

## **Supplementary Material:**

### A causal web between chronotype and metabolic health traits

Table S1: TableS1EpiGraphDBIVWresults.xlsx. EpiGraphDB data downloaded to produce Figure 2.

Table S2: TableS2StudyCharacteristics.xlsx. SNP-level information on all 10 studies analyzed needed to reproduce analyses of these 10 studies.

Table S3: TableS3MRAnalysisResults.xlsx. Summary level results for each of the 10 MR analyses, including leave-one-out statistics, MR-Egger statistics, and all MR statistics. Used to produce supplementary scatter plots, leave-one-out plots, and Figures 3-5 and supplementary figures.

Table S4: TableS4ConfounderGraph.xlsx. Statistics downloaded from EpiGraphDB needed to reproduce figures 6 and 7.

Figures S1-S7: Following Pages

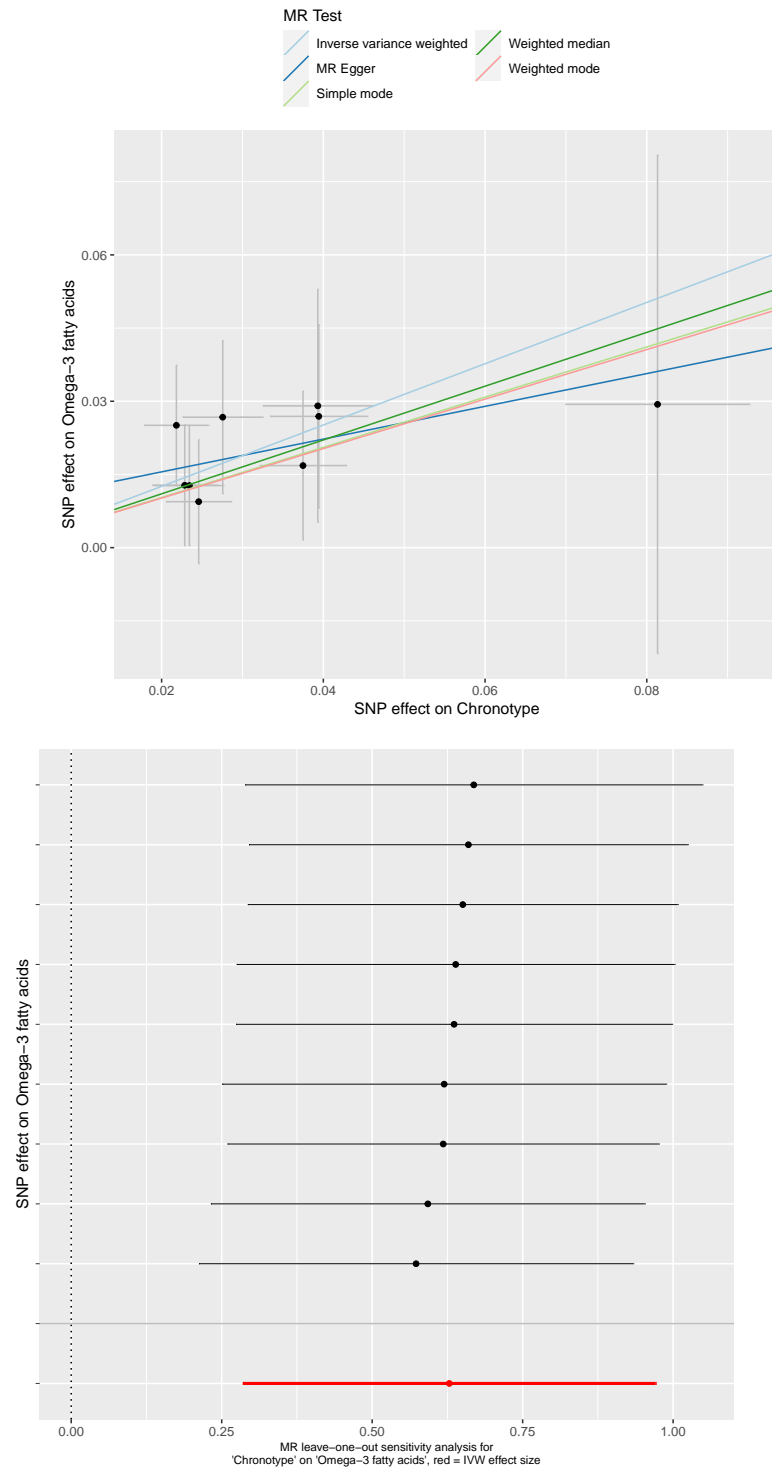


Figure S1: Propensity to an evening chronotype causes increased omega-3 fatty acids. (top) IVW, Weighted median, mode, weighted mode, and Egger regressions shown. Panel (bottom) depicts leave-one-out sensitivity analyses with the IVW method, where the red line indicates the consensus IVW point estimate.

