

SUPPLEMENTAL MATERIAL

Table S1. Logistic Regression Analyses for the Longitudinal Association of NAFLD with Quartiles of Change in Longitudinal Strain from Y25 (2010-2011) to Y30 (2015-2016) in CARDIA.

Quartiles of Change in Longitudinal Strain from Y25 to Y30								
Odds Ratio (95% Confidence Interval)								
	Q1 (-10.68 to -1.99)		Q2 (-1.98 to .03)		Q3 (.04 to 1.88)		Q4 (1.89 to 11.57)	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Base Model†	REFERENCE		1.59	.90-2.80	1.94	1.09-3.44	3.20	1.72-5.94
Multivariable‡			1.55	.86-2.79	1.84	1.01-3.35	2.98	1.56-5.70
+ HF risk factors§			1.52	.79-2.92	1.39	.71-2.72	2.24	1.06-4.73
Multivariable‡ + HF RFs+ BMI			1.69	.87-3.27	1.53	.78-3.01	2.09	.99-4.38
Multivariable‡ + HF RFs+ %change BMI^			1.63	.51-1.70	1.49	.43-2.39	2.10	.53-1.71

Multivariable [‡] +HF RFs + VAT		1.52	.77-2.99	1.49	.75-2.96	1.90	.89-4.09
Multivariable [‡] + HF RFs+ BMI + %change BMI [^]		1.08	.59-1.98	.87	.48-1.58	1.01	.56-1.83

NAFLD, nonalcoholic fatty liver disease; CARDIA, Coronary Artery Risk Development in Young Adults; Q, quartile; OR, odds ratio; 95%CI, 95% confidence interval

*Result from multinomial model with normal geometry as referent²⁴

[†]adjusted for center only

[‡] Multivariable model: adjusted for age, race, sex, study center, education, income level, alcohol intake (drinks/week), smoking status (current/former vs. never), physical activity score

[§]HF risk factors: systolic blood pressure, antihypertensive medication use, anti-hyperlipidemic medication use, total cholesterol, HDL cholesterol, diabetes status, and GFR

[^]%change BMI = (Y30 BMI – Y25 BMI)/Y25 BMI X 100

Table S2. Odds Ratios (95% Confidence Interval) for the Longitudinal Association of Continuous Liver Attenuation with Prevalent and Incident Abnormal Left Ventricular Geometry and Remodeling, The CARDIA Study.

	Prevalent Abnormal LV Geometry and Remodeling			Incident Abnormal LV Geometry and Remodeling		
	Prevalent LVH	Concentric Remodeling*	Concentric Hypertrophy*	Eccentric Hypertrophy*	Incident LVH	Incident Abnormal LV Geometry
Base Model†	.96 (.95-.97)	.99 (.97-1.00)	.96 (.95-.97)	.96 (.95-1.00)	.97 (.95-.98)	.97 (.96-.98)
Multivariable‡	.96 (.95-.97)	.99 (.98-1.05)	.96 (.95-.97)	.95 (.94-.97)	.96 (.95-.98)	.97 (.96-.98)
+ HF risk factors§	.99 (.97-1.0)	.99 (.98-1.01)	.99 (.98-1.01)	.98 (.96-.99)	.98 (.96-.99)	.98 (.97-.99)
Multivariable‡ + HF RFs+ BMI	1.00 (.99-1.01)	1.0 (.98-1.02)	1.01 (.99-1.03)	.99 (.97-1.01)	1.00 (.98-1.02)	.99 (.98-1.01)
Multivariable‡ + HF RFs+ %change BMI^	.98 (.97-.99)	1.0 (.98-1.01)	.98 (.97-1.01)	.98 (.97-.99)	.98 (.96-.99)	.98 (.97-.99)

Multivariable [‡] +HF RFs + VAT	.99 (.98-1.01)	1.0 (.98-1.02)	1.01 (.99-1.03)	.99 (.97-.99)	.99 (.97-1.01)	.99 (.97-.99)
Multivariable [‡] + HF RFs+ BMI + %change BMI [^]	1.00 (.98-1.01)	1.11 (.62-1.99)	1.06 (.61-1.84)	1.41 (.86-2.33)	1.0 (.98-1.02)	.99 (.98-1.01)

