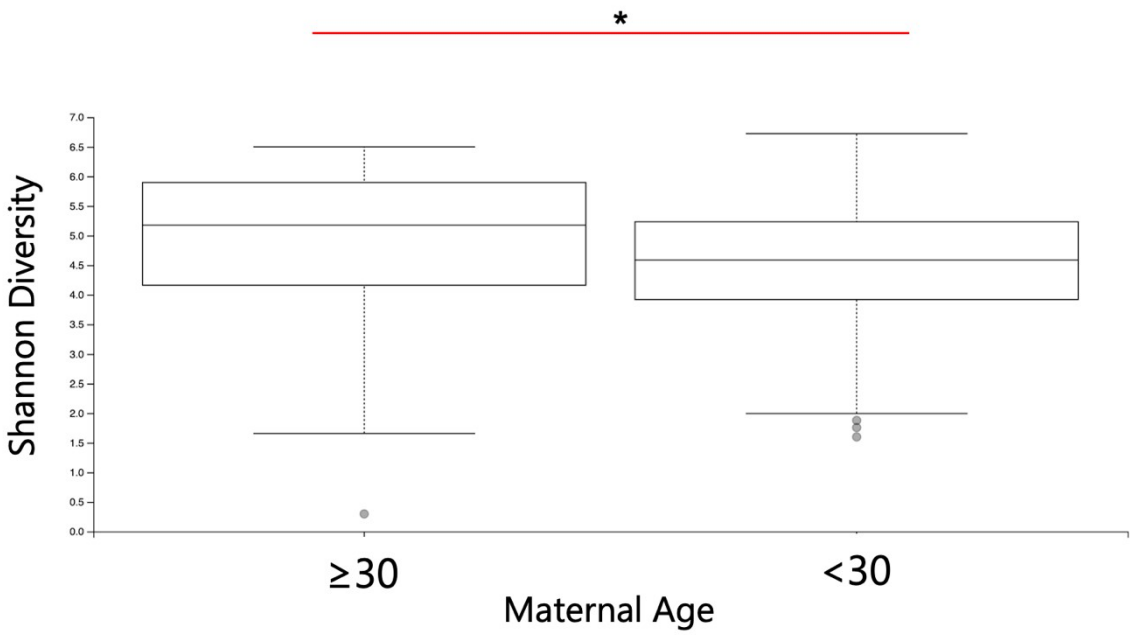
Supplemental Figures

A



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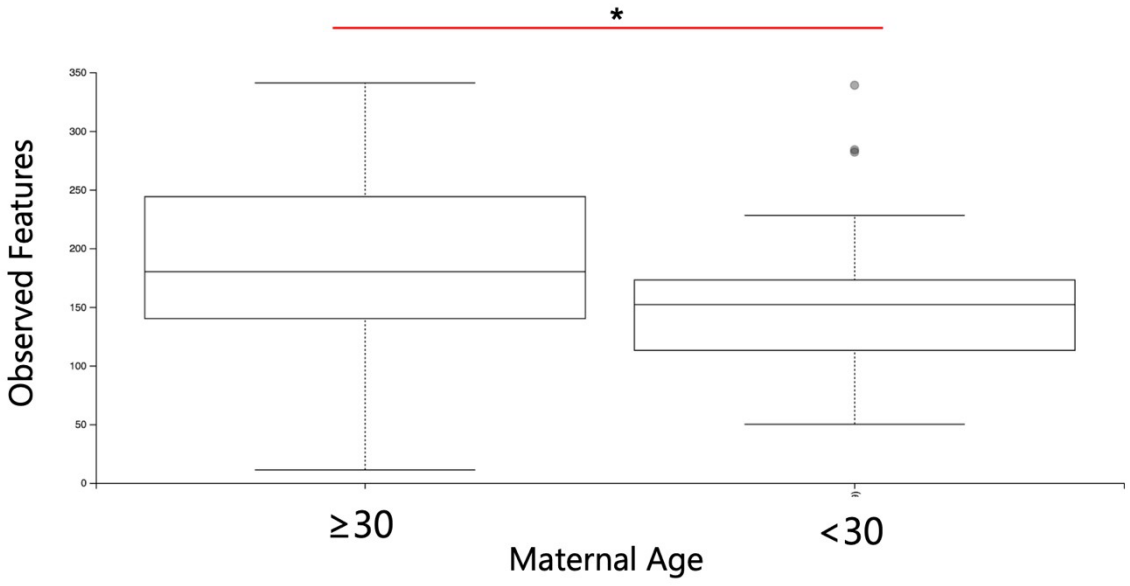

