

Supplemental Table 1. Adjusted Mean Shifts in Age at Pubertal Onset (Months, 95% CIs) by Quartiles of Wet-Weight Serum OCPs Comparing Primary Wet-Weight Model with Sensitivity Analysis Additionally Adjusted for Maternal Age at Menarche in 350 Russian Boys

	G2+ (n=322)				TV > 3 mL (n=322)			
	Primary Model ^a		Sensitivity Model ^b		Primary Model ^c		Sensitivity Model ^d	
	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value
HCB^e								
Q1	REF		REF		REF		REF	
Q2	-1.83 (-8.71, 5.06)	0.60	-2.54 (-9.33, 4.25)	0.46	3.01 (-3.16, 9.18)	0.34	2.33 (-3.77, 8.43)	0.45
Q3	5.69 (-1.22, 12.60)	0.11	4.34 (-2.51, 11.19)	0.21	7.84 (1.64, 14.04)	0.01	6.75 (0.59, 12.90)	0.03
Q4	-2.99 (-10.01, 4.04)	0.40	-3.80 (-10.73, 3.14)	0.28	4.93 (-1.32, 11.18)	0.12	4.16 (-2.01, 10.34)	0.19
<i>p for trend</i>		0.83		0.96		0.05		0.09
β-HCH^f								
Q1	REF		REF		REF		REF	
Q2	2.12 (-4.86, 9.10)	0.55	2.41 (-4.45, 9.27)	0.49	-0.88 (-7.16, 5.40)	0.78	-0.65 (-6.83, 5.54)	0.84
Q3	1.06 (-5.96, 8.08)	0.77	-0.09 (-7.02, 6.85)	0.98	1.47 (-4.84, 7.78)	0.65	0.62 (-5.61, 6.84)	0.85
Q4	3.91 (-3.11, 10.94)	0.27	3.50 (-3.40, 10.41)	0.32	1.21 (-5.15, 7.56)	0.71	0.85 (-5.40, 7.10)	0.79
<i>p for trend</i>		0.35		0.47		0.56		0.71
p,p'-DDE^g								
Q1	REF		REF		REF		REF	
Q2	2.30 (-4.65, 9.25)	0.51	1.98 (-4.87, 8.83)	0.57	1.04 (-5.21, 7.30)	0.74	0.79 (-5.36, 6.95)	0.80
Q3	1.33 (-5.65, 8.30)	0.71	1.73 (-5.14, 8.60)	0.62	1.01 (-5.27, 7.30)	0.75	1.40 (-4.78, 7.59)	0.66
Q4	5.96 (-1.30, 13.21)	0.11	5.13 (-2.03, 12.30)	0.16	3.37 (-3.20, 9.94)	0.31	2.65 (-3.82, 9.13)	0.42
<i>p for trend</i>		0.16		0.20		0.35		0.41

^aG2+ primary model adjusted for baseline covariates: boys' total serum lipids, birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels; missing birth weight (n=1), macronutrients (n=3)

^bG2+ sensitivity model adjusted for baseline covariates: boys' total serum lipids, birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, maternal age at menarche; missing birth weight (n=1), macronutrients (n=3), maternal age at menarche (n=26)

^cTV > 3 mL primary model adjusted for baseline covariates: boys' total serum lipids, birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels; missing birth weight (n=1), macronutrients (n=3)

^dTV > 3 mL sensitivity model adjusted for baseline covariates: boys' total serum lipids, birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, maternal age at menarche; missing boy's birth weight (n=1), macronutrients (n=3), maternal age at menarche (n=26)

^eHCB wet-weight quartiles (Q1-Q4, pg/g serum): Q1: 169-516; Q2: 517-751; Q3: 752-1,156; Q4: 1,157-15,482

^fβ-HCH wet-weight quartiles (Q1-Q4, pg/g serum): Q1: 209-567; Q2: 568-814; Q3: 815-1,294; Q4: 1,295-13,732

^gp,p'-DDE wet-weight quartiles (Q1-Q4, pg/g serum): Q1: 261-907; Q2: 908-1,406; Q3: 1,407-2,327; Q4: 2,328-41,301

