

**Figure S1** **Association between GHSRrs572169 genotypes and metabolic risks after stratification by BMI status.** N, normal; OW, overweight; \* and \*\* indicate *P* < 0.05, *P* < 0.01, respectively. Other notes and abbreviations see legends of Figure 2.



**Figure S2** **Association between GHSRrs572169 genotypes and metabolic risks after stratification by FBG status.** E, euglycaemia; H, hyperglyceamia. \* and \*\* indicate *P* < 0.05, *P* < 0.01, respectively. Other notes and abbreviations see legends of Figure 2.



**Figure S3** **Association between GHSRrs572169 genotypes and metabolic risks after stratification by lipid status.** H, hyperlipidemia; N, normolipidemia. \* and \*\* indicate *P* < 0.05, *P* < 0.01, respectively. Other notes and abbreviations see legends of Figure 2.

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| **Table S1** Correlation analyses between metabolic parameters and GHSRrs572169 genotypes |
| Parameter | Relative factor | Unstandardized Coefficients | Standardized Coefficients | t | *P* | 95% Confidence interval for B |
|
| B | Std. Error | Beta |  |  | Lower Bound | Upper Bound |
| **LG** |  |  |  |  |  |  |  |  |
| FBG | TG | 0.272  | 0.103  | 0.117  | 2.624  | 0.009  | 0.068  | 0.475  |
| TC | LDL | 0.942  | 0.015  | 0.789  | 63.881  | 0.000  | 0.913  | 0.971  |
|  | HDL | 0.935  | 0.032  | 0.350  | 28.807  | 0.000  | 0.871  | 0.999  |
|  | TG | 0.442  | 0.026  | 0.219  | 17.308  | 0.000  | 0.392  | 0.492  |
|  | WC | 0.003  | 0.001  | 0.026  | 2.205  | 0.028  | 0.000  | 0.005  |
| TG | TC | 0.832  | 0.049  | 1.683  | 17.158  | 0.000  | 0.737  | 0.927  |
|  | HDL | -1.138  | 0.086  | -0.863  | -13.177  | 0.000  | -1.308  | -0.968  |
|  | LDL | -0.600  | 0.062  | -1.016  | -9.731  | 0.000  | -0.721  | -0.479  |
|  | FBG | 0.031  | 0.014  | 0.071  | 2.195  | 0.029  | 0.003  | 0.058  |
|  | HDL/LDL | 0.407  | 0.172  | 0.177  | 2.371  | 0.018  | 0.070  | 0.745  |
|  | Weight | 0.007  | 0.002  | 0.108  | 3.046  | 0.002  | 0.003  | 0.012  |
|  | Sex | 0.125  | 0.043  | 0.101  | 2.868  | 0.004  | 0.039  | 0.210  |
| HDL | HDL/LDL | 1.186  | 0.056  | 0.682  | 21.133  | 0.000  | 1.076  | 1.297  |
|  | TC | 0.382  | 0.022  | 1.020  | 17.692  | 0.000  | 0.340  | 0.425  |
|  | TG | -0.226  | 0.017  | -0.299  | -13.098  | 0.000  | -0.260  | -0.192  |
|  | LDL | -0.111  | 0.030  | -0.248  | -3.717  | 0.000  | -0.170  | -0.052  |
|  | Weight | -0.002  | 0.001  | -0.043  | -2.204  | 0.028  | -0.004  | 0.000  |
| LDL | TC | 0.671  | 0.012  | 0.801  | 55.293  | 0.000  | 0.647  | 0.695  |
|  | HDL/LDL | -1.424  | 0.055  | -0.366  | -25.705  | 0.000  | -1.533  | -1.315  |
