

**Interactions between Mediterranean Diet Supplemented with Dairy Foods and the Gut
Microbiota Influence Cardiovascular Health in an Australian Population**

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SUPPLEMENTARY TABLE AND FIGURES

Supplementary Table S1. Taxa that are significantly altered by the 8-week MedDairy (MD) or low-fat control diet (LFD) intervention.

Bacteria	Within group comparison				Between group comparison	
	MedDairy (MD)		Low-fat diet (LFD)		8-weeks	
	p	FDR	p	FDR	p	FDR
Lachnospiraceae NK4A136	0.011*	0.754	0.748	1	0.266	1
Streptococcus	0.017*	0.754	0.216	0.858	0.078	1
Collinsella	0.021*	0.754	0.003*	0.461	0.014*	0.977
Butyricicoccus	0.022*	0.754	0.620	1	0.050*	0.982
Oscillospirales (uncultured)	0.014*	0.754	1	1	0.505	1
Oscillospirales UCG-002	0.031*	0.897	0.405	0.858	0.659	1
Veillonella	0.036*	0.932	0.724	1	0.049*	0.982
Ruminococcaceae UBA1819	0.043*	0.966	0.415	0.858	0.110	0.982
Oscillospirales UCG-010	0.461	0.966	0.012*	0.720	0.572	1
Oscillospirales UCG-005	0.727	1	0.036*	0.858	0.074	0.982
Moryella	0.624	1	0.014*	0.719	0.059	0.982
Izemoplasmatales	0.820	1	0.026*	0.858	0.148	0.982
Holdemania	0.913	1	0.031*	0.858	0.746	1
Rikenellaceae RC9 gut group	0.944	1	0.033*	0.858	0.155	0.982

Statistical analyses were performed using the Wilcoxon sign-rank test for within group comparison and the Mann-Whitney test for between group comparison. * denotes $p \leq 0.05$.

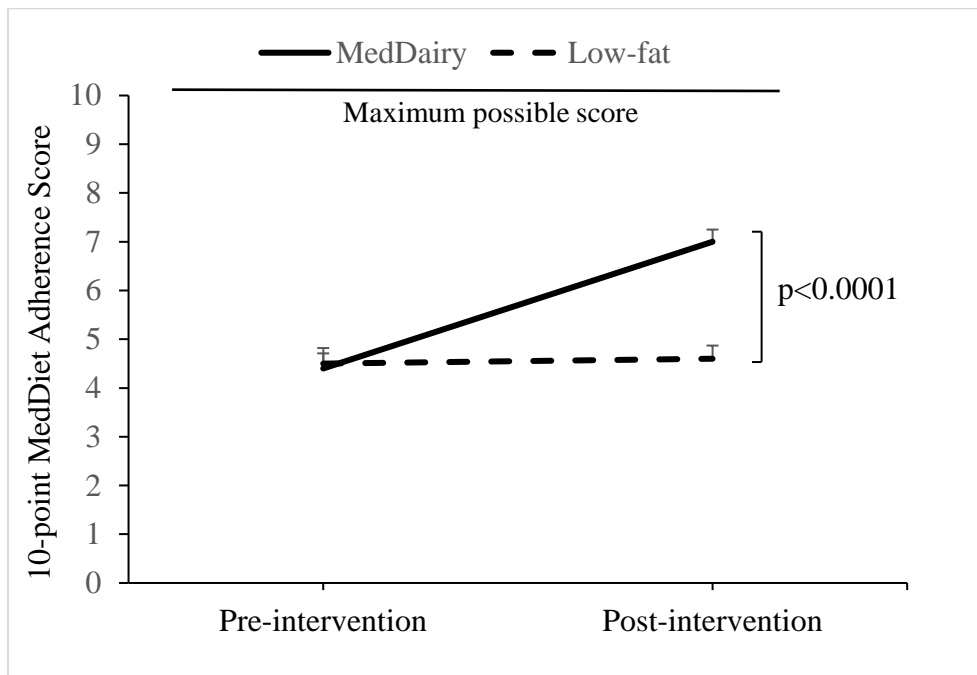
Supplementary Table S2. Correlation analysis between *Butyricicoccus* and clinical, anthropometric and cognitive measurements for both MedDairy (MD) and low-fat diet (LFD) groups combined (whole dataset), and stratified by MD or LFD diet.