CARDIA, Coronary Artery Risk Development in Young Adults; LV, left ventricle; HF, heart failure; BMI, body mass index; LVM, left ventricular mass; RWT, relative wall thickness; VAT, visceral adipose tissue; OR, odds ratio; 95%CI, 95% confidence interval

LVH was defined as LVM indexed to body surface area (LVMI) >115 g/m² (men) or >95 g/m^{2.7} (women); Concentric remodeling was defined as RWT > 0.42 and LVH; Concentric hypertrophy was defined as RWT > 0.42 and LVH; Eccentric hypertrophy was defined as RWT ≤ 0.42 and LVH; Any abnormal LV geometry was defined as either concentric hypertrophy or concentric remodeling or eccentric hypertrophy.²⁴

*Result from multinomial model with normal geometry as referent²⁴

† adjusted for center only

‡ Multivariable model: adjusted for Y25 age, race, sex, study center, education, income level, alcohol intake (drinks/week), smoking status (current vs. former/never), physical activity score

§ HF risk factors: Y25 systolic blood pressure, antihypertensive medication use, anti-hyperlipidemic medication use, total cholesterol, HDL cholesterol, diabetes status, GFR, and Y25 echo measures (e.g., Y25 LVM/BSA (LVH model) or Y25 LV RWT (LV remodeling models))

[^]%change BMI = (Y30 BMI – Y25 BMI)/Y25 BMI X 100

Table S3. Linear Regression Analyses for the Longitudinal Association of Continuous Liver Attenuation with Prevalent Left Ventricular Function, The CARDIA Study, 2015-2016.

Y30 Markers of LV Function										
	LVEF		E/A ratio		E/e' ratio		Longitudinal Strain		Cardiac output	
	β (SE)	P-value	β (SE)	P-value	β (SE)	P-value	β (SE)	P-value	β (SE)	P-value
Base Model [†]	.05 (.01)	<.0001	.005 (.04)	<.0001	-.02 (.005)	.0003	-.05 (.006)	<.0001	-.03 (.003)	<.0001
Multivariable [‡]	.03 (.01)	.03	.005 (.0008)	<.0001	-.03 (.005)	<.0001	-.04 (.006)	<.0001	-.03 (.003)	<.0001
+ HF risk factors [§]	.02 (.01)	.09	.003 (.0008)	<.0001	-.01 (.006)	.01	-.02 (.007)	.01	-.03 (.003)	<.0001
Multivariable [‡] + HF RFs+ BMI	.02 (.01)	.21	.002 (.0009)	.005	-.01 (.006)	.04	-.01 (.008)	.10	-.01 (.003)	.001
Multivariable [‡] + HF RFs+ %change BMI	.02 (.01)	.05	.003 (.0008)	<.0001	-.02 (.006)	.007	-.02 (.007)	.007	-.03 (.003)	<.0001

Multivariable [‡] +HF RFs + VAT	.02 (.01)	.18	.002 (.0009)	.049	-0.009 (.006)	.13	-0.01 (.008)	.20	-0.01 (.003)	.0005
Multivariable [‡] + HF RFs+ BMI + %change BMI [^]	.02 (.01)	.19	.003 (.0009)	.005	-0.01 (.006)	.07	-0.01 (.008)	.08	-0.01 (.003)	.0005

CARDIA, Coronary Artery Risk Development in Young Adults; LVEF, left ventricular ejection fraction; HF, heart failure; BMI, body mass index; VAT, visceral adipose tissue

[†]adjusted for center only

[‡]Multivariable model: adjusted for age, race, sex, study center, education, income level, alcohol intake (drinks/week), smoking status (current/former vs. never), physical activity score

[§]HF risk factors: systolic blood pressure, antihypertensive medication use, anti-hyperlipidemic medication use, total cholesterol, HDL cholesterol, diabetes status, and GFR

[^]%change BMI = (Y30 BMI – Y25 BMI)/Y25 BMI X 100