

Supplemental Table S1. Distributions (Mean $\pm$ SD) of developmental quotient scores of Mullen Scales of Early Learning (MSEL) and Vineland Adaptive Behavior Scales (VABS) for the composite score and each subscale

	ASD (N=810)	DD (N=192)	TD (N=531)
MSEL - Composite Score	61.6 $\pm$ 22.8	58.9 $\pm$ 19.5	106.2 $\pm$ 13.6
MSEL - Receptive Language	54.7 $\pm$ 27.2	55.8 $\pm$ 19.7	104.3 $\pm$ 17.9
MSEL - Expressive Language	54.2 $\pm$ 25.4	52.5 $\pm$ 23.3	104.2 $\pm$ 18.8
MSEL - Visual Receptivity	69.5 $\pm$ 25.9	66.2 $\pm$ 24.0	112.4 $\pm$ 18.1
MSEL - Fine Motor Skills	67.9 $\pm$ 21.0	61.2 $\pm$ 19.6	103.9 $\pm$ 14.8
VABS - Composite Score	55.8 $\pm$ 16.0	55.7 $\pm$ 18.0	103.9 $\pm$ 16.8
VABS - Communication	50.1 $\pm$ 23.0	50.8 $\pm$ 20.0	106.5 $\pm$ 21.8
VABS - Daily Living Skills	53.7 $\pm$ 14.6	55.0 $\pm$ 19.3	96.8 $\pm$ 20.3
VABS - Socialization	45.4 $\pm$ 19.0	55.4 $\pm$ 22.1	106.5 $\pm$ 24.4
VABS - Motor Skills	73.0 $\pm$ 19.7	60.4 $\pm$ 21.4	106.8 $\pm$ 19.7

Abbreviations: ASD, autism spectrum disorder; MSEL, Mullen Scales of Early Learning; VABS, Vineland Adaptive Behavior Scales.

Supplemental Table S2. Number (%) of subjects exposed to each application of insecticide by period and case status.

Application	Period of exposure	Missing N (ASD/DD/TD)	ASD (N=810)	DD (N=192)	TD (N=531)	Total (N=1,533)
Indoor	Index period	15/3/8	116 (14.6%)	19 (10.1%)	43 (8.2%)	178 (11.8%)
Professionally	Pre-pregnancy	16/3/10	36 (4.5%)	6 (3.2%)	13 (2.5%)	55 (3.7%)
Applied Insecticide	Trimester 1	22/3/11	36 (4.6%)	6 (3.2%)	12 (2.3%)	54 (3.6%)
	Trimester 2	23/3/10	45 (5.7%)	5 (2.6%)	16 (3.1%)	66 (4.4%)
	Trimester 3	28/11/12	43 (5.5%)	2 (1.1%)	16 (3.1%)	61 (4.1%)
	Pregnancy	27/3/11	57 (7.3%)	6 (3.2%)	20 (3.8%)	83 (5.6%)
	Year 1	27/3/12	67 (8.6%)	6 (3.2%)	26 (5.0%)	99 (6.6%)
	Year 2	27/3/17	71 (9.1%)	12 (6.3%)	27 (5.3%)	110 (7.4%)
Indoor	Index period	7/2/7	310 (38.6%)	76 (40.0%)	198 (37.8%)	584 (38.5%)
Non-professionally	Pre-pregnancy	17/6/9	106 (13.4%)	29 (15.6%)	64 (12.3%)	199 (13.3%)
Applied Insecticide	Trimester 1	17/6/9	118 (14.9%)	35 (18.8%)	66 (12.6%)	219 (14.6%)
	Trimester 2	18/6/9	129 (16.3%)	35 (18.8%)	79 (15.1%)	243 (16.2%)
	Trimester 3	23/12/11	105 (13.3%)	30 (16.7%)	61 (11.7%)	196 (13.2%)
	Pregnancy	20/6/10	178 (22.5%)	54 (29.0%)	113 (21.7%)	345 (23.0%)
	Year 1	7/2/8	222 (27.6%)	49 (25.8%)	138 (26.4%)	409 (27.0%)
	Year 2	10/2/9	231 (28.9%)	52 (27.4%)	145 (27.8%)	428 (28.3%)
Any Indoor	Index period	3/2/5	370 (45.8%)	86 (45.3%)	217 (41.3%)	673 (44.2%)
Insecticide	Pre-pregnancy	10/6/7	136 (17.0%)	33 (17.7%)	74 (14.1%)	243 (16.1%)
	Trimester 1	11/5/7	144 (18.0%)	40 (21.4%)	76 (14.5%)	260 (17.2%)
	Trimester 2	11/6/7	163 (20.4%)	39 (21.0%)	89 (17.0%)	291 (19.3%)
	Trimester 3	17/12/9	137 (17.3%)	32 (17.8%)	73 (14.0%)	242 (16.2%)
	Pregnancy	11/3/7	217 (27.2%)	57 (30.2%)	123 (23.5%)	397 (26.3%)
	Year 1	3/2/6	265 (32.8%)	54 (28.4%)	152 (29.0%)	471 (30.9%)
	Year 2	5/2/7	274 (34.0%)	61 (32.1%)	163 (31.1%)	498 (32.8%)
Outdoor	Index period	10/0/7	226 (28.2%)	43 (22.4%)	161 (30.7%)	430 (28.4%)
Non-professional	Pre-pregnancy	20/2/13	78 (9.9%)	13 (6.8%)	49 (9.5%)	140 (9.3%)
Applied Insecticide	Trimester 1	20/2/13	87 (11.0%)	19 (10.0%)	53 (10.2%)	159 (10.6%)
	Trimester 2	21/2/12	95 (12.0%)	20 (10.5%)	61 (11.8%)	176 (11.7%)
	Trimester 3	27/10/13	82 (10.5%)	21 (11.5%)	51 (9.8%)	154 (10.4%)
	Pregnancy	23/6/11	133 (16.9%)	31 (16.7%)	100 (19.2%)	264 (17.7%)
	Year 1	12/0/7	176 (22.1%)	33 (17.2%)	117 (22.3%)	326 (21.5%)
	Year 2	12/0/9	186 (23.3%)	34 (17.7%)	126 (24.1%)	346 (22.9%)
Any Outdoor	Index period	9/0/7	317 (39.6%)	63 (32.8%)	227 (43.3%)	607 (40.0%)
Insecticide	Pre-pregnancy	19/2/13	134 (16.9%)	24 (12.6%)	89 (17.2%)	247 (16.5%)
	Trimester 1	19/2/13	144 (18.2%)	30 (15.8%)	92 (17.8%)	266 (17.7%)
	Trimester 2	20/2/12	156 (19.7%)	31 (16.3%)	103 (19.8%)	290 (19.3%)

