Supplementary Table 1. Meta-analysis of association between total fiber intake and all taxa in the NCI and NYU study populations

	NYU				NCI						
Phylum; Class; Order; Family; Genus; Species	**Base Mean**	**FC**	**p-value**	**p-adj**	**Base Mean**	**Log2FC**	**p-value**	**p-adj**	**Meta FC**	**Meta CI**	**Meta p**
PHYLUM LEVEL											
Actinobacteria	143.20	0.990	0.670	0.893	115.59	0.982	0.292	0.621	0.985	0.959-1.012	0.294
Bacteroidetes	330.53	0.983	0.472	0.893	3075.49	1.015	0.074	0.258	1.012	0.996-1.028	0.443
Firmicutes	2126.89	1.000	1.000	1.000	5057.10	1.006	0.478	0.621	1.000	0.996-1.005	0.614
Proteobacteria	46.68	1.057	0.026	0.102	198.49	0.992	0.532	0.621	1.005	0.983-1.027	0.261
CLASS LEVEL											
Actinobacteria; Actinobacteria	95.25	1.001	0.963	1.000	92.05	0.982	0.450	0.531	0.991	0.959-1.025	0.613
Actinobacteria; Coriobacteriia	45.54	0.995	0.829	1.000	26.14	0.971	0.008	0.098	0.975	0.956-0.994	0.040
Bacteroidetes; Bacteroidia	327.59	0.986	0.570	1.000	3253.15	1.011	0.273	0.507	1.007	0.989-1.026	0.703
Firmicutes; Bacilli	70.42	0.988	0.612	1.000	68.40	0.975	0.230	0.499	0.981	0.951-1.011	0.226
Firmicutes; Clostridia	2017.61	1.000	1.000	1.000	4676.67	1.006	0.444	0.531	1.000	0.997-1.004	0.586
Firmicutes; Erysipelotrichi	45.10	0.983	0.467	1.000	104.43	1.003	0.808	0.808	0.999	0.978-1.020	0.735
Proteobacteria; Betaproteobacteria	4.81	1.008	0.746	1.000	80.63	0.994	0.743	0.805	0.999	0.972-1.027	0.995
Proteobacteria; Deltaproteobacteria	2.09	1.028	0.206	1.000	20.90	0.981	0.322	0.522	1.001	0.974-1.030	0.856
Proteobacteria; Gammaproteobacteria	39.69	1.026	NA	NA	76.42	1.021	0.449	0.531	1.024	0.990-1.059	NA
ORDER LEVEL											
Actinobacteria; Actinobacteria; Actinomycetales	3.69	0.963	0.134	1.000	1.14	0.962	0.163	0.349	0.962	0.928-0.998	0.041
Actinobacteria; Actinobacteria; Bifidobacteriales	91.55	0.999	0.950	1.000	90.91	0.978	0.464	0.633	0.991	0.955-1.028	0.572
Actinobacteria; Coriobacteriia; Coriobacteriales	45.54	0.994	0.798	1.000	26.14	0.971	0.007	0.083	0.974	0.955-0.994	0.036
Bacteroidetes; Bacteroidia; Bacteroidales	327.61	0.986	0.563	1.000	3253.13	1.011	0.276	0.517	1.008	0.989-1.027	0.712
Firmicutes; Bacilli; Lactobacillales	65.05	0.992	0.737	1.000	62.58	0.964	0.135	0.338	0.978	0.945-1.012	0.194
Firmicutes; Bacilli; Turicibacterales	4.68	0.985	0.467	1.000	5.61	1.020	0.601	0.751	0.993	0.958-1.029	0.890
Firmicutes; Clostridia; Clostridiales	2017.52	1.000	1.000	1.000	4676.48	1.006	0.442	0.633	1.000	0.998-1.002	0.585
Firmicutes; Erysipelotrichi; Erysipelotrichales	45.10	0.982	0.470	1.000	104.43	1.003	0.805	0.863	0.999	0.977-1.021	0.740
Proteobacteria; Betaproteobacteria; Burkholderiales	4.25	1.015	0.552	1.000	80.51	0.993	0.724	0.836	1.001	0.973-1.031	0.867
