

Supplementary Materials

Figure S1. Alpha diversity between healthy and diabetic groups.

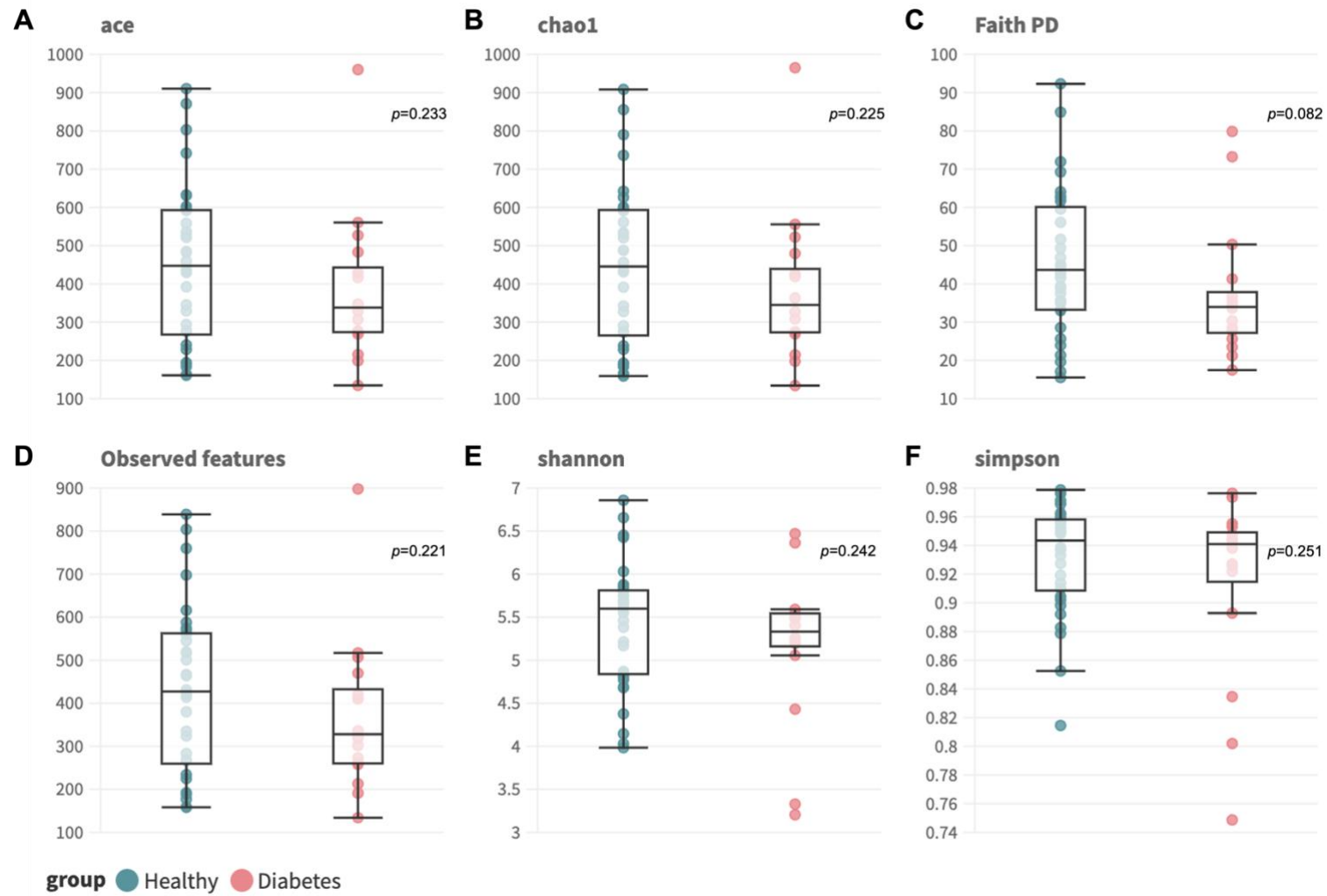


Table S1. Adonis test statistics of beta diversity.

