Supplemental Material

Characterizing Racial Disparities in the Associations Between Early Life Phthalate Exposure and Child Cognition

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eTable 1. Study Sample Characteristics of Mother-Child Dyads With Follow-Up at Age 5 and/or 8 Years by Child Race,
According to Covariates in the Full a Cohort Sample Compared to the Analytic Sample, Stratified by Race: The HOME Study
(2003-2006)

	Full Sa	mple ^b]	Black	White		
	Analytic	Full	Analytic	Full	Analytic	Full	
	Sample	Sample	Sample	Sample	Sample	Sample	
Variable	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	
Overall	253 (100)	389 (100)	90 (36)	123 (32)	145 (57)	242 (62)	
Maternal Age							
<25 years	57 (23)	96 (25)	45 (50)	65 (53)	8 (5)	24 (10)	
25 - <35 years	154 (61)	231 (59)	40 (44)	48 (39)	104 (72)	169 (70)	
35+ years	42 (17)	62 (16)	5 (6)	10 (8)	33 (23)	49 (20)	
Maternal Education							
High School or less	62 (25)	95 (25)	51 (57)	67 (57)	7 (5)	12 (5)	
Some College	71 (28)	93 (24)	31 (34)	38 (32)	37 (26)	50 (21)	
Completed College	120 (47)	196 (51)	8 (9)	17 (14)	101 (70)	165 (70)	
Annual Income							
<\$30,000	82 (32)	124 (32)	70 (78)	95 (77)	9 (6)	23 (10)	
\$30,000 - \$75,000	77 (30)	121 (31)	17 (19)	22 (18)	55 (38)	93 (38)	
≥\$75,000	94 (37)	144 (37)	3 (3)	6 (5)	81 (56)	126 (52)	
Maternal Smoking ^d							
Unexposed	78 (31)	89 (31)	5 (6)	5 (5)	66 (56)	76 (45)	
Second-Hand Smoking	116 (46)	163 (58)	40 (44)	67 (72)	71 (49)	88 (52)	
Active Smoking	29 (11)	31 (11)	45 (50)	21 (23)	8 (6)	5 (3)	
Parity							
0	114 (45)	173 (45)	29 (32)	39 (32)	73 (50)	117 (49)	
1	79 (31)	126 (33)	29 (32)	43 (36)	46 (32)	79 (33)	
2 +	60 (24)	94 (24)	32 (36)	43 (36)	26 (18)	48 (20)	
Pre-pregnancy BMI (kg/m2) ^e							
Normal/Underweight <25	125 (49)	142 (50)	32 (36)	32 (34)	83 (57)	98 (58)	
Overweight $\geq 25 - \langle 30 \rangle$	65 (26)	69 (24)	23 (25)	32 (34)	38 (26)	42 (25)	
Obese≥30	63 (25)	65 (23)	35 (39)	36 (39)	24 (17)	25 (15)	
Child Sex							
Male	113 (45)	181 (46)	33 (37)	45 (37)	69 (48)	122 (50)	
Female	140 (55)	208 (53)	57 (63)	78 (63)	76 (52)	120 (50)	

BMI: Body Mass Index, HOME Study: Health Outcomes and Measures of the Environment Study

^a Note that values may not sum to the full sample size due to missing information from subsets of the original full sample, percentages reflect columns (e.g., race) within each study sample characteristic

^b Child race category Other for the analytic sample includes Hispanic (n=6, 33%), Native American (n=5, 28%), Asian and Pacific Islander (n=7, 38%)

^c Maternal race/ethnicity category Other for the analytic sample includes Hispanic (n=7, 39%), Native American (n=2, 11%), Asian and Pacific Islander (n=3, 17%), Multiple/other race (n=6, 33%)

^a Maternal smoking during pregnancy estimated based on maternal serum cotinine concentrations during pregnancy. Unexposed smoking exposure defined as having serum cotinine concentrations <0.015 ng/mL, second-hand smoking exposure is defined by serum cotinine concentrations between 0.015 and <3.00 ng/mL, and active smoking includes those with serum cotinine concentrations ≥ 3.00 ng/mL.