Proteobacteria; Deltaproteobacteria; Desulfovibrionales	2.09	1.030	0.205	1.000	20.90	0.981	0.326	0.544	1.001	0.972-1.032	0.848
Proteobacteria; Gammaproteobacteria; Enterobacteriales	34.63	1.028	NA	NA	53.48	0.991	NA	NA	1.018	0.979-1.059	NA
Proteobacteria; Gammaproteobacteria; Pasteurellales	4.88	0.999	0.939	1.000	4.62	1.000	0.996	0.996	0.999	0.964-1.035	0.954

FAMILY LEVEL											
Actinobacteria; Actinobacteria; Actinomycetales; Actinomycetaceae	2.03	0.891	0.005	0.120	0.88	0.965	0.132	0.589	0.946	0.908-0.985	0.003
Actinobacteria; Actinobacteria; Bifidobacteriales; Bifidobacteriaceae	80.72	0.997	0.953	0.985	80.13	0.986	0.579	0.822	0.989	0.947-1.032	0.662
Actinobacteria; Coriobacteriia; Coriobacteriales; Coriobacteriaceae	45.82	0.995	0.885	0.985	26.31	0.968	0.007	0.198	0.971	0.950-0.993	0.044
Bacteroidetes; Bacteroidia; Bacteroidales; [Barnesiellaceae]	7.57	1.001	0.985	0.985	34.20	1.006	0.825	0.891	1.005	0.959-1.053	0.865
Bacteroidetes; Bacteroidia; Bacteroidales; [Odoribacteraceae]	1.08	0.973	0.557	0.818	18.62	0.979	0.240	0.589	0.978	0.947-1.011	0.212
Bacteroidetes; Bacteroidia; Bacteroidales; [Paraprevotellaceae]	7.50	0.966	NA	NA	75.21	1.042	0.185	0.589	1.018	0.967-1.070	NA
Bacteroidetes; Bacteroidia; Bacteroidales; Bacteroidaceae	220.33	0.958	0.223	0.700	2212.24	0.997	0.788	0.886	0.992	0.968-1.016	0.295
Bacteroidetes; Bacteroidia; Bacteroidales; Porphyromonadaceae	13.98	0.938	0.096	0.520	99.22	0.988	0.344	0.664	0.982	0.957-1.007	0.065
Bacteroidetes; Bacteroidia; Bacteroidales; Prevotellaceae	22.94	0.930	0.121	0.520	438.79	1.055	0.084	0.569	1.015	0.965-1.068	0.888
Bacteroidetes; Bacteroidia; Bacteroidales; Rikenellaceae	14.88	1.117	0.011	0.120	110.13	0.994	0.716	0.886	1.010	0.978-1.043	0.126
Bacteroidetes; Bacteroidia; Bacteroidales; S24-7	8.29	1.001	NA	NA	96.07	0.991	NA	NA	0.994	0.945-1.046	NA
Firmicutes; Bacilli; Lactobacillales; Streptococcaceae	52.38	0.967	0.438	0.787	56.19	0.976	NA	NA	0.974	0.937-1.013	NA
Firmicutes; Bacilli; Turicibacterales; Turicibacteraceae	4.48	0.965	0.448	0.787	4.60	1.008	0.787	0.886	0.996	0.950-1.045	0.734
Firmicutes; Clostridia; Clostridiales; [Mogibacteriaceae]	4.66	1.021	0.540	0.818	7.45	0.999	0.962	0.962	1.004	0.974-1.034	0.691
Firmicutes; Clostridia; Clostridiales; Christensenellaceae	13.51	1.109	NA	NA	13.89	1.013	0.616	0.832	1.033	0.991-1.078	NA
Firmicutes; Clostridia; Clostridiales; Clostridiaceae	81.77	1.039	0.346	0.760	71.07	1.020	0.309	0.643	1.023	0.989-1.058	0.166
Firmicutes; Clostridia; Clostridiales; Lachnospiraceae	1350.28	0.968	0.052	0.384	1876.37	1.006	0.371	0.668	1.001	0.989-1.013	0.468
Firmicutes; Clostridia; Clostridiales; Peptostreptococcaceae	64.60	1.014	0.738	0.985	0.98	1.054	0.039	0.524	1.043	1.000-1.089	0.088
