

## Supplementary data:

# Association of *HS6ST3* gene polymorphisms with obesity and triglycerides: gene × gender interaction

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**Table 1.** Associations of 117 SNPs with obesity in the Health ABC and Marshfield samples.

| SNP        | Position | Minor allele | MAF  | <i>P</i> HWE | OR meta | <i>P</i> meta | OR Marshfield | <i>P</i> Marshfield | OR Health ABC | <i>P</i> Health ABC |
|------------|----------|--------------|------|--------------|---------|---------------|---------------|---------------------|---------------|---------------------|
| rs535812   | 95563620 | G            | 0.36 | 0.71         | 1.12    | 0.01          | 1.13          | 0.02                | 1.1           | 0.31                |
| rs2262077  | 95599508 | T            | 0.15 | 0.54         | 0.98    | 0.68          | 0.98          | 0.78                | 0.96          | 0.72                |
| rs9525134  | 95603291 | A            | 0.12 | 0.97         | 0.97    | 0.62          | 0.96          | 0.57                | 1             | 0.99                |
| rs7987510  | 95605772 | C            | 0.42 | 0.19         | 0.92    | 0.06          | 0.92          | 0.12                | 0.91          | 0.3                 |
| rs17675800 | 95624214 | A            | 0.12 | 1            | 0.94    | 0.32          | 0.93          | 0.35                | 0.95          | 0.73                |
| rs7338183  | 95628750 | T            | 0.07 | 0.65         | 0.92    | 0.32          | 0.91          | 0.34                | 0.94          | 0.74                |
| rs6492836  | 95632405 | G            | 0.19 | 0.72         | 0.92    | 0.13          | 0.93          | 0.21                | 0.9           | 0.36                |
| rs7331762  | 95643558 | T            | 0.49 | 0.71         | 0.92    | 0.37          | 0.89          | 0.02                | 1.03          | 0.74                |
| rs12585736 | 95643883 | A            | 0.3  | 0.23         | 0.94    | 0.22          | 0.93          | 0.2                 | 0.98          | 0.84                |
| rs9525147  | 95645616 | T            | 0.46 | 0.42         | 1.1     | 0.03          | 1.12          | 0.02                | 1.02          | 0.83                |
| rs4771929  | 95650914 | A            | 0.04 | 0.33         | 0.95    | 0.6           | 0.94          | 0.61                | 0.97          | 0.86                |
| rs878950   | 95652682 | T            | 0.46 | 0.41         | 1.11    | 0.02          | 1.13          | 0.01                | 1.03          | 0.77                |
| rs9525149  | 95653783 | G            | 0.47 | 0.22         | 0.92    | 0.06          | 0.91          | 0.04                | 0.98          | 0.83                |
| rs16951714 | 95668966 | C            | 0.02 | 1            | 0.92    | 0.58          | 0.87          | 0.41                | 1.12          | 0.72                |
| rs1927808  | 95671445 | A            | 0.44 | 0.05         | 0.93    | 0.1           | 0.93          | 0.14                | 0.94          | 0.49                |
| rs1930224  | 95695560 | A            | 0.27 | 0.71         | 0.96    | 0.43          | 0.95          | 0.38                | 1             | 0.99                |
| rs9562056  | 95695709 | A            | 0.04 | 1            | 0.98    | 0.78          | 0.87          | 0.3                 | 1.04          | 0.65                |
| rs9562057  | 95695857 | T            | 0.11 | 0.64         | 0.98    | 0.62          | 0.89          | 0.16                | 1.55          | 0.02                |
| rs1927801  | 95703618 | C            | 0.47 | 0.36         | 0.94    | 0.26          | 0.92          | 0.08                | 1.03          | 0.78                |
| rs1930219  | 95706723 | C            | 0.42 | 0.04         | 0.95    | 0.27          | 0.94          | 0.23                | 0.99          | 0.9                 |
| rs7322488  | 95714635 | C            | 0.04 | 1            | 0.95    | 0.93          | 0.86          | 0.22                | 1.2           | 0.33                |
