

Table S3. Mixed linear random-effect models including the effect of time, the diet factor, all different baseline factors, and all GSRS-IBS subscales as outcome*

	Pain			Constipation			Diarrhea			Bloating		
Independent variables: PHQ-12 and time	β	SE	p-value	β	SE	p-value	β	SE	p-value	β	SE	p-value
(intercept)	3.15	0.15	<0.0001	1.64	0.15	<0.0001	1.34	0.07	<0.0001	3.89	0.21	<0.0001
Time	-0.17	0.04	0.001	-0.04	0.03	0.21	-0.06	0.02	0.004	-0.26	0.05	<0.0001
Diet (low FODMAP)	-0.28	0.22	0.20	-0.32	0.22	0.14	-0.06	0.10	0.59	-0.35	0.30	0.25
Time*diet (traditional IBS vs. low FODMAP)	-0.02	0.06	0.71	0.03	0.05	0.61	0.001	0.03	0.96	-0.08	0.07	0.28
PHQ-12	0.35	0.15	0.02	0.04	0.15	0.77	0.12	0.07	0.09	0.31	0.21	0.14
Time*PHQ-12	-0.01	0.05	0.84	0.03	0.03	0.46	-0.004	0.02	0.84	0.04	0.05	0.40
PHQ-12*diet (traditional IBS vs. low FODMAP)	0.07	0.22	0.75	-0.04	0.22	0.87	0.03	0.10	0.75	-0.11	0.30	0.71
Time*PHQ-12*diet (traditional IBS vs. low FODMAP)	-0.01	0.06	0.92	-0.03	0.05	0.56	-0.01	0.03	0.75	-0.05	0.07	0.48
Independent variables: HADS and time	β	SE	p-value	β	SE	p-value	β	SE	p-value	β	SE	p-value
(intercept)	3.12	0.17	<0.0001	1.60	0.15	<0.0001	1.34	0.08	<0.0001	3.81	0.21	<0.0001
Time	-0.16	0.05	0.001	-0.04	0.03	0.22	-0.05	0.02	0.01	-0.24	0.05	<0.0001
Diet (traditional IBS vs. low FODMAP)	-0.25	0.24	0.30	-0.30	0.21	0.16	-0.02	0.11	0.85	-0.21	0.30	0.48
Time*diet (traditional IBS vs. low FODMAP)	-0.02	0.07	0.73	0.02	0.05	0.67	-0.003	0.03	0.91	-0.10	0.07	0.15
HADS	0.02	0.16	0.88	-0.18	0.14	0.21	0.03	0.07	0.64	-0.27	0.20	0.19
Time*HADS	0.01	0.04	0.84	0.01	0.03	0.68	0.01	0.02	0.51	0.11	0.05	0.02
HADS*diet (traditional IBS vs. low FODMAP)	0.07	0.24	0.76	0.26	0.22	0.0002	0.11	>0.99	0.30	0.31	0.33	
Time*HADS*diet (traditional IBS vs. low FODMAP)	0.01	0.07	0.83	-0.02	0.05	0.71	-0.02	0.03	0.56	-0.05	0.07	0.54
Independent variables: VSI and time	β	SE	p-value	β	SE	p-value	β	SE	p-value	β	SE	p-value
(intercept)	3.11	0.16	<0.0001	1.64	0.14	<0.0001	1.33	0.07	<0.0001	3.87	0.21	<0.0001
Time	-0.17	0.04	0.0004	-0.05	0.03	0.19	-0.06	0.02	0.004	-0.27	0.05	<0.0001
Diet (traditional IBS vs. low FODMAP)	-0.17	0.22	0.45	-0.29	0.21	0.16	-0.01	0.10	0.90	-0.28	0.30	0.35
Time*diet (traditional IBS vs. low FODMAP)	-0.03	0.06	0.69	0.03	0.05	0.58	-0.001	0.03	0.96	-0.07	0.07	0.31
VSI	0.18	0.14	0.20	0.02	0.13	0.88	0.09	0.06	0.14	-0.08	0.18	0.67
Time*VSI	0.02	0.04	0.59	0.0002	0.03	>0.99	-0.0001	0.02	>0.99	0.09	0.04	0.05
VSI*diet (traditional IBS vs. low FODMAP)	0.31	0.24	0.19	0.42	0.22	0.06	0.14	0.11	0.20	0.52	0.32	0.10
Time*VSI*diet (traditional IBS vs. low FODMAP)	-0.02	0.07	0.77	-0.001	0.05	0.99	-0.02	0.03	0.47	-0.09	0.08	0.25
