

Supplementary Material

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Table S1: Questions used to evaluate respiratory and allergic outcomes that form part of the ISAAC-III questionnaire¹ unless indicated otherwise

Type of outcome	Outcome	Definition: A positive answer to the following questions:
Respiratory, asthma	Ever wheeze	Has your child <u>ever</u> had wheezing or whistling in the chest at any time in the past?
	Current wheeze*	Has your child had wheezing or whistling in the chest <u>in the past 12 months</u> ?
	Severity of asthma symptoms	How many attacks of wheezing has your child had <u>in the past 12 months</u> ?
	Severity of asthma symptoms	<u>In the past 12 months</u> , how often, on average, has your child's sleep been disturbed due to wheezing?
	Severity of asthma symptoms	<u>In the past 12 months</u> , has wheezing ever been severe enough to limit your child's speech to only one or two words at a time between breaths?
	Ever doctor-diagnosed asthma*	Has your child ever been diagnosed with asthma by a doctor? **
Respiratory, LRTI	Current dry cough at night*	In the past 12 months, has your child had a dry cough at night, apart from a cough associated with a cold or chest infection?
	Ever LRTI	Has your child <u>ever</u> been diagnosed with pneumonia or chest infections (bronchitis, bronchiolitis), at any point in their life? **
	Current LRTI*	Has your child presented any episodes of pneumonia or chest infection (bronchitis, bronchiolitis) <u>in the last 12 months</u> ? **
Allergic, Rhinitis	Ever nasal allergies (allergic rhinitis)	Has your child <u>ever</u> had a problem with sneezing, or a runny, or blocked nose when he/she DID NOT have a cold or the flu?
	Current nasal allergies	<u>In the past 12 months</u> , has your child had a problem with sneezing, or a runny, or blocked nose when he/she DID NOT have a cold or the flu?
	Current allergic rhinoconjunctivitis	<u>In the past 12 months</u> , has this nose problem been accompanied by itchy-watery eyes?
Allergic, Eczema	Ever itchy rash (symptoms of atopic eczema)	Has your child ever had an itchy rash which was coming and going for at least six months?
	Current itchy rash	Has your child had this itchy rash at any time in the past 12 months?
	Ever doctor-diagnosed eczema*	Has your child ever been diagnosed with, or said to have, eczema or skin allergy? **

Abbreviations: LRTI: lower respiratory tract infection

*Selected for epidemiological analysis

** Not part of ISAAC-III questionnaire

¹ Mallol J, Crane J, von Mutius E, *et al.* The International Study of Asthma and Allergies in Childhood (ISAAC) Phase Three: A global synthesis. *Allergol Immunopathol (Madr)* 2013;**41**:73–85. doi:10.1016/j.aller.2012.03.001

Table S2: Spearman correlation coefficients of respiratory and allergic outcomes.

Outcome	Ever doctor - diagnosed asthma	Current Dry Cough	Curre nt LRTI	Current Nasal Allergies (Rhinitis)	Current Itchy Rash (Atopic Eczema)	Ever doctor- diagnosed Eczema
Current wheeze	0.49	0.31	0.16	0.19	0.15	-0.04
Ever doctor - diagnosed Asthma		0.16	0.16	0.21	0.10	-0.02
Current Cough			0.18	0.35	0.10	0,02
Current LRTI				0.16	0.20	0.06
Current Nasal Allergies (Rhinitis)					0.05	0.02
Current itchy rash (Atopic Eczema)						0.21

Table S3: Spearman correlation coefficients of averaged maternal specific gravity-adjusted urinary pesticide metabolite concentrations during pregnant with current children's concentration.

Averaged prenatal concentration in Mother's	Current child concentrations							
	TCP	ETU	OHP	OHT	2,4-D	3PBA	DCCA	ΣPyrethroid*
TCP	0.07	0.05	0.06	-0.04	0.02	-0.03	-0.00	-0.03
ETU	0.10	0.12	0.06	-0.02	0.02	-0.03	-0.06	-0.04
OHP	0.13	0.01	0.27	-0.05	0.06	-0.03	-0.04	-0.04
OHT	0.07	0.11	-0.00	0.25	0.04	0.07	0.03	0.05
2,4-D	0.03	-0.11	-0.02	-0.17	0.20	-0.01	0.03	0.02
3PBA	0.13	0.00	-0.06	0.00	0.05	0.14	0.12	0.13
DCCA	0.17	-0.07	-0.00	-0.02	-0.01	0.06	0.06	0.06
Σ Pyrethroid*	0.16	-0.04	-0.03	-0.01	0.02	0.09	0.08	0.08

Abbreviations: TCP: 3,5,6 trichloro-2-pyridinol, ETU: Ethylenethiourea, OHP: Hydroxypyrimethanil, OHT: 5-hydroxythiabenzazole, 2,4-D: 2,4-Dichlorophenoxyacetic acid 3-PBA: 3-Phenoxybenzoic acid, DCCA: 3-(2,2-dichlorovinyl)-2,2-dimethyl-cyclopropane-1-carboxylic acid