Variable 1	Variable 2	MD and LFD groups combined		
		r	p	FDR
10-point MDS	<i>Butyricicoccus</i>	0.283	0.003*	0.048*
18-point MDS	<i>Butyricicoccus</i>	0.331	<0.001*	0.011*
SBP (clinic)	<i>Butyricicoccus</i>	-0.241	0.013*	0.114
Glucose	<i>Butyricicoccus</i>	0.228	0.019*	0.152
10-point MDS	<i>Colinsella</i>	-0.091	0.353	0.747
18-point MDS	<i>Colinsella</i>	-0.301	0.002*	0.028*
Cholesterol:HDL	<i>Colinsella</i>	0.215	0.027*	0.195

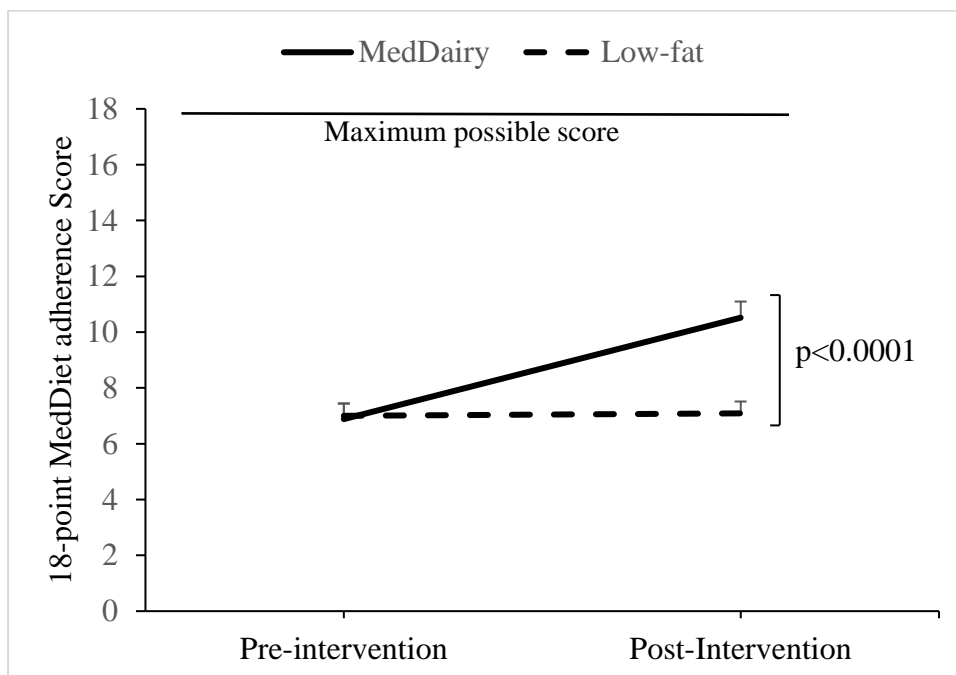
Variable 1	Variable 2	MD only			LFD only		
		r	p	FDR	r	p	FDR
10-point MDS	<i>Butyricicoccus</i>	0.464	0.006*	0.094	0.199	0.246	0.694
18-point MDS	<i>Butyricicoccus</i>	0.509	0.002*	0.050*	0.196	0.252	0.704
SBP (clinic)	<i>Butyricicoccus</i>	-0.377	0.026*	0.232	-0.203	0.235	0.691
Glucose	<i>Butyricicoccus</i>	0.396	0.019*	0.192	0.070	0.683	0.967
10-point MDS	<i>Colinsella</i>	-0.165	0.350	0.771	-0.065	0.705	0.967
18-point MDS	<i>Colinsella</i>	-0.329	0.058	0.354	-0.098	0.570	0.914
Cholesterol:HDL	<i>Colinsella</i>	0.183	0.293	0.539	0.341	0.042*	0.328

r denotes correlation coefficient; FDR denotes false discovery rate adjustment multiple testing.