Independent variables: FODMAP intake and time	β	SE	p-value	β	SE	p-value	β	SE	p-value	β	SE	p-value
(intercept)	3.12	0.16	<0.0001	1.63	0.15	<0.0001	1.33	0.07	<0.0001	3.86	0.21	<0.0001
Time	-0.16	0.04	0.0004	-0.05	0.03	0.18	-0.06	0.02	0.003	-0.26	0.05	<0.0001

Diet (traditional IBS vs. low FODMAP)	-0.22	0.23	0.35	-0.32	0.21	0.13	-0.005	0.11	0.96	-0.27	0.30	0.37	
Time*diet (traditional IBS vs. low FODMAP)	-0.02	0.06	0.80	0.02	0.05	0.64	-0.002	0.03	0.95	-0.07	0.07	0.35	
FODMAP intake	-0.02	0.18	0.91	0.22	0.16	0.17	0.06	0.08	0.48	-0.19	0.23	0.40	
Time*FODMAP intake	-0.06	0.05	0.21	-0.01	0.04	0.81	-0.03	0.02	0.19	-0.05	0.06	0.34	
FODMAP intake*diet (traditional IBS vs. low FODMAP)	0.07	0.24	0.75	-0.07	0.21	0.72	-0.01	0.11	0.93	0.12	0.30	0.69	
Time*FODMAP intake*diet (traditional IBS vs. low FODMAP)	0.12	0.06	0.06	0.03	0.05	0.51	0.04	0.26	0.16	0.10	0.07	0.20	
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Independent variables: Energy intake and time		β	SE	p-value									
(intercept)		3.11	0.16	<0.0001	1.64	0.15	<0.0001	1.33	0.07	<0.0001	3.86	0.20	<0.0001
Time		-0.17	0.04	0.0003	-0.05	0.03	0.18	-0.06	0.02	0.003	-0.26	0.05	<0.0001
Diet (traditional IBS vs. low FODMAP)		-0.22	0.23	0.34	-0.32	0.21	0.13	-0.01	0.11	0.95	-0.26	0.29	0.36
Time*diet (traditional IBS vs. low FODMAP)		-0.02	0.06	0.79	0.02	0.05	0.64	-0.001	0.03	0.96	-0.07	0.07	0.36
Energy intake		0.05	0.16	0.74	-0.01	0.15	0.94	-0.02	0.07	0.73	-0.29	0.20	0.15
Time*energy intake		-0.06	0.04	0.16	-0.001	0.03	0.97	-0.01	0.02	0.48	0.02	0.05	0.75
Energy intake*diet (traditional IBS vs. low FODMAP)		-0.33	0.23	0.15	0.06	0.21	0.78	-0.07	0.11	0.51	-0.10	0.29	0.72
Time*energy intake*diet (traditional IBS vs. low FODMAP)		-0.02	0.06	0.81	-0.02	0.05	0.71	-0.01	0.03	0.75	-0.01	0.07	0.88
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Independent variables: Dysbiosis Index (DI) score (in tertiles) and time		β	SE	p-value									
(intercept)		2.81	0.33	<0.0001	1.53	0.30	<0.0001	1.33	0.15	<0.0001	3.98	0.43	<0.0001
Time		-0.14	0.09	0.12	0.07	0.07	0.27	-0.06	0.04	0.12	-0.23	0.10	0.03
Diet (traditional IBS vs. low FODMAP)		-0.03	0.51	0.95	-0.40	0.46	0.39	0.21	0.23	0.36	-0.62	0.65	0.35
Time*diet (traditional IBS vs. low FODMAP)		0.15	0.14	0.28	0.06	0.10	0.57	-0.02	0.06	0.68	-0.05	0.16	0.75
DI score (lowest vs. highest tertile)		0.21	0.47	0.65	-0.30	0.43	0.49	-0.10	0.21	0.65	-0.85	0.60	0.16
DI score (mid vs. highest tertile)		0.48	0.40	0.23	0.34	0.37	0.35	0.05	0.18	0.76	0.15	0.51	0.77
DI score (lowest vs. mid tertile)		-0.27	0.40	0.51	-0.64	0.37	0.08	-0.15	0.18	0.40	-1.01	0.51	0.05