*Σ Pyrethroid: Sum of PBA and DCCA

Table S4: Odds ratios adjusted for child's sex and maternal smoking during pregnancy for each **10-fold increase** in specific pesticide metabolite concentrations and childhood respiratory outcomes. ISA study at five years of age, Matina County, Costa Rica 2015-2016

	Current Wheeze (N = 62)			Ever doctor- diagnosed Asthma (N= 37)			Current Dry Cough (N= 118)			Current LRTI (N=15)		
	OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI	
<i>Prenatal metabolites* (n = 303)</i>												
TCP	1.09	0.41	2.76	0.81	0.22	2.58	0.93	0.41	2.05	2.29	0.43	9.47
ETU	0.88	0.26	2.73	0.42	0.08	1.74	1.40	0.53	3.80	0.30	0.02	2.76
OHP	0.99	0.63	1.53	0.97	0.55	1.65	1.04	0.72	1.49	0.97	0.41	2.07
OHT	0.89	0.63	1.22	0.86	0.56	1.28	1.15	0.89	1.50	0.80	0.39	1.44
2,4-D	1.40	0.67	2.78	0.41	0.12	1.19	0.92	0.48	1.70	1.02	0.21	3.35
3PBA	1.91	0.86	4.26	0.46	0.15	1.29	1.25	0.64	2.44	0.85	0.18	3.62
DCCA	1.02	0.47	2.20	0.35	0.12	0.93	0.78	0.41	1.47	1.55	0.38	6.23
∑ Pyrethroid**	1.32	0.58	2.99	0.33	0.11	0.96	0.96	0.49	1.90	1.26	0.27	5.41
<i>Child metabolites* (n = 293)</i>												
TCP	0.60	0.22	1.53	0.83	0.25	2.56	0.48	0.21	1.06	1.79	0.33	8.57
ETU	0.86	0.43	1.74	0.68	0.29	1.62	0.94	0.52	1.69	2.70	0.72	10.64
OHP	1.30	0.85	1.95	1.09	0.64	1.81	0.96	0.67	1.36	1.45	0.68	2.81
OHT	1.08	0.72	1.59	1.18	0.72	1.90	0.98	0.70	1.36	1.48	0.73	2.85
2,4-D	1.15	0.58	2.17	1.21	0.51	2.57	0.75	0.41	1.30	0.82	0.20	2.53
3PBA	1.84	0.96	3.62	2.17	0.96	5.07	1.36	0.79	2.34	3.81	1.13	13.68
DCCA	1.96	0.98	3.94	2.16	0.92	5.09	1.28	0.72	2.28	3.18	0.94	10.77
∑ Pyrethroid**	1.99	0.98	4.07	2.30	0.96	5.57	1.35	0.75	2.43	3.74	1.06	13.46

Abbreviations: OR: Odds ratios, CI: Confidence Intervals, TCP: 3,5,6 trichloro-2-pyridinol, ETU: Ethylene thiourea, OHP: Hydroxypyrimethanil, OHT: 5-hydroxythiabendazole, 2,4-D: 2,4-Dichlorophenoxyacetic acid 3-PBA: 3-Phenoxybenzoic acid, DCCA: 3-(2,2-dichlorovinyl)-2,2-dimethyl-cyclopropane-1-carboxylic acid

*Variables dichotomized at 75th percentile; Reference: Below 75th percentile

** ∑ Pyrethroid: Sum of PBA and DCCA

Table S5: Odds ratios adjusted for maternal smoking during pregnancy, child's sex of high ($\geq P75$) specific pesticide exposures and childhood respiratory outcomes, including both **prenatal and current exposures** in the same model. ISA study at five years of age. Matina County. Costa Rica 2015-2016

	Current Wheeze (N = 62)			Ever doctor- diagnosed Asthma (N= 37)			Current Dry Cough (N= 118)			Current LRTI (N=15)		
	OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI	
<i>Prenatal metabolites* (n = 303)</i>												
TCP	1.50	0.79	2.78	0.86	0.36	1.91	1.14	0.66	1.95	1.00	0.27	3.07
ETU	1.29	0.66	2.42	0.90	0.36	2.02	0.95	0.55	1.64	1.04	0.28	3.19
OHP	0.52	0.24	1.06	0.69	0.26	1.58	1.03	0.59	1.77	0.72	0.16	2.38
OHT	0.63	0.30	1.25	0.58	0.22	1.37	1.16	0.67	2.01	0.35	0.05	1.37
2.4-D	1.30	0.66	2.49	0.51	0.17	1.28	0.96	0.54	1.69	1.37	0.39	4.24
3PBA	1.12	0.58	2.12	0.50	0.18	1.20	1.13	0.65	1.95	0.65	0.14	2.15
DCCA	0.82	0.40	1.58	0.21	0.05	0.63	0.78	0.44	1.36	1.03	0.27	3.14
Σ Pyrethroid***	1.05	0.53	2.00	0.31	0.09	0.84	0.92	0.52	1.59	1.01	0.27	3.12
<i>Child metabolites* (n = 293)</i>												
TCP	0.92	0.46	1.76	1.15	0.50	2.48	0.78	0.44	1.34	2.05	0.66	5.91
ETU	0.57	0.26	1.14	0.67	0.26	1.54	0.94	0.54	1.62	2.08	0.67	6.03
OHP	1.26	0.65	2.37	1.43	0.64	3.06	1.28	0.74	2.20	2.13	0.69	6.16
OHT	1.27	0.65	2.42	1.98	0.90	4.23	0.88	0.50	1.53	2.40	0.76	7.08
2.4-D	0.78	0.38	1.54	0.63	0.22	1.54	0.77	0.43	1.35	1.35	0.39	4.16
3PBA	1.71	0.91	3.15	1.82	0.83	3.83	1.40	0.81	2.39	2.80	0.94	8.17
DCCA	1.98	1.06	3.64	2.29	1.06	4.86	1.37	0.80	2.36	2.06	0.67	5.94
Σ Pyrethroid***	2.37	1.28	4.34	2.22	1.03	4.69	1.59	0.93	2.73	2.78	0.94	8.06

