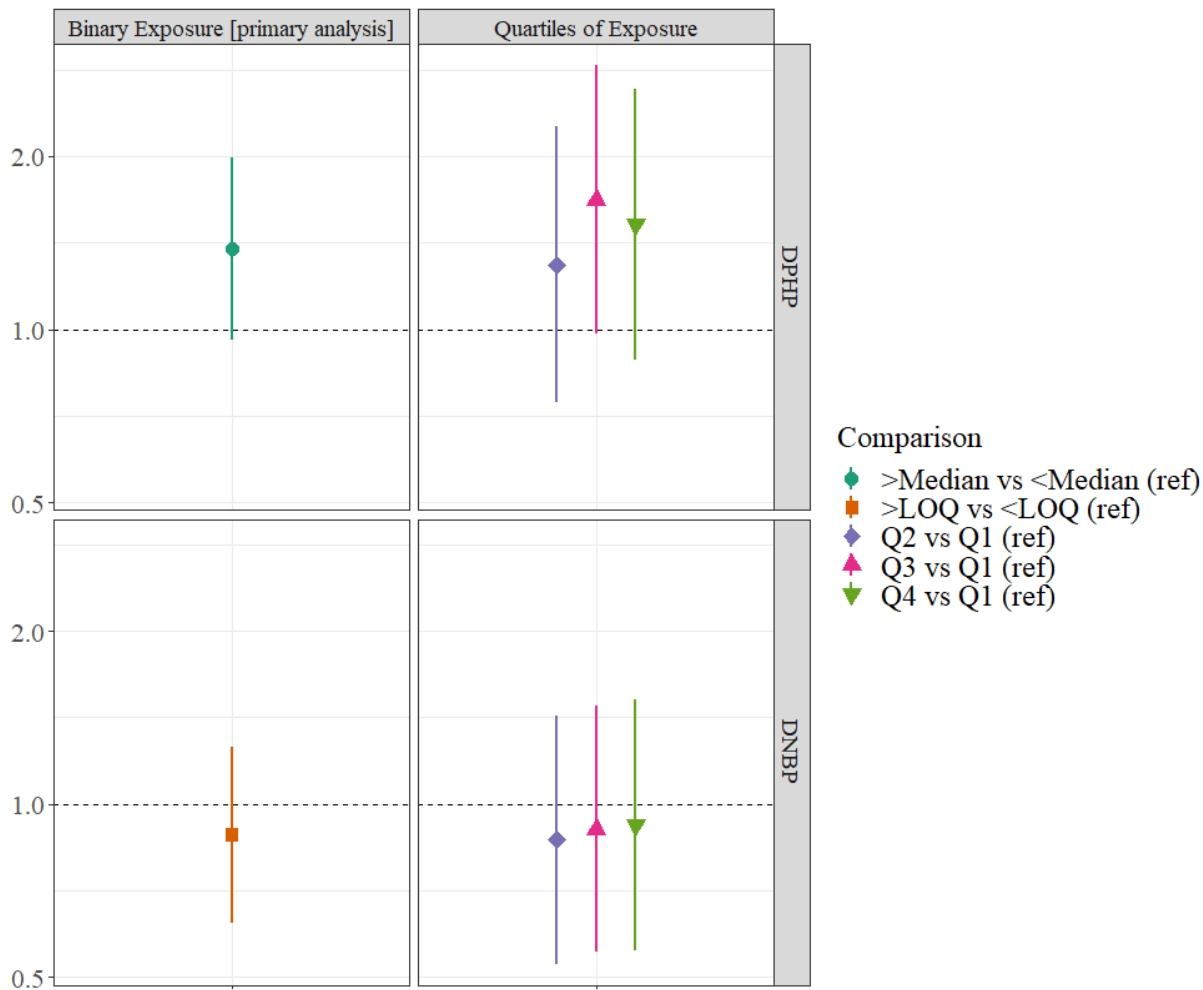


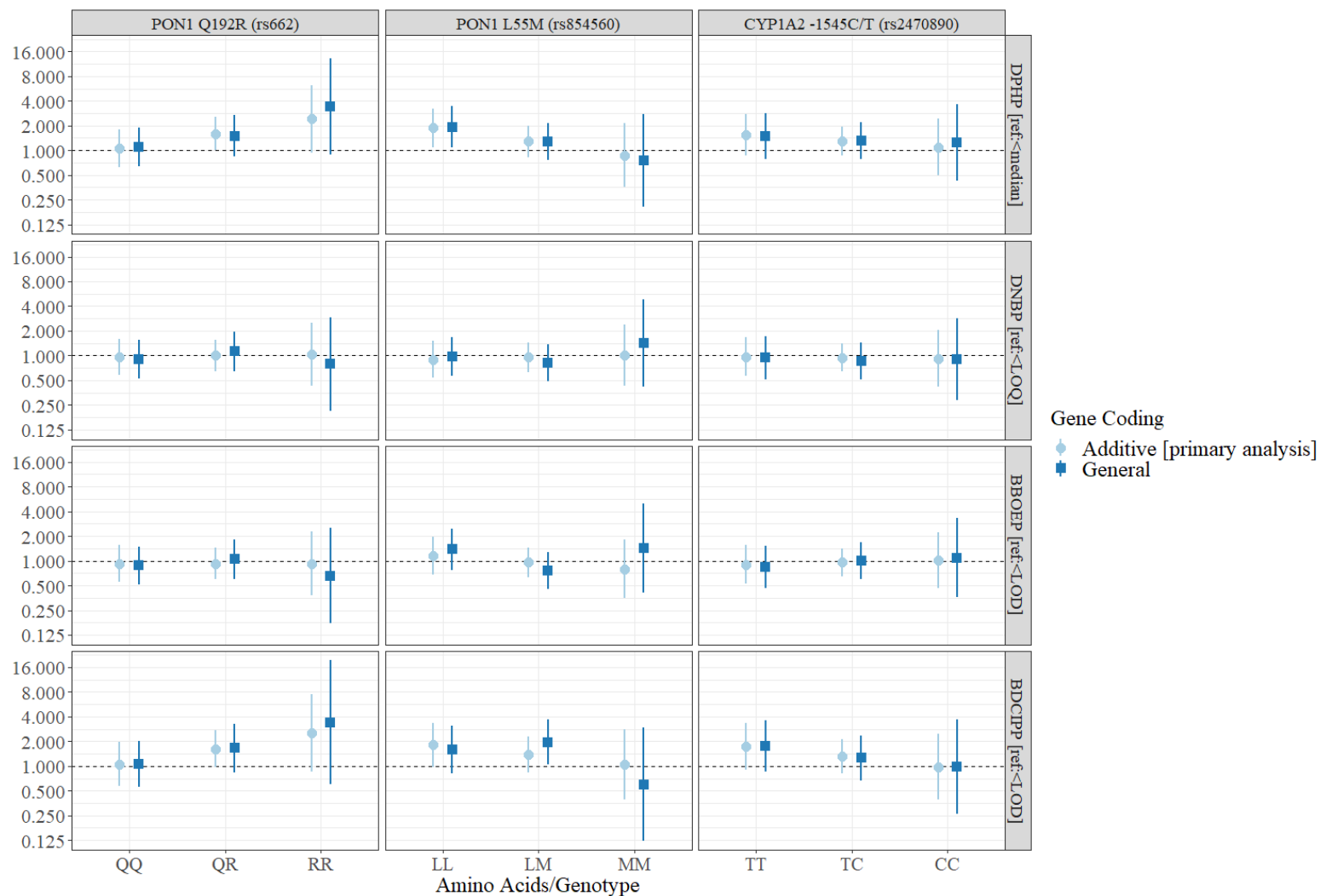
1. Supplemental material



Supplementary Figure 1 Risk ratios of attention-deficit hyperactivity disorder associated with increased organophosphate ester exposure based on binary classification (primary analysis) or quartiles, pooled across multiply imputed datasets (m=20; 295 cases; 555 sub-cohort).

Abbreviations:

Q1, 0-25th percentile; Q2, 25-50th percentile; Q3, 50-75th percentile; Q4, 75-100th percentile; DPHP, diphenyl phosphate; DNBP, di-n-butyl phosphate.



