

Online Supplementary Material

Supplementary Methods.

Stool samples were collected with OMNIgeneGUT fecal collection kits (DNAGenotek) and stored at -80C until analysis of 16S rRNA gene amplicons using Illumina iTaq PCR amplification and MiSeq sequencing, and assigning microbial OTU via QIIMEv1.3 and Greengenes database, keeping hits with 97% identity. Blood collected in EDTA-tubes was fractionated and assayed for plasma LPS (Antibodies Online) and FABP2 (R&D Systems Quantikine kit) by sandwich ELISA; zonulin was assayed by competitive ELISA (Immundiagnostik AG). Data were analyzed with Galaxy, R packages including Phyloseq, and IBM SPSS Statistics software.

Supplementary legend to figure 1 of main manuscript.

Linear discriminate analysis (LDA) and Phylogenetic investigation of communities by reconstruction of unobserved states (PICRUST) are shown for metagenome predicted KEGG ortholog genes. Data are shown for log LDA scores >2.0 threshold ($P < .05$ for Kruskal-Wallis rank using closed reference OTU protocol).

Supplementary legend to figure 2 of main manuscript.

Plasma LPS endotoxin, zonulin, and FABP2 are blood markers of gut dysbiosis and gut permeability pathophysiological epithelium integrity. Box-whisker plots are shown for DEP/ANX subjects (green) vs control reference subjects (red). ANOVA comparison of means are: LPS (mean difference 36.8 pg/ml, 95% CI 8.0 to 65.6, $P = .014$); zonulin (mean difference 15.0 ng/ml, 95% CI 11.1 to 18.9, $P < .001$); FABP2 (mean difference 0.29 ng/ml, 95% CI 0.03 to 0.55, $P = .032$).

Supplementary figure S1.

Differential gut microbiome distribution in DEP/ANX subjects vs control reference subjects. Linear discriminant analysis (LDA) effect size ("LEfSe") algorithm results are shown for log LDA scores >3.0 threshold ($P < .05$ for Kruskal-Wallis rank test). Data for DEP/ANX subjects are shown vs control reference subjects.

Supplementary figure S2.

Cladogram representing LEfSe corresponding to gut microbiome taxa obtained from DEP/ANX subjects or control reference subjects. Shown are taxa with log LDA scores >3.0 ($P < .05$ for Kruskal-Wallis rank test).