^e Pre-pregnancy BMI (kg/m2) was defined as normal/underweight ≤ 25 , overweight $\geq 25 < 30$, and obese ≥ 30

	Non-Hispanic Black ((N=90)	Non-Hispanic White (N	=145)	Percent Difference Between Non-Hispanic		
Phthalate					Black and Non-His	panic White (95% CI)	
Metabolite	Gestation ^a	Childhood ^c	Gestation	Childhood	Gestation	Childhood	
MCPP	1.8 (1.8, 3.5)	11.0 (10.0, 12.4)	2.4 (1.76, 3.5)	12.2 (10.4, 14.2)	7.2 (6.2, 8.3)	9.1 (8.6, 9.6)	
MiBP	5.8 (3.7, 7.8)	17.4 (15.7, 19.9)	4.4 (2.51, 7.2)	15.6 (14.8, 19.7)	13 (11, 16)	10 (10, 11)	
MBzP	13.0 (7.4, 20.7)	36.7 (28.5, 48.7)	7.8 (4.68, 14.0)	27.3 (21.7, 37.2)	16 (13, 21)	13 (12, 15)	
MBP	25.0 (16.4, 43.7)	31.7 (27.5, 37.8)	23.9 (16.63, 35.1)	32.1 (26.8, 37.8)	10 (9.1, 13)	10 (9.3, 11)	
MCOP ^d		33.9 (30.9, 36.8)		35.4 (31.6, 38.3)		9.6 (9.2, 10)	
MCNP ^d		10.8 (9.8, 12.5)		11.2 (9.8, 12.3)		9.8 (9.3, 10)	
ΣDEHP ^e	57.6 (39.3, 113.9)	197.9 (180.5, 223.4)	89.0 (52.8, 214.9)	194.1 (173.1, 213.2)	6.3 (5.0, 8.0)	10 (9.8, 101)	
MEP	138.3 (79.8, 397.8)	135.4 (104.3, 204.3)	122.28 (63.4, 242.1)	66.7 (50.9, 96.3)	15 (11, 19)	21 (19, 24)	

eTable 2. Univariate Statistics (median, Q1, Q3) of Error Corrected Repeated Maternal and Childhood Urinary Concentrations of Phthalate Metabolites (ng/mL)

Q1: 1st quartile, Q3: 3rd quartile

MCPP, mono(3- carboxypropyl) phthalate; MiBP, mono-isobutyl phthalate; MBzP, monobenzyl phthalate; MBP, mono-n-butyl phthalate; MCOP, monocarboxyoctyl phthalate; MCNP, monocarboxynonyl phthalate; ΣDEHP, summary di(2-ethylhexyl) phthalate metabolite measure; MEP, monoethyl phthalate

^a Repeated maternal urinary phthalate metabolites assessed at 16 and 26 weeks gestation

^c Repeated child urinary phthalate metabolites assessed at age 1, 2, 3, 4, 5, and 8 years, and average childhood values were based on error corrected average trajectories from ages 1,2,3,4 and 5. Note, phthalate concentrations at age 8 years were not included in average childhood values, and the main outcome of average child FSIQ includes values obtained at age 5 and 8 years.

^d We did not measure MCNP or MCOP concentrations from maternal urine samples, as the method for these biomarkers had not yet been developed at the time of analysis ^e Concentrations of Σ DEHP (in ng/mL) were calculated using the following formula: Σ DEHP (ng/mL)=[MECPP (ng/mL) /278 g/mol + MEHHP (ng/mL) /294.3 g/mol + MEOHP (ng/mL) /292.2 g/mol + MEHP (ng/mL) /278.3 g/mol] *278 g/mol.