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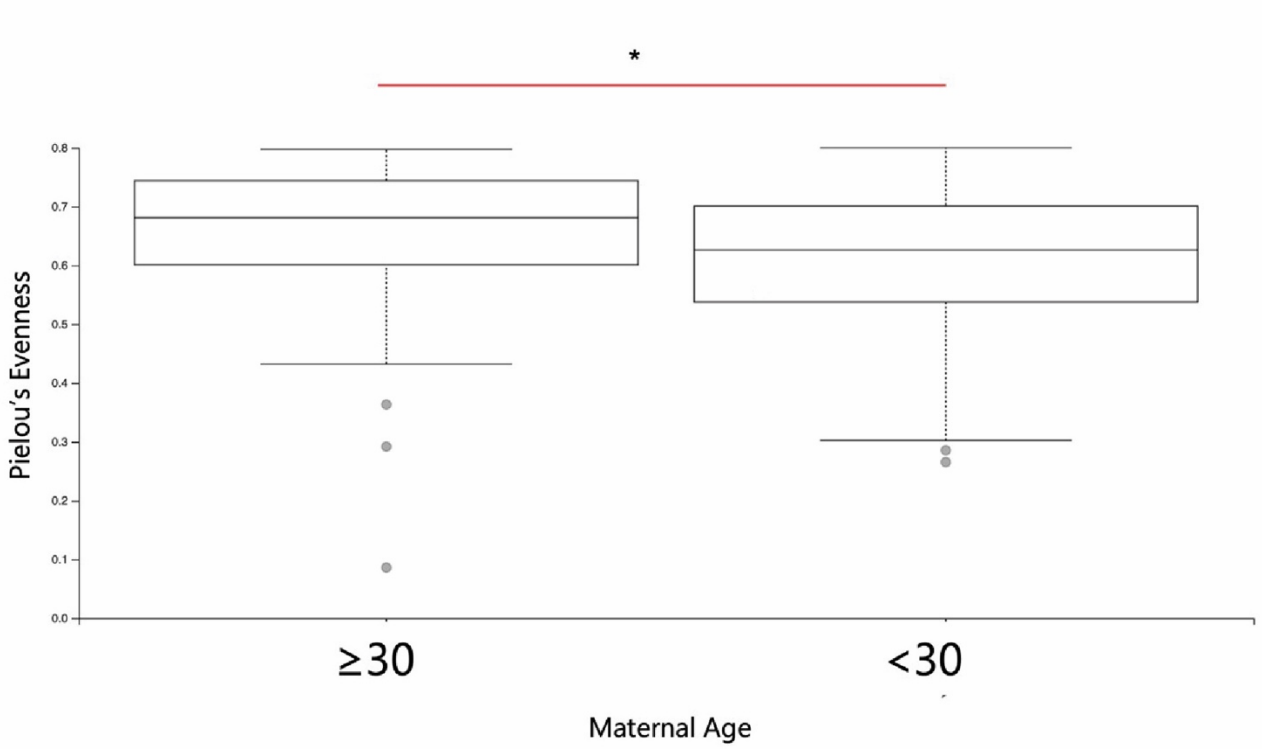