Firmicutes; Clostridia; Clostridiales; Ruminococcaceae	448.99	1.011	0.465	0.787	1544.20	0.999	0.957	0.962	1.003	0.987-1.018	0.635
Firmicutes; Clostridia; Clostridiales; Veillonellaceae	45.20	0.997	0.920	0.985	104.87	1.022	0.201	0.589	1.017	0.987-1.049	0.401
Firmicutes; Erysipelotrichi; Erysipelotrichales; Erysipelotrichaceae	57.51	0.940	0.142	0.520	109.19	1.011	0.424	0.673	1.004	0.979-1.030	0.644
Proteobacteria; Betaproteobacteria; Burkholderiales; Alcaligenaceae	3.90	1.008	0.856	0.985	72.98	0.994	0.750	0.886	0.996	0.963-1.030	0.921
Proteobacteria; Deltaproteobacteria; Desulfovibrionales; Desulfovibrionaceae	1.89	1.050	0.295	0.743	20.48	0.981	0.300	0.643	0.990	0.956-1.025	0.998
Proteobacteria; Gammaproteobacteria; Enterobacteriales; Enterobacteriaceae	45.22	1.067	NA	NA	54.16	1.008	NA	NA	1.024	0.975-1.075	NA
Proteobacteria; Gammaproteobacteria; Pasteurellales; Pasteurellaceae	11.67	0.990	0.832	0.985	4.05	1.010	NA	NA	1.004	0.958-1.053	NA
GENUS LEVEL											

Actinobacteria; Coriobacteriia; Coriobacteriales; Coriobacteriaceae; Adlercreutzia	6.74	1.017	0.692	0.967	2.40	0.991	0.644	0.797	0.995	0.962-1.030	0.960
Actinobacteria; Coriobacteriia; Coriobacteriales; Coriobacteriaceae; Collinsella	30.17	1.036	0.442	0.913	14.94	0.985	0.415	0.797	0.992	0.959-1.026	0.967
Actinobacteria; Coriobacteriia; Coriobacteriales; Coriobacteriaceae; Eggerthella	6.18	0.985	NA	NA	2.09	0.990	0.631	0.797	0.989	0.951-1.028	NA
Actinobacteria; Actinobacteria; Actinomycetales; Actinomycetaceae; Actinomyces	2.16	0.885	0.003	0.110	0.75	0.969	0.130	0.454	0.951	0.917-0.986	0.002
Actinobacteria; Actinobacteria; Bifidobacteriales; Bifidobacteriaceae; Bifidobacterium	84.01	1.001	0.973	0.973	90.68	1.004	0.850	0.925	1.003	0.967-1.041	0.874
Bacteroidetes; Bacteroidia; Bacteroidales; [Odoribacteraceae]; Odoribacter	0.68	0.995	0.916	0.967	10.88	0.946	0.004	0.176	0.953	0.921-0.987	0.032
Bacteroidetes; Bacteroidia; Bacteroidales; Porphyromonadaceae; Parabacteroides	13.09	0.920	0.029	0.218	131.35	1.004	0.780	0.869	0.993	0.966-1.020	0.181
Bacteroidetes; Bacteroidia; Bacteroidales; Bacteroidaceae; Bacteroides	253.86	0.973	0.456	0.913	2927.16	1.002	0.887	0.925	0.998	0.972-1.025	0.673
Bacteroidetes; Bacteroidia; Bacteroidales; Prevotellaceae; Prevotella	20.36	0.926	0.088	0.520	482.01	1.038	0.076	0.391	1.017	0.980-1.056	0.949
Firmicutes; Erysipelotrichi; Erysipelotrichales; Erysipelotrichaceae; [Eubacterium]	20.65	0.950	0.255	0.875	42.55	1.026	0.217	0.590	1.012	0.976-1.050	0.937
Firmicutes; Clostridia; Clostridiales; Clostridiaceae; SMB53	0.62	1.035	0.443	0.913	0.88	1.045	0.029	0.391	1.044	1.007-1.082	0.036
Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; Lachnospira	31.63	1.042	0.279	0.875	163.91	1.026	0.091	0.406	1.028	1.000-1.057	0.050