| Variable | Bray-Curtis | cosine | Hamming | Jaccard | gUniFrac | uwUniFrac | wnUniFrac | wUniFrac |
|-------------------|--------------------|---------------|----------------|----------------|-----------------|------------------|------------------|-----------------|
| Age Group | 0.037 | 0.024 | 0.070 | 0.045 | 0.443 | 0.081 | 0.456 | 0.442 |
| Breed Size | 0.131 | 0.209 | 0.139 | 0.221 | 0.419 | 0.224 | 0.423 | 0.456 |
| Gender | 0.789 | 0.505 | 0.733 | 0.881 | 0.724 | 0.279 | 0.725 | 0.706 |
| Group | 0.027 | 0.114 | 0.271 | 0.002 | 0.251 | 0.001 | 0.243 | 0.233 |

*Abbreviations: gUniFrac = Generalized Unique Fraction Distances; uwUniFrac = Unweighted Unique Fraction Distances; wnUniFrac = Weighted Normalized Unique Fraction Distances; wUniFrac = Weighted Unique Fraction Distances

Table S2. Top 10 hub nodes across networks.

| ASV | Taxon | Group | Degree |
|----------------------------------|--|----------|--------|
| bb3055f753c1dd21f0137f2dd59d49ec | f__Helicobacteraceae; g__Helicobacter | Healthy | 25 |
| adc085fb68c6ca79a17867f7d5dfe238 | f__Enterobacteriaceae; g__Escherichia-Shigella; s__Escherichia_sp. | Healthy | 25 |
| 99acc08c0d8bfce4ad95740ddf504a83 | f__Erysipelatoclostridiaceae; g__Erysipelatoclostridium; s__[Clostridium]_spiroforme | Healthy | 24 |
| 3c72324085d7022a73a0bf57beb0b3fc | f__Lachnospiraceae; g__Lachnospiraceae_NK4A136_group; s__uncultured_bacterium | Healthy | 24 |
| 7a35b8233e75ddc42a93f46704d53d1f | f__Enterobacteriaceae; g__Escherichia-Shigella; s__Escherichia_sp. | Healthy | 23 |
| a25ccb444dbbbc340eb5926283bf134b | f__Prevotellaceae; g__Prevotellaceae_Ga6A1_group; s__uncultured_bacterium | Healthy | 23 |
| 46f019631ec39bbb20d30b4a3ae24704 | f__Streptococcaceae; g__Streptococcus; s__Streptococcus_lutetiensis | Healthy | 23 |
| 8c59053f20bd4788d68a45616fc58ee8 | f__Lachnospiraceae | Healthy | 22 |
| a3a5f80c745d186df4adaeb7f1ef8a32 | f__Bacteroidaceae; g__Bacteroides; s__Bacteroides_vulgatus | Healthy | 22 |
| 5c8e65a01a47c84e85f83cac65a5e0b5 | f__Peptostreptococcaceae; g__Peptostreptococcus; s__Peptostreptococcus_anaerobius | Healthy | 22 |
| 3e48499d30bb1bc080c438249c940174 | f__Pectobacteriaceae; g__Sodalis; s__bacterium_secondary | Diabetes | 147 |
| 8f6b2d5f877dd8c9a342fab371c4d92f | f__Prevotellaceae; g__Alloprevotella | Diabetes | 133 |
| 8c86daad090df502f91909b7794dd72a | f__Helicobacteraceae; g__Helicobacter | Diabetes | 122 |
| 01ebe1bdf28b4b98908f3eb63287170f | f__Prevotellaceae; g__Alloprevotella | Diabetes | 116 |
| 50f31ae556c607afe407e6610551f887 | f__Lachnospiraceae | Diabetes | 40 |
| 38ab081ee38e634b89bb6eaaba005e48 | f__Lachnospiraceae; g__Blautia | Diabetes | 38 |
| 851d8b0b44c78c7ce24c78b9f14b1d85 | f__Bacteroidaceae; g__Bacteroides; s__Bacteroides_stercoris | Diabetes | 34 |
| d862ff0f8f5c9f39ae13f080aa680bb3 | f__Lachnospiraceae; g__Roseburia; s__Roseburia_intestinalis | Diabetes | 30 |
| f7a1c2a7dc74eb24446faaa79f519ee6 | f__Lachnospiraceae; g__Agathobacter; s__[Eubacterium]_rectale | Diabetes | 30 |
| 57aefa5d0a0056772a9e3e71c4ddec1b | f__Lactobacillaceae; g__Lactobacillus; s__Lactobacillus_fermentum | Diabetes | 29 |