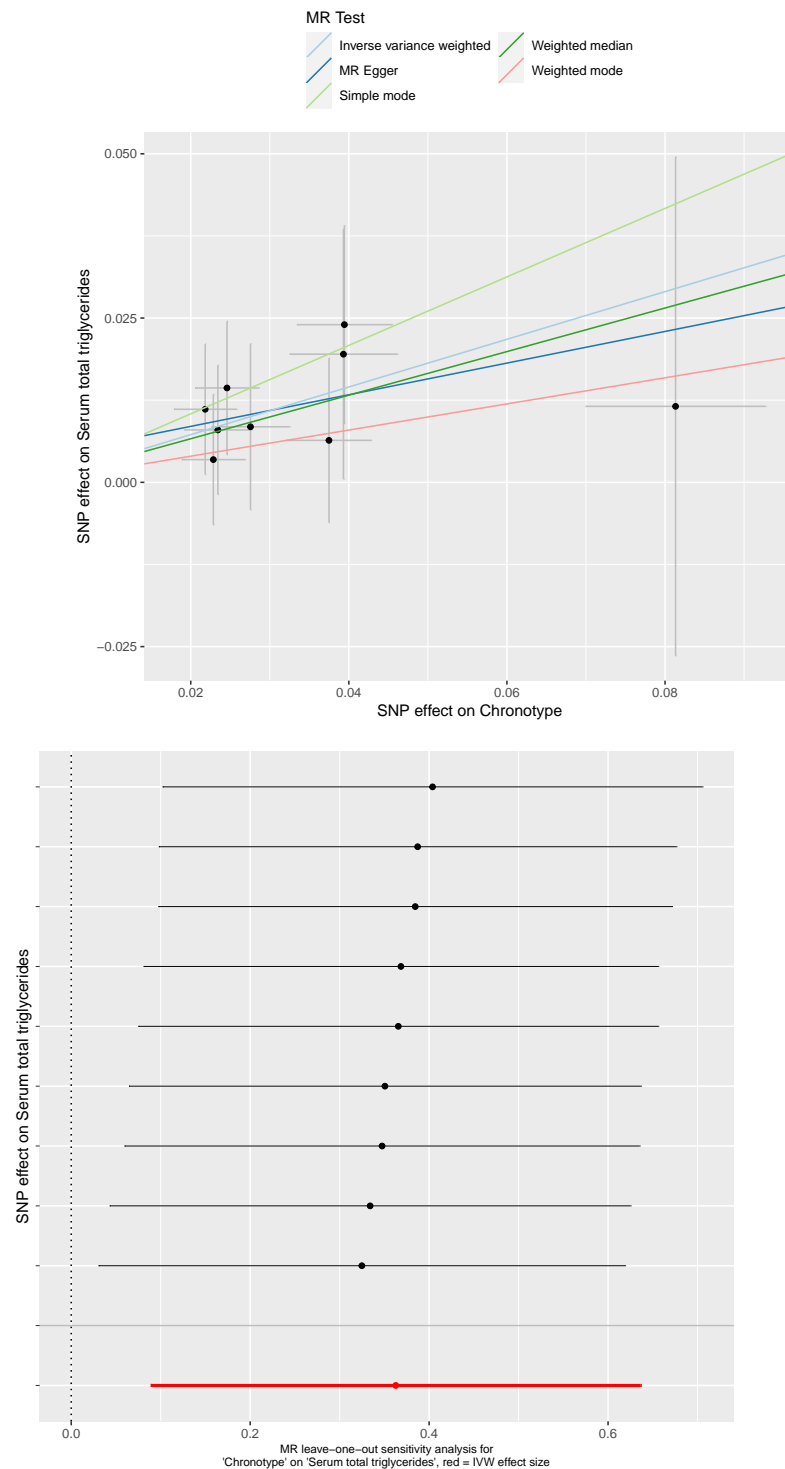


Figure S2: Propensity to an evening chronotype causes increased serum total triglycerides. (top) IVW, Weighted median, mode, weighted mode, and Egger regressions shown. Panel (bottom) depicts leave-one-out sensitivity analyses with the IVW method, where the red line indicates the consensus IVW point estimate.