									Vis	it							
Phthalate		16 W	eeks	26 We	eks	1 Yea	r	2 Yea	rs	3 Yea	rs	4 Yea	rs	5 Yea	rs	8 Yea	ars
Metabolite	LOD	Ν	% <lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	Ν	% <lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	Ν	% <lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	Ν	% <lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	Ν	% <lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""></lod<></td></lod<></td></lod<></td></lod<>	Ν	% <lod< td=""><td>Ν</td><td>%<lod< td=""><td>Ν</td><td>%<lod< td=""></lod<></td></lod<></td></lod<>	Ν	% <lod< td=""><td>Ν</td><td>%<lod< td=""></lod<></td></lod<>	Ν	% <lod< td=""></lod<>
MCPP	0.20	252	1.6%	245	3.3%	213	0.0%	188	0.0%	196	1.5%	166	0.6%	202	0.0%	220	0.0%
MiBP ^a	0.30	252	2.8%	245	5.4%							166	0.0%	202	0.5%	220	0.0%
MBzP	0.22	252	1.2%	245	1.6%	213	0.5%	188	0.5%	196	0.5%	166	0.0%	202	0.0%	220	0.5%
MBP ^a	0.60	252	0.0%	245	0.0%							166	0.0%	202	1.5%	220	0.9%
MCOP ^b	0.50					213	0.0%	188	0.5%	196	1.5%	166	0.0%	202	1.5%	220	0.0%
MCNP ^b	0.50					213	1.4%	188	0.0%	196	4.1%	166	0.0%	202	0.0%	220	0.0%
ΣDEHP °																	
MEP	0.53	252	0.0%	245	0.0%	213	0.0%	188	0.0%	196	0.0%	166	0.0%	202	0.0%	220	0.0%

eTable 3. Limits of Detection and Percent of Participants Below the Value of the Limit of Detection for Repeated Maternal and Childhood Urinary Concentrations of Phthalate Metabolites (ng/mL)

LOD: Limit of detection

MCPP, mono(3- carboxypropyl) phthalate; MiBP, mono-isobutyl phthalate; MBzP, monobenzyl phthalate; MBP, mono-n-butyl phthalate; MCOP, monocarboxyoctyl phthalate; MCNP, monocarboxynonyl phthalate; ΣDEHP, summary di(2-ethylhexyl) phthalate metabolite measure; MEP, monoethyl phthalate

^a We did not measure MiBP or MBP concentrations from childhood urinary samples at ages 1, 2, and 3 years

^b We did not measure MCNP or MCOP concentrations from maternal urine samples, as the method for these biomarkers had not yet been developed at the time of analysis ^b Concentrations of Σ DEHP (in ng/mL) were calculated using the following formula: Σ DEHP (ng/mL)=[MECPP (ng/mL)/278 g/mol + MEHHP (ng/mL)/294.3 g/mol + MEOHP (ng/mL)/292.2 g/mol + MEHP (ng/mL)/278.3 g/mol] *278 g/mol.

	Visit	N (%) by Race		Direct Effect		Indirect Effect	
Metabolite		Black	White	β (95% CI)	P-value	β (95% CI)	P-value
MBzP	1 Year	68 (76)	127 (88)	-8.1 (-13.9, -2.3)	< 0.01	0.7 (-0.2, 2.2)	0.15
	2 Years	45 (50)	126 (87)	-7.0 (-12.8, -1.4)	0.01	0.4 (-0.7, 1.8)	0.45
	3 Years	51 (57)	124 (86)	-9.2 (-15.2, -3.4)	< 0.01	0.6 (-0.5, 2.1)	0.27
	4 Years	48 (53)	105 (72)	-8.8 (-14.7, -2.9)	< 0.01	0.3 (-0.5, 1.4)	0.50
	5 Years	67 (74)	120 (83)	-8.8 (-14.7, -3.0)	< 0.01	0.3 (-0.3, 1.3)	0.36
	8 Years	58 (72)	107 (85)	-10.0 (-15.9, -4.4)	< 0.01	0.3 (-0.6, 1.5)	0.55
MEP	1 Year	68 (76)	127 (88)	-5.8 (-11.6, 0.3)	0.06	-1.3 (-3.7, 0.8)	0.18
	2 Years	45 (50)	126 (87)	-4.9 (-11.5, 1.6)	0.15	-1.9 (-4.7, 0.7)	0.16
	3 Years	51 (57)	124 (86)	-7.9 (-14.4, -1.3)	0.01	-0.7 (-3.2, 1.9)	0.58
	4 Years	48 (53)	105 (72)	-8.1 (-14.6, -1.3)	0.02	-0.5 (-3.2, 2.2)	0.71
	5 Years	67 (74)	120 (83)	-7.0 (-13.2, -1.0	0.03	-1.1 (-3.6, 1.1)	0.34
	8 Years	58 (72)	107 (85)	-8.2 (-14.9, -1.8)	0.01	-1.5 (-3.5, 0.3)	0.14