| rs1927796  | 95716834 | T            | 0.47 | 0.31         | 0.94    | 0.23          | 0.92          | 0.09                | 1.03          | 0.79                |
| rs1927790  | 95720192 | G            | 0.42 | 0.16         | 0.96    | 0.4           | 0.95          | 0.33                | 1             | 0.99                |
| rs4381453  | 95721516 | T            | 0.04 | 0.18         | 1.06    | 0.58          | 1.1           | 0.43                | 0.94          | 0.77                |
| rs12561187 | 95734967 | A            | 0.04 | 0.93         | 0.95    | 0.93          | 0.85          | 0.2                 | 1.21          | 0.31                |
| rs2038823  | 95749434 | A            | 0.12 | 0.67         | 1       | 0.96          | 1             | 0.98                | 1.01          | 0.96                |
| rs9300342  | 95749951 | A            | 0.45 | 0.07         | 0.95    | 0.25          | 0.94          | 0.23                | 0.98          | 0.84                |
| rs9556553  | 95754094 | C            | 0.04 | 0.99         | 0.94    | 0.49          | 0.88          | 0.3                 | 1             | 0.99                |
| rs7320184  | 95774346 | A            | 0.45 | 0.31         | 0.95    | 0.25          | 0.94          | 0.19                | 1             | 0.98                |
| rs12583999 | 95789919 | A            | 0.25 | 0.45         | 0.97    | 0.49          | 0.95          | 0.35                | 1.03          | 0.8                 |
| rs4771934  | 95791757 | C            | 0.45 | 0.26         | 0.95    | 0.21          | 0.93          | 0.16                | 1             | 0.98                |
| rs11618566 | 95793153 | T            | 0.11 | 1            | 1       | 0.99          | 1             | 0.99                | 0.99          | 0.97                |
| rs1925111  | 95797481 | T            | 0.11 | 0.38         | 0.99    | 0.89          | 0.99          | 0.88                | 1             | 0.99                |
| rs7328493  | 95798499 | G            | 0.33 | 0.36         | 0.94    | 0.17          | 0.92          | 0.13                | 0.99          | 0.93                |
| rs9513122  | 95798535 | G            | 0.4  | 0.79         | 1.06    | 0.6           | 1.1           | 0.06                | 0.94          | 0.53                |
| rs11069237 | 95807454 | G            | 0.49 | 0.83         | 0.93    | 0.07          | 0.92          | 0.08                | 0.96          | 0.61                |
| rs1925103  | 95818043 | G            | 0.12 | 0.32         | 0.98    | 0.81          | 0.98          | 0.77                | 1.01          | 0.97                |
| rs1888977  | 95825574 | T            | 0.46 | 0.17         | 0.96    | 0.51          | 0.93          | 0.13                | 1.05          | 0.6                 |

**Table 1** (contd)

| SNP        | Position | Minor allele | MAF  | <i>P</i> HWE | OR meta | <i>P</i> meta | OR Marshfield | <i>P</i> Marshfield | OR Health ABC | <i>P</i> Health ABC |
|------------|----------|--------------|------|--------------|---------|---------------|---------------|---------------------|---------------|---------------------|
| rs9556581  | 95830484 | G            | 0.2  | 0.55         | 0.98    | 0.65          | 0.98          | 0.79                | 0.96          | 0.66                |
| rs9513131  | 95834874 | G            | 0.42 | 0.55         | 1.06    | 0.46          | 1.09          | 0.1                 | 0.96          | 0.64                |
| rs9556582  | 95838532 | A            | 0.46 | 0.81         | 0.96    | 0.9           | 0.93          | 0.15                | 1.1           | 0.34                |
| rs7330499  | 95842794 | T            | 0.14 | 0.8          | 0.98    | 0.8           | 0.98          | 0.73                | 1.01          | 0.93                |
| rs2389663  | 95844751 | G            | 0.41 | 0.96         | 1.06    | 0.22          | 1.08          | 0.14                | 0.98          | 0.86                |
| rs2892823  | 95846932 | C            | 0.11 | 0.59         | 0.98    | 0.8           | 0.99          | 0.93                | 0.95          | 0.72                |