Supplemental Table 2. Adjusted Mean Shifts of Age at Pubertal Onset (Months, 95% CIs) Comparing Primary Wet-Weight Model with Alternative Analysis using Lipid-Normalized Measures in 350 Russian Boys

	G2+ (n=346)				TV > 3 mL (n=346)				P2+ (n=344)			
	Wet-Weight Model ^a		Lipid-Normalized Model ^b		Wet-Weight Model ^c		Lipid-Normalized Model ^d		Wet-Weight Model ^e		Lipid-Normalized Model ^f	
	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value
HCB^{g,h}												
Q1	REF		REF		REF		REF		REF		REF	
Q2	-0.68 (-7.45, 6.08)	0.84	1.61 (-5.18, 8.41)	0.64	3.56 (-2.57, 9.70)	0.25	4.10 (-2.01, 10.21)	0.19	-0.08 (-5.77, 5.60)	0.82	2.80 (-2.81, 8.40)	0.33
Q3	6.11 (-0.66, 12.88)	0.08	5.58 (-1.29, 12.45)	0.11	7.87 (1.73, 14.02)	0.01	6.82 (0.67, 12.98)	0.03	4.65 (-1.04, 10.34)	0.11	8.97 (3.33, 14.60)	0.002
Q4	-2.72 (-9.55, 4.10)	0.43	0.72 (-6.22, 7.66)	0.84	4.73 (-1.42, 10.88)	0.13	7.03 (0.82, 13.24)	0.03	4.59 (-1.13, 10.31)	0.12	5.20 (-0.50, 10.89)	0.07
<i>p for trend</i>		0.93		0.57		0.06		0.02		0.04		0.02
β-HCH^{i,j}												
Q1	REF		REF		REF		REF		REF		REF	
Q2	2.64 (-4.20, 9.47)	0.45	-0.07 (-6.93, 6.78)	0.98	-0.05 (-6.29, 6.19)	0.99	2.55 (-3.64, 8.74)	0.42	-1.69 (-7.47, 4.09)	0.57	3.15 (-2.62, 8.92)	0.28
Q3	1.91 (-4.88, 8.69)	0.58	2.36 (-4.48, 9.20)	0.50	1.79 (-4.38, 7.96)	0.57	-0.25 (-6.42, 5.92)	0.94	3.43 (-2.33, 9.19)	0.24	3.86 (-1.89, 9.60)	0.19
Q4	4.07 (-2.78, 10.92)	0.24	2.38 (-4.51, 9.26)	0.50	1.35 (-4.91, 7.62)	0.67	2.16 (-4.09, 8.41)	0.50	-1.33 (-7.18, 4.51)	0.65	0.28 (-5.55, 6.12)	0.92
<i>p for trend</i>		0.30		0.39		0.56		0.72		0.91		0.86
DDE^{k,l}												
Q1	REF		REF		REF		REF		REF		REF	
Q2	-0.08 (-6.82, 6.66)	0.98	0.86 (-5.84, 7.56)	0.80	-0.19 (-6.32, 5.95)	0.95	-0.17 (-6.28, 5.93)	0.96	3.85 (-1.88, 9.58)	0.19	2.68 (-3.06, 8.41)	0.36
Q3	-0.20 (-6.96, 6.55)	0.95	-1.29 (-8.05, 5.46)	0.71	-0.44 (-6.61, 5.73)	0.89	-1.97 (-8.13, 4.19)	0.53	3.99 (-1.74, 9.72)	0.17	2.00 (-3.72, 7.73)	0.49
Q4	4.89 (-2.05, 11.83)	0.17	6.54 (-0.33, 13.41)	0.06	3.31 (-3.05, 9.66)	0.31	3.68 (-2.61, 9.98)	0.25	3.33 (-2.55, 9.21)	0.27	2.56 (-3.32, 8.45)	0.39
<i>p for trend</i>		0.20		0.12		0.36		0.38		0.28		0.45

^aG2+ wet-weight model adjusted for baseline covariates: boys' total serum lipids, birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels; missing birth weight (n=1), macronutrients (n=3)

^bG2+ lipid-normalized model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels; missing birth weight (n=1), macronutrients (n=3)