Abbreviations: OR: Odds ratios. CI: Confidence Intervals

*Variables dichotomized at 75th percentile; Reference: Below 75th percentile

** Σ Pyrethroid: Sum of PBA and DCCA

Table S6: Odds ratios adjusted for child's sex and maternal smoking during pregnancy for each **10-fold increase** in specific pesticide metabolite concentrations and childhood respiratory outcomes, including **prenatal and current exposures in the same model**. ISA study at five years of age, Matina County, Costa Rica 2015-2016

	Current Wheeze (N = 62)			Ever doctor- diagnosed Asthma (N= 37)			Current Dry Cough (N= 118)			Current LRTI (N=15)		
	OR**	95% CI		OR**	95% CI		OR**	95% CI		OR**	95% CI	
<i>Prenatal metabolites* (n = 303)</i>												
TCP	1.09	0.40	2.81	0.80	0.21	2.59	1.01	0.44	2.26	2.12	0.39	8.81
ETU	0.88	0.26	2.78	0.43	0.08	1.84	1.47	0.54	4.02	0.20	0.01	2.02
OHP	0.91	0.56	1.42	0.88	0.48	1.54	1.05	0.72	1.52	0.93	0.38	2.01
OHT	0.85	0.60	1.18	0.80	0.51	1.21	1.18	0.90	1.56	0.73	0.36	1.33
2,4-D	1.35	0.64	2.73	0.37	0.10	1.10	0.99	0.52	1.86	1.04	0.21	3.47
3PBA	1.85	0.79	4.33	0.33	0.10	1.02	1.26	0.62	2.55	0.71	0.14	3.37
DCCA	0.99	0.44	2.22	0.30	0.10	0.84	0.83	0.43	1.63	1.49	0.34	6.42
∑ Pyrethroid**	1.29	0.54	3.05	0.26	0.08	0.81	1.02	0.50	2.08	1.18	0.24	5.51
<i>Child metabolites* (n = 293)</i>												
TCP	0.59	0.22	1.52	0.84	0.25	2.59	0.48	0.21	1.06	1.70	0.31	8.34
ETU	0.87	0.43	1.77	0.72	0.30	1.77	0.91	0.51	1.65	3.36	0.83	14.84
OHP	1.32	0.86	1.99	1.12	0.64	1.85	0.95	0.66	1.36	1.46	0.68	2.83
OHT	1.13	0.75	1.69	1.25	0.75	2.03	0.93	0.65	1.30	1.60	0.79	3.12
2,4-D	1.10	0.54	2.09	1.39	0.58	3.01	0.75	0.41	1.32	0.81	0.19	2.57
3PBA	1.75	0.90	3.46	2.42	1.06	5.68	1.32	0.77	2.30	3.92	1.16	14.08
DCCA	1.96	0.98	3.95	2.37	1.00	5.69	1.30	0.73	2.32	3.09	0.90	10.50
∑ Pyrethroid**	1.95	0.96	4.01	2.53	1.05	6.23	1.34	0.75	2.43	3.70	1.04	13.37

Abbreviations: OR: Odds ratios, CI: Confidence Intervals

** ∑ Pyrethroid: Sum of PBA and DCCA

Table S8: Odds ratios adjusted for maternal smoking during pregnancy, child's sex, parity, and breastfeeding history (asthma) as per high (≥75) or specific pesticide childhood respiratory and respiratory outcomes (seats of age) at age 6 years of age in a cohort of rural Ugandan children 2015-2016