Firmicutes; Clostridia; Clostridiales; Ruminococcaceae; Faecalibacterium	230.42	1.030	0.367	0.913	549.73	1.025	0.078	0.391	1.025	1.000-1.051	0.059
Firmicutes; Clostridia; Clostridiales; Ruminococcaceae; Oscillospira	22.58	0.973	0.386	0.913	85.60	0.984	0.079	0.391	0.982	0.965-1.000	0.063
Firmicutes; Clostridia; Clostridiales; Ruminococcaceae; Ruminococcus	62.89	1.010	0.782	0.967	340.79	0.975	0.059	0.391	0.979	0.955-1.004	0.250
Firmicutes; Clostridia; Clostridiales; Veillonellaceae; Veillonella	4.41	0.927	0.096	0.520	3.57	1.001	0.944	0.959	0.987	0.950-1.026	0.263
Firmicutes; Clostridia; Clostridiales; Clostridiaceae; Clostridium	2.39	0.997	0.941	0.967	17.50	1.031	0.117	0.443	1.025	0.990-1.062	0.288
Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; [Ruminococcus]	288.25	0.911	0.007	0.139	201.55	1.015	0.178	0.545	1.005	0.985-1.026	0.355
Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; Anaerostipes	5.92	1.007	0.859	0.967	10.66	1.018	0.287	0.641	1.016	0.986-1.048	0.377
Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; Dorea	104.47	1.022	0.418	0.913	65.24	1.004	0.666	0.797	1.006	0.988-1.025	0.382
Firmicutes; Clostridia; Clostridiales; Veillonellaceae; Phascolarctobacterium	18.58	1.010	0.832	0.967	34.43	1.012	0.558	0.797	1.012	0.975-1.049	0.571
Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; Blautia	676.47	1.040	0.178	0.753	513.86	0.979	0.046	0.391	0.986	0.967-1.005	0.635
Firmicutes; Clostridia; Clostridiales; Veillonellaceae; Dialister	16.99	0.984	0.713	0.967	25.15	0.994	0.780	0.869	0.992	0.955-1.031	0.648
Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; Roseburia	6.46	0.993	0.849	0.967	35.21	1.010	0.502	0.797	1.008	0.980-1.036	0.731

Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; Coprococcus	208.88	0.990	0.541	0.967	207.84	1.006	0.436	0.797	1.003	0.990-1.017	0.901
Firmicutes; Bacilli; Lactobacillales; Streptococcaceae; Streptococcus	55.61	0.957	0.299	0.875	57.84	0.985	0.443	0.797	0.980	0.947-1.015	0.202
Firmicutes; Bacilli; Turicibacterales; Turicibacteraceae; Turicibacter	4.19	0.997	0.942	0.967	6.02	1.017	NA	NA	1.013	0.975-1.053	NA
Proteobacteria; Gammaproteobacteria; Pasteurellales; Pasteurellaceae; Haemophilus	4.27	0.988	0.795	0.967	4.03	1.011	NA	NA	1.007	0.969-1.046	NA
Proteobacteria; Betaproteobacteria; Burkholderiales; Alcaligenaceae; Sutterella	4.32	1.008	0.849	0.967	85.39	1.008	0.653	0.797	1.008	0.976-1.040	0.650
SPECIES LEVEL											
Actinobacteria; Coriobacteriia; Coriobacteriales; Coriobacteriaceae; Collinsella; aerofaciens	25.31	1.051	0.349	0.884	13.58	0.988	0.571	0.839	0.997	0.958-1.037	0.799
Actinobacteria; Coriobacteriia; Coriobacteriales; Coriobacteriaceae; Eggerthella; lenta	6.14	0.984	NA	NA	1.99	0.986	0.613	0.839	0.986	0.939-1.035	NA