| rs9634489  | 95847005 | G            | 0.5  | 0.47         | 1       | 0.95          | 0.99          | 0.9                 | 1.05          | 0.67                |
| rs9516682  | 95850023 | G            | 0.44 | 1            | 1       | 0.96          | 1.02          | 0.75                | 0.96          | 0.63                |
| rs1925125  | 95852503 | A            | 0.1  | 0.91         | 1.02    | 0.8           | 1.01          | 0.92                | 1.05          | 0.74                |
| rs1328054  | 95852659 | A            | 0.15 | 0.43         | 0.95    | 0.42          | 0.97          | 0.7                 | 0.88          | 0.32                |
| rs979231   | 95859562 | G            | 0.46 | 0.93         | 0.99    | 0.86          | 0.98          | 0.64                | 1.05          | 0.59                |
| rs426351   | 95870269 | T            | 0.1  | 0.99         | 1.01    | 0.88          | 0.99          | 0.88                | 1.08          | 0.58                |
| rs9556587  | 95877619 | G            | 0.34 | 0.52         | 1.03    | 0.54          | 1.01          | 0.92                | 1.12          | 0.28                |
| rs1319306  | 95883420 | G            | 0.32 | 0.58         | 1.01    | 0.83          | 1.01          | 0.86                | 1.01          | 0.88                |
| rs1164591  | 95887951 | T            | 0.38 | 0.09         | 1       | 0.94          | 1             | 1                   | 0.99          | 0.87                |
| rs1327914  | 95891570 | G            | 0.18 | 0.52         | 0.97    | 0.63          | 0.99          | 0.83                | 0.94          | 0.55                |
| rs732123   | 95897048 | G            | 0.05 | 0.45         | 0.87    | 0.17          | 0.84          | 0.14                | 0.96          | 0.82                |
| rs732121   | 95897355 | G            | 0.06 | 0.49         | 0.91    | 0.29          | 0.87          | 0.19                | 1.01          | 0.95                |
| rs1164596  | 95898682 | A            | 0.45 | 0.84         | 1.02    | 0.58          | 1.01          | 0.78                | 1.06          | 0.53                |
| rs472010   | 95901979 | C            | 0.45 | 0.9          | 1.02    | 0.57          | 1.01          | 0.83                | 1.08          | 0.41                |
| rs7329719  | 95903295 | C            | 0.06 | 0.41         | 0.93    | 0.4           | 0.89          | 0.29                | 1.02          | 0.92                |
| rs4131181  | 95906950 | C            | 0.23 | 0.84         | 0.95    | 0.34          | 0.96          | 0.44                | 0.94          | 0.58                |
| rs7995242  | 95910166 | A            | 0.16 | 0.33         | 0.97    | 0.59          | 0.98          | 0.77                | 0.93          | 0.55                |
| rs7984995  | 95912038 | A            | 0.06 | 0.57         | 0.92    | 0.38          | 0.9           | 0.32                | 0.99          | 0.96                |
| rs16951476 | 95915175 | G            | 0.17 | 0.83         | 0.97    | 0.62          | 0.98          | 0.74                | 0.95          | 0.67                |
| rs1927548  | 95917112 | C            | 0.05 | 0.51         | 0.9     | 0.29          | 0.88          | 0.28                | 0.95          | 0.77                |
| rs1328049  | 95918181 | A            | 0.05 | 0.51         | 0.91    | 0.32          | 0.88          | 0.28                | 0.97          | 0.87                |
| rs9516712  | 95922815 | G            | 0.21 | 0.36         | 0.95    | 0.37          | 0.95          | 0.4                 | 0.97          | 0.74                |
| rs913427   | 95923396 | G            | 0.37 | 0.67         | 1.03    | 0.54          | 1.04          | 0.41                | 0.98          | 0.8                 |
| rs7317645  | 95928675 | T            | 0.16 | 0.71         | 1       | 0.95          | 0.96          | 0.6                 | 1.1           | 0.42                |
| rs17268714 | 95942540 | G            | 0.08 | 0.89         | 0.98    | 0.79          | 0.96          | 0.63                | 1.05          | 0.76                |
