Electronic Supplementary Material (ESI) for Environmental Science: Processes & Impacts.

Supporting Information for

Association of Phthalate Exposure with Precocious and Delayed Pubertal Timing in Girls and Boys: A Systematic Review and Meta-Analysis

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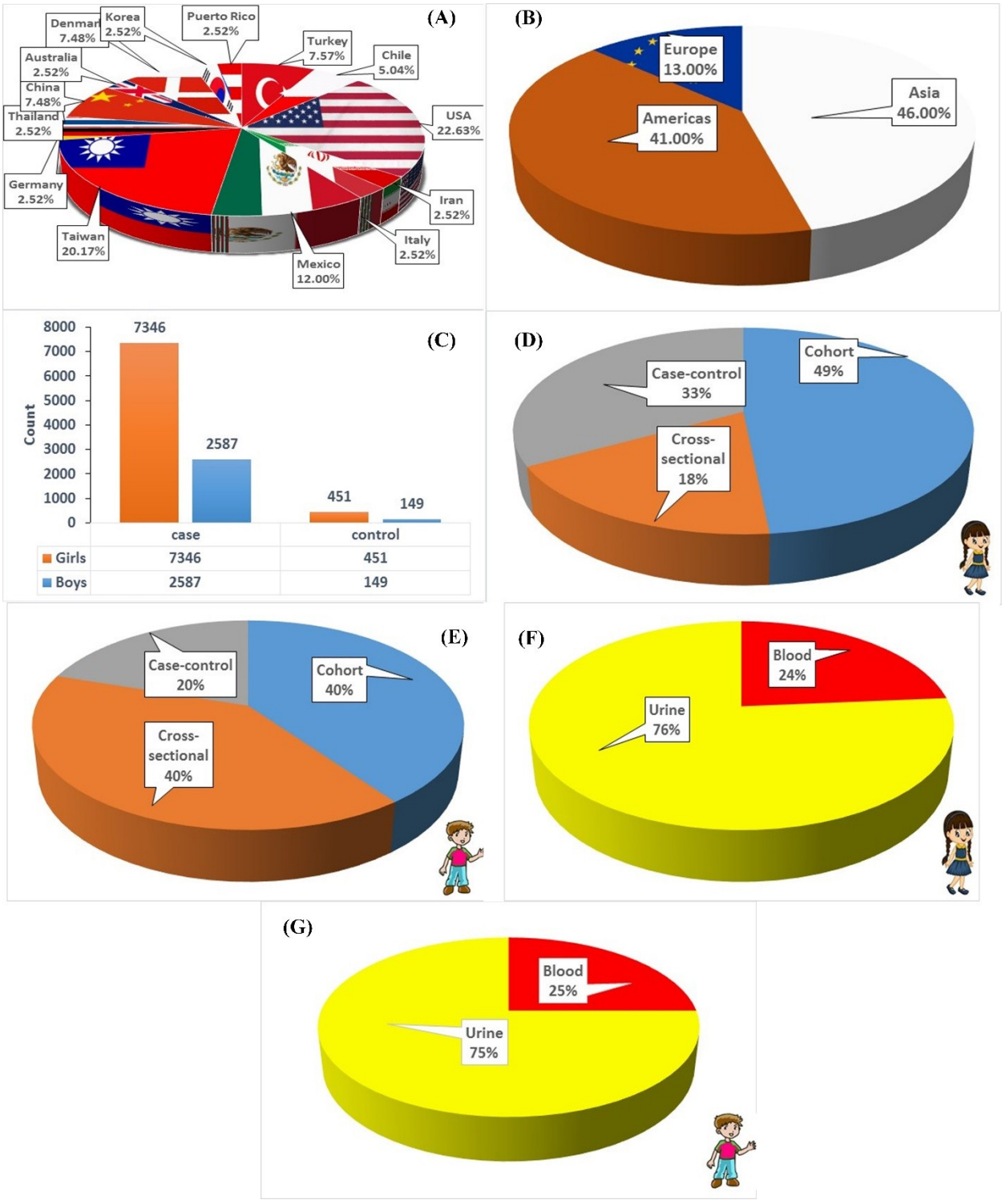