^cTV > 3 mL wet-weight model adjusted for baseline covariates: boys' total serum lipids, birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels; missing birth weight (n=1), macronutrients (n=3)

^dTV > 3 mL lipid-normalized model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels; missing birth weight (n=1), macronutrients (n=3)

^eP2+ wet-weight model adjusted for baseline covariates: boys' total serum lipids, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, maternal age at birth, household income; missing macronutrients (n=3), household income (n=1), maternal age at birth (n=2)

^fP2+ lipid-normalized model adjusted for baseline covariates: boys' macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, maternal age at birth, household income; missing macronutrients (n=3), household income (n=1), maternal at birth (n=2)

^gHCB wet-weight quartiles (Q1-Q4, pg/g serum): Q1: 169-516; Q2: 517-751; Q3: 752-1,156; Q4: 1,157-15,482

^hHCB lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 31-105; Q2: 106-158; Q3: 159-246; Q4: 247-2,660

ⁱβ-HCH wet-weight quartiles (Q1-Q4, pg/g serum): Q1: 209-567; Q2: 568-814; Q3: 815-1,294; Q4: 1,295-13,732

^jβ-HCH lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 39-115; Q2: 116-168; Q3: 169-269; Q4: 270-2,860

1^k*p,p'*-DDE wet-weight quartiles (Q1-Q4, pg/g serum): Q1: 261-907; Q2: 908-1,406; Q3: 1,407-2,327; Q4: 2,328-41,301

2^k*p,p'*-DDE lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 48-189; Q2: 190-292; Q3: 293-493; Q4: 494-9,370

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Supplemental Table 3. Adjusted Mean Shifts in Age at Pubertal Onset (Months, 95% CIs) by Quartiles of Lipid-Normalized Serum OCPs Comparing Lipid-Normalized Model with Sensitivity Analysis Additionally Adjusted for Baseline BMI Categories and Height Z-scores in 350 Russian Boys

	G2+ (n=346)				TV > 3 mL (n=346)				P2+ (n=344)			
	Lipid-Normalized Model ^a		Sensitivity Model ^b		Lipid-Normalized Model ^c		Sensitivity Model ^d		Lipid-Normalized Model ^e		Sensitivity Model ^f	
	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value
HCB^g												
Q1	REF		REF		REF		REF		REF		REF	
Q2	1.61 (-5.18, 8.41)	0.64	0.76 (-5.72, 7.25)	0.82	4.10 (-2.01, 10.21)	0.19	3.20 (-2.80, 9.20)	0.30	2.80 (-2.81, 8.40)	0.33	1.88 (-3.71, 7.48)	0.51
Q3	5.58 (-1.29, 12.45)	0.11	3.40 (-3.44, 10.24)	0.33	6.82 (0.67, 12.98)	0.03	5.38 (-0.92, 11.69)	0.09	8.97 (3.33, 14.60)	0.002	7.24 (1.35, 13.13)	0.02
Q4	0.72 (-6.22, 7.66)	0.84	-0.97 (-7.78, 5.83)	0.78	7.03 (0.82, 13.24)	0.03	5.70 (-0.56, 11.95)	0.07	5.20 (-0.50, 10.89)	0.07	3.54 (-2.33, 9.41)	0.24
<i>p for trend</i>		0.57		0.93		0.02		0.06		0.02		0.11
β-HCH^h												
Q1	REF		REF		REF		REF		REF		REF	
Q2	-0.07 (-6.93, 6.78)	0.98	0.12 (-6.44, 6.68)	0.97	2.55 (-3.64, 8.74)	0.42	1.92 (-4.16, 8.00)	0.54	3.15 (-2.62, 8.92)	0.28	2.01 (-3.78, 7.79)	0.50
Q3	2.36 (-4.48, 9.20)	0.50	1.04 (-5.81, 7.89)	0.77	-0.25 (-6.42, 5.92)	0.94	-2.38 (-8.73, 3.98)	0.46	3.86 (-1.89, 9.60)	0.19	1.59 (-4.43, 7.61)	0.60
Q4	2.31 (-4.51, 9.26)	0.50	-0.20 (-7.14, 6.73)	0.95	2.16 (-4.09, 8.41)	0.50	-0.81 (-7.28, 5.67)	0.81	0.28 (-5.55, 6.12)	0.92	-3.38 (-9.57, 2.82)	0.29
<i>p for trend</i>		0.39		0.99		0.72		0.54		0.86		0.27
p,p'-DDEⁱ												
Q1	REF		REF		REF		REF		REF		REF	
Q2	0.86 (-5.84, 7.56)	0.80	0.13 (-6.54, 6.80)	0.97	-0.17 (-6.28, 5.93)	0.96	-1.67 (-7.87, 4.53)	0.60	2.68 (-3.06, 8.41)	0.36	1.31 (-4.53, 7.15)	0.66
Q3	-1.29 (-8.05, 5.46)	0.71	-1.72 (-8.47, 5.02)	0.71	-1.97 (-8.13, 4.19)	0.53	-3.59 (-9.87, 2.70)	0.26	2.00 (-3.72, 7.73)	0.49	0.67 (-5.20, 6.54)	0.82
Q4	6.54 (-0.33, 13.41)	0.06	2.09 (-4.98, 9.16)	0.56	3.68 (-2.61, 9.98)	0.25	-0.82 (-7.43, 5.80)	0.81	2.56 (-3.32, 8.45)	0.39	-0.90 (-7.06, 5.26)	0.78
<i>p for trend</i>		0.12		0.70		0.38		0.68		0.45		0.73