Flea Collar Use	Trimester 3	26/10/13	141 (18.0%)	31 (17.0%)	92 (17.8%)	264 (17.8%)
	Pregnancy	22/6/11	194 (24.6%)	42 (22.6%)	145 (27.9%)	381 (25.5%)
	Year 1	11/0/7	252 (31.5%)	47 (24.5%)	166 (31.7%)	465 (30.7%)
	Year 2	11/0/9	265 (33.2%)	51 (26.6%)	177 (33.9%)	493 (32.6%)
	Index period	15/0/3	57 (7.2%)	9 (4.7%)	30 (5.7%)	96 (6.3%)
	Pre-pregnancy	18/3/6	30 (3.8%)	6 (3.2%)	14 (2.7%)	50 (3.3%)
	Trimester 1	18/3/6	29 (3.7%)	6 (3.2%)	16 (3.0%)	51 (3.4%)
	Trimester 2	17/3/8	32 (4.0%)	6 (3.2%)	17 (3.3%)	55 (3.7%)
	Trimester 3	25/11/9	28 (3.6%)	6 (3.3%)	13 (2.5%)	47 (3.2%)
	Pregnancy	22/5/8	37 (4.7%)	7 (3.7%)	22 (4.2%)	66 (4.4%)
Flea Skin application	Year 1	19/0/8	33 (4.2%)	8 (4.2%)	17 (3.3%)	58 (3.9%)
	Year 2	19/0/8	36 (4.6%)	6 (3.1%)	15 (2.9%)	57 (3.8%)
	Index period	23/2/9	188 (23.9%)	32 (16.8%)	146 (28.0%)	366 (24.4%)
	Pre-pregnancy	41/7/21	111 (14.4%)	19 (10.3%)	77 (15.1%)	207 (14.1%)
	Trimester 1	38/7/22	124 (16.1%)	18 (9.7%)	81 (15.9%)	223 (15.2%)
	Trimester 2	39/8/21	124 (16.1%)	17 (9.2%)	76 (14.9%)	217 (14.8%)
	Trimester 3	46/17/22	116 (15.2%)	14 (8.0%)	79 (15.5%)	209 (14.4%)
	Pregnancy	40/11/21	143 (18.6%)	19 (10.5%)	97 (19.0%)	259 (17.7%)
	Year 1	30/4/12	150 (19.2%)	27 (14.4%)	117 (22.5%)	294 (19.8%)
	Year 2	28/2/13	141 (18.0%)	26 (13.7%)	120 (23.2%)	287 (19.3%)
Flea soap, shampoo, or powder	Index period	21/2/11	128 (16.2%)	29 (15.3%)	66 (12.7%)	223 (14.9%)
	Pre-pregnancy	31/4/23	76 (9.8%)	21 (11.2%)	32 (6.3%)	129 (8.7%)
	Trimester 1	32/4/24	73 (9.4%)	19 (10.1%)	30 (5.9%)	122 (8.3%)
	Trimester 2	30/4/22	77 (9.9%)	16 (8.5%)	29 (5.7%)	122 (8.3%)
	Trimester 3	40/13/25	73 (9.5%)	14 (7.8%)	30 (5.9%)	117 (8.0%)
	Pregnancy	37/6/23	90 (11.6%)	20 (10.8%)	39 (7.7%)	149 (10.2%)
	Year 1	27/3/14	96 (12.3%)	17 (9.0%)	52 (10.1%)	165 (11.1%)
	Year 2	28/2/15	98 (12.5%)	18 (9.5%)	46 (8.9%)	162 (10.9%)

