

Effect of randomisation to 6-month Mediterranean versus low-fat diet intervention on inflammation and adiposity in patients with coronary heart disease; Preliminary results of the AUSMED Heart Trial

Hannah L Mayr ^{1,*}, Catherine Itsiopoulos ¹, Audrey C Tierney ^{1,2}, Jessica Radcliffe ¹, Teagan Kucianski ¹ and Colleen J Thomas ³

¹ Department of Rehabilitation, Nutrition and Sport, School of Allied Health, La Trobe University, Melbourne, Victoria, 3086, Australia

² School of Allied Health, University of Limerick, Castletroy, Limerick, V94 T9PX, Ireland

³ Department of Physiology, Anatomy and Microbiology, School of Life Sciences, La Trobe University, Melbourne, Victoria, 3086, Australia

*Correspondence: h.mayr@latrobe.edu.au; Tel.: +61-3-94791721

Table S1. Frequency of attendance for study appointments and phone reviews and access to other health services during the intervention period in the total cohort and within study groups

	Total cohort	Low-fat diet	MedDiet	p-value
<i>Study services (n=65)</i>				
3-week phone review	53 (81.5)	26 (83.9)	27 (79.4)	0.89
6-week phone review	57 (87.7)	28 (90.3)	19 (85.3)	0.81
9-week phone review	57 (87.7)	28 (90.3)	29 (85.3)	0.88
3-month appointment	60 (92.3)	30 (96.8)	30 (88.2)	0.41
4-month phone review	56 (86.2)	26 (83.9)	30 (88.2)	0.62
5-month phone review	55 (84.6)	25 (80.6)	30 (88.2)	0.62
6-month appointment	56 (86.2)	29 (93.5)	27 (79.4)	0.20
<i>Health services (n=60)^a</i>				
Cardiologist	32 (53.3)	17 (56.7)	15 (50.0)	0.80
Other specialist	37 (45.0)	16 (53.3)	11 (36.7)	0.30
General Practitioner	58 (96.7)	30 (100)	28 (93.3)	0.47
Allied health	17 (28.3)	9 (30)	8 (26.7)	1.00
Dietitian	1 (1.7)	1 (3.3)	0 (0.0)	1.00
Cardiac rehabilitation ^b	6 (10.0)	4 (13.3)	2 (6.7)	0.67
Hospital admission ^c	11 (18.3)	8 (26.7)	3 (10.0)	0.18
Cardiac event ^d	1 (1.7)	1 (3.3)	0 (0.0)	1.00
Medical test	33 (55.0)	16 (53.3)	17 (56.7)	1.00
Cardiac test	15 (25.0)	10 (33.3)	5 (16.7)	0.23
Cardiac procedure ^d	1 (1.7)	1 (3.3)		1.00

Data are N (%). ^aUse of health services includes any time across the intervention period, only participants who attended at least the 3-month appointment have been included. ^bParticipants had indicated they completed rehabilitation prior to the study intervention. ^cHospital admission may include day procedure or emergency presentation with medical tests performed; for the low-fat diet group these were for colonoscopy, iron deficiency anaemia, Bell's Palsy, hip replacement, undiagnosed sore on head, hernia repair, traveller's diarrhoea and chest pain, and for the MedDiet group these were for colonoscopy (2 participants) and renal calculi. ^dParticipant who dropped out after 3-months experienced acute myocardial infarction and had an angiogram performed.

Table S2. Proportion of participants taking prescribed medications and supplements across intervention time points in the study groups