^aG2+ lipid-normalized model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein),

^bblood lead levels; missing birth weight (n=1), macronutrients (n=3)

^bG2+ sensitivity model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, WHO BMI z-score, WHO height z-score; missing birth weight (n=1), macronutrients (n=3)

^cTV > 3 mL lipid-normalized model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels; missing birth weight (n=1), macronutrients (n=3)

^dTV > 3 mL sensitivity model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, WHO BMI z-score, WHO height z-score; missing birth weight (n=1), macronutrients (n=3)

^eP2+ lipid-normalized model adjusted for baseline covariates: boys' macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, maternal age at birth, household income; missing macronutrients (n=3), household income (n=1), maternal age at birth (n=2)

^fP2+ sensitivity model adjusted for baseline covariates: boys' macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, maternal age at birth, household income, WHO BMI z-score, WHO height z-score; missing macronutrients (n=3), household income (n=1), maternal age at birth (n=2)

^gHCB lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 31-105; Q2: 106-158; Q3: 159-246; Q4: 247-2,660

^hβ-HCH lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 39-115; Q2: 116.-168; Q3: 169-269; Q4: 270-2,860

ⁱp,p'-DDE lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 48-189; Q2: 190-292; Q3: 293-493; Q4: 494-9,370

Supplemental Table 4. Adjusted Mean Shifts in Age at Pubertal Onset (Months, 95% CIs) by Quartiles of Lipid-Normalized Serum OCPs Comparing Lipid-Normalized Model with Sensitivity Analysis Additionally Adjusted for Maternal Age at Menarche in 350 Russian Boys