eTable 4. Adjusted ^a direct and indirect effects of the associations between race and child FSIQ at ages 5 or 8 per 10-fold increase in gestational and childhood urinary phthalate metabolite concentrations

MBzP, monobenzyl phthalate; MEP, monoethyl phthalate

^a Adjusted for maternal age (continuous), pre-pregnancy BMI (continuous), income (continuous), log-10 transformed average gestational cotinine concentration (continuous), and maternal FSIQ scores (continuous)

	Time Period	N (%) by	Race	Average Adjusted Total Effect (95% CI)	Direct Effect (95% CI)	P-value	Indirect Effect (95% CI)	P-value
		Black	White					
Primary Analysis								
5 5	Gestation	90 (100)	145 (100)	-7.0 (-12.1, -1.8)	-7.0 (-12.1, -2.0)	< 0.01	0.1(-0.4, 0.8)	0.78
	1 Year	68 (76)	127 (88)	-7.0 (-12.1, -1.8)	-5.8 (-11.6, 0.3)	0.06	-1.3 (-3.7, 0.8)	0.18
	2 Years	45 (50)	126 (87)	-7.0 (-12.1, -1.8)	-4.9 (-11.5, 1.6)	0.15	-1.9 (-4.7, 0.7)	0.16
	3 Years	51 (57)	124 (86)	-7.0 (-12.1, -1.8)	-7.9 (-14.4, -1.3)	0.01	-0.7 (-3.2, 1.9)	0.58
	4 Years	48 (53)	105 (72)	-7.0 (-12.1, -1.8)	-8.1 (-14.6, -1.3)	0.02	-0.5 (-3.2, 2.2)	0.71
	5 Years	67 (74)	120 (83)	-7.0 (-12.1, -1.8)	-7.0 (-13.2, -1.0	0.03	-1.1 (-3.6, 1.1)	0.34
	8 Years	58 (72)	107 (85)	-9.6 (-15.5, -3.7)	-8.2 (-14.9, -1.8)	0.01	-1.5 (-3.5, 0.3)	0.14
Adjusted for child sex								
-	Gestation	90 (100)	145 (100)	-7.0 (-12.1, -1.9)	-7.0 (-12.2, -1.9)	0.01	0.1 (-0.4, 0.7)	0.79
	1 Year	68 (76)	127 (88)	-7.0 (-12.1, -1.9)	-6.0 (-12.0, 0.4)	0.07	-1.5 (-3.5, 0.4)	0.13
	2 Years	45 (50)	126 (87)	-7.0 (-12.1, -1.9)	-4.0 (-10.4, 2.6)	0.23	-2.2 (-5.1. 0.4)	0.09
	3 Years	51 (57)	124 (86)	-7.0 (-12.1, -1.9)	-6.9 (-13.3, -0.6)	0.03	-1.3 (-3.9, 1.2)	0.33
	4 Years	48 (53)	105 (72)	-7.0 (-12.1, -1.9)	-7.7 (-14.5, -1.0)	0.03	-0.7 (-3.6, 1.8)	0.65