	Current Wheeze (N = 62)			Ever doctor- diagnosed Asthma (N= 37)			Current Dry Cough (N= 118)			Current LRTI (N=15)		
	OR*	95% CI		OR*	95% CI		OR*	95% CI		OR*	95% CI	
Prenatal metabolites* (n = 303)												
TCP	1.62	0.84	3.02	0.89	0.36	1.96	1.10	0.64	1.88	1.09	0.29	3.30
ETU	1.20	0.68	2.19	0.82	0.33	1.88	0.95	0.52	1.66	1.14	0.31	3.54
OHP	0.54	0.24	1.08	0.78	0.30	1.88	1.04	0.60	1.78	0.76	0.17	2.47
OHT	0.68	0.30	1.26	0.69	0.23	1.47	1.06	0.64	1.88	0.43	0.07	1.63
2,4-D	1.38	0.66	2.66	0.40	0.17	1.20	0.80	0.49	1.36	1.48	0.44	4.36
3PBA	1.22	0.68	2.19	0.55	0.21	1.38	1.26	0.60	2.09	0.72	0.16	2.40
DCCA	0.88	0.40	1.50	0.20	0.05	0.64	0.74	0.43	1.38	1.06	0.28	3.23
∑ Pyrethroid***	1.22	0.62	2.30	0.39	0.13	0.90	0.96	0.55	1.66	1.04	0.28	3.20
Child metabolites* (n = 293)												
TCP	0.90	0.45	1.72	1.11	0.48	2.40	0.78	0.44	1.36	2.09	0.68	6.04
ETU	0.56	0.26	1.14	0.64	0.25	1.49	0.94	0.54	1.62	2.08	0.68	6.03
OHP	1.48	0.73	2.87	1.60	0.69	3.42	1.33	0.78	2.39	2.04	0.65	6.03
OHT	1.34	0.63	2.50	1.85	0.89	4.44	0.95	0.52	1.64	2.01	0.65	5.83
2,4-D	0.84	0.40	1.64	0.53	0.19	1.27	0.79	0.44	1.34	1.50	0.46	4.44
3PBA	1.66	0.87	3.12	1.80	0.82	3.64	1.36	0.88	2.32	2.73	0.90	8.00
DCCA	1.88	1.00	3.49	2.05	0.96	4.38	1.34	0.76	2.26	2.07	0.67	5.99
∑ Pyrethroid***	2.40	1.28	4.46	2.10	0.98	4.89	1.53	0.90	2.66	2.78	0.94	8.08

Abbreviations: OR: Odds Ratio; CI: Confidence Intervals

*Variables dichotomized at 75th percentile; Reference: Below 75th percentile

**∑ Pyrethroid: Sum of 3PBA and DCCA

Table S9: Odds ratios adjusted for **current smoking in house**, **child's sex**, and **parity** of high ($\geq P75$) specific pesticide exposures and **childhood respiratory outcomes**. ISA study at five years of age. Matina County. Costa Rica 2015-2016

	Current Wheeze (N = 62)			Ever Asthma (N= 37)			Current Dry Cough (N= 118)			Current LRTI (N=15)		
	OR**	95% CI		OR**	95% CI		OR**	95% CI		OR**	95% CI	
<i>Prenatal metabolites* (n = 303)</i>												
TCP	1.55	0.82	2.86	0.90	0.38	1.96	1.17	0.68	2.00	1.00	0.27	3.09
ETU	1.09	0.56	2.04	0.76	0.31	1.71	0.88	0.51	1.51	1.19	0.32	3.70
OHP	0.57	0.26	1.13	0.81	0.33	1.81	1.01	0.59	1.73	0.82	0.18	2.75
OHT	0.62	0.30	1.22	0.64	0.25	1.47	1.07	0.62	1.82	0.46	0.07	1.76
2.4-D	1.36	0.71	2.54	0.55	0.20	1.30	0.89	0.51	1.52	1.53	0.46	4.51
3PBA	1.18	0.61	2.20	0.61	0.23	1.40	1.18	0.68	2.01	0.74	0.16	2.47
DCCA	0.82	0.41	1.57	0.22	0.05	0.64	0.76	0.43	1.30	1.05	0.28	3.23
Σ Pyrethroid***	1.12	0.58	2.10	0.40	0.13	0.99	0.93	0.54	1.59	1.03	0.27	3.18
<i>Child metabolites* (n = 293)</i>												
TCP	0.96	0.48	1.83	1.24	0.54	2.70	0.75	0.42	1.30	2.59	0.81	7.94
ETU	0.57	0.27	1.14	0.65	0.25	1.50	0.95	0.55	1.64	2.05	0.66	5.99
OHP	1.36	0.70	2.60	1.53	0.68	3.32	1.28	0.74	2.20	2.09	0.66	6.26
OHT	1.23	0.64	2.32	1.93	0.89	4.06	0.91	0.52	1.56	2.09	0.67	6.12
2.4-D	0.76	0.38	1.48	0.47	0.17	1.15	0.79	0.45	1.37	1.42	0.42	4.25
3PBA	1.77	0.94	3.29	1.72	0.79	3.62	1.51	0.88	2.61	2.46	0.82	7.20
DCCA	1.90	1.02	3.51	1.97	0.92	4.10	1.41	0.82	2.43	1.91	0.61	5.57
Σ Pyrethroid***	2.38	1.28	4.38	2.00	0.93	4.17	1.66	0.96	2.86	2.59	0.86	7.58

Abbreviations: OR: Odds ratios. CI: Confidence Intervals

*Variables dichotomized at 75th percentile; Reference: Below 75th percentile

** Σ Pyrethroid: Sum of PBA and DCCA

Table S10. Odds ratios adjusted for child's sex and maternal smoking during pregnancy for each **10-fold increase** in specific pesticide metabolite concentrations and **childhood allergic outcomes**. ISA study at five years of age, Matina County, Costa Rica 2015-2016