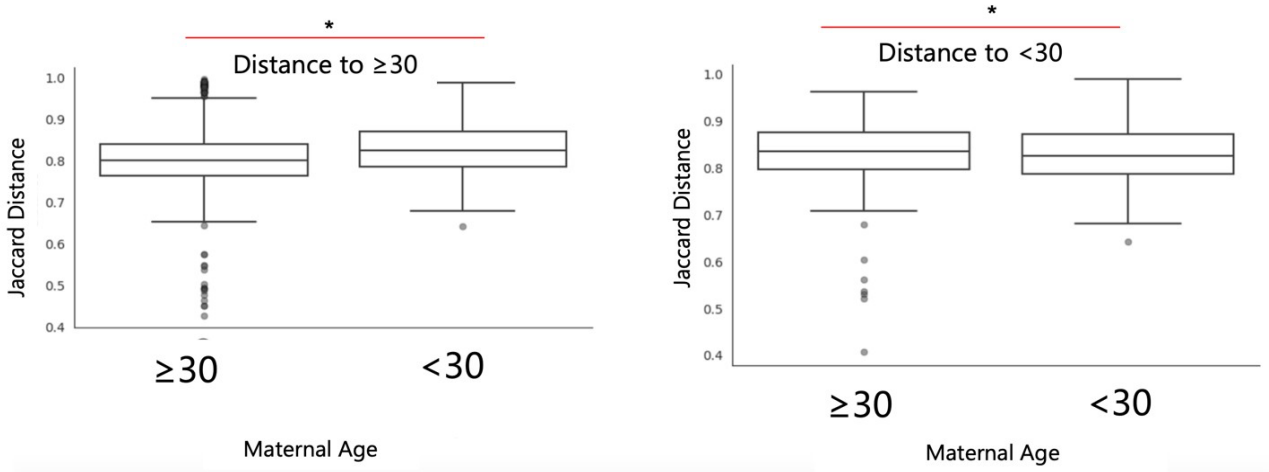
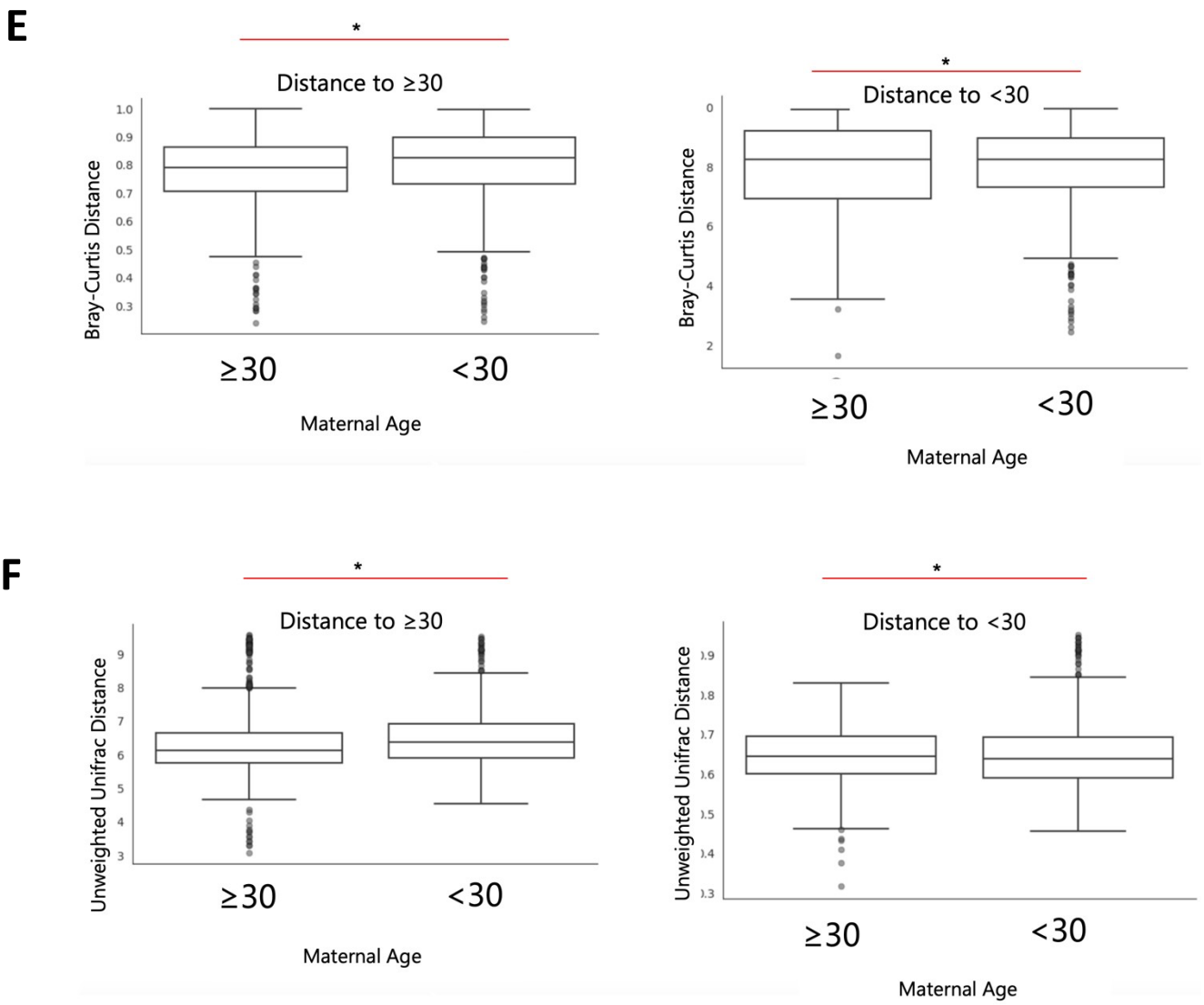