	5 Years	67 (74)	120 (83)	-7.0 (-12.1, -1.9)	-6.8 (-12.7, -0.1)	0.02	-1.5 (-3.9, 0.8)	0.20
	8 Years	58 (72)	107 (85)	-9.6 (-15.5, -3.8)	-9.7 (-15.4, -3.8)	< 0.01	0.1 (-0.4, 0.8)	0.75
Adjusted for HOME scores ^b								
-	Gestation	90 (100)	145 (100)	-6.7 (-12.1, -1.3)	-6.8 (-12.8, -1.3)	0.02	0.1 (-0.4, 0.8)	0.76
	1 Year	68 (76)	127 (88)	-6.7 (-12.1, -1.3)	-5.6 (-11.7, 0.6)	0.08	-1.5 (-4.0, 0.7)	0.19
	2 Years	45 (50)	126 (87)	-6.7 (-12.1, -1.3)	-4.3 (11.4, 2.1)	0.22	-2.0 (-4.8, 0.6)	0.13
	3 Years	51 (57)	124 (86)	-6.7 (-12.1, -1.3)	-6.8 (-13.4, -0.2)	0.05	-0.9 (-3.7, 1.6)	0.49
	4 Years	48 (53)	105 (72)	-6.7 (-12.1, -1.3)	-4.8 (-12.4, 2.3)	0.19	-0.4 (-3.1, 2.3)	0.76
	5 Years	67 (74)	120 (83)	-6.7 (-12.1, -1.3)	-6.4 (-13.1, -0.2)	0.04	-1.3 (-3.7, 1.1)	0.33
	8 Years	58 (72)	107 (85)	-9.1 (-15.3, -2.9)	-9.2 (-15.5, -2.8)	< 0.01	0.1 (-0.4, 0.8)	0.70
Adjusted for neighborhood ocioeconomic position ^{c,d}								
*	Gestation	88 (100)	142 (100)	-6.1 (-11.7, -0.6)	-6.3 (-11.9, -1.0)	0.03	0.1 (-0.4, 0.7)	0.72
	1 Year	67 (76)	124 (87)	-6.1 (-11.7, -0.6)	-6.1 (-12.3, 0.3)	0.06	-0.9 (-2.9, 1.0)	0.35
	2 Years	45 (51)	123 (87)	-6.1 (-11.7, -0.6)	-4.1 (-10.6, 2.4)	0.21	-1.2 (-3.9,1.3)	0.32
	3 Years	50 (57)	121 (85)	-6.1 (-11.7, -0.6)	-8.6 (-15.7, -1.6)	< 0.01	-0.2 (-2.9, 2.7)	0.90
	4 Years	47 (53)	102 (72)	-6.1 (-11.7, -0.6)	-9.0 (-16.4, -1.9)	< 0.01	0.2 (-2.5, 2.9)	0.89
	5 Years	66 (75)	117 (82)	-6.1 (-11.7, -0.6)	-7.1 (-13.3, -0.8)	0.02	-0.5 (-2.6, 1.5)	0.63
	8 Years	58 (72)	107 (85)	-10.3 (-16.8, -3.7)	-9.2 (-16.0, -1.9)	0.01	-1.2 (-3.5, 0.5)	0.19

eTable 5. Adjusted ^a	associations between a	average child FSIQ	at ages 5 or 8 per	10-fold increase in	gestational and	childhood MEP	urinary p	hthalate
metabolite concentrat	tions							