	Current Nasal Allergies (Allergic Rhinitis) (n = 63)			Current Itchy Rash (Atopic Eczema) (n = 39)			Ever doctor- diagnosed Eczema (n = 21)		
	OR	95% CI		OR	95% CI		OR	95% CI	
Prenatal metabolites (n = 303)									
TCP	0.63	0.22	1.66	1.36	0.42	4.00	1.45	0.31	5.54
ETU	1.06	0.32	3.28	0.91	0.22	3.44	0.87	0.11	5.11
OHP	1.40	0.92	2.13	0.99	0.56	1.66	1.19	0.59	2.25
OHT	0.86	0.61	1.18	1.20	0.82	1.71	1.04	0.61	1.67
2,4-D	1.24	0.59	2.46	0.82	0.29	1.99	0.45	0.09	1.63
3PBA	1.50	0.68	3.30	0.54	0.19	1.47	2.19	0.62	7.40
DCCA	1.57	0.73	3.38	0.69	0.26	1.76	1.86	0.55	6.22
∑ Pyrethroid**	1.52	0.68	3.41	0.57	0.20	1.57	2.15	0.59	7.58
Child metabolites (n = 293)									
TCP	0.80	0.31	2.00	0.77	0.24	2.34	1.35	0.31	5.29
ETU	0.65	0.32	1.30	1.60	0.68	3.85	0.44	0.15	1.30
OHP	1.10	0.72	1.66	1.20	0.72	1.95	0.84	0.40	1.64
OHT	1.04	0.69	1.53	1.61	1.01	2.53	0.83	0.41	1.54
2,4-D	1.00	0.50	1.90	1.13	0.48	2.38	0.93	0.28	2.45
3PBA	0.94	0.49	1.80	3.00	1.34	6.99	1.41	0.51	3.96
DCCA	0.95	0.48	1.89	2.37	1.04	5.47	1.83	0.62	5.26
∑ Pyrethroid**	0.91	0.45	1.84	2.90	1.24	6.92	1.71	0.57	5.11

Abbreviations: OR: Odds ratios, CI: Confidence Intervals

** ∑ Pyrethroid: Sum of PBA and DCCA

Table S11: Odds ratios adjusted for maternal smoking during pregnancy, child's sex of high ($\geq P75$) specific pesticide exposures and **childhood allergic outcomes**, including **prenatal and current exposures** in the same model. ISA study at five years of age. Matina County. Costa Rica 2015-2016

	Current Nasal Allergies (Allergic Rhinitis) (n = 63)			Current Itchy Rash (Atopic Eczema) (n = 39)			Ever doctor-diagnosed Eczema (n = 21)		
	OR**	95% CI		OR**	95% CI		OR**	95% CI	
Prenatal metabolites* (n = 303)									
TCP	0.50	0.23	1.01	0.76	0.31	1.69	0.66	0.18	1.86
ETU	0.78	0.38	1.52	0.63	0.24	1.46	0.70	0.20	1.99
OHP	1.20	0.62	2.23	1.07	0.46	2.29	2.51	0.98	6.23
OHT	0.64	0.30	1.26	1.26	0.56	2.66	1.09	0.34	2.97
2.4-D	1.43	0.74	2.72	1.15	0.50	2.51	0.88	0.27	2.44
3PBA	1.10	0.57	2.08	0.51	0.19	1.19	1.55	0.56	3.91
DCCA	0.99	0.50	1.88	1.13	0.50	2.41	1.21	0.42	3.12
Σ Pyrethroid***	0.90	0.45	1.72	0.81	0.33	1.80	1.58	0.57	4.00
Child metabolites* (n = 293)									
TCP	0.99	0.50	1.87	0.59	0.22	1.35	0.93	0.30	2.48
ETU	0.52	0.24	1.05	1.41	0.64	2.97	0.30	0.05	1.07
OHP	1.30	0.68	2.42	1.23	0.55	2.61	0.62	0.17	1.78
OHT	1.28	0.66	2.43	1.50	0.69	3.15	0.29	0.04	1.04
2.4-D	1.08	0.54	2.06	1.12	0.48	2.43	1.28	0.43	3.42
3PBA	0.85	0.42	1.62	2.71	1.30	5.58	1.19	0.41	3.09
DCCA	0.76	0.37	1.46	2.07	0.98	4.25	1.18	0.41	3.03
Σ Pyrethroid***	0.86	0.43	1.64	2.77	1.34	5.68	1.51	0.55	3.80

Abbreviations: OR: Odds ratios. CI: Confidence Intervals

*Variables dichotomized at 75th percentile; Reference: Below 75th percentile

** Σ Pyrethroid: Sum of PBA and DCCA

Table S12. Odds ratios adjusted for child's sex and maternal smoking during pregnancy for each **10-fold increase** in specific pesticide metabolite concentrations and **childhood allergic outcomes, including prenatal and current exposures** in the same model. ISA study at five years of age, Matina County, Costa Rica 2015-2016