*
Pielou's Evenness
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
≥30
<30
Maternal Age

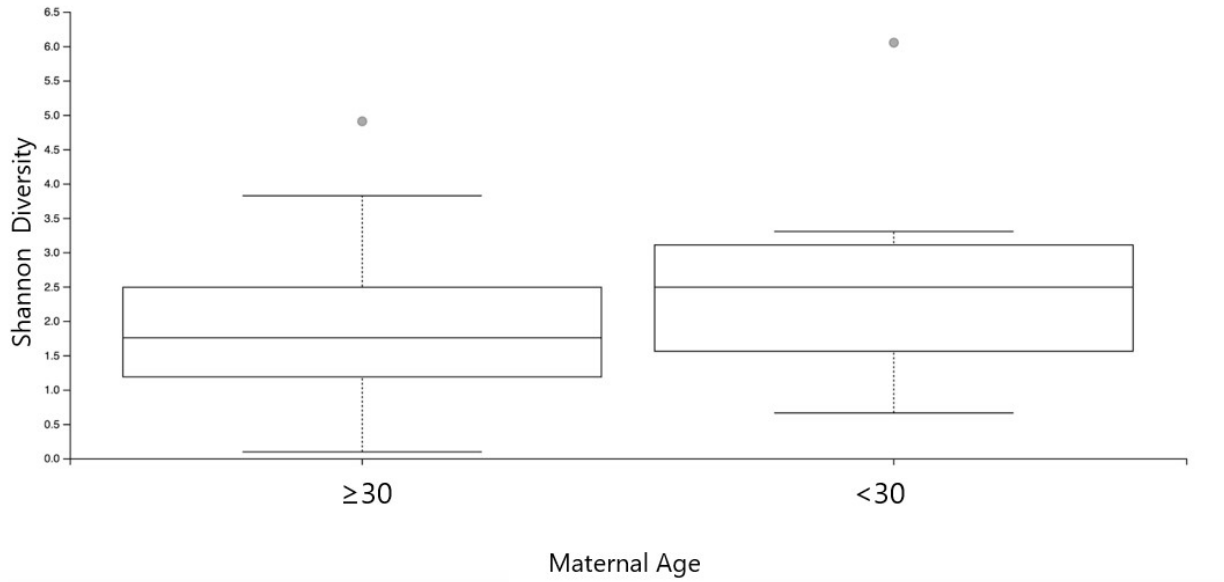
D


*
Distance to ≥30
Jaccard Distance
0.4
0.5
0.6
0.7
0.8
0.9
1.0
≥30
<30
Maternal Age
*
Distance to <30
Jaccard Distance
0.4
0.5
0.6
0.7
0.8
0.9
1.0
≥30
<30
Maternal Age

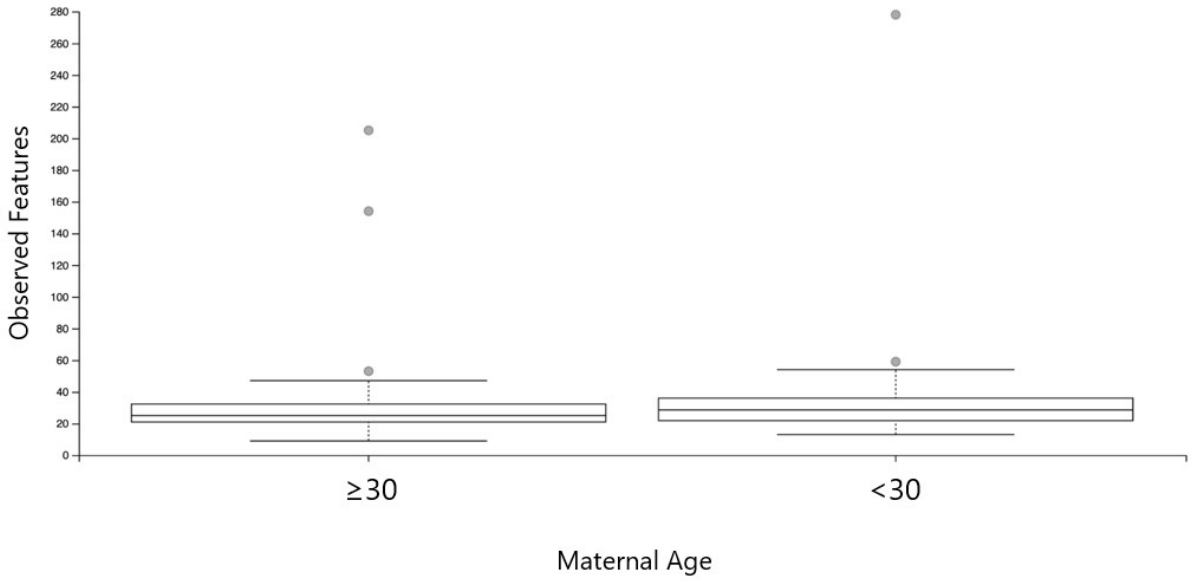


Supplementary Figure 1. Mothers aged 30 and above have a significantly different microbiome compared to mothers below 30. Comparing microbial diversity of mothers aged 30 and above to mother below the age of 30 (n = 74) using alpha and beta diversity metrics. Samples from the two groups show statistically significant results using **(A)** Shannon diversity, **(B)** Observed Features, **(C)** Pielou's Evenness, **(D)** Jaccard distance, **(E)** Bray-Curtis distance and **(F)** Unweighted UniFrac distance all of which had a p-value < 0.05. Statistical significance was determined by a Kruskal-Wallis test for alpha-diversity, and a PERMANOVA test for betadiversity.

