Table S3. MR results of TD on PSC

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| --- | --- | --- | --- | --- | --- |
| Exposure vs outcome | Methods | SNPs | OR | 95%CI | *P* |
| GD vs PSC | MR Egger | 6 | 0.792  | 0.162-3.862 | 0.787  |
| Weighted median | 6 | 0.995  | 0.826-1.199 | 0.957  |
| Inverse variance weighted | 6 | 1.010  | 0.754-1.353 | 0.945  |
| Simple mode | 6 | 0.887  | 0.696-1.131 | 0.379  |
| Weighted mode | 6 | 0.911  | 0.736-1.129 | 0.434  |
| AT vs PSC | MR Egger | 7 | 0.963  | 0.905-1.025 | 0.292  |
| Weighted median | 7 | 1.005  | 0.961-1.051 | 0.829  |
| Inverse variance weighted | 7 | 0.995  | 0.960-1.030 | 0.757  |
| Simple mode | 7 | 1.004  | 0.940-1.071 | 0.917  |
| Weighted mode | 7 | 1.005  | 0.949-1.065 | 0.870  |
| Hyperthyroidism vs PSC | MR Egger | 21 | 8.561E+02 | 0.000-1.669E+36 | 0.865  |
| Weighted median | 21 | 1.933E+09 | 0.453- 8.255E+18 | 0.059  |
| Inverse variance weighted | **21** | 1.100E+19 | 2.472E+08-4.895E+29 | **0.000**  |
| Simple mode | 21 | 7.239E+02 | 0.000-2.652E+17 | 0.704  |
| Weighted mode | 21 | 2.745E+04 | 0.000- 4.879E+20 | 0.598  |
| Hypothyroidism vs PSC | MR Egger | 22 | 2.680E+16 | 3.874-1.8537E+32 | 0.065  |
| Weighted median | 22 | 6.286E+04 | 0.675- 5.851E+09 | 0.058  |
| Inverse variance weighted | **22** | 3.267E+04 | 3.150-3.388E+08 | **0.028**  |
| Simple mode | 22 | 9.547E+03 | 0.000-1.903E+13 | 0.417  |
| Weighted mode | 22 | 2.273E+04 | 0.000-1.164E+14 | 0.395  |
| TC vs PSC | MR Egger | 266 | 1.003  | 0.997-1.009 | 0.385  |
| Weighted median | 266 | 1.004  | 0.998-1.009 | 0.212  |
| Inverse variance weighted | 266 | 0.998  | 0.995-1.002 | 0.396  |
| Simple mode | 266 | 1.001  | 0.990-1.012 | 0.888  |
| Weighted mode | 266 | 1.002  | 0.996-1.009 | 0.471  |
| TSH vs PSC  | MR Egger | 15 | 1.215  | 0.713-2.071 | 0.486  |
| Weighted median | 15 | 0.934  | 0.768-1.137 | 0.497  |
| Inverse variance weighted | 15 | 1.018  | 0.854-1.213 | 0.841  |
| Simple mode | 15 | 0.932  | 0.678-1.281 | 0.671  |
| Weighted mode | 15 | 0.924  | 0.685-1.245 | 0.610  |
| TRH vs PSC | MR Egger | 15 | 0.857  | 0.596-1.234 | 0.422  |
| Weighted median | 15 | 0.995  | 0.826-1.198 | 0.957  |
| Inverse variance weighted | 15 | 1.021  | 0.886-1.177  | 0.770  |
| Simple mode | 15 | 1.120  | 0.825-1.520  | 0.480  |
| Weighted mode | 15 | 1.073  | 0.774-1.488  | 0.680  |
| TBG vs PSC | MR Egger | ——————————————— |
| Weighted median |
| Inverse variance weighted |
| Simple mode |
| Weighted mode |
|  | MR Egger | 11 | 1.071  | 0.722-1.589  | 0.740  |
| Weighted median | 11 | 0.999  | 0.808-1.236  | 0.995  |
| THRα vs PSC | Inverse variance weighted | 11 | 1.010  | 0.858-1.191  | 0.901  |
|  | Simple mode | 11 | 1.005  | 0.739-1.368  | 0.975  |
| Weighted mode | 11 | 0.979  | 0.712-1.347  | 0.899  |
|  | MR Egger | 14 | 0.860  | 0.579-1.277  | 0.469  |
| Weighted median | 14 | 0.934  | 0.769-1.134  | 0.491  |
| TP vs PSC | Inverse variance weighted | 14 | 0.886  | 0.763-1.028  | 0.111  |
|  | Simple mode | 14 | 0.731  | 0.509-1.052  | 0.116  |
| Weighted mode | 14 | 1.100  | 0.780-1.551  | 0.597  |
| TG vs PSC | MR Egger | 10 | 0.732  | 0.525-1.020 | 0.102  |
| Weighted median | 10 | 0.871  | 0.672-1.128  | 0.295  |
| Inverse variance weighted | 10 | 0.927  | 0.756-1.138  | 0.469  |
| Simple mode | 10 | 0.800  | 0.557-1.149  | 0.258  |
| Weighted mode | 10 | 0.808  | 0.564-1.158  | 0.276  |

MR, Mendelian randomization; PSC, primary sclerosing cholangitis; TD, thyroid dysfunction; SNP, single-nucleotide polymorphism; OR, odds ratio; CI, confidence interval; GD, Graves' disease; AT, autoimmune thyroiditis; TC, thyroid cancer; TSH, thyroid stimulating hormone; TRH, thyrotropin-releasing hormone, TBG, thyroxine-binding globulin; THRα, thyroid hormone receptor alpha; TP, thyroid peroxidase; TG, thyroglobulin.