Actinobacteria; Actinobacteria; Bifidobacteriales; Bifidobacteriaceae; Bifidobacterium; adolescentis	38.42	1.007	0.898	0.951	75.56	1.002	0.932	0.964	1.003	0.959-1.049	0.880
Bacteroidetes; Bacteroidia; Bacteroidales; Prevotellaceae; Prevotella; copri	16.68	0.951	NA	NA	353.04	1.040	NA	NA	1.019	0.969-1.071	NA
Bacteroidetes; Bacteroidia; Bacteroidales; Porphyromonadaceae; Parabacteroides; distasonis	7.33	0.940	0.184	0.770	51.50	1.007	0.724	0.844	0.996	0.961-1.033	0.495
Bacteroidetes; Bacteroidia; Bacteroidales; Bacteroidaceae; Bacteroides; uniformis	32.05	0.948	0.202	0.770	305.56	0.972	0.128	0.540	0.968	0.936-1.001	0.048
Bacteroidetes; Bacteroidia; Bacteroidales; Bacteroidaceae; Bacteroides; ovatus	5.59	0.987	0.790	0.951	12.37	0.981	0.309	0.730	0.982	0.950-1.016	0.363
Bacteroidetes; Bacteroidia; Bacteroidales; Bacteroidaceae; Bacteroides; fragilis	20.37	1.058	NA	NA	16.33	0.989	0.651	0.844	1.000	0.958-1.044	NA
Firmicutes; Clostridia; Clostridiales; Veillonellaceae; Veillonella; dispar	3.41	0.899	0.041	0.467	2.82	1.012	0.666	0.844	0.986	0.939-1.035	0.261
Firmicutes; Clostridia; Clostridiales; Ruminococcaceae; Faecalibacterium; prausnitzii	230.05	1.032	0.354	0.884	540.38	1.025	0.103	0.540	1.026	0.999-1.053	0.070
Firmicutes; Clostridia; Clostridiales; Ruminococcaceae; Ruminococcus; bromii	24.12	0.966	0.489	0.951	1.65	0.969	0.161	0.578	0.968	0.930-1.008	0.138
Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; Dorea; formicigenerans	1.92	1.033	0.447	0.915	20.11	1.018	0.323	0.730	1.020	0.988-1.054	0.216
Firmicutes; Clostridi; Clostridiales; Lachnospiraceae; Roseburia; faecis	1.12	0.995	0.918	0.951	2.28	1.011	0.562	0.839	1.009	0.975-1.044	0.733
Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; [Ruminococcus]; gnavus	138.52	0.894	NA	NA	85.10	1.005	0.735	0.844	0.995	0.969-1.021	NA
Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; Blautia; producta	35.68	1.042	NA	NA	28.60	0.979	0.367	0.771	0.992	0.953-1.032	NA
Firmicutes; Erysipelotrichi; Erysipelotrichales; Erysipelotrichaceae; [Eubacterium]; dolichum	7.70	0.934	0.198	0.770	3.34	0.963	0.122	0.540	0.958	0.917-1.000	0.045
Firmicutes; Erysipelotrichi; Erysipelotrichales; Erysipelotrichaceae; [Eubacterium]; biforme	10.94	0.928	NA	NA	39.95	1.015	0.635	0.842	0.993	0.943-1.045	NA

Relationship between higher quartiles of fiber intake and differential taxon abundance was evaluated using negative binomial generalized linear models in the DESeq2 package in R. Models were adjusted for age, sex, race, categorical BMI and cigarette smoking status. This table reports

on all taxa from a taxonomy-based meta-analysis to evaluate the relationship between taxa abundance by fiber intake in both study populations.*Log2FC* = Log 2 Fold Change; *FC* = Fold Change