

## **Online Data Supplement**

### **Prenatal and Early-Life Fructose, Fructose-Containing Beverages, and Mid-Childhood Asthma**

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**Table E1.** Associations of maternal pregnancy (1<sup>st</sup> and 2<sup>nd</sup> trimester average) and early childhood sugar sweetened beverages, juice, and total fructose intake (Quartiles 2, 3, and 4 v. Quartile 1) with hsCRP, IL-6, and TNFR2 levels (log transformed) in mid-childhood.

	N	Model 0 β (95% CI)	Model 1 β (95% CI)	Model 2 β (95% CI)
<b>β (95% CI) for log transformed hsCRP</b>				
<i>Maternal prenatal</i>				
Sugar sweetened beverages	526			
. Quartile 1		0.0 (ref)	0.0 (ref)	0.0 (ref)
. Quartile 2		0.01 (-0.39, 0.42)	-0.07 (-0.46, 0.33)	-0.09 (-0.46, 0.28)
. Quartile 3		0.40 (0.01, 0.79)	0.26 (-0.12, 0.65)	0.18 (-0.17, 0.54)
. Quartile 4		0.21 (-0.18, 0.60)	-0.05 (-0.44, 0.34)	-0.13 (-0.50, 0.24)
Juice	526			
. Quartile 1		0.0 (ref)	0.0 (ref)	0.0 (ref)
. Quartile 2		0.18 (-0.24, 0.59)	0.15 (-0.25, 0.55)	0.20 (-0.17, 0.58)
. Quartile 3		0.03 (-0.37, 0.43)	0.05 (-0.34, 0.44)	0.14 (-0.23, 0.50)
. Quartile 4		0.20 (-0.20, 0.59)	0.10 (-0.28, 0.49)	0.17 (-0.19, 0.53)
Total fructose	526			
. Quartile 1		0.0 (ref)	0.0 (ref)	0.0 (ref)
. Quartile 2		-0.47 (-0.87,-0.06)	-0.45 (-0.84,-0.05)	-0.47 (-0.84,-0.10)
. Quartile 3		0.03 (-0.36, 0.43)	-0.05 (-0.44, 0.33)	-0.07 (-0.44, 0.29)
. Quartile 4		-0.09 (-0.49, 0.32)	-0.17 (-0.57, 0.24)	-0.25 (-0.62, 0.13)
<i>Early childhood</i>				
Sugar sweetened beverages	469			
. Quartile 1		0.0 (ref)	0.0 (ref)	0.0 (ref)
. Quartile 2		0.00 (-0.44, 0.44)	-0.04 (-0.47, 0.38)	-0.06 (-0.46, 0.34)
. Quartile 3		0.39 (-0.03, 0.82)	0.19 (-0.23, 0.62)	0.23 (-0.17, 0.63)
. Quartile 4		0.47 (0.10, 0.84)	0.35 (-0.05, 0.74)	0.36 (-0.01, 0.74)
Juice	469			
. Quartile 1		0.0 (ref)	0.0 (ref)	0.0 (ref)
. Quartile 2		-0.05 (-0.42, 0.33)	0.01 (-0.36, 0.37)	0.07 (-0.27, 0.41)
. Quartile 3		0.16 (-0.30, 0.62)	0.05 (-0.40, 0.50)	-0.03 (-0.45, 0.39)
. Quartile 4		0.13 (-0.28, 0.55)	0.17 (-0.23, 0.57)	0.23 (-0.15, 0.61)
Total fructose	469			
. Quartile 1		0.0 (ref)	0.0 (ref)	0.0 (ref)
. Quartile 2		0.11 (-0.31, 0.52)	0.11 (-0.29, 0.51)	0.00 (-0.38, 0.37)
. Quartile 3		0.12 (-0.30, 0.55)	0.08 (-0.34, 0.49)	-0.08 (-0.47, 0.31)
. Quartile 4		0.27 (-0.13, 0.68)	0.18 (-0.21, 0.57)	0.11 (-0.26, 0.48)