	G2+ (n=322)				TV > 3 mL (n=322)			
	Lipid-Normalized Model ^a		Sensitivity Model ^b		Lipid-Normalized Model ^c		Sensitivity Model ^d	
	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value	Mean Shift (months) and 95% CI	p-value
⁹ HCB ^e								
Q1	REF		REF		REF		REF	
Q2	0.71 (-6.21, 7.63)	0.84	-0.13 (-6.95, 6.70)	0.97	4.20 (-1.95, 10.35)	0.18	3.45 (-2.63, 9.52)	0.27
Q3	4.54 (-2.52, 11.61)	0.21	3.52 (-3.46, 10.50)	0.32	6.50 (0.25, 12.76)	0.04	5.72 (-0.46, 11.91)	0.07
Q4	0.66 (-6.52, 7.85)	0.86	-0.37 (-7.47, 6.72)	0.92	7.68 (1.34, 14.02)	0.02	6.74 (0.46, 13.02)	0.04
<i>p for trend</i>		0.59		0.80		0.01		0.03
¹⁵ β-HCH ^f								
Q1	REF		REF		REF		REF	
Q2	-0.50 (-7.48, 6.48)	0.89	0.18 (-6.70, 7.06)	0.96	1.10 (-5.14, 7.33)	0.73	1.78 (-4.36, 7.91)	0.57
Q3	2.38 (-4.63, 9.39)	0.51	1.94 (-4.95, 8.84)	0.58	-0.37 (-6.63, 5.89)	0.91	-0.66 (-6.80, 5.49)	0.83
Q4	1.93 (-5.13, 8.99)	0.59	1.60 (-5.34, 8.55)	0.65	1.46 (-4.89, 7.81)	0.65	1.18 (-5.05, 7.41)	0.71
<i>p for trend</i>		0.45		0.56		0.78		0.91
²¹ <i>p,p'</i> -DDE ^g								
Q1	REF		REF		REF		REF	
Q2	1.27 (-5.67, 8.22)	0.72	1.98 (-4.89, 8.85)	0.57	-0.80 (-7.06, 5.46)	0.80	-0.09 (-6.27, 6.09)	0.98