|  | TG | -0.219  | 0.024  | -0.130  | -9.243  | 0.000  | -0.266  | -0.173  |
| HDL/LDL | LDL | -0.401  | 0.016  | -1.562  | -25.708  | 0.000  | -0.432  | -0.371  |
|  | TC | 0.239  | 0.014  | 1.108  | 17.675  | 0.000  | 0.212  | 0.265  |
|  | TG | -0.125  | 0.012  | -0.286  | -10.026  | 0.000  | -0.149  | -0.100  |
| **OG** |  |  |  |  |  |  |  |  |
| FBG | WC | 0.043  | 0.007  | 0.242  | 6.375  | 0.000  | 0.030  | 0.056  |
|  | HDL | -0.311  | 0.144  | -0.083  | -2.158  | 0.031  | -0.593  | -0.028  |
|  | Age | 0.034  | 0.008  | 0.152  | 3.988  | 0.000  | 0.017  | 0.050  |
|  | Sex | 0.357  | 0.135  | 0.095  | 2.653  | 0.008  | 0.093  | 0.621  |
|  | SBP | -0.007  | 0.003  | -0.096  | -2.414  | 0.016  | -0.013  | -0.001  |
|  | TG | 0.105  | 0.037  | 0.111  | 2.856  | 0.004  | 0.033  | 0.178  |
| TC | LDL | 1.161  | 0.023  | 1.072  | 50.589  | 0.000  | 1.116  | 1.206  |
|  | TG | 0.251  | 0.010  | 0.434  | 26.164  | 0.000  | 0.232  | 0.270  |
|  | HDL/LDL | 0.893  | 0.059  | 0.315  | 15.078  | 0.000  | 0.777  | 1.009  |
|  | Height | -0.007  | 0.002  | -0.049  | -3.053  | 0.002  | -0.011  | -0.002  |
|  | DBP | 0.004  | 0.002  | 0.038  | 2.396  | 0.017  | 0.001  | 0.007  |
| TG | LDL | -2.415  | 0.099  | -1.290  | -24.294  | 0.000  | -2.610  | -2.219  |
|  | TC | 1.862  | 0.074  | 1.077  | 25.176  | 0.000  | 1.717  | 2.007  |
|  | HDL/LDL | -1.491  | 0.177  | -0.305  | -8.405  | 0.000  | -1.839  | -1.142  |
|  | CC | 0.026  | 0.008  | 0.097  | 3.285  | 0.001  | 0.011  | 0.042  |
|  | FBG | 0.096  | 0.027  | 0.091  | 3.551  | 0.000  | 0.043  | 0.150  |
|  | Height | 0.016  | 0.007  | 0.067  | 2.349  | 0.019  | 0.003  | 0.029  |
| HDL | TG | -0.214  | 0.008  | -0.842  | -25.295  | 0.000  | -0.231  | -0.198  |
|  | HDL/LDL | 0.429  | 0.043  | 0.345  | 10.039  | 0.000  | 0.345  | 0.513  |
|  | TC | 0.457  | 0.023  | 1.038  | 19.615  | 0.000  | 0.411  | 0.502  |
|  | LDL | -0.321  | 0.031  | -0.673  | -10.417  | 0.000  | -0.381  | -0.260  |
|  | BMI | -0.017  | 0.003  | -0.119  | -5.009  | 0.000  | -0.024  | -0.011  |
|  | FBG | -0.013  | 0.006  | -0.048  | -2.038  | 0.042  | -0.025  | 0.000  |
| LDL | TC | 0.764  | 0.015  | 0.827  | 50.344  | 0.000  | 0.734  | 0.793  |
|  | HDL/LDL | -0.645  | 0.045  | -0.247  | -14.230  | 0.000  | -0.734  | -0.556  |
|  | TG | -0.250  | 0.009  | -0.467  | -26.748  | 0.000  | -0.268  | -0.231  |
|  | HDL | -0.414  | 0.038  | -0.198  | -10.819  | 0.000  | -0.490  | -0.339  |
| HDL/LDL | LDL | -0.361  | 0.014  | -0.943  | -26.465  | 0.000  | -0.388  | -0.334  |
|  | HDL | 0.272  | 0.020  | 0.339  | 13.822  | 0.000  | 0.233  | 0.310  |