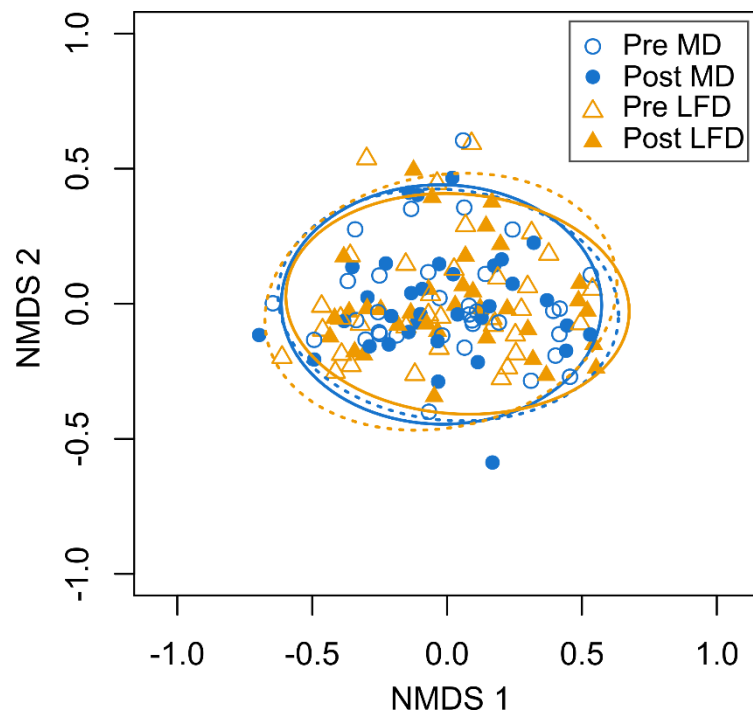
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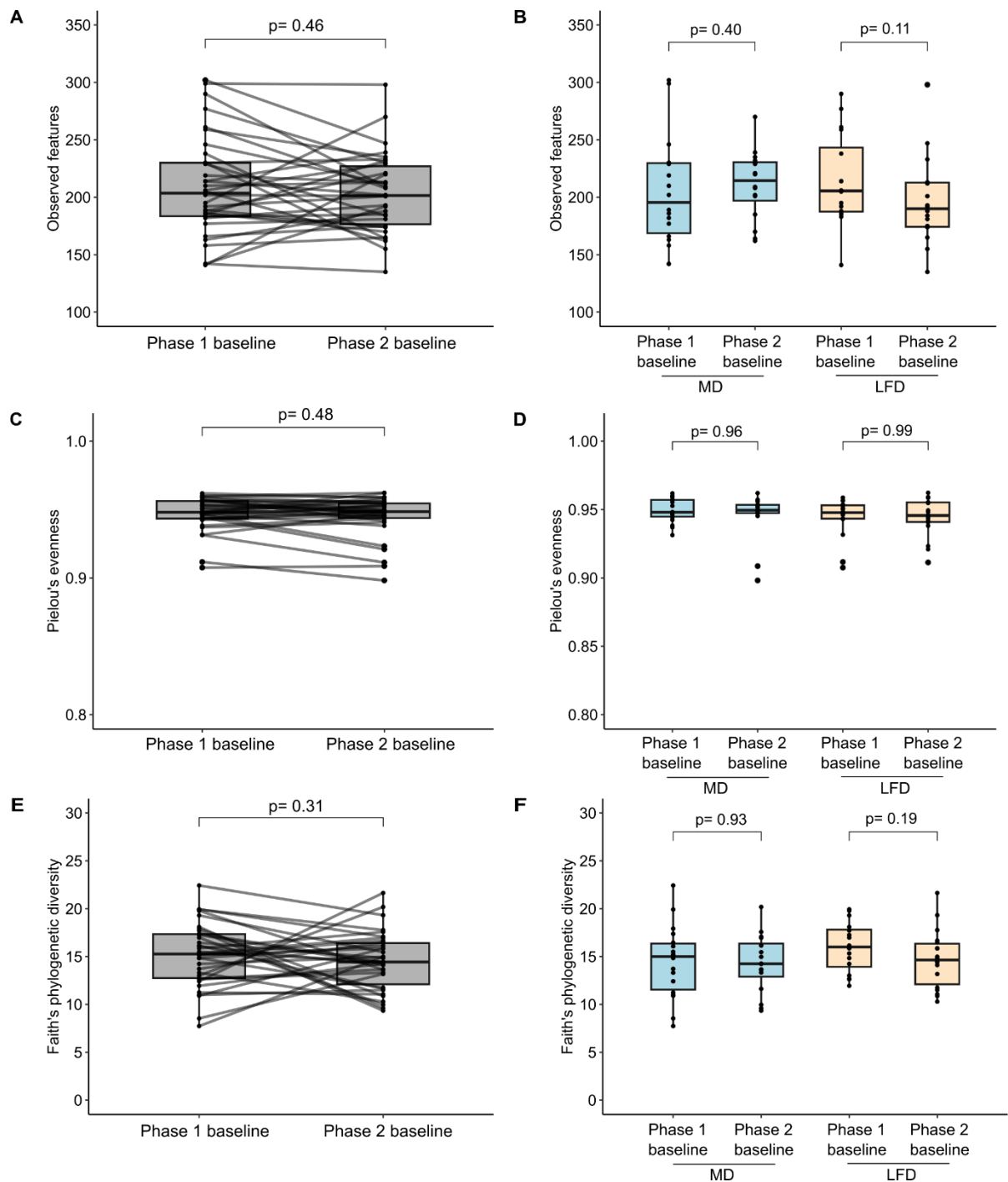
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Supplementary Figure S1. (A) Mediterranean diet score before and during MedDairy and Low-Fat dietary phases. Maximum possible score = 10 based on Trichopoulou *et al.* (2003). (B) Mediterranean diet score before and during MedDairy and Low-Fat dietary phases. Maximum possible score = 18 based on Sofi *et al.* (2014). Data is shown as Mean \pm standard error of mean. $p < 0.0001$ indicate significant difference between groups.