Q3	-0.25 (-7.14, 6.64)	0.94	0.55 (-6.26, 7.36)	0.87	-0.85 (-7.07, 5.36)	0.79	-0.09 (-6.23, 6.05)	0.98
Q4	6.91 (-0.24, 14.05)	0.06	6.36 (-0.69, 13.41)	0.08	3.11 (-3.36, 9.58)	0.35	2.66 (-3.71, 9.04)	0.41
<i>p for trend</i>		0.11		0.13		0.40		0.46

²⁸G2+ lipid-normalized model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein),

²⁹blood lead levels; missing birth weight (n=1), macronutrients (n=3)

³⁰G2+ sensitivity model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, maternal age at menarche; missing birth weight (n=1), macronutrients (n=3), maternal age at menarche (n=26)

³²TV > 3 mL lipid-normalized model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels; missing birth weight (n=1), macronutrients (n=3)

³⁴TV > 3 mL sensitivity model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, maternal age at menarche; missing birth weight (n=1), macronutrients (n=3), maternal age at menarche (n=26)

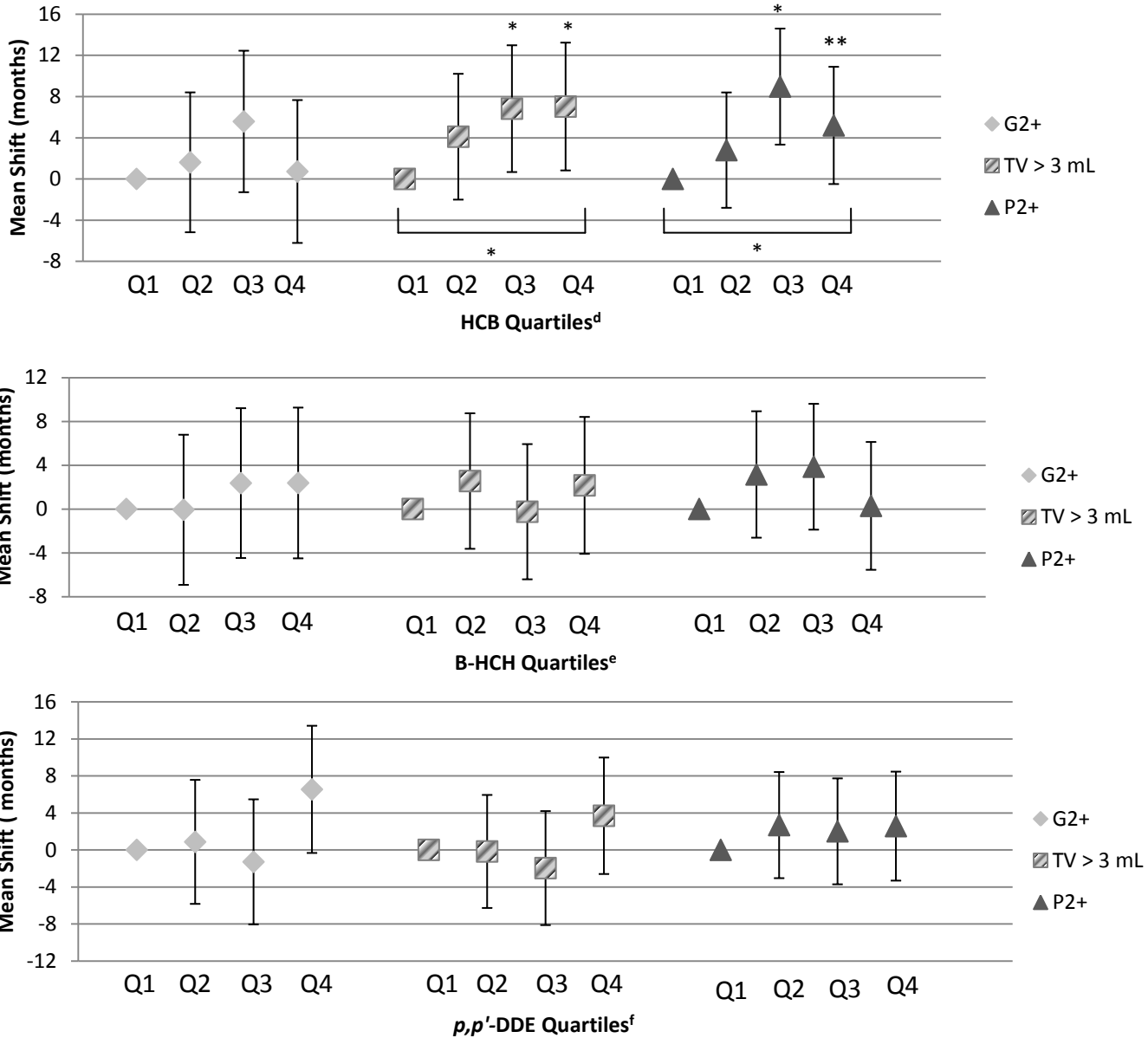
³⁷HCB lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 31-105; Q2: 106-158; Q3: 159-246; Q4: 247-2,660