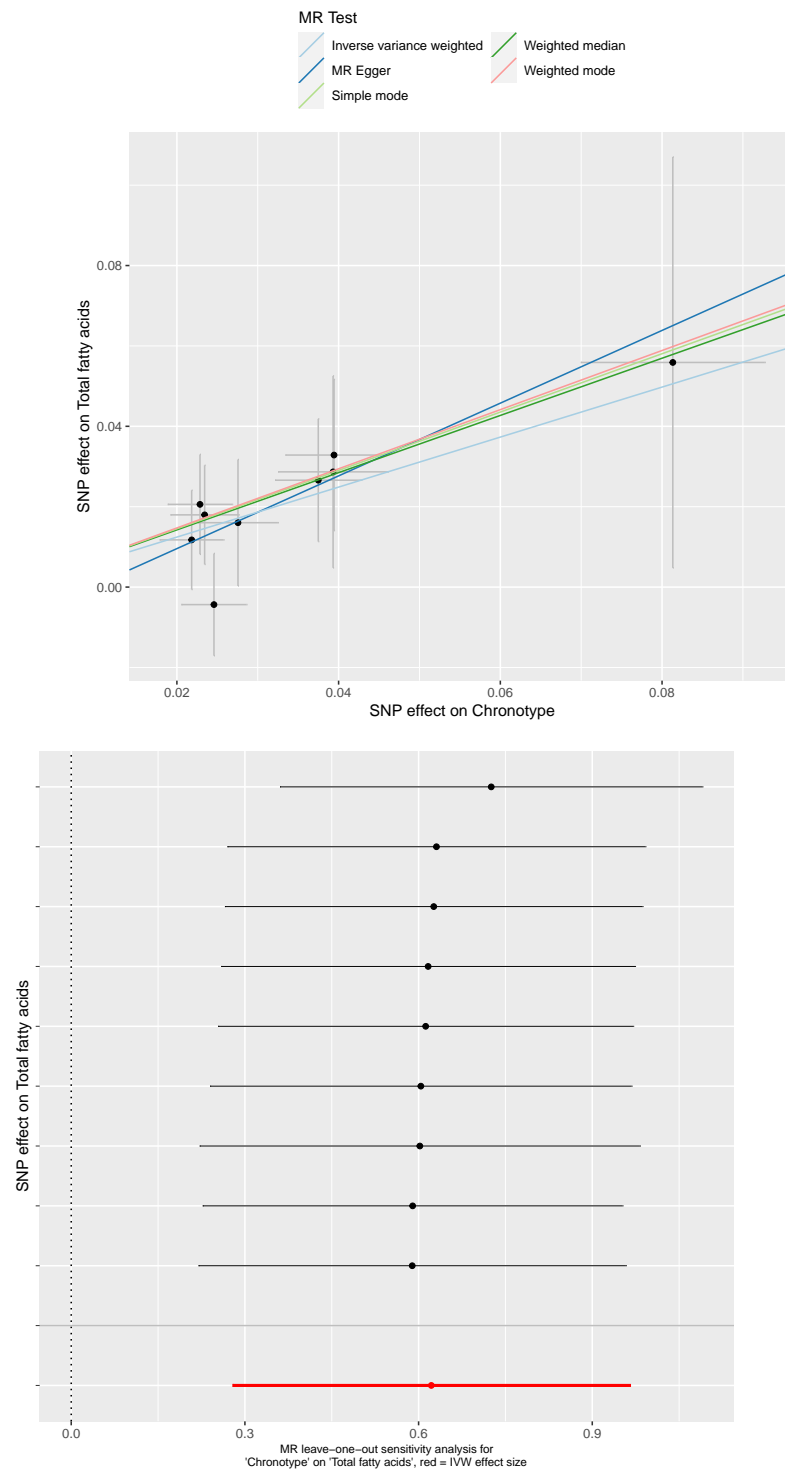


Figure S3: Propensity to an evening chronotype causes increased total fatty acids. (top) IVW, Weighted median, mode, weighted mode, and Egger regressions shown. Panel (bottom) depicts leave-one-out sensitivity analyses with the IVW method, where the red line indicates the consensus IVW point estimate.