	Low-fat diet				MedDiet			
	Baseline	3-month	6-month	<i>p</i> -value	Baseline	3-month	6-month	<i>p</i> -value
Medication Use	31 (100)	31 (100)	30 (96.7) ^a	0.37	34 (100)	34 (100)	34 (100)	1.00
Anti-platelet	29 (93.5)	29 (93.5)	28 (90.3) ^a	0.37	30 (88.2)	30 (88.2)	30 (88.2)	1.00
Statin	26 (83.9)	26 (83.9)	26 (83.9)	1.00	31 (91.2)	31 (91.2)	31 (91.2)	1.00
Other lipid-lowering	3 (9.7)	3 (9.7)	3 (9.7)	1.00	3 (8.8)	3 (8.8)	3 (8.8)	1.000
β-blocker	21 (67.7)	21 (67.7)	21 (67.7)	1.00	24 (70.6)	19 (55.9)	19 (55.9)	0.007*
ACE inhibitor	15 (48.4)	16 (51.6)	17 (54.8)	0.22	17 (50.0)	18 (52.9)	18 (52.9)	0.37
Angiotensin 2 receptor blocker	6 (19.4)	6 (19.4)	6 (19.4)	1.00	8 (23.5)	8 (23.5)	8 (23.5)	1.00
Ca ²⁺ channel blocker	5 (16.1)	5 (16.1)	5 (16.1)	1.00	4 (11.8)	3 (8.8)	3 (8.8)	0.37
Oral hypoglycaemic agent	7 (22.6)	7 (22.6)	7 (22.6)	1.00	8 (23.5)	8 (23.5)	8 (23.5)	1.00
Insulin	2 (6.5)	2 (6.5)	2 (6.5)	1.00	3 (8.8)	3 (8.8)	3 (8.8)	1.00
Anti-reflux	9 (29.0)	9 (29.0)	9 (29.0)	1.00	9 (26.5)	9 (26.5)	9 (26.5)	1.00
Diuretic	5 (16.1)	5 (16.1)	4 (12.9)	0.37	3 (8.8)	3 (8.8)	5 (14.7)	0.14
Thyroid medication	1 (3.2)	1 (3.2)	1 (3.2)	1.00	5 (14.7)	5 (14.7)	5 (14.7)	1.00
Anti-depressant	3 (9.7)	4 (12.9)	4 (12.9)	0.37	4 (11.8)	4 (11.8)	4 (11.8)	0.37
Pain relief	3 (9.7)	3 (9.7)	3 (9.7)	1.00	5 (14.7)	5 (14.7)	4 (12.1)	1.00
NSAID	2 (6.5)	2 (6.5)	1 (3.2)	0.37	0 (0.0)	0 (0.0)	0 (0.0)	1.00
<i>Self-report compliance^b</i>								
100%	23 (74.2)	24 (77.4)	24 (77.4)		28 (84.8) ^b	27 (79.4)	27 (79.4)	
90%	6 (19.4)	7 (22.6)	6 (19.4)		4 (12.1)	5 (14.7)	5 (14.7)	
75%	1 (3.2)				1 (3.0)	1 (3.0)	1 (3.0)	
<50% ^c	1 (3.2)							
Nil			1 (3.2) ^a					
Supplement use	13 (41.9)	13 (41.9)	13 (41.9)	1.00	15 (44.1)	14 (41.2)	17 (50.0)	0.31
Omega-3	3 (9.7)	4 (12.9)	4 (12.9)	0.37	7 (20.6)	7 (20.6)	6 (17.6)	0.72
Vitamin D	5 (16.1)	6 (19.4)	7 (22.6)	0.22	7 (20.6)	7 (20.6)	8 (23.5)	0.37
Multivitamin	5 (16.1)	5 (16.1)	4 (12.9)	0.72	3 (8.8)	2 (5.9)	2 (5.9)	0.37
CoQ10	5 (16.1)	5 (16.1)	6 (19.4)	0.37	2 (5.9)	2 (5.9)	2 (5.9)	1.00
Glucosamine	0 (0.0)	1 (3.2)	1 (3.2)	0.61	4 (11.8)	4 (11.8)	3 (8.8)	0.37
Magnesium	3 (9.7)	1 (3.2)	2 (6.5)	0.22	3 (8.8)	3 (8.8)	4 (11.8)	0.72
Iron	2 (6.5)	2 (6.5)	3 (9.7)	0.37	0 (0.0)	0 (0.0)	2 (5.9)	0.14
Vitamin E	1 (3.2)	1 (3.2)	1 (3.2)	1.00	0 (0.0)	0 (0.0)	0 (0.0)	-
Vitamin C	1 (3.2)	1 (3.2)	1 (3.2)	1.00	0 (0.0)	1 (2.9)	1 (2.9)	0.37

Data are N (%). MedDiet, Mediterranean diet; β, beta; ACE, angiotensin converting enzyme; NSAID, non-steroidal anti-inflammatory drug; CoQ10, coenzyme Q10. ^aOne participant stopped taking anti-platelet medication. ^bOne participant who dropped out did not complete this question and has not been included at any time point. ^cOne participant with prescription NSAID reported <50% for compliance as it was prescribed *Pro Re Nata* (as needed) for osteoarthritis; their use of the medication was ceased after 3-months.*Significant within-group change across time points, *p*<0.05.

