Distinct patterns of personalised dietary advice delivered by a metabotype framework similarly improve dietary quality and metabolic health parameters: secondary analysis of a randomised controlled trial

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Supplementary Table 1. Coefficient of variation inter-batches for metabolites in the quality control sample.

Metabolite	CV (%)
Alanine	1.0
Arginine	3.2
Asparagine	2.6
Citrulline	1.4
Glutamine	0.9
Glutamate	1.0
Glycine	2.2
Histidine	2.2
Isoleucine	0.9
Leucine	2.2
Lysine	5.1
Methionine	2.9
Ornithine	2.4
Phenylalanine	0.9
Proline	3.0
Serine	2.4
Threonine	0.9
Tryptophan	3.3
Tyrosine	2.3
Valine	4.5
ADMA	0.7
α-AAA	3.5
Creatinine	0.5
Kynurenine	0.3
Putrescine	0.4
Sarcosine	1.0
SDMA	6.3
t4-OH-Pro	0.6
Taurine	1.4
Hexoses	2.0

Carnitine	2.5
C 2:0	2.6
C 3:0	3.7
C 4:0	4.3
C 3:1;O2 (C 4:0;0)	1.9
C 6:0 (C 4:2;O2)	0.8
C 8:0	1.4
C 10:0	0.8
C 12:0	0.3
C 14:1	34.6
C 16:0 (C 14:2;O2)	1.2
C 18:0	2.3
C 18:1	0.7

LPC 14:0	2.2
LPC 16:0	1.0
LPC 16:1	1.2
LPC 17:0	0.8
LPC 18:0	1.8
LPC 18:1	1.4
LPC 18:2	0.6
LPC 20:3	1.6
LPC 20:4	1.6
LPC 28:1	18.6

SM 33:1;O2	2.3
SM 34:1;O2	0.3
SM 34:2;O2	2.6
SM 35:1;O2	1.0
SM 36:1;O2	2.9
SM 36:2;O2	1.8
SM 38:3;O2	2.8
SM 41:1;O2	3.1
SM 41:2;O2	3.2
SM 42:1;O2	1.0
SM 42:2;O2	2.6
SM 43:1;O2	3.2
SM 44:1;O2	1.3
SM 44:2;O2	1.1