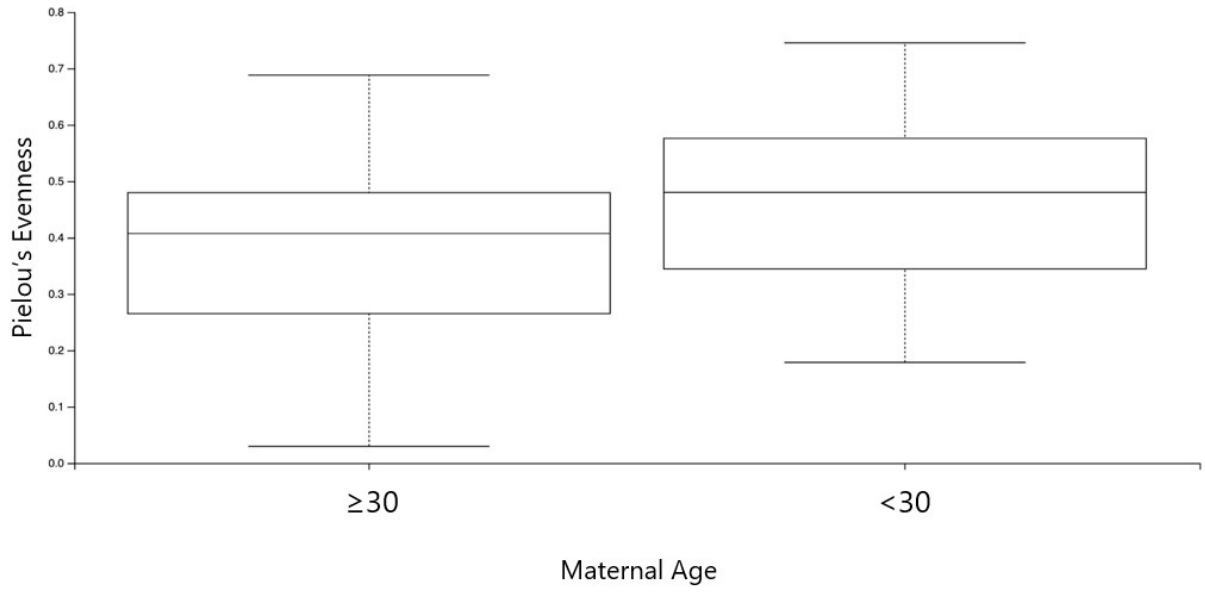
A


Shannon Diversity
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
≥30
<30
Maternal Age

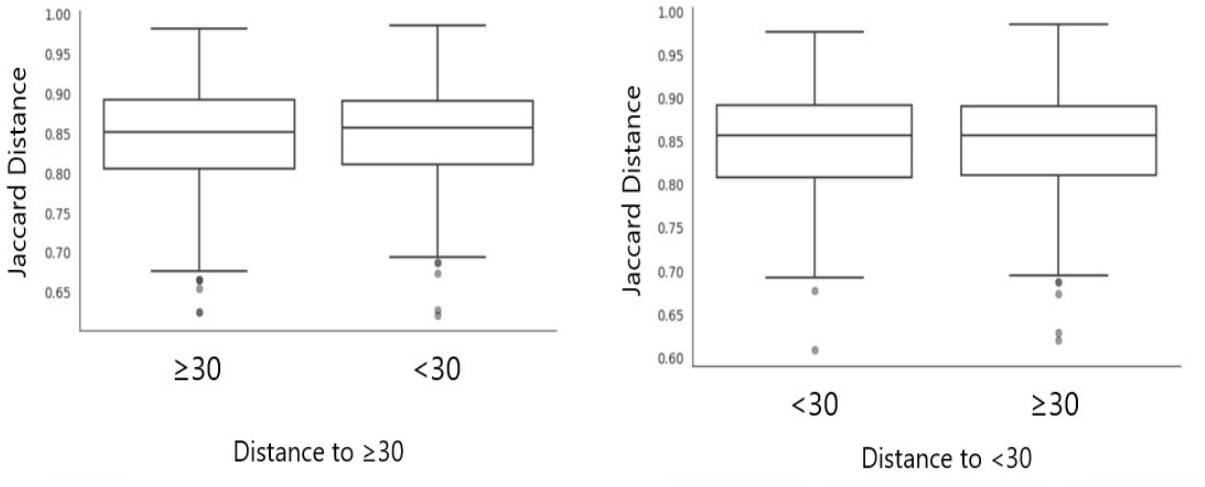
B


Observed Features
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
≥30
<30
Maternal Age