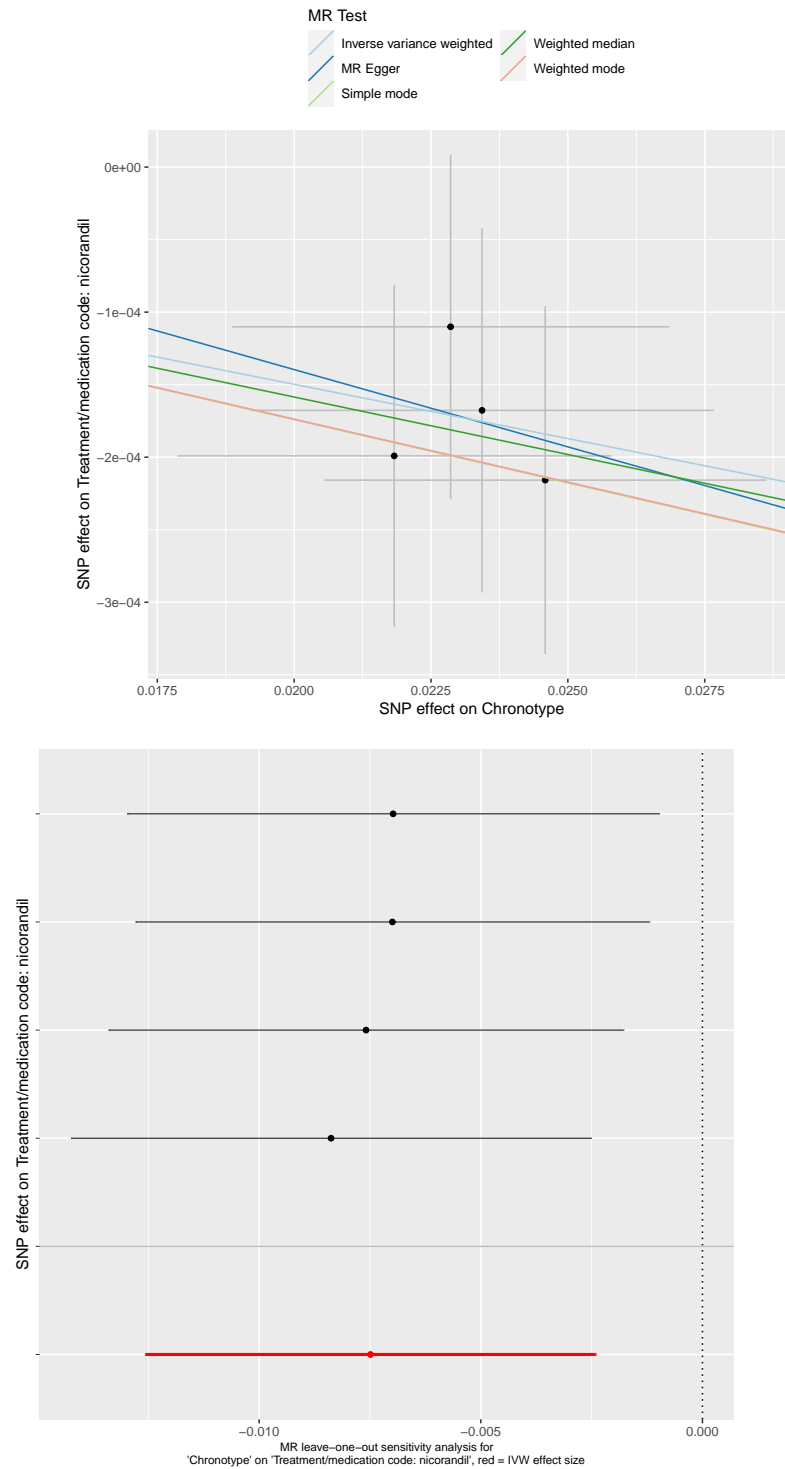


Figure S4: Propensity to an evening chronotype causes decreased likelihood of treatment with nicorandil. (top) IVW, Weighted median, mode, weighted mode, and Egger regressions shown. Panel (bottom) depicts leave-one-out sensitivity analyses with the IVW method, where the red line indicates the consensus IVW point estimate.

