        | <0.001   | 1.16         | <0.001   |
| <b>LVM indexed height<sup>2.7</sup>(g/m<sup>2.7</sup>)</b> |             |          |              |          |
| Body mass index(kg/m <sup>2</sup> )                        | 0.78        | <0.001   | 0.79         | <0.001   |
| Age(years)   | -1.30       | 0.19     | -1.15        | 0.18     |
| SBP(mmHg)  | 0.04        | 0.28     | 0.03         | 0.31     |
| DBP(mmHg)  | -0.08       | 0.11     | 0.03         | 0.56     |
| Waist circumference(cm)                                    | 0.19        | <0.001   | 0.22         | <0.001   |
| VFA(cm <sup>2</sup> )                                      | 0.06        | <0.001   | 0.06         | <0.001   |
| Fat mass(kg)   | 0.45        | <0.001   | 0.46         | <0.001   |

LVM: Left ventricular mass; LVEDV: left ventricular end-diastolic volume; LVESV: left ventricular end-systolic volume; BMI: body mass index; SBP: systolic blood pressure; DBP: diastolic blood pressure; VFA: visceral fat area.

Table S2. Sex-specific Pearson correlations between obesity indicators and cardiac structure parameters.

| Variables                         | Boys   |          |                     |        |        | Girls  |          |                     |        |        |
|-----------------------------------|--------|----------|---------------------|--------|--------|--------|----------|---------------------|--------|--------|
|                                   | BMI    | Fat mass | Waist circumference | VFA    | SV     | BMI    | Fat mass | Waist circumference | VFA    | SV     |
| LVM                               | 0.55   | 0.54     | 0.53                | 0.45   | 0.69   | 0.51   | 0.51     | 0.52                | 0.45   | 0.69   |
| <i>P</i>                          | <0.001 | <0.001   | <0.001              | <0.001 | <0.001 | <0.001 | <0.001   | <0.001              | <0.001 | <0.001 |
| LVM indexed height                | 0.50   | 0.47     | 0.45                | 0.38   | 0.67   | 0.48   | 0.45     | 0.46                | 0.38   | 0.66   |
| <i>P</i>                          | <0.001 | <0.001   | <0.001              | <0.001 | <0.001 | <0.001 | <0.001   | <0.001              | <0.001 | <0.001 |
| LVM indexed height <sup>2.7</sup> | 0.33   | 0.28     | 0.23                | 0.21   | 0.54   | 0.35   | 0.28     | 0.28                | 0.21   | 0.54   |
| <i>P</i>                          | <0.001 | <0.001   | <0.001              | <0.001 | <0.001 | <0.001 | <0.001   | <0.001              | <0.001 | <0.001 |
| LVEDV                             | 0.37   | 0.33     | 0.37                | 0.25   | 0.95   | 0.39   | 0.39     | 0.41                | 0.33   | 0.94   |
| <i>P</i>                          | <0.001 | <0.001   | <0.001              | <0.001 | <0.001 | <0.001 | <0.001   | <0.001              | <0.001 | <0.001 |
| LVESV                             | 0.27   | 0.24     | 0.26                | 0.17   | 0.57   | 0.29   | 0.30     | 0.30                | 0.25   | 0.56   |
| <i>P</i>                          | <0.001 | <0.001   | <0.001              | <0.001 | <0.001 | <0.001 | <0.001   | <0.001              | <0.001 | <0.001 |

LVM: Left ventricular mass; LVEDV: left ventricular end-diastolic volume; LVESV: left ventricular end-systolic volume; BMI: body mass index; SBP: systolic blood pressure; DBP: diastolic blood pressure; VFA: visceral fat area; SV: stroke volume.

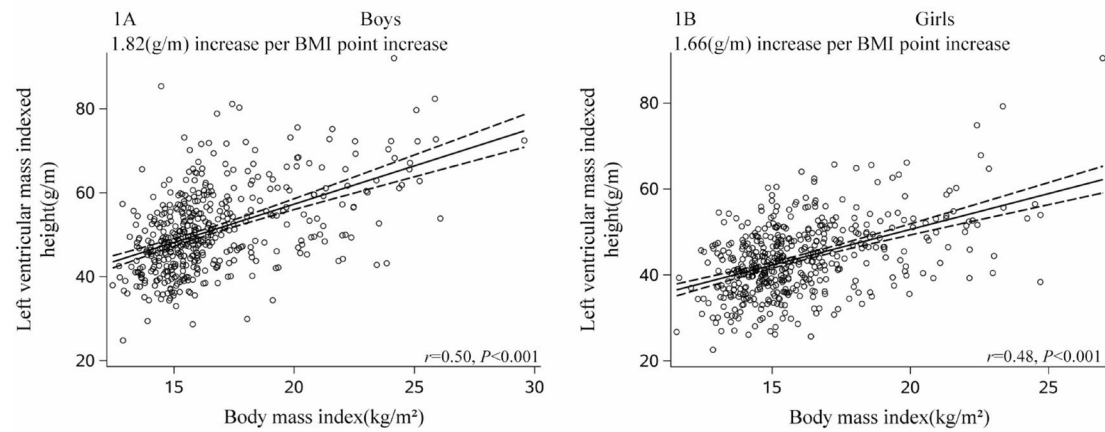


Figure S1. Sex-specific correlations between body mass index (BMI) and left ventricular mass (LVM) indexed height (A, boys; B, girls) presenting a steeper relationship between BMI and LVM indexed height in boys. Mean $\pm$ 95%CI (dashed lines) was shown for each graph.

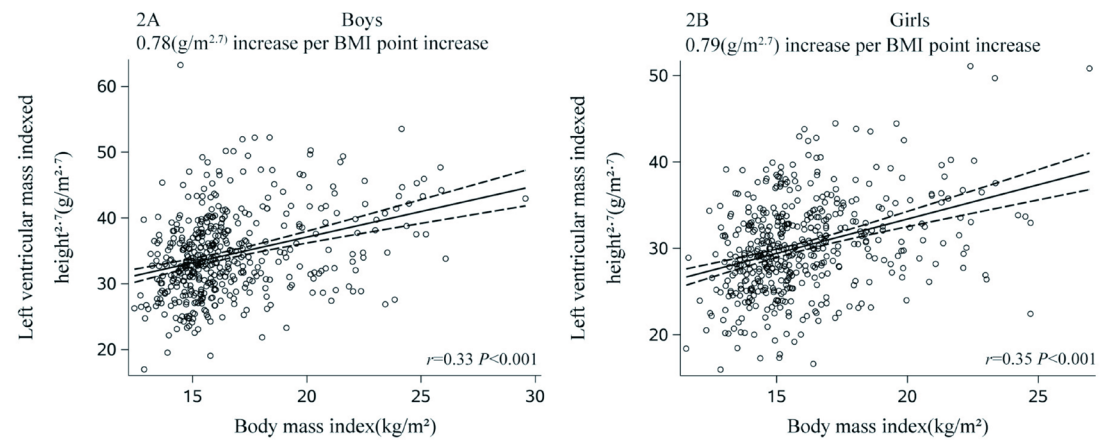


Figure S2. Sex-specific correlations between body mass index (BMI) and left ventricular mass (LVM) indexed height<sup>2.7</sup> (A, boys; B, girls) presenting a steeper relationship between BMI and LVM height<sup>2.7</sup> in girls. Mean $\pm$ 95%CI (dashed lines) was shown for each graph.