Table S3. Adjusted means of cardiometabolic risk markers at 6-months by tertiles of 6-month change in MEDAS score^a

Risk variable	T1 (-2 to +1) <i>n</i> =22		T2 (+2 to 5) <i>n</i> =27		T3 (+6 to 9) <i>n</i> =15	
	Adjusted mean	95% CI	Adjusted mean	95% CI	Adjusted mean	95% CI
<i>Anthropometry</i>						
Weight (kg) [†]	85.9	84.7, 87.3	85.3	84.1, 86.5	84.1	82.6, 85.7
BMI (kg/m ²)	30.1	29.6, 30.5	30.0	29.5, 30.4	29.6	29.1, 30.2
Waist circumference (cm)	103.5	102.1, 104.9	102.6	101.3, 103.9	100.7	99.0, 102.3*
Waist-hip ratio	0.981	0.967, 0.995	0.965	0.952, 0.978	0.959	0.942, 0.976*
<i>Body composition</i>						
FMI (kg/m ²)	10.2	9.82, 10.57	10.2	9.85, 10.53	9.8	9.31, 10.21
Total body fat (%)	33.9	33.1, 34.7	33.7	32.9, 34.4	32.9	32.0, 33.9
Trunk fat (%)	36.6	35.6, 37.6	36.0	35.1, 37.0	35.3	34.1, 36.4
VAT (cm ²)	196.0	186.0, 206.0	200.0	190.9, 209.0	195.3	183.5, 207.1
SAT (cm ²)	331.7	315.0, 348.4	313.4	298.3, 328.6	304.3	284.3, 324.3*
<i>Haemodynamic</i>						
SBP (mmHg)	136.5	132.1, 140.8	136.1	132.1, 140.8	133.4	128.2, 138.5
DBP (mmHg)	82.0	79.5, 84.4	82.1	79.9, 84.4	80.8	77.9, 83.7
HR (bpm)	66.0	62.9, 69.1	66.2	63.4, 69.1	65.9	62.2, 69.6
<i>Pathology[†]</i>						
LDL (mmol/L)	1.69	1.51, 1.90	1.97	1.77, 2.17	1.70	1.49, 1.95
HDL (mmol/L)	1.26	1.19, 1.33	1.19	1.14, 1.25	1.19	1.11, 1.27
Triglycerides (mmol/L)	1.16	1.01, 1.33	1.37	1.22, 1.55	1.30	1.11, 1.53
Glucose (mmol/L) [‡]	5.09	4.79, 5.41	5.32	5.06, 5.61	5.50	5.12, 5.87
hs-CRP (mg/L)**	0.69	0.43, 1.09	0.83	0.54, 1.27	0.87	0.50, 1.50
hs-IL-6 (pg/mL)	1.42	1.09, 1.99	1.46	1.09, 1.96	1.46	0.99, 2.15
Adiponectin (ng/mL)	7.19	6.08, 8.51	7.62	6.44, 9.59	7.87	6.44, 9.59

MEDAS, Mediterranean Diet Adherence Screener; T, tertile; CI, confidence interval; BMI, body mass index; FMI, fat mass index; VAT visceral adipose tissue; SAT, subcutaneous adipose tissue; SBP, systolic blood pressure; DBP, diastolic blood pressure; HR, heart rate; LDL, low-density lipoprotein; HDL, high-density lipoprotein; hs-CRP, high sensitivity C-reactive protein; hs-IL-6, high sensitivity interleukin-6. ^aAdjusted average indices as least-square means with 95%CI from multi-variable linear models adjusted for baseline value, sex, age, type 2 diabetes mellitus, time since coronary event and change in moderate-to-vigorous activity levels. *Significant difference between T1 and T3, *p*<0.05. [†]Variable log-transformed and data are presented as adjusted geometric means and confidence intervals have been backwards logged. [‡]One participant with T2DM had a major increase in insulin dosage and was excluded from analyses. [‡]Two participants excluded for value >10mg/L.