	Current Nasal Allergies (Allergic Rhinitis) (n = 63)			Current Itchy Rash (Atopic Eczema) (n = 39)			Ever doctor-diagnosed Eczema (n = 21)		
	OR	95% CI		OR	95% CI		OR	95% CI	
Prenatal metabolites * (n = 303)									
TCP	0.65	0.23	1.74	1.29	0.39	3.84	1.35	0.28	5.20
ETU	1.19	0.35	3.71	0.78	0.18	3.08	0.95	0.13	5.50
OHP	1.32	0.85	2.02	0.98	0.55	1.65	1.26	0.62	2.38
OHT	0.84	0.59	1.18	1.09	0.74	1.57	1.09	0.63	1.78
2,4-D	1.29	0.61	2.61	0.76	0.26	1.88	0.43	0.08	1.60
3PBA	1.38	0.60	3.18	0.46	0.15	1.34	2.33	0.63	8.37
DCCA	1.53	0.69	3.42	0.67	0.24	1.78	1.89	0.54	6.66
∑ Pyrethroid**	1.45	0.62	3.38	0.54	0.18	1.55	2.25	0.60	8.46
Child metabolites * (n = 293)									
TCP	0.82	0.32	2.07	0.76	0.24	2.31	1.32	0.30	5.22
ETU	0.64	0.32	1.29	1.64	0.69	4.06	0.44	0.15	1.31
OHP	1.05	0.68	1.60	1.21	0.71	1.97	0.80	0.36	1.59
OHT	1.09	0.72	1.63	1.57	0.97	2.50	0.80	0.39	1.53
2,4-D	0.96	0.47	1.84	1.18	0.50	2.51	1.06	0.32	2.82
3PBA	0.91	0.47	1.75	3.24	1.44	7.60	1.31	0.46	3.77
DCCA	0.92	0.46	1.83	2.44	1.06	5.67	1.76	0.60	5.08
∑ Pyrethroid**	0.89	0.44	1.80	3.03	1.29	7.29	1.63	0.53	4.92

Abbreviations: OR: Odds ratios. CI: Confidence Intervals

*Variables dichotomized at 75th percentile; Reference: Below 75th percentile

** ∑ Pyrethroid: Sum of PBA and DCCA

Table S13: Odds ratios adjusted for maternal smoking during pregnancy, child's sex, parity, and maternal history of asthma (yes/no), of high ($\geq P75$) specific pesticide exposures and childhood allergic outcomes. ISA study at five years of age. Matina County, Costa Rica 2015-2016

	Current Nasal Allergies (Allergic Rhinitis) (n = 63)			Current Itchy Rash (Atopic Eczema) (n = 39)			Ever doctor-diagnosed Eczema (n = 21)		
	OR	95% CI		OR	95% CI		OR	95% CI	
<i>Prenatal metabolites* (n = 303)</i>									
TCP	0.49	0.22	0.99	0.80	0.33	1.76	0.71	0.20	2.01
ETU	0.73	0.36	1.41	0.70	0.27	1.61	0.74	0.20	2.12
OHP	1.37	0.73	2.52	1.05	0.46	2.25	2.46	0.96	6.15
OHT	0.62	0.30	1.21	1.38	0.63	2.90	0.90	0.28	2.44
2,4-D	1.43	0.75	2.64	1.22	0.54	2.58	1.02	0.32	2.80
3PBA	1.23	0.64	2.29	0.55	0.21	1.29	1.71	0.61	4.38
DCCA	1.04	0.53	1.95	1.16	0.51	2.45	1.33	0.46	3.48
Σ Pyrethroid***	1.03	0.53	1.94	0.84	0.35	1.84	1.78	0.64	4.61
<i>Child metabolites* (n = 293)</i>									
TCP	0.95	0.48	1.79	0.59	0.22	1.35	0.92	0.29	2.46
ETU	0.51	0.23	1.04	1.37	0.63	2.87	0.29	0.05	1.04
OHP	1.40	0.73	2.63	1.22	0.54	2.60	0.71	0.20	2.05
OHT	1.23	0.64	2.30	1.60	0.74	3.34	0.31	0.05	1.12
2,4-D	1.21	0.62	2.27	1.20	0.53	2.55	1.35	0.46	3.55
3PBA	0.83	0.41	1.59	2.53	1.22	5.18	1.13	0.38	2.95
DCCA	0.74	0.36	1.43	2.07	0.99	4.26	1.13	0.39	2.93
Σ Pyrethroid***	0.84	0.42	1.61	2.70	1.31	5.54	1.48	0.54	3.75

Abbreviations: OR: Odds ratios. CI: Confidence Intervals

*Variables dichotomized at 75th percentile; Reference: Below 75th percentile

** Σ Pyrethroid: Sum of PBA and DCCA

Table S14: Odds ratios adjusted for maternal smoking during pregnancy, child's sex, parity, and breastfeeding of high (≥ 75) specific pesticide exposures and childhood allergic outcomes. ISA study at five years of age. Matina County. Costa Rica 2015-2016