Values are N (%). Abbreviations: ASD, autism spectrum disorder; DD, developmental delay; preg, pregnancy; TD, typically developing.

Supplemental Table S3. Beta (95% CI) for main effects of each insecticide with MSEL Composite DQ

Application	Exposure Period	ASD	DD	TD
Indoor Professionally Applied Insecticide	Pre-pregnancy	7.46 (-0.15, 15.07)	-	-6.08 (-13.54, 1.37)
	Trimester 1	7.23 (-0.39, 14.85)	-	-4.70 (-12.46, 3.05)
	Trimester 2	4.57 (-2.17, 11.31)	-	-2.93 (-9.41, 3.55)
	Trimester 3	4.88 (-2.02, 11.77)	-	-1.91 (-8.41, 4.58)
	Pregnancy	8.04 (1.93, 14.14)	-	-2.76 (-8.74, 3.23)
	Year 1	3.52 (-2.17, 9.21)	-	0.60 (-4.54, 5.74)
	Year 2	1.94 (-3.64, 7.51)	-	2.90 (-2.12, 7.92)
Indoor Non-professionally Applied Insecticide	Pre-pregnancy	0.41 (-4.26, 5.08)	-6.65 (-14.85, 1.54)	-0.53 (-3.95, 2.90)
	Trimester 1	2.63 (-1.83, 7.10)	-6.86 (-14.45, 0.73)	-1.93 (-5.37, 1.51)
	Trimester 2	1.63 (-2.62, 5.88)	-2.91 (-10.30, 4.47)	0.15 (-3.05, 3.35)
	Trimester 3	3.27 (-1.37, 7.90)	-7.42 (-15.17, 0.34)	-1.45 (-5.00, 2.10)
	Pregnancy	2.16 (-1.64, 5.97)	-3.54 (-9.87, 2.79)	-1.07 (-3.86, 1.73)
	Year 1	2.61 (-0.93, 6.16)	-0.17 (-6.66, 6.33)	-0.81 (-3.39, 1.76)
	Year 2	1.16 (-2.34, 4.67)	-1.84 (-8.23, 4.54)	-0.55 (-3.10, 2.00)
Any Indoor Insecticide	Pre-pregnancy	1.86 (-2.36, 6.07)	-6.16 (-13.82, 1.49)	-1.06 (-4.30, 2.17)
	Trimester 1	3.56 (-0.56, 7.68)	-6.34 (-13.42, 0.73)	-2.30 (-5.54, 0.95)
	Trimester 2	2.71 (-1.17, 6.59)	-2.98 (-10.07, 4.10)	-0.31 (-3.35, 2.73)
	Trimester 3	4.03 (-0.11, 8.17)	-6.74 (-14.27, 0.79)	-2.31 (-5.57, 0.96)
	Pregnancy	4.15 (0.60, 7.70)	-3.42 (-9.61, 2.77)	-1.50 (-4.20, 1.21)
	Year 1	1.89 (-1.48, 5.26)	1.86 (-4.40, 8.12)	-0.95 (-3.44, 1.55)
	Year 2	1.22 (-2.13, 4.57)	-0.06 (-6.10, 5.98)	-0.58 (-3.04, 1.88)
Outdoor Non-professionally Applied Insecticide	Pre-pregnancy	-1.84 (-7.10, 3.42)	-1.20 (-12.75, 10.34)	-0.23 (-4.17, 3.71)
	Trimester 1	2.07 (-2.95, 7.09)	-1.25 (-11.18, 8.69)	-0.87 (-4.73, 2.99)
	Trimester 2	-0.65 (-5.43, 4.13)	-1.37 (-10.98, 8.24)	0.72 (-2.86, 4.29)
	Trimester 3	0.86 (-4.27, 5.98)	-4.34 (-13.68, 5.01)	-2.09 (-5.99, 1.80)
	Pregnancy	-1.34 (-5.54, 2.87)	-0.36 (-8.39, 7.67)	-1.07 (-4.02, 1.88)
