

Online Supplemental Materials

Plasma Epoxyeicosatrienoic Acids and Dihydroxyeicosatrienoic Acids, Insulin, Glucose and Risk of Diabetes: The Strong Heart Study

Table S1. Association of EETs and DHETs with incident diabetes in women and men in the Strong Heart Family Study

	Women			Men			BMI < 30			BMI ≥ 30			Age < 35 years			Age ≥ 35 years		
	†RR	95% CI	p	†RR	95% CI	p	†RR	95% CI	p	†RR	95% CI	p	†RR	95% CI	p	†RR	95% CI	p
EET 14,15	1.05	(0.95, 1.16)	0.30	1.02	(0.93, 1.12)	0.69	0.99	(0.84, 1.16)	0.87	1.04	(0.95, 1.15)	0.39	1.02	(0.93, 1.12)	0.69	1.02	(0.93, 1.11)	0.72
EET 11,12	1.04	(0.93, 1.16)	0.50	1.00	(0.90, 1.12)	1.00	0.93	(0.77, 1.13)	0.48	1.03	(0.91, 1.15)	0.68	1.00	(0.90, 1.12)	1.00	1.00	(0.89, 1.12)	0.98
EET 8,9	1.10	(1.00, 1.20)	0.06	1.07	(0.98, 1.18)	0.14	1.05	(0.91, 1.21)	0.53	1.10	(1.00, 1.21)	0.05	1.07	(0.98, 1.17)	0.14	1.07	(0.97, 1.17)	0.18
EET 5,6	1.06	(0.96, 1.18)	0.22	1.03	(0.94, 1.13)	0.54	1.02	(0.87, 1.20)	0.83	1.05	(0.96, 1.16)	0.30	1.03	(0.94, 1.13)	0.54	1.03	(0.94, 1.13)	0.55
DHET 14,15	0.90	(0.80, 1.01)	0.07	0.94	(0.85, 1.05)	0.30	0.93	(0.77, 1.12)	0.42	0.96	(0.86, 1.06)	0.40	0.94	(0.85, 1.05)	0.30	0.93	(0.83, 1.04)	0.19
DHET 11,12	0.98	(0.86, 1.11)	0.71	1.01	(0.89, 1.14)	0.89	1.00	(0.84, 1.19)	0.99	1.03	(0.92, 1.16)	0.59	1.01	(0.90, 1.14)	0.87	0.99	(0.88, 1.12)	0.89
DHET 8,9	1.01	(0.88, 1.17)	0.87	1.08	(0.95, 1.22)	0.25	0.98	(0.83, 1.16)	0.82	1.11	(0.98, 1.25)	0.12	1.08	(0.95, 1.22)	0.24	1.08	(0.95, 1.23)	0.22
DHET 5,6	1.03	(0.91, 1.18)	0.62	1.14	(1.00, 1.30)	0.04	1.07	(0.88, 1.31)	0.48	1.19	(1.05, 1.35)	0.01	1.14	(1.00, 1.30)	0.04	1.15	(1.01, 1.30)	0.04

Covariates included age, site, education, smoking, physical activity, BMI, waist circumference and LDL.

†RR: Relative risk of incident diabetes associated with one SD higher log EET/DHET species

Abbreviations: EET=Epoxyeicosatrienoic Acid; DHET= Dihydroxyeicosatrienoic acid; BMI=body mass index

Table S2: Associations of EET 14,15 with fasting glucose in the Strong Heart Study and the Strong Heart Family Study, stratified by age, sex, and body mass index

	SHS		SHFS		Meta-analysis		
	†Beta	95% CI	†Beta	95% CI	†Beta	95% CI	p-value
Age							
< median	0.37	(-0.92, 1.67)	-0.11	(-0.91, 0.69)			
> median	-0.31	(-2.05, 1.43)	-0.33	(-1.13, 0.48)			
Sex							
Women	-0.14	(-1.40, 1.12)	-0.46	(-1.20, 0.28)	-0.38	(-1.02, 0.26)	0.244
Men	0.75	(-1.34, 2.84)	0.18	(-0.54, 0.90)	0.24	(-0.44, 0.92)	0.484
BMI							
< 30	-0.31	(-1.53, 0.91)	-0.92	(-1.58, -0.26)	-0.79	(-1.37, -0.20)	0.008
≥ 30	1.03	(-1.31, 3.38)	0.48	(-0.27, 1.23)	0.53	(-0.19, 1.24)	0.147

Covariates included age, site, education, smoking, physical activity, BMI, waist circumference and LDL.