	Current Nasal Allergies (Allergic Rhinitis) (n = 63)			Current Itchy Rash (Atopic Eczema) (n = 39)			Ever doctor-diagnosed Eczema (n = 21)		
	OR**	95% CI		OR**	95% CI		OR**	95% CI	
Prenatal metabolites* (n = 303)									
TCP	0.48	0.22	0.97	0.80	0.33	1.75	0.68	0.19	1.93
ETU	0.71	0.35	1.38	0.68	0.26	1.57	0.68	0.19	1.94
OHP	1.36	0.72	2.49	1.07	0.47	2.30	2.44	0.95	6.03
OHT	0.64	0.31	1.25	1.36	0.62	2.86	0.93	0.29	2.49
2.4-D	1.38	0.73	2.55	1.21	0.54	2.54	0.94	0.30	2.53
3PBA	1.21	0.63	2.25	0.54	0.20	1.27	1.59	0.57	4.05
DCCA	1.02	0.52	1.91	1.13	0.50	2.38	1.21	0.42	3.10
Σ Pyrethroid***	1.01	0.52	1.90	0.81	0.34	1.76	1.56	0.57	3.96
Child metabolites* (n = 293)									
TCP	0.95	0.48	1.80	0.59	0.22	1.36	0.93	0.29	2.47
ETU	0.52	0.23	1.04	1.36	0.62	2.85	0.29	0.05	1.04
OHP	1.32	0.69	2.48	1.22	0.54	2.62	0.67	0.18	1.91
OHT	1.20	0.62	2.24	1.54	0.71	3.19	0.29	0.05	1.03
2.4-D	1.21	0.62	2.26	1.15	0.51	2.45	1.25	0.43	3.24
3PBA	0.85	0.42	1.63	2.59	1.25	5.29	1.23	0.42	3.18
DCCA	0.75	0.37	1.44	2.13	1.01	4.39	1.20	0.41	3.10
Σ Pyrethroid***	0.84	0.42	1.61	2.79	1.34	5.73	1.55	0.57	3.91

Abbreviations: OR: Odds ratios. CI: Confidence Intervals

*Variables dichotomized at 75th percentile; Reference: Below 75th percentile

** Σ Pyrethroid: Sum of PBA and DCCA

Table S15: Odds ratios adjusted for **current smoking in house**, **child's sex**, and **parity** of high ($\geq P75$) specific pesticide exposures and **childhood allergic outcomes**. ISA study at five years of age. Matina County, Costa Rica 2015-2016

	Current Nasal Allergies (Allergic Rhinitis) (n = 63)			Current Itchy Rash (Atopic Eczema) (n = 39)			Ever doctor-diagnosed Eczema (n = 21)		
	OR**	95% CI		OR**	95% CI		OR**	95% CI	
Prenatal metabolites* (n = 303)									
TCP	0.50	0.23	1.00	0.87	0.37	1.87	0.68	0.19	1.92
ETU	0.71	0.35	1.36	0.63	0.25	1.43	0.68	0.19	1.94
OHP	1.37	0.73	2.51	1.06	0.47	2.24	2.41	0.94	5.96
OHT	0.63	0.30	1.22	1.41	0.65	2.91	0.94	0.30	2.52
2,4-D	1.41	0.75	2.59	1.38	0.64	2.83	0.94	0.30	2.49
3PBA	1.22	0.64	2.26	0.62	0.24	1.41	1.59	0.58	4.04
DCCA	1.02	0.53	1.91	1.19	0.54	2.48	1.21	0.42	3.12
Σ Pyrethroid***	1.01	0.52	1.90	0.87	0.37	1.87	1.58	0.58	3.98
Child metabolites* (n = 293)									
TCP	0.93	0.47	1.76	0.63	0.24	1.42	0.92	0.29	2.47
ETU	0.52	0.24	1.04	1.37	0.64	2.83	0.29	0.05	1.05
OHP	1.35	0.70	2.52	1.17	0.52	2.45	0.66	0.18	1.88
OHT	1.19	0.62	2.21	1.58	0.74	3.12	0.29	0.05	1.03
2,4-D	1.20	0.62	2.25	1.19	0.54	2.49	1.26	0.43	3.27
3PBA	0.88	0.44	1.68	2.63	1.29	5.31	1.23	0.42	3.20
DCCA	0.77	0.38	1.49	2.05	0.99	4.15	1.20	0.41	3.10
Σ Pyrethroid***	0.87	0.43	1.67	2.65	1.30	5.33	1.55	0.57	3.91

Abbreviations: OR: Odds ratios. CI: Confidence Intervals

*Variables dichotomized at 75th percentile; Reference: Below 75th percentile

** Σ Pyrethroid: Sum of PBA and DCCA

Table S16: Odds ratios adjusted for maternal smoking during pregnancy and child's sex for recent environmental exposures and current **respiratory outcomes** in 293 five-year-old children from the ISA study. Matina County. Costa Rica. 2015-2016