	Year 1	1.26 (-2.52, 5.03)	-3.44 (-11.42, 4.53)	0.36 (-2.42, 3.15)
	Year 2	0.30 (-3.42, 4.02)	-1.32 (-9.17, 6.54)	-0.36 (-3.06, 2.34)
Any Outdoor Insecticide	Pre-pregnancy	0.85 (-3.41, 5.11)	-1.39 (-10.14, 7.37)	0.53 (-2.53, 3.59)
	Trimester 1	2.39 (-1.76, 6.55)	-0.48 (-8.54, 7.57)	0.83 (-2.20, 3.85)
	Trimester 2	0.51 (-3.49, 4.52)	-0.61 (-8.56, 7.34)	1.46 (-1.40, 4.31)
	Trimester 3	0.95 (-3.20, 5.11)	-3.74 (-11.67, 4.19)	-0.01 (-2.99, 2.98)
	Pregnancy	-0.56 (-4.30, 3.19)	-0.49 (-7.57, 6.59)	0.17 (-2.39, 2.73)
	Year 1	1.46 (-1.98, 4.90)	-0.19 (-7.03, 6.64)	1.46 (-1.02, 3.94)
	Year 2	0.77 (-2.67, 4.22)	0.32 (-6.45, 7.09)	0.74 (-1.69, 3.17)
Flea Collar Use	Pre-pregnancy	-5.27 (-13.40, 2.86)	-	-1.85 (-8.78, 5.08)
	Trimester 1	-5.82 (-14.09, 2.46)	-	-2.63 (-9.09, 3.84)
	Trimester 2	-7.90 (-15.78, -0.02)	-	-1.82 (-8.09, 4.45)
	Trimester 3	-5.12 (-13.54, 3.29)	-	-1.29 (-8.46, 5.87)
	Pregnancy	-6.31 (-13.68, 1.06)	-	-3.44 (-9.01, 2.12)
	Year 1	-5.75 (-13.52, 2.02)	-	-0.14 (-6.45, 6.17)
	Year 2	-8.68 (-16.13, -1.22)	-	-3.77 (-10.44, 2.90)
Flea Skin application	Pre-pregnancy	-1.07 (-5.65, 3.51)	-9.93 (-19.52, -0.33)	2.27 (-1.03, 5.56)
	Trimester 1	-0.69 (-5.11, 3.73)	-11.13 (-20.90, -1.36)	1.81 (-1.45, 5.07)
	Trimester 2	1.33 (-3.05, 5.71)	-12.86 (-23.01, -2.70)	1.23 (-2.09, 4.56)
	Trimester 3	-0.23 (-4.73, 4.26)	-10.61 (-21.98, 0.77)	2.71 (-0.54, 5.96)
	Pregnancy	-0.46 (-4.63, 3.71)	-11.75 (-21.31, -2.20)	1.98 (-1.04, 4.99)
	Year 1	-0.75 (-4.84, 3.34)	-6.79 (-15.12, 1.53)	2.39 (-0.39, 5.17)
	Year 2	0.83 (-3.33, 4.99)	-4.66 (-12.99, 3.66)	2.13 (-0.61, 4.87)
Flea soap, shampoo, or powder	Pre-pregnancy	-5.07 (-10.50, 0.37)	-5.76 (-14.95, 3.42)	-2.13 (-6.79, 2.53)
	Trimester 1	-4.86 (-10.37, 0.64)	-0.52 (-10.25, 9.22)	-2.74 (-7.54, 2.07)
	Trimester 2	-6.45 (-11.81, -1.08)	-0.72 (-11.39, 9.95)	-3.44 (-8.33, 1.46)
	Trimester 3	-6.65 (-12.16, -1.13)	-0.60 (-11.58, 10.39)	-3.06 (-7.88, 1.76)
	Pregnancy	-4.25 (-9.30, 0.79)	0.38 (-9.18, 9.94)	-2.61 (-6.89, 1.67)
	Year 1	-6.47 (-11.26, -1.67)	-1.49 (-11.75, 8.78)	-0.78 (-4.55, 2.99)
	Year 2	-8.87 (-13.62, -4.12)	-3.14 (-13.11, 6.84)	-1.48 (-5.46, 2.49)

