

S2 Table (A). Statistical summary of covariates and results of ANOVA test between covariates and cardiac traits.

Phenotype	Covariates	Median	Mean	Standard Deviation	N	F value	Pr (>F)	Significance [#]
afibtyp	Age	68.0402	66.4148	9.1279	340	5.760	0.0169	*
	Sex	NA	NA	NA		0.097	0.7554	
	Waist-Hip Ratio	0.9672	0.9640	0.0693		0.637	0.4253	
	BMI	26.9896	27.6906	4.2811		0.612	0.4346	
afibyn	Age	63.7663	62.8722	10.5118	2798	48.072	5.08×10 ⁻¹²	***
	Sex	NA	NA	NA		1.204	0.273	
	Waist-Hip Ratio	0.9638	0.9603	0.0780		0.033	0.856	
	BMI	27.0524	27.4561	4.0510		1.834	0.176	
cadyn	Age	63.8005	62.9203	10.5165	2824	130.405	0	***
	Sex	NA	NA	NA		173.573	0	***
	Waist-Hip Ratio	0.9636	0.9602	0.0779		11.892	0.000572	***
	BMI	27.0416	27.4454	4.0442		0.304	0.581144	
canceryn	Age	63.8100	62.9241	10.5205	2821	52.096	6.77×10 ⁻¹³	***
	Sex	NA	NA	NA		0.849	0.3568	
	Waist-Hip Ratio	0.9636	0.9602	0.0780		0.188	0.6650	
	BMI	27.0416	27.4458	4.0415		2.971	0.0849	.
cmpyn	Age	63.8005	62.9203	10.5165	2824	0.757	0.38444	
	Sex	NA	NA	NA		8.161	0.00431	**
	Waist-Hip Ratio	0.9636	0.9602	0.0779		0.142	0.70639	
	BMI	27.0416	27.4454	4.0442		0.051	0.82201	
death2010	Age	63.8005	62.9203	10.5165	2824	339.192	0	***
	Sex	NA	NA	NA		23.660	1.21×10 ⁻⁶	***
	Waist-Hip Ratio	0.9636	0.9602	0.0779		5.962	0.01468	*
	BMI	27.0416	27.4454	4.0442		8.258	0.00409	**
diabetes2010	Age	63.8005	62.9203	10.5165	2824	143.040	0	***
	Sex	NA	NA	NA		2.801	0.0943	.
	Waist-Hip Ratio	0.9636	0.9602	0.0779		46.374	1.19×10 ⁻¹¹	***
	BMI	27.0416	27.4454	4.0442		54.682	1.86×10 ⁻¹³	***
dm2yn	Age	63.8005	62.9203	10.5165	2824	90.491	0	***
	Sex	NA	NA	NA		0.754	0.385	
	Waist-Hip Ratio	0.9636	0.9602	0.0779		31.638	2.04×10 ⁻⁸	***
	BMI	27.0416	27.4454	4.0442		25.561	4.56×10 ⁻⁷	***
hyptenyn	Age	63.8005	62.9203	10.5165	2824	102.922	0	***
	Sex	NA	NA	NA		7.648	0.00572	**
	Waist-Hip Ratio	0.9636	0.9602	0.0779		28.003	1.3×10 ⁻⁷	***
	BMI	27.0416	27.4454	4.0442		107.473	0	***
insuthyn	Age	63.8101	62.9310	10.5320	2811	20.553	6.04×10 ⁻⁶	***
	Sex	NA	NA	NA		7.833	0.00517	**
	Waist-Hip Ratio	0.9636	0.9602	0.0778		9.930	0.00164	**
	BMI	27.0416	27.4446	4.0492		19.412	1.09×10 ⁻⁵	***
rhythyn	Age	63.7663	62.8639	10.5348	2789	11.154	0.00085	***
	Sex	NA	NA	NA		4.316	0.03786	*
	Waist-Hip Ratio	0.9636	0.9602	0.0780		0.946	0.33092	
	BMI	27.0538	27.4478	4.0521		0.000	0.98690	
strokeyn	Age	63.8005	62.9203	10.5165	2824	64.557	1.36×10 ⁻¹⁵	***
	Sex	NA	NA	NA		0.516	0.472	
	Waist-Hip Ratio	0.9636	0.9602	0.0779		0.396	0.529	
	BMI	27.0416	27.4454	4.0442		2.292	0.130	
vdyn	Age	63.8005	62.9203	10.5165	2824	118.539	0	***
	Sex	NA	NA	NA		9.801	0.00176	**
	Waist-Hip Ratio	0.9636	0.9602	0.0779		1.777	0.18267	
	BMI	27.0416	27.4454	4.0442		2.968	0.08503	.
venthrom	Age	63.7991	62.9135	10.5061	2817	15.699	7.61×10 ⁻⁵	***
	Sex	NA	NA	NA		14.305	0.000159	***
	Waist-Hip Ratio	0.9640	0.9603	0.0780		1.574	0.209665	
	BMI	27.0484	27.4511	4.0462		16.687	4.53×10 ⁻⁵	***

[#]Significance codes: '***' - 0.001 / '**' - 0.01 / '*' - 0.05 / '.' - 0.1 / ' ' - 1 / NA - Not Available

S2 Table (B). Statistical summary of covariates and results of ANOVA test between covariates and fatty acids.