Supplementary Figure 2 Risk of attention-deficit hyperactivity disorder in children with prenatal organophosphate ester exposure above threshold relative to those below the threshold, stratified by amino acid/genotype coded with an additive (continuous) or general (categorical) model.

Abbreviations: DPHP, diphenyl phosphate; DNBP, di-n-butyl phosphate; BBOEP, bis(2-butoxyethyl) hydrogen phosphate; BDCIPP, bis(1,3-dichloro-2-propyl) phosphate; LOD, limit of detection; LOQ, limit of quantification.

Supplementary Table 1 Frequencies (%) of maternal and fetal amino acids/genotype by ADHD case and sub-cohort status.

Gene	SNPs (rs#)	Amino acids/ Genotype	Case group (N=295)		Sub-cohort (N=555)	
			Maternal gene	Fetal gene	Maternal gene	Fetal gene
<i>PONI</i>	Q192R (rs662)	Missing	19	122	17	127
		QQ	126 (46%)	75 (43%)	290 (54%)	238 (56%)
		QR	120 (43%)	81 (47%)	209 (39%)	161 (38%)
		RR	30 (11%)	17 (10%)	39 (7%)	29 (7%)
	L55M (rs854560)	Missing	14	122	19	127
		LL	125 (44%)	82 (47%)	216 (40%)	189 (44%)
		LM	127 (45%)	76 (44%)	256 (48%)	197 (46%)
	MM	29 (10%)	15 (9%)	64 (12%)	42 (10%)	
<i>CYP1A2</i>	-1545C/T (rs2470890)	Missing	18	121	16	129
		TT	112 (40%)	70 (40%)	216 (40%)	163 (38%)
		TC	122 (44%)	72 (41%)	255 (47%)	208 (49%)
		CC	43 (16%)	32 (18%)	68 (13%)	55 (13%)

Supplementary Table 2 Comparison of the median concentrations ($\mu\text{g/L}$) of urinary DPHP, BDCIPP, DNBP, and BBOEP observed among the control mothers in the current study with previous reports (specific gravity adjusted geometric mean in parenthesis)

Population	Author, year	N	Years	Location	Average age \pm SD (min-max)	Gestational weeks	DPHP	BDCIPP	DNBP	BBOEP
Pregnant women	Current study	555	2003-2008	Oslo, Norway	30.9 ± 4.22	17	0.45 (0.52)	<0.17 (0.19)	0.22 (0.25)	0.07 (0.08)
	(Romano et al. 2017)	59	2014-2015	RI, US	29.5 ± 4.5	12	0.86	1.09	.	.
	(Feng et al. 2016)	23	2015	Shanghai, China	(25-40)	28	1.06	1.39	.	.
	(Kosarac et al. 2016)	24	2010-2012	Ontario, Canada	(18-45)	2 nd trimester	0.83	1.58	.	.
	(Hoffman et al. 2017b)	349	2001-2006	NC, US	29.6	2-3 rd trimester	2.94	0.26	.	<0.08
	(Castorina et al. 2017)	310	1999-2000	CA, US	26 ± 5.2	24-30	0.77 (1.4)	1.02 (1.8)	.	.
Women Undergoing IVF cycles	(Carignan et al. 2017)	211	2005-2015	MA, US	35	.	0.79 (0.81)	0.69 (0.68)	.	.
Mothers from mother-child dyads	(Butt et al. 2016)	28	2015	CA, US	(18-)	.	0.80 (1.2)	1.90 (3.3)	.	.
	(Butt et al. 2014)	22	2013-2014	NJ, US	(18-)	.	(1.9)	(2.4)	.	.
	(Cequier et al. 2015)	48	2012	Norway	(32-56)	.	0.51 (0.61)	0.12 (0.15)	<0.12 (<0.12)	<0.18 (<0.18)
Females from NHANES	(Ospina et al. 2018)	2666	2013-2014	US	(6-)	.	0.89	0.82	0.24	.

Abbreviations:

DPHP, diphenyl phosphate; DNBP, di-n-butyl phosphate; BBOEP, bis(2-butoxyethyl) hydrogen phosphate; BDCIPP, bis(1,3-dichloro-2-propyl) phosphate; SD, standard deviation.