Adjusted for blood lead levels ^e

	Gestation	90 (100)	145 (100)	-6.9 (-12.1, -1.6)	-7.0 (-12.3, -2.0)	< 0.01	0.12 (-0.5, 0.8)	0.68
	1 Year	62 (69)	118 (81)	-6.4 (-12.4, -0.4)	-4.7 (-11.5, 2.4)	0.16	-1.8 (-4.2, 0.2)	0.08
	2 Years	43 (48)	111 (77)	-6.3 (-12.7, 0.0)	-4.6 (-11.7, 2.6)	0.24	-2.2 (-5.4, 0.8)	0.16
	3 Years	47 (52)	105 (72)	-7.0 (-13.3, -0.8)	-7.8 (-14.6, -0.7)	0.03	-0.4 (-3.1, 2.2)	0.77
	4 Years	47 (52)	90 (62)	-7.8 (-14.4, -1.2)	-7.0 (-14.0, 0.6)	0.08	-1.1 (-4.5, 2.2)	0.51
	5 Years	61 (68)	98 (68)	-6.9 (-13.3, -0.4)	-5.7 (-12.4, 1.0)	0.12	-1.2 (-4.2, 1.5)	0.37
	8 Years	54 (67)	83 (66)	-7.7 (-14.0, -1.4)	-6.4 (-12.9, 0.4)	0.07	-1.4 (-3.9, 0.6)	0.19
Adjusted for parity								
5 I 5	Gestation	90 (100)	145 (100)	-6.5 (-11.7, -1.3)	-6.5 (-11.5, -1.28)	0.02	0.1 (-0.6, 0.9)	0.73
	1 Year	68 (76)	127 (88)	-6.5 (-11.7, -1.3)	-5.5 (-11.8, 0.5)	0.09	-1.5 (-3.9, 0.8)	0.19
	2 Years	45 (50)	126 (87)	-6.5 (-11.7, -1.3)	-4.3 (-10.5, 2.3)	0.20	-2.1 (-4.9, 0.3)	0.10
	3 Years	51 (57)	124 (86)	-6.5 (-11.7, -1.3)	-6.8 (-13.4, 0.1)	0.05	-1.0 (-4.0, 1.8)	0.46
	4 Years	48 (53)	105 (72)	-6.5 (-11.7, -1.3)	-7.4 (-14.0, -0.5)	0.04	-0.6 (-3.5, 2.2)	0.66
	5 Years	67 (74)	120 (83)	-6.5 (-11.7, -1.3)	-6.7 (-13.1, -0.8)	0.02	-1.2 (-3.7, 1.2)	0.35
	8 Years	58 (72)	107 (85)	-9.3 (-15.3, -3.4)	-9.4 (-15.0, -3.2)	< 0.01	0.12 (-0.5, 0.9)	0.71
Adjusted for maternal educational attainment ^f								
	Gestation	90 (100)	145 (100)	-6.3 (-11.5, -1.1)	-6.3 (-11.3, -1.3)	0.02	0.1 (-0.4, 0.7)	0.74
	1 Year	68 (76)	127 (88)	-6.3 (-11.5, -1.1)	-5.6 (-11.7, 0.6)	0.08	-1.0 (-3.0, 0.8)	0.26
	2 Years	45 (50)	126 (87)	-6.3 (-11.5, -1.1)	-4.2 (-10.7, 1.7)	0.19	-1.7 (-4.4, 0.9)	0.22
	3 Years	51 (57)	124 (86)	-6.3 (-11.5, -1.1)	-6.9 (-13.7, -0.5)	0.04	-0.6 (-3.0, 1.8)	0.64
	4 Years	48 (53)	105 (72)	-6.3 (-11.5, -1.1)	-7.0 (-13.8, -0.6)	0.03	-0.2 (-2.7, 2.4)	0.85
	5 Years	67 (74)	120 (83)	-6.3 (-11.5, -1.1)	-6.8 (-12.7, -1.0)	0.03	-0.9 (-3.3, 1.2)	0.41
	8 Years	58 (72)	107 (85)	-8.8 (-14.7, -2.8)	-8.6 (-14.5, -2.6)	0.01	0.1 (-0.5, 0.9)	0.78
Fully adjusted model g, h								
	Gestation	88 (100)	142 (100)	-5.2 (-11.2, 0.9)	-5.4 (-11.3, 0.4)	0.07	0.02 (-0.4, 1.1)	0.66
	1 Year	63 (72)	114 (80)	-5.1 (-11.8, 1.7)	-4.5 (-11.9, 3.2)	0.25	-1.4 (-4.4, 1.1)	0.31
	2 Years	43 (49)	107 (75)	-3.4 (-10.5, 3.7)	-2.2 (-9.8, 5.7)	0.57	-1.6 (-5.2, 1.6)	0.30
	3 Years	45 (51)	102 (72)	-4.7 (-11.7, 2.4)	-5.9 (-14.0, 2.5)	0.16	-0.2 (-2.9, 2.7)	0.88
	4 Years	45 (51)	87 (61)	-5.5 (-13.2, 2.2)	-4.7 (-12.8, 4.0)	0.26	-0.2 (-3.4, 3.2)	0.90
	5 Years	59 (67)	95 (67)	-6.1 (-13.3, 1.1)	-5.2 (-12.6, 2.6)	0.19	-0.9 (-4.0, 2.0)	0.54
	8 Years	71 (90)	105 (85)	-7.7 (-15.2, -0.3)	-6.6 (-14.9, 1.1)	0.09	-1.2(-3.5, 0.7)	0.25

