

Description of Additional Supplementary Files

Supplementary data 1: Baseline Characteristics of Participants in DMP Cohort (n = 6,941)

Supplementary data 2: Association Between Sleep Characteristics and Various Phenotypes in DMP Cohort

Supplementary data 3: Alpha Diversity Associated with Sleep Characteristics in DMP Cohort

Supplementary data 4: Microbiome Composition (Species Level) Beta-Diversity Variance Explained by Sleep Characteristics in DMP Cohort

Supplementary data 5: Species Abundance Associated with Sleep Characteristics in DMP Cohort

Supplementary data 6: Species Abundance Associated with PSQI Component Scores in DMP Cohort

Supplementary data 7: Replication of Species Abundance and Sleep Characteristics Association in the DEEP Cohort

Supplementary data 8: Stability-selection summary of penalized multivariate mediation among Diet, Microbiome, and Sleep (10,000 iterations)

Supplementary data 9: Estimating the Causal Effects of Diet on Sleep Characteristics via Gut Microbiome Composition Using an Unpenalized Model

Supplementary data 10: Estimating the Causal Effects of Diet on Gut Microbiome Composition via Sleep Characteristics Using an Unpenalized Model

Supplementary data 11: Estimating the Causal Effects of Sleep Characteristics on Gut Microbiome Composition via Diet Using an Unpenalized Model

Supplementary data 12: Pathway Profiles of Clostridia bacterium UC5_1_1E11 and Clostridia sp. SGB14844 in Relation to Coffee Intake and Social Jet Lag

Supplementary data 13: Phylogenetic vs. Non-Phylogenetic Model Comparisons for Clostridia bacterium UC5_1_1E11 and Clostridia sp. SGB14844 Associations