Figure S1. Statistical information about studies included in the current systematic review and meta-analysis, (A): Distribution of included studies in different countries, (B): Distribution of included studies in different continents, (C): Sample size in both gender and groups of case and control, (D): Distribution in the study design for pubertal timing in girls group, (E): Distribution in the study design for pubertal timing in boys group, (F): Distribution of performed studies on the test specimen for girl groups, (G): Distribution of performed studies on the test specimen for boy groups

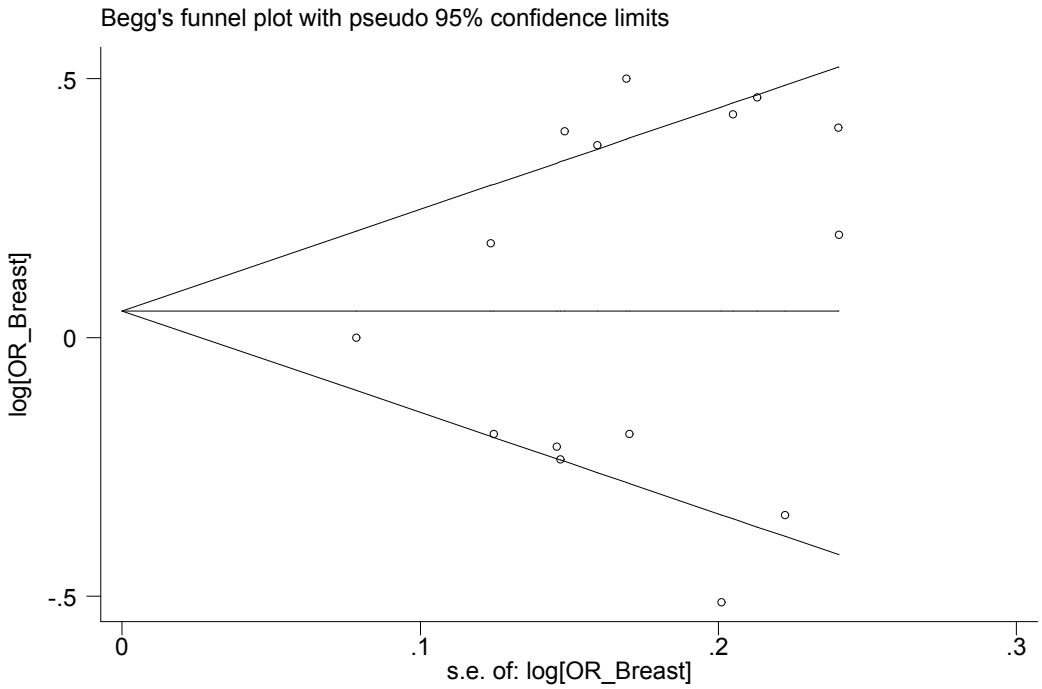

Figure S2, Funnel plot, using data in included papers between breast development in girls (Thelarche) and different phthalates

Table S1.Test(s) of heterogeneity:

	statistic	freedom	P-value	I-squared**	Tau-squared
MEP	7.71	2	0.021	74.1%	0.0289
MMP	1.75	2	0.416	0.0%	0.0000
MnBP	3.73	1	0.053	73.2%	0.2284
MEHP	9.27	2	0.010	78.4%	0.1086
MEHHP	0.05	1	0.822	0.0%	0.0000
MEOHP	0.06	1	0.809	0.0%	0.0000