| rs11619806 | 95942849 | T            | 0.08 | 0.87         | 0.97    | 0.73          | 0.96          | 0.66                | 1.01          | 0.93                |
| rs3892845  | 95956287 | T            | 0.1  | 0.81         | 1.02    | 0.74          | 0.99          | 0.87                | 1.14          | 0.36                |
| rs7325688  | 95976260 | T            | 0.1  | 1            | 1.04    | 0.6           | 0.99          | 0.95                | 1.17          | 0.26                |
| rs2389696  | 95982289 | A            | 0.17 | 0.65         | 1.02    | 0.68          | 0.98          | 0.77                | 1.15          | 0.23                |
| rs4362239  | 95989215 | T            | 0.11 | 0.76         | 0.99    | 0.94          | 1.01          | 0.93                | 0.96          | 0.76                |
| rs1889860  | 95995058 | C            | 0.1  | 1            | 0.99    | 0.89          | 1.02          | 0.81                | 0.89          | 0.45                |
| rs7323929  | 95998778 | A            | 0.03 | 1            | 1       | 0.98          | 1.05          | 0.72                | 0.85          | 0.5                 |
| rs1414622  | 96006899 | C            | 0.08 | 0.82         | 0.97    | 0.67          | 0.93          | 0.45                | 1.08          | 0.64                |
| rs9584386  | 96016034 | G            | 0.11 | 0.85         | 0.99    | 0.85          | 0.99          | 0.85                | 2.58E-09      | 1                   |
| rs529060   | 96021571 | C            | 0.2  | 0.84         | 0.98    | 0.64          | 0.99          | 0.83                | 0.94          | 0.57                |
| rs547571   | 96029271 | A            | 0.1  | 1            | 1       | 0.99          | 1.03          | 0.73                | 0.9           | 0.52                |
| rs2152480  | 96048311 | T            | 0.04 | 0.95         | 1.12    | 0.3           | 1.08          | 0.57                | 1.21          | 0.31                |
| rs2050537  | 96058902 | T            | 0.08 | 0.89         | 0.99    | 0.85          | 0.97          | 0.78                | 1.02          | 0.9                 |
| rs2784475  | 96065745 | T            | 0.1  | 0.9          | 1.05    | 0.53          | 1.03          | 0.69                | 1.09          | 0.56                |
| rs17767526 | 96069408 | G            | 0.04 | 1            | 0.92    | 0.49          | 0.95          | 0.71                | 0.83          | 0.45                |
| rs17767562 | 96073933 | C            | 0.44 | 0.71         | 0.92    | 0.07          | 0.9           | 0.04                | 0.99          | 0.94                |
| rs523268   | 96096938 | A            | 0.29 | 0.78         | 1.04    | 0.45          | 1.05          | 0.35                | 0.98          | 0.86                |
| rs1336096  | 96120203 | T            | 0.09 | 0.94         | 1.07    | 0.34          | 1.07          | 0.45                | 1.1           | 0.54                |
| rs1002164  | 96121934 | A            | 0.35 | 0.56         | 1.08    | 0.07          | 1.1           | 0.06                | 1.03          | 0.79                |
| rs648241   | 96126061 | C            | 0.29 | 0.84         | 1.04    | 0.37          | 1.06          | 0.31                | 1             | 1                   |
| rs1414624  | 96129098 | G            | 0.46 | 0.62         | 0.95    | 0.21          | 0.93          | 0.15                | 1.01          | 0.95                |
| rs583038   | 96135248 | G            | 0.42 | 0.75         | 1.05    | 0.26          | 1.05          | 0.32                | 1.05          | 0.59                |
| rs12864425 | 96152245 | G            | 0.21 | 0.81         | 1.03    | 0.55          | 1.05          | 0.44                | 0.99          | 0.9                 |
| rs7987457  | 96164160 | G            | 0.09 | 0.57         | 1.03    | 0.71          | 1.06          | 0.47                | 0.91          | 0.57                |
| rs1924584  | 96185497 | C            | 0.49 | 0.23         | 1       | 0.93          | 1.02          | 0.66                | 0.94          | 0.53                |