|  | TC | 0.119  | 0.013  | 0.338  | 9.105  | 0.000  | 0.094  | 0.145  |
|  | CC | 0.003  | 0.001  | 0.054  | 2.218  | 0.027  | 0.000  | 0.006  |
| **CG** |  |  |  |  |  |  |  |  |
| FBG | PP | 0.020  | 0.003  | 0.251  | 6.482  | 0.000  | 0.014  | 0.026  |
|  | BMI | 0.105  | 0.024  | 0.221  | 4.451  | 0.000  | 0.059  | 0.152  |
|  | DBP | -0.014  | 0.004  | -0.133  | -3.448  | 0.001  | -0.022  | -0.006  |
|  | TC | -0.164  | 0.050  | -0.123  | -3.268  | 0.001  | -0.263  | -0.066  |
|  | CC | -0.020  | 0.010  | -0.100  | -2.021  | 0.044  | -0.039  | -0.001  |
| TC | LDL | 0.937  | 0.014  | 0.798  | 66.524  | 0.000  | 0.910  | 0.965  |
|  | TG | 0.440  | 0.011  | 0.495  | 40.636  | 0.000  | 0.419  | 0.462  |
|  | HDL | 0.951  | 0.027  | 0.429  | 34.873  | 0.000  | 0.897  | 1.004  |
|  | FBG | -0.029  | 0.009  | -0.039  | -3.337  | 0.001  | -0.046  | -0.012  |
|  | Sex | 0.072  | 0.025  | 0.034  | 2.854  | 0.004  | 0.022  | 0.121  |
| TG | HDL | -1.769  | 0.057  | -0.710  | -30.923  | 0.000  | -1.881  | -1.656  |
|  | TC | 1.662  | 0.041  | 1.480  | 40.636  | 0.000  | 1.582  | 1.742  |
|  | LDL | -1.591  | 0.045  | -1.206  | -35.175  | 0.000  | -1.680  | -1.502  |
|  | Sex | -0.161  | 0.049  | -0.068  | -3.306  | 0.001  | -0.257  | -0.065  |
|  | FBG | 0.045  | 0.017  | 0.054  | 2.649  | 0.008  | 0.012  | 0.079  |
| HDL | HDL/LDL | 1.250  | 0.054  | 0.683  | 23.076  | 0.000  | 1.143  | 1.356  |
|  | LDL | -0.106  | 0.029  | -0.201  | -3.706  | 0.000  | -0.162  | -0.050  |
|  | TC | 0.381  | 0.020  | 0.845  | 19.071  | 0.000  | 0.342  | 0.420  |
|  | TG | -0.188  | 0.011  | -0.468  | -17.735  | 0.000  | -0.209  | -0.167  |
|  | Sex | -0.033  | 0.016  | -0.035  | -2.070  | 0.039  | -0.064  | -0.002  |
| LDL | TC | 0.700  | 0.021  | 0.822  | 33.949  | 0.000  | 0.660  | 0.741  |
|  | HDL/LDL | -1.232  | 0.091  | -0.356  | -13.586  | 0.000  | -1.410  | -1.054  |
|  | TG | -0.313  | 0.013  | -0.413  | -24.396  | 0.000  | -0.339  | -0.288  |
|  | HDL | -0.201  | 0.056  | -0.106  | -3.585  | 0.000  | -0.311  | -0.091  |
|  | WC | 0.004  | 0.001  | 0.033  | 2.778  | 0.006  | 0.001  | 0.006  |
| HDL/LDL | LDL | -0.198  | 0.005  | -0.683  | -42.153  | 0.000  | -0.207  | -0.188  |
| 　 | HDL | 0.369  | 0.009  | 0.675  | 41.689  | 0.000  | 0.352  | 0.386  |

Abbreviations: BMI, body mass index; CC, chest circumference; CG, control group; DBP, diastolic blood pressure; FPG fasting plasma glucose; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; LG, long-lived group; OG, offspring group; PP, pulse pressure; SBP, systolic blood pressure; TC, total cholesterol; TG, triglyceride; WC, waist circumference.