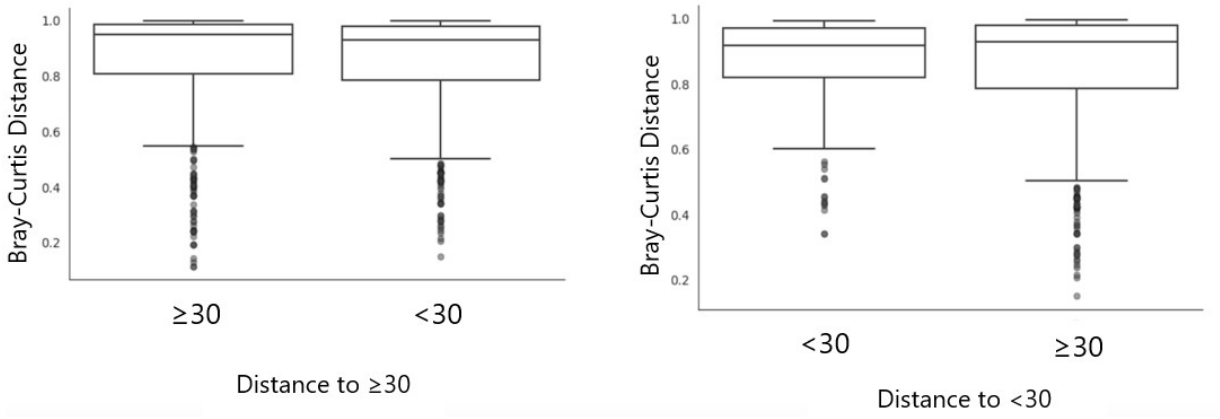
C


Pielou's Evenness
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
≥30
<30
Maternal Age

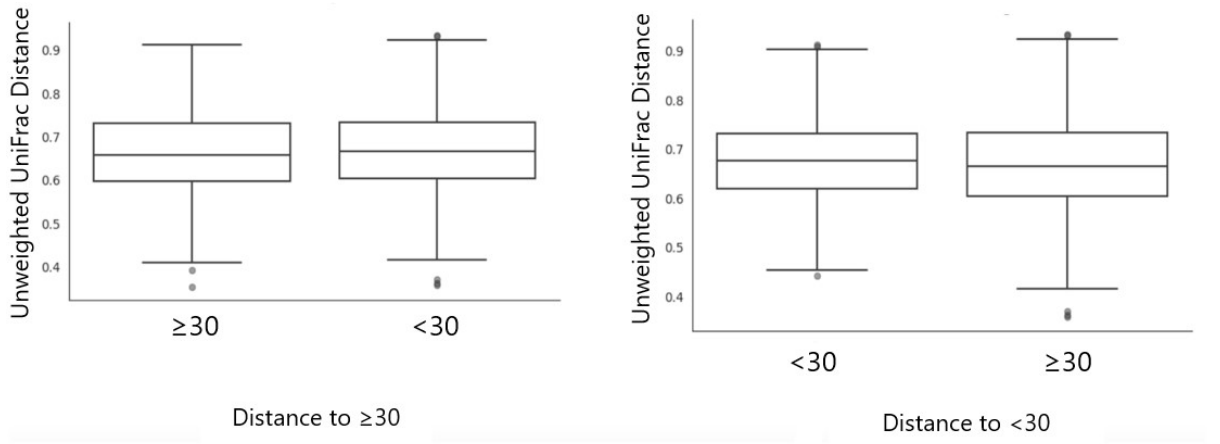
D


Jaccard Distance
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
≥30
<30
Distance to ≥30
Jaccard Distance
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
<30
≥30
Distance to <30