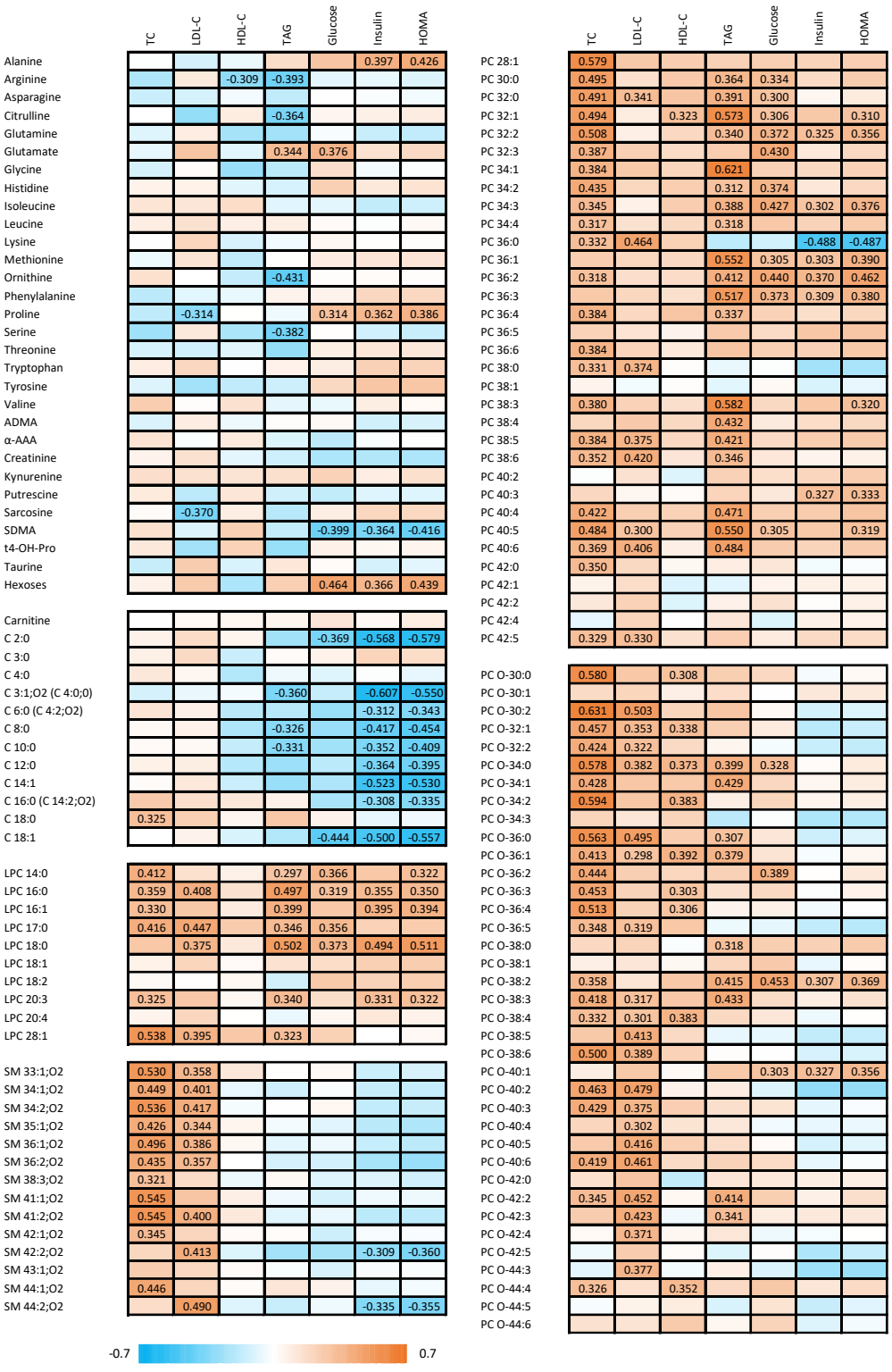
Metabolite	CV (%)
PC 28:1	0.9
PC 30:0	13.3
PC 32:0	1.3
PC 32:1	2.3
PC 32:2	0.3
PC 32:3	1.0
PC 34:1	0.8
PC 34:2	1.6
PC 34:3	1.2
PC 34:4	1.4
PC 36:0	1.6
PC 36:1	1.0
PC 36:2	0.9
PC 36:3	1.9
PC 36:4	0.4
PC 36:5	0.8
PC 36:6	0.9
PC 38:0	0.6
PC 38:1	17.4
PC 38:3	1.7
PC 38:4	0.0
PC 38:5	0.7
PC 38:6	0.6
PC 40:2	3.1
PC 40:3	1.4
PC 40:4	1.7
PC 40:5	1.1
PC 40:6	0.3
PC 42:0	2.2
PC 42:1	0.7
PC 42:2	2.0
PC 42:4	0.8
PC 42:5	1.5

PC O-30:0	2.2
PC O-30:1	6.6
PC O-30:2	5.4
PC O-32:1	1.2
PC O-32:2	1.2
PC O-34:0	0.9
PC O-34:1	1.3
PC O-34:2	0.7
PC O-34:3	1.8
PC O-36:0	0.7
PC O-36:1	1.1
PC O-36:2	1.9
PC O-36:3	1.0
PC O-36:4	0.1
PC O-36:5	1.1
PC O-38:0	2.7
PC O-38:1	1.3
PC O-38:2	1.8
PC O-38:3	0.9
PC O-38:4	1.1
PC O-38:5	1.4
PC O-38:6	1.5
PC O-40:1	2.0
PC O-40:2	1.3
PC O-40:3	0.3
PC O-40:4	1.3
PC O-40:5	1.1
PC O-40:6	1.4
PC O-42:0	19.4
PC O-42:2	2.4
PC O-42:3	1.7
PC O-42:4	0.4
PC O-42:5	1.4
PC O-44:3	2.6
PC O-44:4	2.5
PC O-44:5	1.3
PC O-44:6	2.0

