

Supplementary Table S3: Association of UniFrac distance vs exacerbation frequency

Blue text denotes tests with P ≤ 0.05

Red text denotes tests with P > 0.05

Microbiome-associated (sampled) exacerbation frequency					
Test: Pearson correlation (Student's T-test)					
	Comparison	Unweighted unifrac			
		R	P	Z	N
Within subject	All	0.16	9.58E-13	7.04	1970
Between subject	All	0.12	< 1e-10	30.7	69026
Within subject	Stable-Stable	0.14	6.46E-06	4.36	1084
Within subject	Stable-Exacerbation	0.19	1.23E-07	5.16	735
Within subject	Exacerbation-Exacerbation	0.10	0.1111851	1.22	151
Between subject	Stable-Stable	0.12	< 1e-10	22.2	36144
Between subject	Stable-Exacerbation	0.13	< 1e-10	20.2	26046
Between subject	Exacerbation-Exacerbation	0.04	0.0004992	3.29	6836

All (clinically reported) exacerbation frequency					
Test: Pearson correlation (Student's T-test)					
	Comparison	Unweighted unifrac			
		R	P	Z	N
Within subject	All	0.15	< 1e-10	6.39	1970
Between subject	All	0.16	< 1e-10	47	92218
Within subject	Stable-Stable	0.11	2.19E-04	3.52	1084
Within subject	Stable-Exacerbation	0.21	5.88E-09	5.7	739
Within subject	Exacerbation-Exacerbation	-0.04	0.3270812	-0.45	154
Between subject	Stable-Stable	0.13	< 1e-10	28	46516
Between subject	Stable-Exacerbation	0.18	< 1e-10	33.8	36712
Between subject	Exacerbation-Exacerbation	0.19	< 1e-10	18.2	9426

Weighted unifrac			
R	P	Z	N
0.10428	3.26E-06	4.509	1970
0.09284	< 1e-10	23.76	69026
0.07	0.0137189	2.205	1084
0.05	0.112201	1.215	735
0.05	0.2955599	0.537	151
0.12	< 1e-10	22.67	36144
0.04	1.77E-09	5.904	26046
-0.05	1.91E-05	-4.12	6836

Microbiome-associated (sampled) number of exacerba

Test: Pearson correlation (Student's T-test)

	Comparison	R
Within subject	All	0.18
Between subject	All	0.09
Within subject	Stable-Stable	0.20
Within subject	Stable-Exacerbation	0.16
Within subject	Exacerbation-Exacerbation	0.12
Between subject	Stable-Stable	0.09
Between subject	Stable-Exacerbation	0.07
Between subject	Exacerbation-Exacerbation	0.08

Weighted unifrac			
R	P	Z	N
0.15	< 1e-10	6.53	1970
0.07	< 1e-10	21.74	92218
0.12	2.80E-05	4.029	1084
0.13	0.0001807	3.567	739
-0.04	0.321436	-0.46	154
0.07	< 1e-10	14.98	46516
0.06	< 1e-10	11.92	36712
0.07	1.33E-10	6.318	9426

All (clinically reported) number of exacerbations

Test: Pearson correlation (Student's T-test)

	Comparison	R
Within subject	All	0.18
Between subject	All	0.13
Within subject	Stable-Stable	0.19
Within subject	Stable-Exacerbation	0.16
Within subject	Exacerbation-Exacerbation	0.03
Between subject	Stable-Stable	0.12
Between subject	Stable-Exacerbation	0.13
Between subject	Exacerbation-Exacerbation	0.12

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Unweighted unfrac			Weighted unfrac			
P	Z	N	R	P	Z	N
6.66E-16	8.00227	1970	0.07314	0.000799	3.15632	1970
< 1e-10	22.4553	69026	0.05802	< 1e-10	14.8218	69026
< 1e-10	6.39996	1084	0.06	0.035426	1.80642	1084
9.30E-06	4.28117	735	-0.01	0.374137	-0.32092	735
0.081806	1.39303	151	-0.01	0.468904	-0.07803	151
< 1e-10	16.1542	36144	0.08	< 1e-10	15.0476	36144
< 1e-10	11.1744	26046	0.02	3.75E-03	2.67371	26046
5.49E-10	6.09433	6836	0.00	3.74E-01	-0.32025	6836

Unweighted unfrac			Weighted unfrac			
P	Z	N	R	P	Z	N
< 1e-10	7.64676	1977	0.14	2.25E-10	6.23532	1977
< 1e-10	38.2126	92654	0.02814	< 1e-10	8.30314	92654
8.88E-10	6.01714	1084	0.12	5.34E-05	3.87459	1084
5.61E-06	4.39212	739	0.12	0.001009	3.08764	739
0.34	0.40938	154	-0.04	0.333094	-0.43138	154
< 1e-10	25.4832	46516	0.02	1.26E-05	4.21329	46516
< 1e-10	23.7657	36712	0.02	4.03E-05	3.94242	36712
< 1e-10	11.3903	9426	0.01	1.40E-01	1.08137	9426