Supplementary Figure S2. Non-metric multidimensional scaling (NMDS) ordination plot based on the gut microbiota composition before and after 8-weeks of MedDairy (MD) or low-fat diet (LFD) intervention.



Supplementary Figure S3. Comparison of microbiota characteristics between the baseline of Phase 1 and Phase 2 for alpha diversity measures of (A, B) microbial richness, (C, D) evenness and (E, F) diversity. Statistical comparisons were performed using the Wilcoxon sign-rank test (within-group assessment) or Mann-Whitney test (between group assessment).

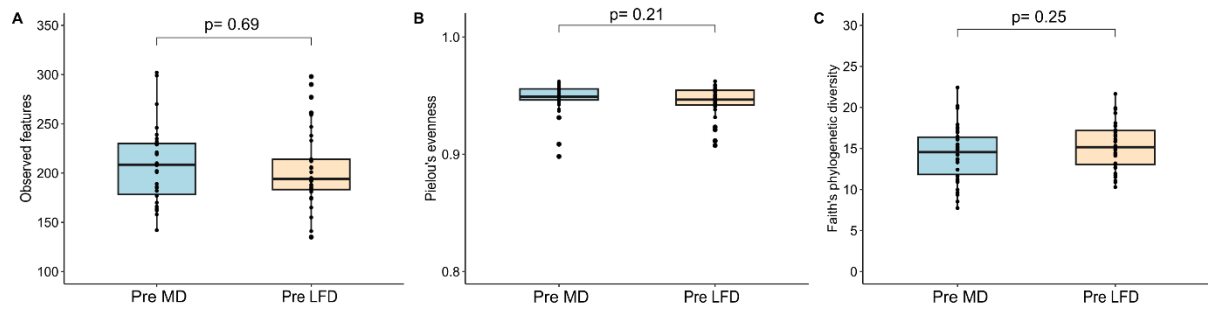


Figure S4. Comparison of microbiota characteristics between the MedDairy (MD) and Low-fat diet (LFD) groups at baseline for alpha diversity measures of (A) microbial richness, (B) evenness and (C) diversity. Statistical comparisons were performed using the Mann-Whitney test (between group assessment).

REFERENCES

1. Trichopoulou A, Costacou T, Bamia C, et al. Adherence to a Mediterranean diet and survival in a Greek population. *The New England journal of medicine* 2003;348(26), 2599-608.
2. Sofi F, Macchi C, Abbate R, et al. Mediterranean diet and health status: an updated meta-analysis and a proposal for a literature-based adherence score. *Public Health Nutr* 2014;17(12), 2769-82.