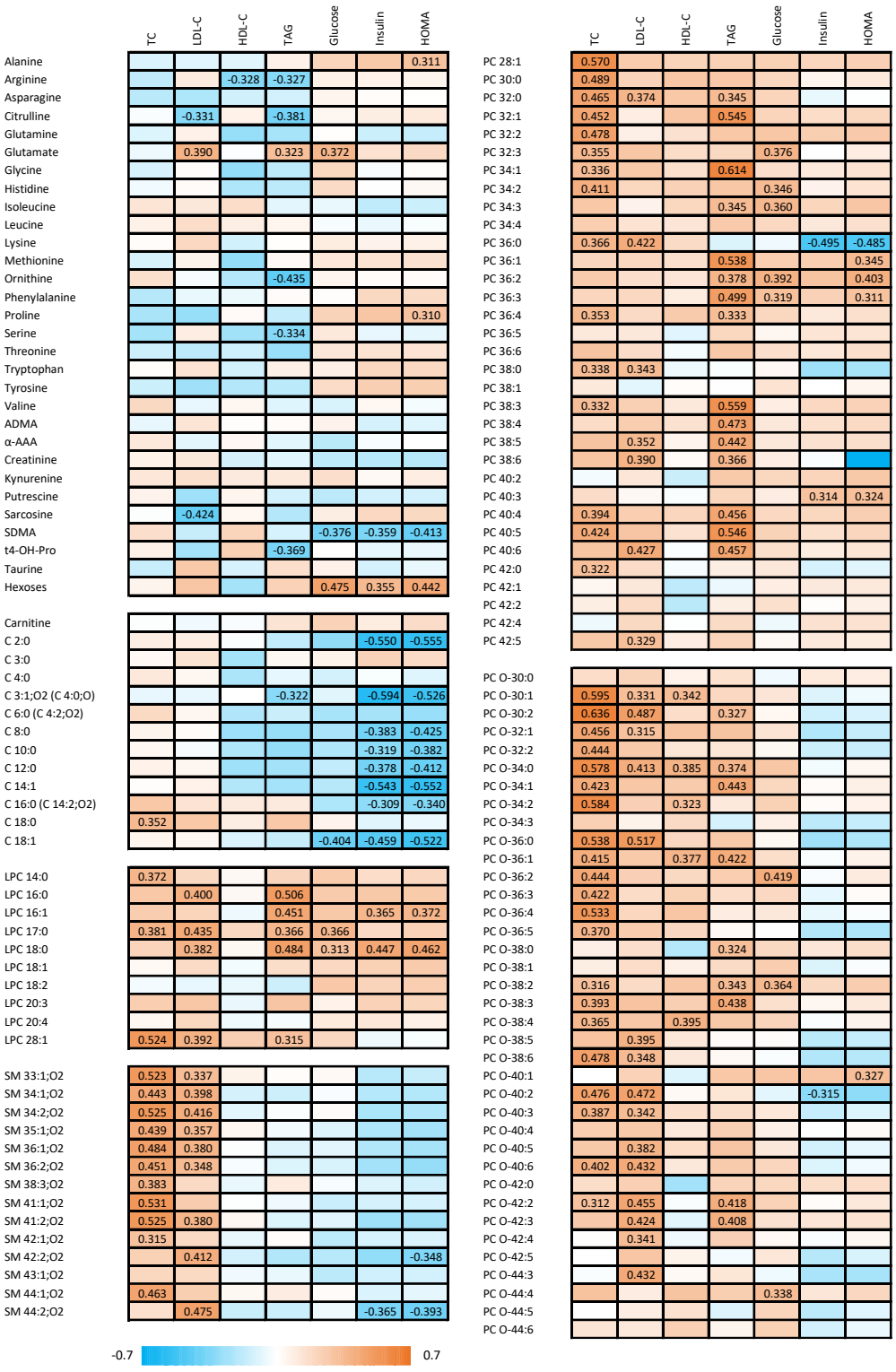
Supplementary Table 2. Spearman correlation coefficients between changes in blood clinical chemistry, weight loss and demographic parameters.

	Δ TC	Δ LDL-C	Δ HDL-C	Δ TAG	Δ Glucose	Δ Insulin	Δ HOMA-IR	Weight loss	Age
Δ LDL-C	0.275								
Δ HDL-C	0.294*	0.032							
Δ TAG	0.246	0.250	0.090						
Δ Glucose	0.168	0.033	0.074	0.274					
Δ Insulin	0.113	-0.159	0.059	0.477 **	0.365 *				
Δ HOMA-IR	0.113	-0.162	0.065	0.479 **	0.546 **	0.965 **			
Weight loss	0.233	-0.008	0.139	0.273	0.354 *	0.367 *	0.404 **		
Age	-0.153	-0.255	-0.303 *	0.126	0.078	-0.019	0.002	0.007	
Sex	0.014	-0.062	-0.103	0.062	-0.003	0.141	0.117	-0.052	-0.052

* $p \leq 0.05$; ** $p \leq 0.01$. HDL-C, high-density lipoprotein cholesterol; HOMA-IR, homeostatic model assessment for insulin resistance; LDL-C, low-density lipoprotein cholesterol; TAG, triacylglycerol; TC, total cholesterol.



Supplementary Figure 1. Heatmap of Spearman correlation coefficients between changes in the blood clinical chemistry and metabolite levels obtained with a personalised dietary advice intervention. Coefficients are presented for significant correlations ($p \leq 0.05$).



Supplementary Figure 2. Heatmap of partial Spearman correlation coefficients between changes in the blood clinical chemistry and metabolite levels obtained with a personalised dietary advice intervention. Analyses were controlled for age, sex and weight loss during the intervention. Coefficients are presented for significant correlations ($p \leq 0.05$).