³⁸β-HCH lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 39-115; Q2: 116.-168; Q3: 169-269; Q4: 270-2,860

³⁹*p,p'*-DDE lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 48-189; Q2: 190-292; Q3: 293-493; Q4: 494-9,370

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Supplemental Figure 1. Adjusted Mean Shifts in Age at Pubertal Onset (Months, 95% CIs) by Quartiles of Lipid-Normalized OCPs^{a,b,c}



*p ≤ 0.05

**p ≤ 0.10

Shift in months is relative to Q1 (reference)

^aG2+ lipid-normalized model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels; missing birth weight (n=1), macronutrients (n=3)

^bTV > 3 mL lipid-normalized model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels; missing birth weight (n=1), macronutrients (n=3)

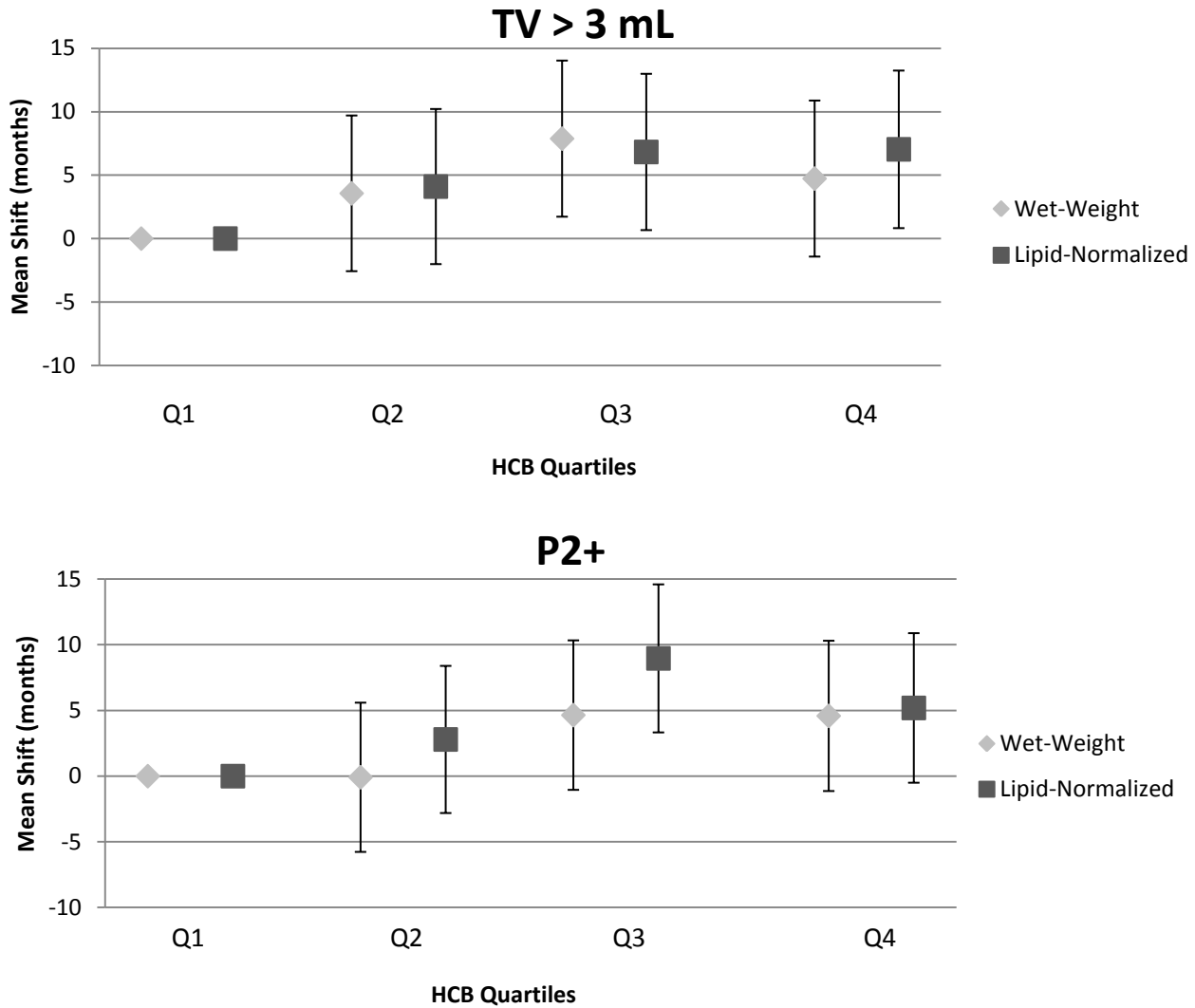
^cP2+ lipid-normalized model adjusted for baseline covariates: boys' macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, maternal age at birth, household income; missing macronutrients (n=3), household income (n=1), maternal age at birth (n=2)

^dHCB lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 31-105; Q2: 106-158; Q3: 159-246; Q4: 247-2,660

^eβ-HCH lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 39-115; Q2: 116.-168; Q3: 169-269; Q4: 270-2,860

^fp,p'-DDE lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 48-189; Q2: 190-292; Q3: 293-493; Q4: 494-9,370

Supplemental Figure 2. Adjusted Mean Shifts in Age at Pubertal Onset (Months, 95% CIs) by Wet-Weight and Lipid-Normalized HCB Concentrations^{a,b,c,d,e,f}



Shift in months is relative to Q1 (reference)

^a TV > 3 wet-weight model adjusted for baseline covariates: boys' total serum lipids, birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels; missing birth weight (n=1), macronutrients (n=3)

^b TV > 3 mL lipid-normalized model adjusted for baseline covariates: boys' birth weight, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels; missing birth weight (n=1), macronutrients (n=3)

^c P2+ wet-weight model adjusted for baseline covariates: boys' total serum lipids, macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, maternal age at birth, household income; missing macronutrients (n=3), household income (n=1), maternal age at birth (n=2)

^d P2+ lipid-normalized model adjusted for baseline covariates: boys' macronutrients (total caloric intake, percent calories from dietary carbohydrates, fat, and protein), blood lead levels, maternal age at birth, household income; missing macronutrients (n=3), household income (n=1), maternal age at birth (n=2)

^e HCB wet-weight quartiles (Q1-Q4, pg/g serum): Q1: 169-516; Q2: 517-751; Q3: 752-1,156; Q4: 1,157-15,482

^f HCB lipid-normalized quartiles (Q1-Q4, ng/g lipid): Q1: 31-105; Q2: 106-158; Q3: 159-246; Q4: 247-2,660