

#### Description of Additional Supplementary Files

- Supplementary Data 1. Active ingredients and ATC code of medications in UK Biobank.
- Supplementary Data 2. The independent SNPs ( $P \leq 5E-8$ ) associated with the 23 medication-taking traits.
- Supplementary Data 3. Results of partitioning the 23 traits' SNP-heritability to 205 tissues/cell types using cell type specific analyses.
- Supplementary Data 4. Results of SMR analysis for the 19 medication-taking traits.
- Supplementary Data 5. Results of gene-based association analyses.
- Supplementary Data 6. Results of gene sets enrichment analysis at  $FDR < 5\%$ .
- Supplementary Data 7. Genetic correlation of the 23 medication traits and 21 related diseases/traits.
- Supplementary Data 8. Mendelian Randomization analysis results using the GSMR method and SNPs associated with 15 diseases/traits as instrument (trait1) to investigate the hypothesis of causality of the 23 medication-taking traits (trait 2).

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