** I-squared: the variation in ES attributable to heterogeneity)

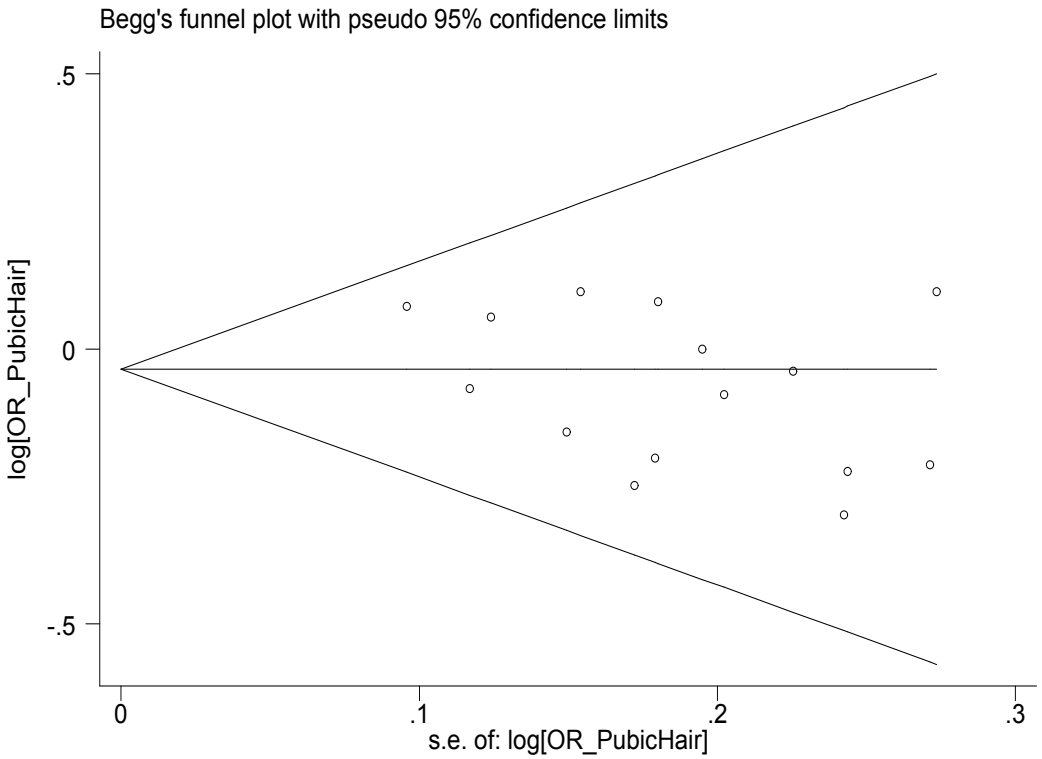

Figure S3, Funnel plot, using data in included papers between pubic-hair development in girls (Pubarche) and different phthalates

Table S2.Test(s) of heterogeneity:

	statistic	freedom	P-value	I-squared**	Tau-squared
MEP	3.34	2	0.189	40.1%	0.0103
MMP	0.29	2	0.866	0.0%	0.0000
MnBP	0.13	1	0.715	0.0%	0.0000
MEHP	1.83	2	0.400	0.0%	0.0000
MEHHP	0.91	1	0.340	0.0%	0.0000
MEOHP	1.02	1	0.312	2.2%	0.0009