†Beta: mean difference in mg/dL glucose associated with one SD higher log EET 14,15

Abbreviations: EET=Epoxyeicosatrienoic Acid; DHET= Dihydroxyeicosatrienoic acid; BMI=body mass index

Table S3: Associations of EET 14,15 with insulin in the Strong Heart Study and the Strong Heart Family Study, stratified by age, sex, and body mass index

	SHS		SHFS		Meta-analysis		
	†GMR	95% CI	†GMR	95% CI	†GMR	95% CI	p-value
Age							
< median	1.00	(0.92, 1.09)	1.06	(1.00, 1.13)			
> median	0.99	(0.89, 1.10)	1.04	(0.99, 1.09)			
Sex							
Women	1.00	(0.93, 1.09)	1.07	(1.01, 1.12)	1.05	(1.00, 1.09)	0.030
Men	0.98	(0.87, 1.11)	1.03	(0.97, 1.09)	1.02	(0.97, 1.07)	0.440
BMI							
< 30	0.99	(0.93, 1.06)	1.02	(0.96, 1.07)	1.01	(0.97, 1.05)	0.726
≥ 30	0.97	(0.82, 1.14)	1.09	(1.04, 1.14)	1.08	(1.03, 1.13)	0.001

Covariates included age, site, education, smoking, physical activity, BMI, waist circumference and LDL.

†GMR: geometric mean ratios of plasma insulin associated with one SD higher log EET 14,15

Abbreviations: EET=Epoxyeicosatrienoic Acid; DHET= Dihydroxyeicosatrienoic acid; BMI=body mass index

Table S4: Associations of DHET 14,15 with fasting glucose in the Strong Heart Study and the Strong Heart Family Study, stratified by age, sex, and body mass index

	SHS		SHFS		Meta-analysis		
	[†] Beta	95% CI	[†] Beta	95% CI	[†] Beta	95% CI	p-value
Age							
< median	-0.96	(-2.48, 0.57)	-0.68	(-1.54, 0.18)			
> median	0.57	(-1.20, 2.35)	-1.16	(-1.92, -0.39)			
Sex							
Women	-0.49	(-1.88, 0.90)	-1.17	(-1.87, -0.47)	-1.03	(-1.66, -0.41)	0.001
Men	0.12	(-2.18, 2.41)	-0.55	(-1.52, 0.43)	-0.44	(-1.34, 0.46)	0.334
BMI							
< 30	-0.53	(-2.06, 0.99)	-0.69	(-1.50, 0.13)	-0.65	(-1.37, 0.07)	0.075
≥ 30	0.16	(-1.95, 2.28)	-1.15	(-1.95, -0.35)	-0.98	(-1.73, -0.23)	0.010

Covariates included age, site, education, smoking, physical activity, BMI, waist circumference and LDL.

[†]Beta: mean difference in mg/dL glucose associated with one SD higher log DHET 14,15

Abbreviations: EET=Epoxyeicosatrienoic Acid; DHET= Dihydroxyeicosatrienoic acid; BMI=body mass index

Table S5: Associations of DHET 14,15 with insulin in the Strong Heart Study and the Strong Heart Family Study, stratified by age, sex, and body mass index

	SHS		SHFS		Meta-analysis		
	[†] GMR	95% CI	[†] GMR	95% CI	[†] GMR	95% CI	p-value
Age							
< median	0.92	(0.82, 1.02)	0.93	(0.86, 1.01)			
> median	0.89	(0.80, 0.99)	0.94	(0.89, 0.99)			
Sex							
Women	0.94	(0.86, 1.03)	0.92	(0.87, 0.97)	0.92	(0.88, 0.97)	0.001
Men	0.84	(0.74, 0.94)	0.96	(0.91, 1.01)	0.94	(0.90, 0.99)	0.010
BMI							
< 30	0.92	(0.82, 1.03)	0.90	(0.85, 0.96)	0.91	(0.86, 0.96)	<0.001
≥ 30	0.91	(0.83, 1.00)	0.97	(0.92, 1.03)	0.96	(0.91, 1.00)	0.063

Covariates included age, site, education, smoking, physical activity, BMI, waist circumference and LDL.

[†]GMR: geometric mean ratios of plasma insulin associated with one SD higher log DHET 14,15

Abbreviations: EET=Epoxyeicosatrienoic Acid; DHET= Dihydroxyeicosatrienoic acid; BMI=body mass index