FSIQ: Full Scale IQ, HOME Scores: Home Observation fort Measurement of the Environment

MEP, monoethyl phthalate

^a Adjusted for maternal age (continuous), pre-pregnancy BMI (continuous), income (continuous), log-10 transformed average gestational cotinine concentration (continuous), and maternal FSIQ scores (continuous)

^bAssessment of caregiving environment (Caldwell et al. 1978)

^e Neighborhood socioeconomic status was assessed using data from the 2000 U.S. Census (Diez Roux et al., 2001). For the census tract of each participant's residence at 20 weeks gestation, a z-score was calculated for the log transformed median household income; percent of households with interest, dividend, or rental income; log transformed median value of housing unit; percent of residents who completed high school; percent of residents who completed college; and percent of residents employed with executive, managerial, or professional occupations. The z-scores for each measure were summed and categorized into terciles, with lower scores representing lower neighborhood socioeconomic status (Diez Roux et al., 2001).

^d Note that neighborhood SES was only available for a subset of participants (n=230)

^e Maternal and childhood concentrations of blood lead levels have been log₁₀ transformed to satisfy normality assumptions

^fMaternal educational attainment was evaluated categorically based on the highest level of educational attainment (high school or less, some college, or completed college)

^g The fully adjusted model included all covariates from primary models: Adjusted for maternal age (continuous), pre-pregnancy BMI (continuous), income (continuous), log-10 transformed average gestational cotinine concentration (continuous), and maternal FSIQ scores (continuous), as well as all covariates considered in sensitivity analyses, including: child sex (boys v girls), HOME scores (continuous), socioeconomic position (terciles), log₁₀ transformed time varying blood lead levels (continuous), parity (continuous), and maternal educational attainment (high school or less, some college, or completed college) ^h Note that neighborhood SES was only available for a subset of participants (n=230)

eFigure 1. Flow Chart of Participant Selection to Final Sample Size

Total Eligible women	N = 1,263
	V
Enrolled	N = 468
	↓
Live, singleton births delivered	N = 389 - 106
Covariate information available	N = 283
	\checkmark
At least one measure of IQ at ages 5 or 8	N = 276
	\checkmark
At least one measure of phthalate metabolite concentration during gestation and childhood	N = 259
	↓
Final sample size	N = 253

eFigure 2: Directed Acyclic Graph used to Select Covariates in the Association Between Race and Child FSIQ Scores Through Maternal Urinary Phthalate Concentrations



eFigure 3: Directed Acyclic Graph used to Select Covariates in the Association Between Race and Child FSIQ Scores Through Childhood Urinary Phthalate Concentrations, Including all Covariates Assessed in Sensitivity Analyses





eFigure 4: Overview of mediation approach, distinguishing between total, controlled direct, and natural indirect effects