**β (95% CI) for log transformed IL6**

<i>Maternal prenatal</i>			
Sugar sweetened beverages	504		
. Quartile 1		0.0 (ref)	0.0 (ref)
. Quartile 2		-0.06 (-0.27, 0.16)	-0.08 (-0.29, 0.14)
. Quartile 3		0.13 (-0.07, 0.34)	0.10 (-0.10, 0.30)
. Quartile 4		0.09 (-0.12, 0.30)	0.03 (-0.19, 0.24)
Juice	504		
. Quartile 1		0.0 (ref)	0.0 (ref)
. Quartile 2		0.11 (-0.11, 0.33)	0.11 (-0.12, 0.33)
. Quartile 3		0.04 (-0.17, 0.25)	0.06 (-0.15, 0.27)
. Quartile 4		0.16 (-0.05, 0.37)	0.13 (-0.08, 0.34)
Total fructose	504		
. Quartile 1			
. Quartile 2		-0.02 (-0.23, 0.20)	-0.01 (-0.23, 0.20)
. Quartile 3		0.11 (-0.09, 0.32)	0.06 (-0.15, 0.27)
. Quartile 4		0.03 (-0.19, 0.25)	0.00 (-0.22, 0.22)
<i>Early childhood</i>			
Sugar sweetened beverages	450		
. Quartile 1		0.0 (ref)	0.0 (ref)
. Quartile 2		-0.03 (-0.26, 0.21)	-0.05 (-0.29, 0.18)
. Quartile 3		0.14 (-0.09, 0.36)	0.07 (-0.16, 0.31)
. Quartile 4		0.11 (-0.09, 0.31)	0.08 (-0.14, 0.29)
Juice	450		
. Quartile 1		0.0 (ref)	0.0 (ref)
. Quartile 2		0.08 (-0.12, 0.28)	0.07 (-0.13, 0.27)
. Quartile 3		0.06 (-0.18, 0.30)	-0.03 (-0.27, 0.22)
. Quartile 4		0.04 (-0.18, 0.26)	0.00 (-0.22, 0.22)
Total fructose	450		
. Quartile 1		0.0 (ref)	0.0 (ref)
. Quartile 2		0.11 (-0.11, 0.34)	0.12 (-0.11, 0.34)
. Quartile 3		0.03 (-0.19, 0.26)	0.00 (-0.22, 0.23)
. Quartile 4		0.09 (-0.12, 0.31)	0.05 (-0.16, 0.26)

**β (95% CI) for log transformed sTNFR2**

<i>Maternal prenatal</i>			
Sugar sweetened beverages	504		
. Quartile 1		0.0 (ref)	0.0 (ref)
. Quartile 2		-0.03 (-0.09, 0.02)	-0.03 (-0.09, 0.02)
. Quartile 3		-0.01 (-0.06, 0.04)	-0.01 (-0.07, 0.04)
. Quartile 4		0.00 (-0.06, 0.05)	0.01 (-0.05, 0.06)

Juice	504			
. Quartile 1		0.0 (ref)	0.0 (ref)	0.0 (ref)
. Quartile 2		-0.03 (-0.08, 0.03)	-0.03 (-0.09, 0.03)	-0.02 (-0.08, 0.03)
. Quartile 3		-0.02 (-0.08, 0.03)	-0.02 (-0.07, 0.04)	-0.01 (-0.07, 0.04)
. Quartile 4		0.03 (-0.03, 0.08)	0.03 (-0.03, 0.08)	0.03 (-0.02, 0.09)
Total fructose	504			
. Quartile 1		0.0 (ref)	0.0 (ref)	0.0 (ref)
. Quartile 2		-0.02 (-0.08, 0.03)	-0.02 (-0.07, 0.04)	-0.02 (-0.07, 0.04)
. Quartile 3		-0.03 (-0.09, 0.02)	-0.04 (-0.09, 0.02)	-0.04 (-0.09, 0.02)
. Quartile 4		-0.01 (-0.06, 0.05)	0.00 (-0.06, 0.05)	-0.01 (-0.06, 0.05)
<i>Early childhood</i>				
Sugar sweetened beverages	450			
. Quartile 1		0.0 (ref)	0.0 (ref)	0.0 (ref)
. Quartile 2		0.01 (-0.05, 0.07)	0.02 (-0.04, 0.08)	0.02 (-0.04, 0.08)
. Quartile 3		-0.04 (-0.10, 0.02)	-0.03 (-0.09, 0.04)	-0.02 (-0.09, 0.04)
. Quartile 4		0.01 (-0.04, 0.06)	0.02 (-0.03, 0.08)	0.03 (-0.03, 0.08)
Juice	450			
. Quartile 1		0.0 (ref)	0.0 (ref)	0.0 (ref)
. Quartile 2		0.00 (-0.05, 0.05)	-0.01 (-0.06, 0.05)	0.00 (-0.05, 0.05)
. Quartile 3		0.00 (-0.06, 0.06)	0.00 (-0.06, 0.06)	0.00 (-0.07, 0.06)
. Quartile 4		0.01 (-0.04, 0.07)	0.00 (-0.05, 0.06)	0.01 (-0.05, 0.07)
Total fructose	450			
. Quartile 1		0.0 (ref)	0.0 (ref)	0.0 (ref)
. Quartile 2		0.01 (-0.04, 0.07)	0.02 (-0.04, 0.08)	0.01 (-0.05, 0.07)
. Quartile 3		0.04 (-0.02, 0.09)	0.04 (-0.02, 0.10)	0.03 (-0.03, 0.09)
. Quartile 4		-0.01 (-0.07, 0.04)	-0.01 (-0.07, 0.04)	-0.01 (-0.07, 0.04)

Model 0. Unadjusted

Model 1. Adjusted for maternal education, smoking during pregnancy, and pre-pregnancy body mass index; household income; and child age, sex, and race/ethnicity.

Early childhood exposures additionally adjusted for mother's sugar sweetened beverage intake (1<sup>st</sup> and 2<sup>nd</sup> trimester average).

Model 2. Model 1 additionally adjusted for child body mass index z-score in mid-childhood.

**Figure E1.** Distribution of reported intake of fructose-rich beverages in mothers and children in Project Viva (N=1068)