Time*DI score (lowest vs. highest tertile)		-0.05	0.13	0.70	-0.18	0.09	0.05	0.04	0.05	0.52	0.12	0.15	0.43
Time*DI score (mid vs. highest tertile)		-0.02	0.11	0.86	-0.15	0.08	0.07	-0.01	0.05	0.88	-0.11	0.13	0.40
Time*DI score (lowest vs. mid tertile)		-0.03	0.11	0.78	-0.04	0.08	0.63	0.04	0.05	0.36	0.22	0.13	0.08
DI score (lowest vs. highest tertile)*diet (traditional IBS vs. low FODMAP)		-0.39	0.66	0.56	0.48	0.60	0.43	-0.31	0.30	0.31	1.03	0.85	0.23

DI score (mid vs. highest tertile)*diet (traditional IBS vs. low FODMAP)	-0.06	0.61	0.93	-0.05	0.56	0.92	-0.18	0.28	0.51	0.24	0.78	0.76	
DI score (lowest vs. mid tertile)*diet (traditional IBS vs. low FODMAP)	-0.33	0.54	0.54	0.53	0.49	0.28	-0.13	0.24	0.61	0.78	0.69	0.26	
Time*DI score (lowest vs. highest tertile)*diet (traditional IBS vs. low FODMAP)	-0.25	0.18	0.17	-0.01	0.13	0.96	0.005	0.08	0.95	-0.27	0.21	0.20	
Time*DI score (mid vs. highest tertile)*diet (traditional IBS vs. low FODMAP)	-0.15	0.17	0.37	-0.04	0.12	0.72	0.04	0.07	0.62	0.13	0.19	0.49	
Time*DI score (lowest vs. mid tertile)*diet (traditional IBS vs. low FODMAP)	-0.10	0.15	0.49	0.04	0.11	0.73	-0.03	0.06	0.62	-0.40	0.17	0.02	
Independent variables: Oligosaccharide intake and time		β	SE	<i>p</i> -value	β	SE	<i>p</i> -value	β	SE	<i>p</i> -value	β	SE	<i>p</i> -value
(intercept)		3.00	0.28	<0.0001	1.48	0.27	<0.0001	1.18	0.14	<0.0001	3.82	0.38	<0.0001
Time		-0.02	0.08	0.83	-0.05	0.06	0.42	-0.02	0.03	0.60	-0.16	0.09	0.09
Diet (traditional IBS vs. low FODMAP)		0.83	0.41	0.04	0.11	0.40	0.78	0.25	0.20	0.21	0.49	0.56	0.38
Time*diet (traditional IBS vs. low FODMAP)		-0.22	0.12	0.06	0.01	0.09	0.91	-0.05	0.05	0.32	-0.39	0.13	0.004
Oligosaccharide intake		0.09	0.18	0.64	0.12	0.18	0.49	0.12	0.09	0.17	0.03	0.25	0.90
Time*Oligosaccharide intake		-0.12	0.05	0.03	0.004	0.04	0.91	-0.03	0.02	0.18	-0.08	0.06	0.17
Oligosaccharide intake*diet (traditional IBS vs. low FODMAP)		-0.86	0.28	0.002	-0.35	0.28	0.21	-0.20	0.14	0.14	-0.61	0.38	0.11
Time*Oligosaccharide intake*diet (traditional IBS vs. low FODMAP)		0.16	0.08	0.05	0.01	0.06	0.88	0.04	0.03	0.27	0.26	0.09	0.01
Independent variables: Polyols intake and time		β	SE	<i>p</i> -value	β	SE	<i>p</i> -value	β	SE	<i>p</i> -value	β	SE	<i>p</i> -value
(intercept)		3.12	0.21	<0.0001	1.61	0.19	<0.0001	1.36	0.09	<0.0001	3.64	0.27	<0.0001
Time		-0.17	0.06	0.004	-0.07	0.04	0.10	-0.07	0.02	0.005	-0.22	0.07	0.001
Diet (traditional IBS vs. low FODMAP)		-0.11	0.29	0.70	-0.23	0.26	0.39	0.04	0.13	0.73	0.03	0.37	0.93
