| Short name          | Trait                             | Ref.               | \( \rho \)       | \( P \)         | N SNPs |
|---------------------|-----------------------------------|--------------------|------------------|-----------------|--------|
| SkinCol_UKB         | Skin Color                        | Neale Lab (2021)   | -0.33            | \( 2.5 \times 10^{-13} \) | 463    |
| Height_UKB          | Height                            | Neale Lab (2021)   | -0.02            | 0.36            | 2479   |
| SitHeight_UKB       | Sitting height                    | Neale Lab (2021)   | 0.02             | 0.47            | 1953   |
| Height_GIANT        | Height                            | Wood et al. (2014) | -0.02            | 0.34            | 1735   |
| BMI_UKB             | Body mass index                   | Neale Lab (2021)   | 0.02             | 0.29            | 1836   |
| BMD_UKB             | Heel bone mineral density         | Neale Lab (2021)   | -0.03            | 0.50            | 583    |
| BMR_UKB             | Basal metabolic rate              | Neale Lab (2021)   | -0.01            | 0.66            | 2028   |
| Weight_UKB          | Weight                            | Neale Lab (2021)   | 0.02             | 0.46            | 2002   |
| FM_UKB              | Fat mass                          | Neale Lab (2021)   | 0.01             | 0.66            | 1818   |
| FFM_UKB             | Fat free mass                     | Neale Lab (2021)   | -0.03            | 0.19            | 2098   |
| Waist_UKB           | Waist circumference               | Neale Lab (2021)   | -0.03            | 0.19            | 1592   |
| Hip_UKB             | Hip circumference                 | Neale Lab (2021)   | 0.00             | 0.87            | 1688   |
| WBC_UKB             | White blood cell count            | Neale Lab (2021)   | -0.05            | 0.10            | 1311   |
| RBC_UKB             | Red blood cell count              | Neale Lab (2021)   | 0.02             | 0.42            | 1392   |
| Pulse_UKB           | Pulse rate                        | Neale Lab (2021)   | 0.07             | 0.21            | 291    |
| HDL_UKB             | HDL cholesterol                   | Neale Lab (2021)   | 0.00             | 0.94            | 656    |
| LDL_UKB             | LDL cholesterol                   | Neale Lab (2021)   | -0.05            | 0.34            | 363    |
| TG_UKB              | Triglycerides                     | Neale Lab (2021)   | -0.02            | 0.68            | 631    |
| AAM_UKB             | Age at menarche                   | Neale Lab (2021)   | -0.01            | 0.84            | 721    |
| BW_EGG              | Birthweight                       | Horikoshi et al. (2016) | 0.05 | 0.18 | 677 |
| HC_EGG              | Infant head circumference         | Taal et al. (2012) | 0.12            | 0.41            | 46     |
| VitD_UKB            | Vitamin D                         | Neale Lab (2021)   | -0.02            | 0.87            | 48     |
| Calcium_UKB         | Calcium                           | Neale Lab (2021)   | 0.18             | 0.22            | 47     |
| Folate_UKB          | Folate                            | Neale Lab (2021)   | -0.04            | 0.79            | 44     |
| FI_MAGIC            | Fasting insulin                   | Chen et al. (2021) | -0.12            | 0.05            | 254    |
| FG_MAGIC            | Fasting glucose                   | Chen et al. (2021) | -0.06            | 0.33            | 285    |
| 2hGlu_MAGIC         | Two hour glucose                  | Chen et al. (2021) | -0.07            | 0.52            | 94     |
| HbA1c_MAGIC         | Glycated haemoglobin              | Chen et al. (2021) | -0.06            | 0.27            | 299    |

Table S1: Trait descriptions, sources, and values for Figure 6