** I-squared: the variation in ES attributable to heterogeneity)

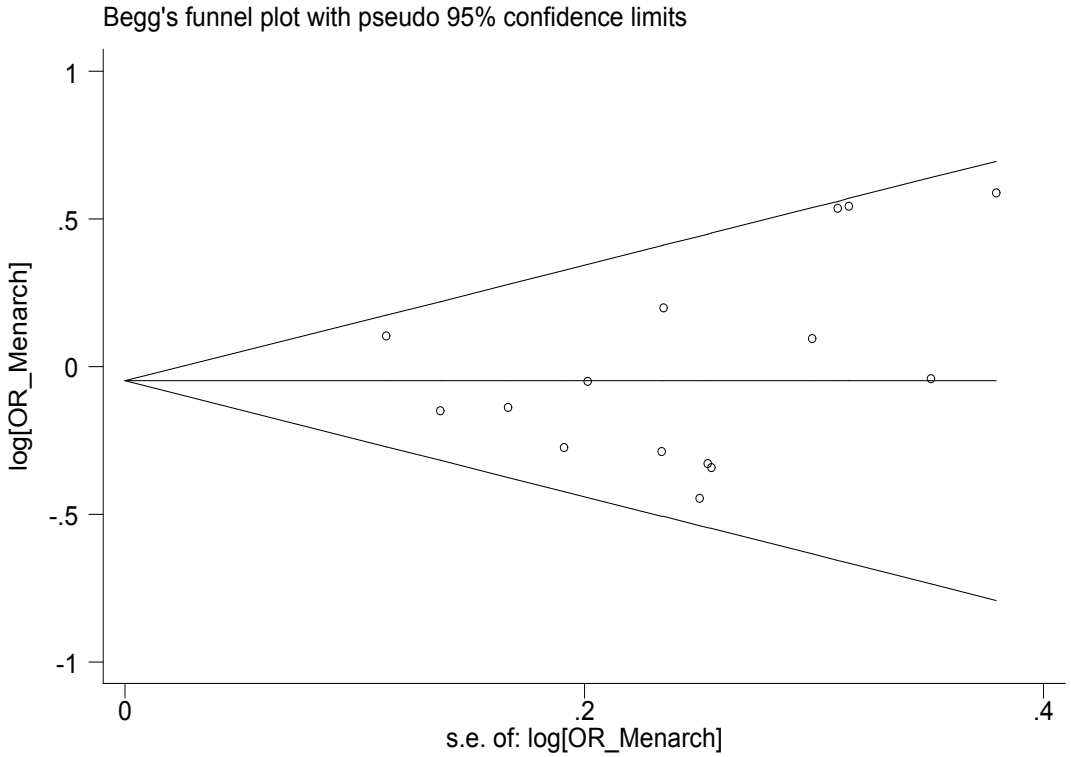

Figure S4, Funnel plot, using data in included papers between menarche time in girls and different phthalates

Table S3.Test(s) of heterogeneity:

	statistic	freedom	P-value	I-squared**	Tau-squared
MEP	5.18	2	0.075	61.4%	0.0344
MMP	0.47	2	0.792	0.0%	0.0000
MnBP	1.94	1	0.164	48.4%	0.2873
MEHP	2.10	2	0.349	5.0%	0.0022
MEHHP	2.69	1	0.101	62.8%	0.3140
MEOHP	2.62	1	0.105	61.8%	0.2850

** I-squared: the variation in ES attributable to heterogeneity)

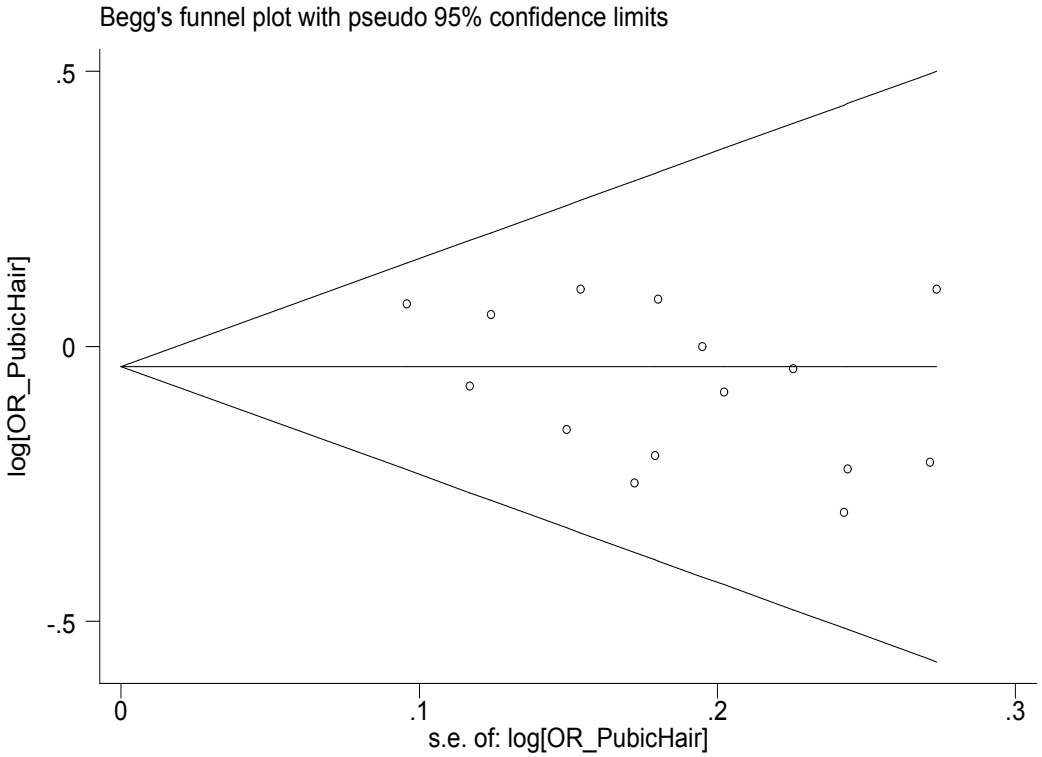

Figure S5, Funnel plot, using data in included papers between pubic-hair development in boys (Pubarche) and different phthalates