Time*diet (traditional IBS vs. low FODMAP)		-0.01	0.08	0.93	0.05	0.06	0.37	0.02	0.03	0.48	-0.08	0.09	0.37
Polyols intake		0.002	0.12	0.99	-0.02	0.11	0.82	0.02	0.05	0.65	-0.20	0.15	0.17
Time*Polyols intake		-0.004	0.03	0.89	-0.02	0.02	0.33	-0.01	0.01	0.39	0.04	0.04	0.30
Polyols intake*diet (traditional IBS vs. low FODMAP)		0.10	0.16	0.51	0.09	0.14	0.55	0.05	0.07	0.49	0.27	0.20	0.19
Time*Polyols intake*diet (traditional IBS vs. low FODMAP)		0.01	0.04	0.85	0.03	0.03	0.40	0.02	0.02	0.21	-0.01	0.05	0.82

Independent variables: Disaccharide intake and time	β	SE	p-value									
(intercept)	2.71	0.32	<0.0001	0.85	0.27	0.003	1.29	0.15	<0.0001	3.93	0.43	<0.0001
Time	-0.04	0.09	0.67	0.09	0.07	0.16	-0.02	0.04	0.66	-0.18	0.10	0.09
Diet (traditional IBS vs. low FODMAP)	-0.18	0.45	0.69	0.06	0.38	0.87	-0.04	0.21	0.85	-0.44	0.60	0.46
Time*diet (traditional IBS vs. low FODMAP)	-0.19	0.12	0.14	-0.16	0.09	0.09	-0.06	0.05	0.24	-0.20	0.15	0.18
Disaccharide intake	0.17	0.11	0.15	0.32	0.10	0.001	0.02	0.05	0.72	-0.03	0.15	0.85
Time*Disaccharide intake	-0.05	0.03	0.10	-0.06	0.02	0.02	-0.02	0.01	0.21	-0.03	0.04	0.36
Disaccharide intake*diet (traditional IBS vs. low FODMAP)	-0.02	0.16	0.92	-0.15	0.13	0.25	0.01	0.07	0.86	0.08	0.21	0.72
Time*Disaccharide intake*diet (traditional IBS vs. low FODMAP)	0.07	0.04	0.12	0.07	0.03	0.02	0.02	0.02	0.18	0.05	0.05	0.31
Independent variables: Monosaccharide intake and time	β	SE	p-value									
(intercept)	3.24	0.27	<0.0001	1.84	0.24	<0.0001	1.33	0.12	<0.0001	4.10	0.34	<0.0001
Time	-0.13	0.07	0.07	-0.08	0.06	0.13	-0.03	0.03	0.27	-0.21	0.08	0.02
Diet (traditional IBS vs. low FODMAP)	-0.40	0.39	0.30	-0.52	0.35	0.14	-0.01	0.18	0.96	-0.63	0.50	0.21
Time*diet (traditional IBS vs. low FODMAP)	-0.09	0.11	0.39	0.03	0.08	0.74	-0.03	0.04	0.50	-0.08	0.12	0.54
Monosaccharide intake	-0.10	0.15	0.53	-0.13	0.14	0.35	-0.0003	0.07	>0.99	-0.19	0.19	0.34
Time*Monosaccharide intake	-0.02	0.04	0.67	0.03	0.03	0.32	-0.01	0.02	0.42	-0.03	0.05	0.48
Monosaccharide intake*diet (traditional IBS vs. low FODMAP)	0.14	0.23	0.55	0.13	0.21	0.52	0.01	0.10	0.95	0.28	0.29	0.33
Time*Monosaccharide intake*diet (traditional IBS vs. low FODMAP)	0.05	0.06	0.43	-0.01	0.05	0.90	0.02	0.03	0.49	0.001	0.07	0.98

*NOTE: Gastrointestinal symptom rating scale for IBS, GSRS-IBS; patient health questionnaire-12, PHQ-12; hospital anxiety and depression scale, HADS; visceral sensitivity index, VSI; dysbiosis index, DI; fermentable oligo-, di-, monosaccharides, and polyols, FODMAP; effect size, β ; standard error, SE; the GSRS-IBS subscales used in the linear mixed (i.e. random-effect) models were BoxCox transformed.