Phenotype and Covariates		Summary Statistics				ANOVA Test		
Phenotype	Covariates	Median	Mean	Standard Deviation	N	F value	Pr (>F)	Significance [#]
Palmitic_acid_C16_0	Palmitic acid C16 0	21.8800	21.9149	1.1415	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		0.359	0.549	
	Sex	NA	NA	NA		1.849	0.174	
	Waist-Hip Ratio	0.9636	0.9600	0.0776		0.010	0.922	
	BMI	27.0022	27.4317	4.0350		2.586	0.108	
Stearic_acid_C18_0	Stearic acid C18 0	17.1600	17.2080	1.1727	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		1.772	0.18328	
	Sex	NA	NA	NA		14.067	0.00018	***
	Waist-Hip Ratio	0.9636	0.9600	0.0776		10.380	0.00129	**
	BMI	27.0022	27.4317	4.0350		4.831	0.02803	*
DHA_C22_6n3	DHA C22 6n3	5.0200	5.1028	1.0893	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		118.883	0	***
	Sex	NA	NA	NA		0.000	0.988	
	Waist-Hip Ratio	0.9636	0.9600	0.0776		0.510	0.475	
	BMI	27.0022	27.4317	4.0350		0.549	0.459	
LOG_Myristic_acid_C14_0	LOG Myristic acid C14 0	0.1989	0.1988	0.1000	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		0.079	0.778038	
	Sex	NA	NA	NA		10.923	0.000962	***
	Waist-Hip Ratio	0.9636	0.9600	0.0776		9.313	0.002297	**
	BMI	27.0022	27.4317	4.0350		9.703	0.001858	**
LOG_Trans_Palmitoleic_acid_C16_1n7t	LOG Trans Palmitoleic acid C16 1n7t	0.1310	0.1402	0.0606	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		29.758	5.33×10 ⁻⁸	***
	Sex	NA	NA	NA		37.874	8.63×10 ⁻¹⁰	***
	Waist-Hip Ratio	0.9636	0.9600	0.0776		0.785	0.376	
	BMI	27.0022	27.4317	4.0350		27.431	1.75×10 ⁻⁷	***
LOG_Oleic_acid_C18_1n9	LOG Oleic acid C18 1n9	2.7619	2.7642	0.0861	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		17.469	3.01×10 ⁻⁵	***
	Sex	NA	NA	NA		14.514	0.000142	***
	Waist-Hip Ratio	0.9636	0.9600	0.0776		0.379	0.538397	
	BMI	27.0022	27.4317	4.0350		8.440	0.003700	**
LOG_C18_2n6tt	LOG C18 2n6tt	0.0488	0.0592	0.0567	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		0.022	0.8819	
	Sex	NA	NA	NA		0.326	0.5678	
	Waist-Hip Ratio	0.9636	0.9600	0.0776		3.946	0.0471	*
	BMI	27.0022	27.4317	4.0350		0.156	0.6931	
LOG_C18_2n6ct	LOG C18 2n6ct	0.0198	0.0296	0.0264	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		0.221	0.638	
	Sex	NA	NA	NA		0.009	0.923	
	Waist-Hip Ratio	0.9636	0.9600	0.0776		0.155	0.694	
	BMI	27.0022	27.4317	4.0350		0.002	0.961	
LOG_C18_2n6tc	LOG C18 2n6tc	0.1133	0.1122	0.0312	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		0.090	0.7648	
	Sex	NA	NA	NA		30.876	3.01×10 ⁻⁸	***
	Waist-Hip Ratio	0.9636	0.9600	0.0776		0.886	0.3468	
	BMI	27.0022	27.4317	4.0350		5.386	0.0204	*
LOG_Linoleic_acid_C18_2n6	LOG Linoleic acid C18 2n6	2.4882	2.4915	0.1376	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		3.521	0.0607	.
	Sex	NA	NA	NA		15.640	7.85×10 ⁻⁵	***
	Waist-Hip Ratio	0.9636	0.9600	0.0776		42.047	1.05×10 ⁻¹⁰	***
	BMI	27.0022	27.4317	4.0350		5.294	0.0215	*
LOG_a_Linolenic_acid_C18_3n3	LOG a Linolenic acid C18 3n3	0.1044	0.1107	0.0391	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		8.582	0.00342	**
	Sex	NA	NA	NA		11.025	0.00091	***
	Waist-Hip Ratio	0.9636	0.9600	0.0776		7.824	0.00519	**
	BMI	27.0022	27.4317	4.0350		0.004	0.95175	
Arachidonic_acid_C20_4n6	Arachidonic acid C20 4n6	16.5400	16.5249	1.5202	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		5.189	0.02281	*
	Sex	NA	NA	NA		7.169	0.00746	**
	Waist-Hip Ratio	0.9636	0.9600	0.0776		4.890	0.02709	*
	BMI	27.0022	27.4317	4.0350		0.119	0.72998	
LOG_Dihomo_g_Linolenic_C20_3n6	LOG Dihomo g Linolenic C20 3n6	0.9933	0.1006	0.1357	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		4.43	0.0354	*
	Sex	NA	NA	NA		15.18	9.99×10 ⁻⁵	***
	Waist-Hip Ratio	0.9636	0.9600	0.0776		0.01	0.9187	
	BMI	27.0022	27.4317	4.0350		26.97	2.22×10 ⁻⁷	***
LOG_EPA_C20_5n3	LOG EPA C20 5n3	0.5306	0.5535	0.1595	2776	NA	NA	NA
	Age	63.8101	62.9438	10.5233		0.132	0.7165	
	Sex	NA	NA	NA		4.134	0.0421	*
	Waist-Hip Ratio	0.9636	0.9600	0.0776		0.456	0.4995	
	BMI	27.0022	27.4317	4.0350		0.283	0.5950	

[#]Significance codes: '****' - 0.001 / '***' - 0.01 / '**' - 0.05 / '.' - 0.1 / ' ' - 1 / NA - Not Available