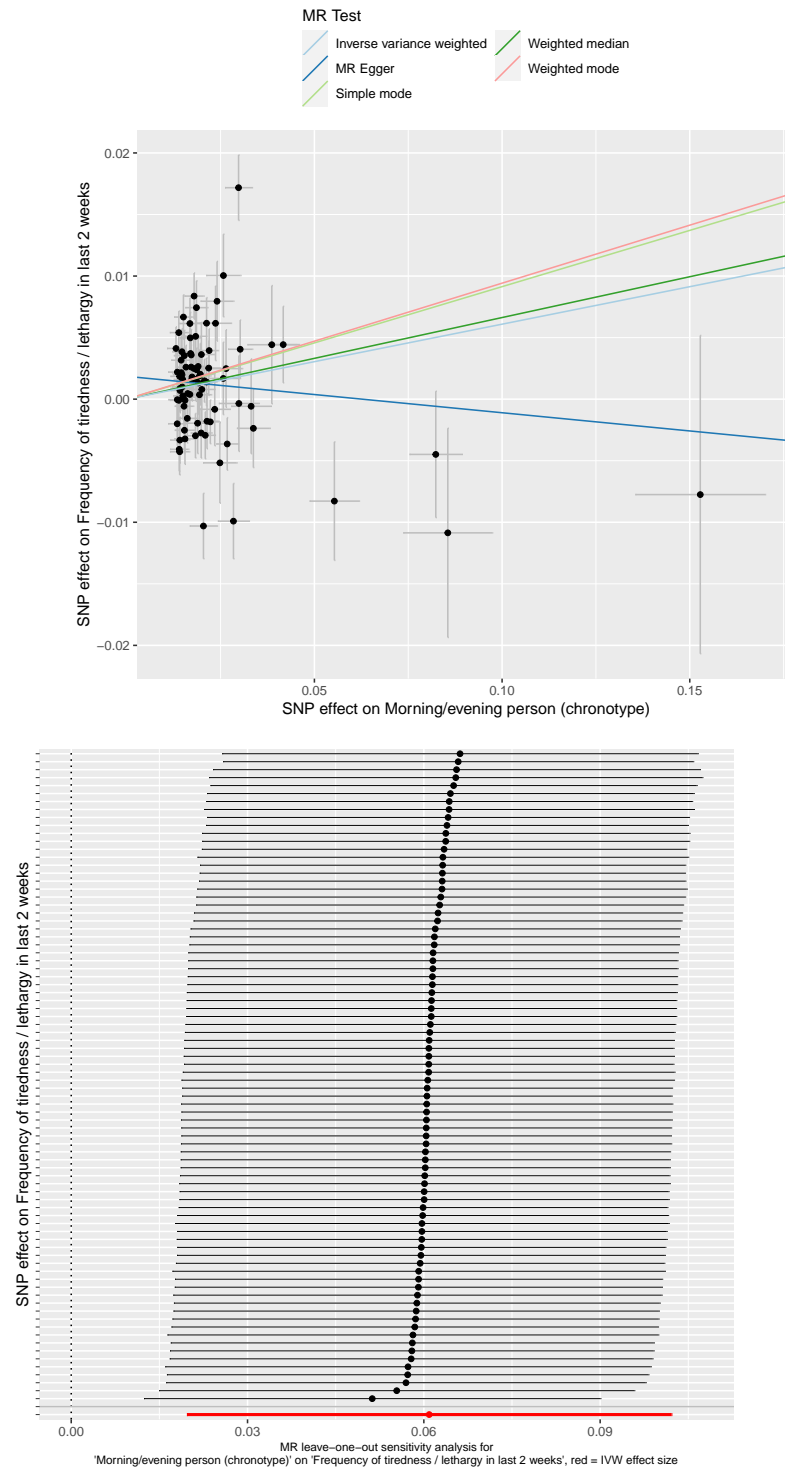


Figure S5: Propensity to an evening chronotype causes increases in self-reported lethargy in the last two weeks. (top) IVW, Weighted median, mode, weighted mode, and Egger regressions shown. Panel (bottom) depicts leave-one-out sensitivity analyses with the IVW method, where the red line indicates the consensus IVW point estimate.