| rs7984507  | 96190221 | C            | 0.07 | 0.62         | 1.11    | 0.21          | 1.17          | 0.09                | 0.98          | 0.87                |
| rs872634   | 96195617 | T            | 0.44 | 0.04         | 0.98    | 0.72          | 1             | 0.97                | 0.93          | 0.42                |
| rs7983691  | 96197015 | C            | 0.32 | 0.66         | 0.97    | 0.5           | 0.96          | 0.39                | 1.02          | 0.87                |
| rs17769587 | 96198816 | T            | 0.1  | 0.95         | 1.01    | 0.81          | 1.06          | 0.48                | 0.83          | 0.23                |
| rs9556622  | 96205987 | G            | 0.02 | 1            | 1.14    | 0.11          | 1.18          | 0.29                | 1.13          | 0.22                |

**Table 1** (*contd*)

| SNP        | Position | Minor allele | MAF  | <i>P</i> HWE | OR meta | <i>P</i> meta | OR Marshfield | <i>P</i> Marshfield | OR Health ABC | <i>P</i> Health ABC |
|------------|----------|--------------|------|--------------|---------|---------------|---------------|---------------------|---------------|---------------------|
| rs7334014  | 96214808 | G            | 0.09 | 0.93         | 0.96    | 0.56          | 1.02          | 0.83                | 0.79          | 0.15                |
| rs1924590  | 96219346 | C            | 0.38 | 0.51         | 0.97    | 0.45          | 0.95          | 0.31                | 1.02          | 0.8                 |
| rs9284173  | 96220471 | G            | 0.07 | 0.73         | 1.13    | 0.13          | 1.12          | 0.22                | 1.17          | 0.35                |
| rs9584410  | 96230865 | G            | 0.32 | 0.55         | 0.95    | 0.26          | 0.96          | 0.44                | 0.91          | 0.35                |
| rs11069244 | 96235945 | G            | 0.09 | 0.93         | 1.07    | 0.34          | 1.08          | 0.39                | 1.07          | 0.66                |
| rs16953570 | 96236802 | T            | 0.09 | 1            | 1.08    | 0.33          | 1.07          | 0.41                | 1.08          | 0.59                |
| rs1924597  | 96238572 | G            | 0.12 | 0.78         | 0.96    | 0.52          | 0.96          | 0.56                | 0.96          | 0.79                |
| rs17770292 | 96238638 | G            | 0.2  | 0.39         | 0.97    | 0.57          | 0.99          | 0.85                | 0.9           | 0.4                 |
| rs1924573  | 96247322 | G            | 0.27 | 0.74         | 1.07    | 0.17          | 1.05          | 0.34                | 1.11          | 0.27                |
| rs1924574  | 96252367 | G            | 0.14 | 0.28         | 1.03    | 0.95          | 1.07          | 0.35                | 0.89          | 0.36                |
| rs6491307  | 96252811 | A            | 0.18 | 0.82         | 1.05    | 0.36          | 1.03          | 0.64                | 1.12          | 0.31                |
| rs4771965  | 96260231 | A            | 0.12 | 0.67         | 0.96    | 0.6           | 0.95          | 0.54                | 1             | 1                   |
| rs1924575  | 96261115 | A            | 0.06 | 0.68         | 1.16    | 0.08          | 1.15          | 0.15                | 1.2           | 0.28                |
| rs1107219  | 96265721 | A            | 0.1  | 0.28         | 0.97    | 0.68          | 0.95          | 0.55                | 1.04          | 0.81                |
| rs1924578  | 96267186 | A            | 0.27 | 0.01         | 1.02    | 0.76          | 1.03          | 0.65                | 0.98          | 0.86                |
| rs2389715  | 96267835 | A            | 0.16 | 0.73         | 1.01    | 0.84          | 0.99          | 0.88                | 1.08          | 0.5                 |
| rs9516762  | 96271312 | G            | 0.19 | 0.59         | 1.01    | 0.9           | 0.99          | 0.89                | 1.06          | 0.62                |
| rs2282135  | 96287906 | T            | 0.27 | 0.01         | 1.04    | 0.47          | 1.04          | 0.47                | 1.02          | 0.85                |