E



F



Supplementary Figure 2. Infants from mothers aged 30 and above do not show a significantly different microbiome compared to infants with mothers below 30 at 2 weeks. Comparing microbial diversity of infants with mothers aged 30 and above to infants with mother below the age of 30 (n = 54) using alpha and beta diversity metrics. Samples from the two groups do not compute statistically significant results using **(A)** Shannon diversity, **(B)** Observed Features, **(C)** Pielou's Evenness, **(D)** Jaccard distance, **(E)** Bray-Curtis distance and **(F)** Unweighted UniFrac distance all of which had a p-value > 0.05. Statistical significance was determined by a Kruskal-Wallis test for alpha-diversity, and a PERMANOVA test for betadiversity.

Factor	Spearman correlation coefficient	P-value	Adjusted P-value
Slowness to Eat at 6 months	0.4368082	0.003031	0.01793750
Number of sucks	-0.5420599	0.005125	0.01793750
Food Responsiveness at 4 months	-0.3627886	0.0122	0.02846667
Satiety Response 4 months	*-0.3158626*	*0.03055*	*0.05346250*
Infant Weight normalized for age at 12 months	*-0.3068612*	*0.04033*	*0.05646200*
Infant Height normalized for age at 12 months	*-0.2603226*	*0.08059*	*0.09402167*
Food Enjoyment	*-0.2229881*	*0.1051*	*0.10510000*

Supplementary Table 1. Correlational Analyses revealed 3 significant relationships with maternal age. Correlational analyses using Pearson correlation tests within the 2-month infant category for all quantitative metadata revealed 3 significant relationships out of 64 variables with the top 7 variables shown, including 4 non-significant ones in *italics.* Statistical significance was determined through the Spearman Correlation test whose raw p-values underwent a Benjamini-Hochberg adjustment to account for all 7 p-values.

Questionnaire Item	Factor it Influences
My infant has a consistent desire to continue feeding even when full	Food Responsiveness
My infant has a desire to always be fed	Food Responsiveness
My infant has a desire to be fed 30 minutes after the last feed	Food Responsiveness
My infant is fussy when not fed	Food Responsiveness
I believe my infant is overfeeding on breastmilk	Food Responsiveness
My infant is overall slow to eat	Slowness to eat
My infant's feed duration lasts more than 30 minutes	Slowness to eat
The rate of breast sucking during the feed	Slowness to eat
How often feeds are completed quickly?	Slowness to eat

Supplementary Table 2. Questionnaire Composition of Feeding Behaviour Factors.
Components that make up the Feeding behaviour factors of Food Responsiveness and Slowness to eat based on the Baby Eating Behaviour Questionnaire developed by Llewellyn et al. 2011.

Infants born to Mothers aged 30+	Infants born to Mothers aged less than 30 years of age
Order: Enterobacterales Family: Yersiniaceae	*Clostridium jeddahense*
Family: Hafniaceae Genus: Hafnia.Obesumbacterium	Family: Lachnospiraceae* Genus: Uncultured
Parabacteroides faecis	Family: Streptococcaceae Genus: Lactococcus
Family: Acidaminococcaceae Genus: Acidaminococcus	*Blautia blautia*
Family: Sutterellaceae. Genus: Sutterella	Family: Erysipelotrichaceae Genus: Faecalitalea

Supplemental Table 3. 5 Most Abundant Taxonomic Groups Unique to each Maternal Age Category in Infants Sampled at 2 Months using Taxa Barplot Inspection. Compared the taxonomic groups in infants with mothers aged 30 and above and infant with mothers below the age of 30 at 2 months using R analysis of the taxabarplot csv file from QIIME2. *Only one taxonomic group Lachnospiraceae was deemed functionally relevant in this analysis.