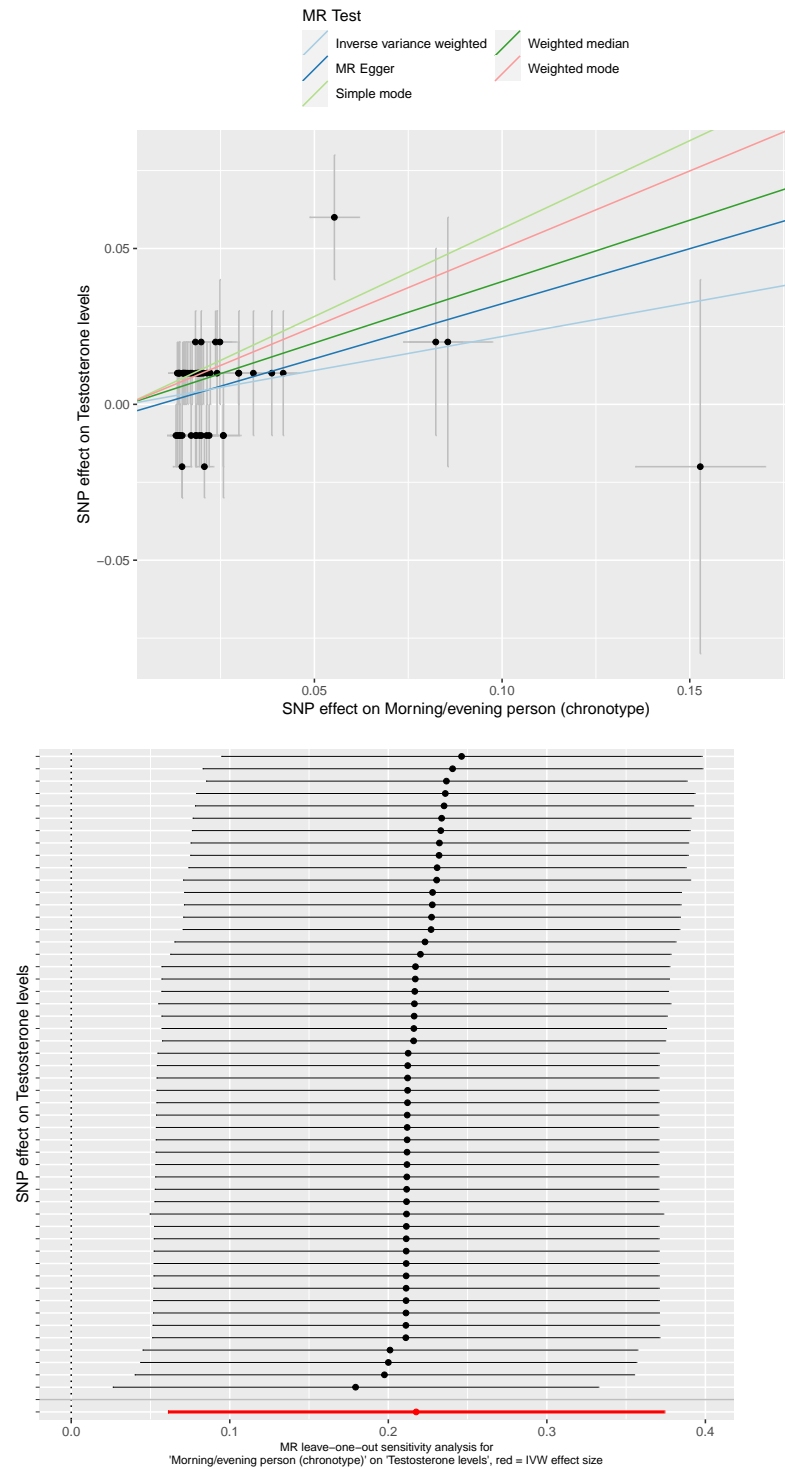


Figure S6: Propensity to an evening chronotype causes increases in serum testosterone. (top) IVW, Weighted median, mode, weighted mode, and Egger regressions shown. Panel (bottom) depicts leave-one-out sensitivity analyses with the IVW method, where the red line indicates the consensus IVW point estimate.