Table S4.Test(s) of heterogeneity:

	statistic	freedom	P-value	I-squared**	Tau-squared
MEP	1.88	2	0.391	0.0%	0.0000
MMP	14.59	3	0.002	79.4%	0.1288
MnBP	0.37	1	0.543	0.0%	0.0000
MEHP	4.23	2	0.121	52.7%	0.0296
MEHHP	0.99	1	0.319	0.0%	0.0000
MEOHP	1.35	1	0.244	26.2%	0.0209

** I-squared: the variation in ES attributable to heterogeneity)

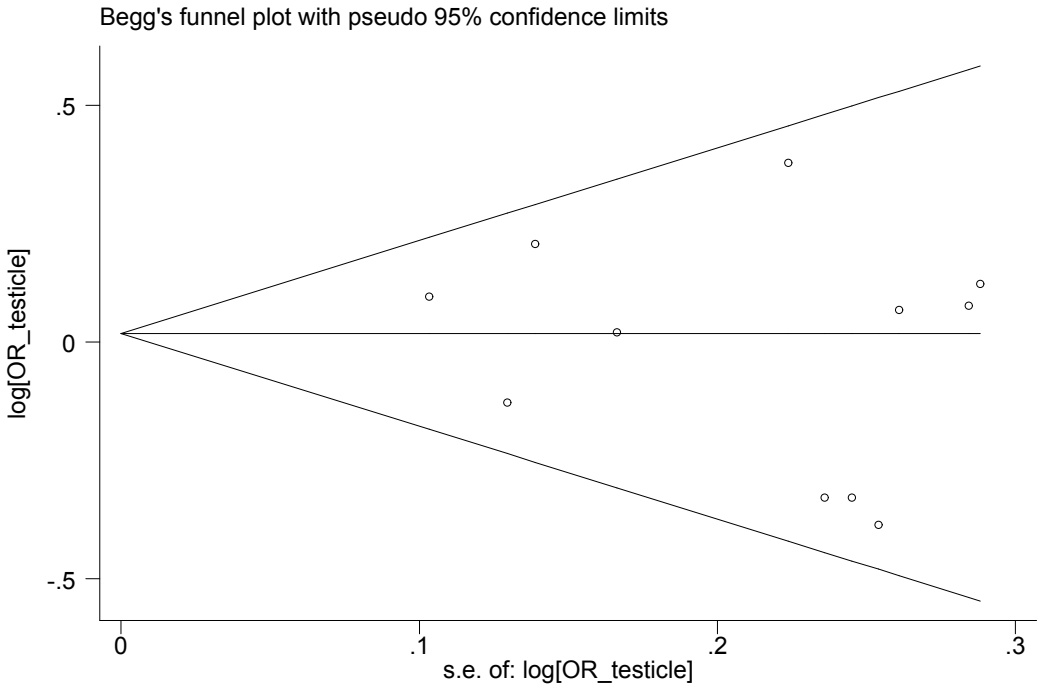

Figure S6, Funnel plot, using data in included papers between testicular volume in boys and different phthalates

Table S5.Test(s) of heterogeneity:

	statistic	freedom	P-value	I-squared**	Tau-squared
MEP	1.84	1	0.175	45.5%	0.0110
MMP	4.05	2	0.132	50.7%	0.0716
MEHP	0.73	1	0.392	0.0%	0.0000
MEHHP	1.17	1	0.280	14.5%	0.0116
MEOHP	1.15	1	0.283	13.1%	0.0110

** I-squared: the variation in ES attributable to heterogeneity)