	<i>n</i>	<i>%</i>	Current Wheeze (N = 62)			Ever doctor- diagnosed Asthma (N= 37)			Current dry cough (N= 118)			Current LRTI (N=49)		
			OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI	
Current maternal banana work	43	14	0.63	0.23	1.47	1.38	0.48	3.41	1.06	0.54	2.06	0.94	0.14	3.62
Maternal work in banana plantation in last 3 years	88	29	1.01	0.54	1.86	1.22	0.56	2.54	1.08	0.64	1.79	0.90	0.24	2.73
Current maternal work in agriculture	49	16	0.63	0.25	1.42	1.14	0.40	2.79	1.23	0.65	2.29	1.31	0.29	4.38
Maternal work in agriculture in last 3 years	99	33	1.00	0.54	1.80	1.17	0.55	2.40	1.19	0.72	1.95	1.05	0.32	3.04
Current paternal work in banana plantation	138	46	0.53	0.28	0.95	1.01	0.48	2.11	1.05	0.65	1.71	0.86	0.27	2.66
Paternal work in banana plantations in last 3 years	156	51	0.68	0.38	1.20	0.87	0.43	1.74	0.99	0.62	1.57	0.58	0.19	1.64
≥50 meters distance to banana plantations	232	75	0.59	0.25	1.27	0.65	0.21	1.63	1.35	0.74	2.43	0.67	0.10	2.53
Current vector control	169	56	1.17	0.65	2.13	1.03	0.50	2.19	1.77	1.08	2.91	2.78	0.84	12.53
Use of pesticides inside the house	152	50	1.40	0.78	2.55	0.99	0.47	2.07	0.96	0.60	1.54	0.50	0.15	1.50
Daily exposure to smoke of waste burning	50	17	0.53	0.20	1.20	0.34	0.08	1.04	1.28	0.68	2.38	1.27	0.28	4.24
1-HP*	74	25	1.28	0.66	2.40	1.53	0.68	3.29	1.42	0.82	2.44	0.75	0.17	2.48
2-OH-PH*	74	25	0.84	0.42	1.62	0.66	0.25	1.53	1.40	0.81	2.40	1.10	0.30	3.36

Abbreviations: OR: Odds ratios. CI: Confidence Intervals. 1-HP: 1-hydroxypyrene. 2-OH-PH: hydroxyphenanthrene

*Variables dichotomized at 75th percentile; Reference: Below 75th percentile

Table S17: Odds ratios adjusted for maternal smoking during pregnancy and child's sex for recent environmental exposures and current **allergic outcomes** in 293 five-year-old children from the ISA study. Matina County, Costa Rica. 2015-2016

	<i>n</i>	<i>%</i>	Current Nasal Allergies (Allergic Rhinitis) (n = 63)			Current Itchy Rash (Atopic Eczema) (n = 39)			Ever doctor-diagnosed Eczema (n = 21)			Current Nasal Allergies (Allergic Rhinitis) (n = 63)		
			OR	OR	OR	95% CI	OR	OR	OR	95% CI	OR	OR	OR	
Current maternal banana work	43	14	1.86	0.85	0.35	1.86	0.85	0.35	1.86	0.85	0.35	1.86	0.14	3.62
Maternal work in banana plantation in last 3 years	88	29	1.78	0.98	0.52	1.78	0.98	0.52	1.78	0.98	0.52	1.78	0.24	2.73
Current maternal work in agriculture	49	16	2.00	0.96	0.43	2.00	0.96	0.43	2.00	0.96	0.43	2.00	0.29	4.38
Maternal work in agriculture in last 3 years	99	33	1.71	0.95	0.52	1.71	0.95	0.52	1.71	0.95	0.52	1.71	0.32	3.04
Current paternal work in banana plantation	138	46	1.66	0.93	0.52	1.66	0.93	0.52	1.66	0.93	0.52	1.66	0.27	2.66
Paternal work in banana plantations in last 3 years	156	51	1.47	0.84	0.48	1.47	0.84	0.48	1.47	0.84	0.48	1.47	0.19	1.64
Paternal work in banana plantations in last 3 years ≥50 meters distance to banana plantations	232	75	1.84	0.92	0.42	1.84	0.92	0.42	1.84	0.92	0.42	1.84	0.10	2.53
Current vector control	169	56	1.69	0.95	0.53	1.69	0.95	0.53	1.69	0.95	0.53	1.69	0.84	12.53
Use of pesticides inside the house	152	50	2.06	1.16	0.66	2.06	1.16	0.66	2.06	1.16	0.66	2.06	0.15	1.50
Daily exposure to smoke of waste burning	50	17	2.47	1.23	0.58	2.47	1.23	0.58	2.47	1.23	0.58	2.47	0.28	4.24
1-HP*	74	25	2.99	1.62	0.86	2.99	1.62	0.86	2.99	1.62	0.86	2.99	0.17	2.48
2-OH-PH*	74	25	1.17	0.59	0.28	1.17	0.59	0.28	1.17	0.59	0.28	1.17	0.30	3.36

Abbreviations: OR: Odds ratios. CI: Confidence Intervals. 1-HP: 1-hydroxypyrene. 2-OH-PH: hydroxyphenanthrene

*Variables dichotomized at 75th percentile; Reference: Below 75th percentile