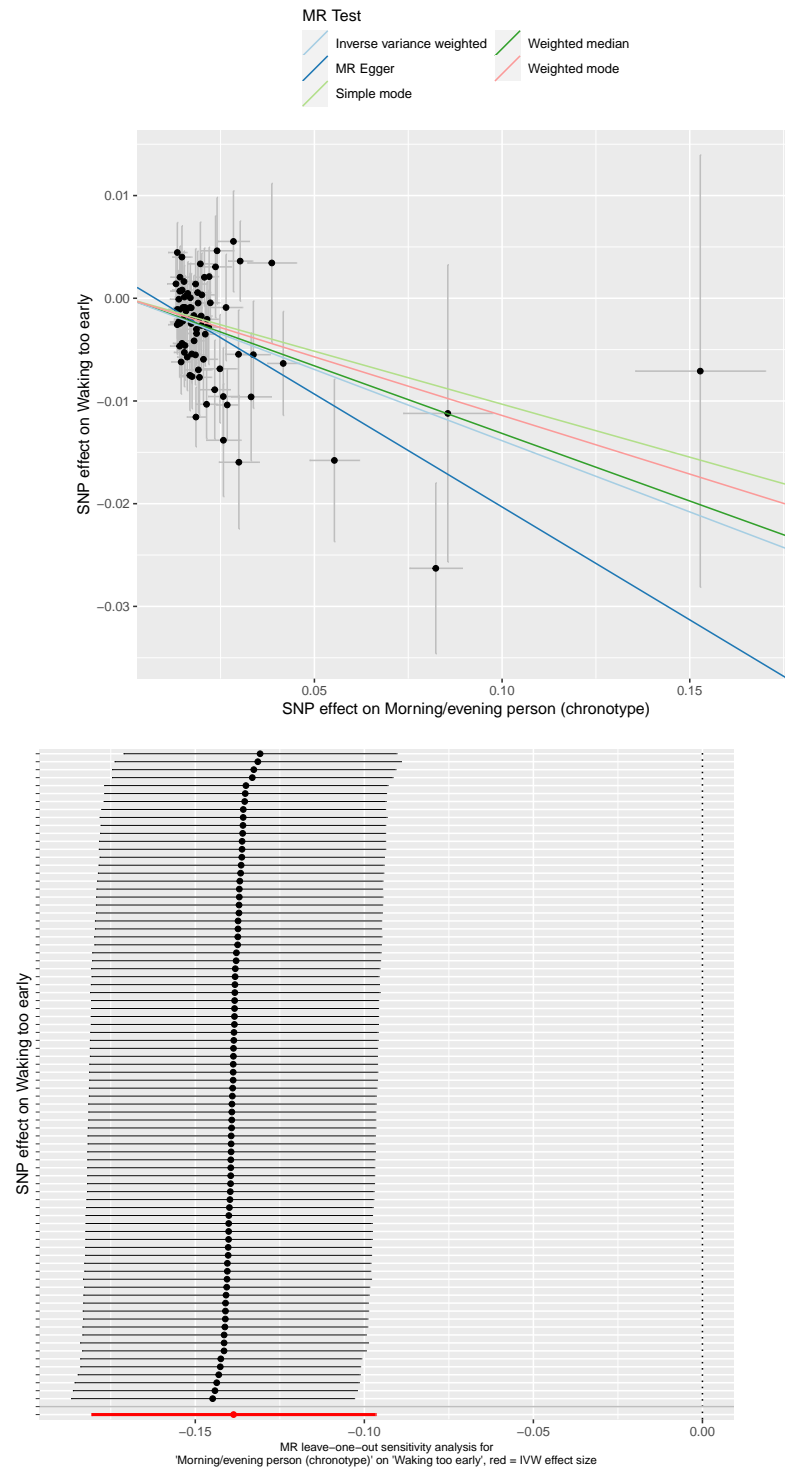


Figure S7: Propensity to an evening chronotype causes decrease in odds of waking early. (top) IVW, Weighted median, mode, weighted mode, and Egger regressions shown. Panel (bottom) depicts leave-one-out sensitivity analyses with the IVW method, where the red line indicates the consensus IVW point estimate.