Supplementary Table 8. SNP-based enrichment analysis for caudate modules and sub-modules.

| Module    | T2D SNPs | Height SNPs |
|-----------|----------|-------------|
|           | Size     | ES          | P-value | FDR | Size     | ES          | P-value | FDR |
| turquoise | 1576     | 0.415712    | 0       | 0   | 1576     | 0.4111951  | 0.0497  | 0.13916 |
| red       | 260      | 0.425652    | 0.00815 | 0.03325 | 260     | 0.42124715 | 0.2414  | 0.289756 |
| magenta   | 156      | 0.444919    | 0.0091  | 0.03325 | 156     | 0.45935112 | 0.12445 | 0.2489 |
| green     | 373      | 0.435294    | 0.0095  | 0.03325 | 374     | 0.4505773  | 0.04135 | 0.13916 |
| tan       | 61       | 0.504785    | 0.01205 | 0.03374 | 61      | 0.46593708 | 0.248362 | 0.289756 |
| yellow    | 481      | 0.368788    | 0.03835 | 0.089483 | 481     | 0.49281818 | 3.00E-04 | 0.0042 |
| purple    | 118      | 0.400124    | 0.09525 | 0.1905 | 118     | 0.38965136 | 0.56555 | 0.56555 |
| salmon    | 39       | 0.439662    | 0.163975 | 0.286956 | 39      | 0.56709814 | 0.069181 | 0.161423 |
| greenyellow | 95    | 0.384014    | 0.20735 | 0.306483 | 95      | 0.57951885 | 0.00415 | 0.019367 |
| black     | 228      | 0.351542    | 0.24705 | 0.306483 | 228     | 0.42270425 | 0.24785 | 0.289756 |
| blue      | 468      | 0.337558    | 0.25135 | 0.306483 | 468     | 0.40408793 | 0.2989  | 0.321892 |
| brown     | 503      | 0.335818    | 0.2627  | 0.306483 | 503     | 0.47241223 | 0.00295 | 0.019367 |
| pink      | 215      | 0.345973    | 0.30135 | 0.324531 | 215     | 0.42818555 | 0.22605 | 0.289756 |
| cyan      | 37       | 0.315055    | 0.746361 | 0.746361 | 37      | 0.49608     | 0.228706 | 0.289756 |

| Sub-module | T2D SNPs | Height SNPs |
|-------------|----------|-------------|
|             | Size     | ES          | P-value | FDR | Size     | ES          | P-value | FDR |
| D2-MSN      | 71       | 0.485125    | 0.0144  | 0.0432 | 71      | 0.4155968  | 0.45245 | 0.49075 |
| D1-MSN      | 75       | 0.453621    | 0.0355  | 0.04715 | 75      | 0.47593623 | 0.1792  | 0.49075 |
| striatum    | 83       | 0.4398      | 0.04715 | 0.04715 | 83      | 0.40625075 | 0.49075 | 0.49075 |
**Supplementary Table 9. Modules enriched in DAGs.**

| Module | GeneRatio | P-value  | FDR    | Count | Module          | GeneRatio | P-value  | FDR    | Count |
|--------|-----------|----------|--------|-------|-----------------|-----------|----------|--------|-------|
| blue   | 460/1186  | 0        | 0      | 460   | turquoise       | 887/1753  | 0        | 0      | 887   |
| green  | 57/1186   | 5.81E-12 | 1.60E-11| 57    | black           | 54/1753   | 6.01E-13| 1.35E-12| 54    |
| purple | 26/1186   | 5.44E-09 | 1.20E-08| 26    |                 |           |          |        |       |

Note: GeneRatio refers to Number of intersection genes / Size of Up- or Down-regulated DAG set.

Please browse Full Text version to see the data of Supplementary Table 10.

**Supplementary Table 10. Functional annotations of caudate modules (sub-modules).**