Bold typeface indicates statistical significance at $P < 0.05$. Associations for indoor professionally applied insecticides and flea collars among DD were not assessed due to small sample sizes. Abbreviations: ASD, autism spectrum disorder; DD, developmental delay; DQ, developmental quotient; MSEL, Mullen Scales of Early Learning; TD, typically developing

Supplemental Table S4. Beta (95% CI) for main effects of each insecticide with VABS Composite DQ.

Application	Exposure Period	ASD	DD	TD
Indoor Professionally Applied Insecticide	Pre-pregnancy	5.53 (0.23, 10.82)	-	-3.52 (-12.91, 5.86)
	Trimester 1	5.22 (-0.15, 10.60)	-	-5.85 (-15.60, 3.91)
	Trimester 2	2.76 (-1.96, 7.48)	-	-1.22 (-9.37, 6.92)
	Trimester 3	5.11 (0.25, 9.96)	-	-0.29 (-8.46, 7.89)
	Pregnancy	5.26 (0.98, 9.54)	-	-0.47 (-8.00, 7.06)
	Year 1	0.78 (-3.21, 4.77)	-	1.84 (-4.62, 8.31)
	Year 2	1.08 (-2.80, 4.95)	-	2.34 (-4.02, 8.69)
Indoor Non-professionally Applied Insecticide	Pre-pregnancy	0.59 (-2.70, 3.87)	-3.03 (-10.65, 4.58)	3.00 (-1.30, 7.29)
	Trimester 1	1.20 (-1.95, 4.36)	1.35 (-5.73, 8.42)	0.00 (-4.33, 4.34)
	Trimester 2	0.07 (-2.93, 3.07)	1.71 (-5.12, 8.54)	2.60 (-1.42, 6.61)
	Trimester 3	-0.56 (-3.84, 2.71)	-2.60 (-9.80, 4.61)	2.79 (-1.68, 7.26)
	Pregnancy	0.22 (-2.47, 2.91)	0.11 (-5.78, 6.00)	1.68 (-1.84, 5.20)
	Year 1	-0.41 (-2.90, 2.08)	0.05 (-5.93, 6.04)	-0.10 (-3.35, 3.16)
	Year 2	0.29 (-2.18, 2.76)	-1.07 (-6.95, 4.82)	-0.53 (-3.74, 2.68)
Any Indoor Insecticide	Pre-pregnancy	2.00 (-0.95, 4.95)	-2.16 (-9.27, 4.96)	1.94 (-2.14, 6.02)
	Trimester 1	2.49 (-0.41, 5.40)	1.48 (-5.12, 8.08)	-0.82 (-4.92, 3.28)
	Trimester 2	1.29 (-1.44, 4.02)	1.85 (-4.70, 8.40)	1.98 (-1.85, 5.80)
	Trimester 3	1.60 (-1.32, 4.53)	-1.78 (-8.77, 5.21)	1.80 (-2.32, 5.92)
	Pregnancy	2.10 (-0.40, 4.61)	0.61 (-5.12, 6.34)	1.37 (-2.04, 4.77)
	Year 1	-0.23 (-2.60, 2.14)	0.85 (-4.93, 6.63)	-0.56 (-3.71, 2.60)
	Year 2	0.60 (-1.75, 2.95)	0.80 (-4.77, 6.36)	-0.62 (-3.72, 2.48)
Outdoor Non-professionally Applied Insecticide	Pre-pregnancy	-0.86 (-4.63, 2.91)	2.14 (-8.46, 12.74)	5.13 (0.15, 10.10)
	Trimester 1	0.40 (-3.19, 3.99)	3.62 (-5.48, 12.72)	0.57 (-4.32, 5.47)
	Trimester 2	-0.75 (-4.17, 2.67)	5.47 (-3.28, 14.23)	3.51 (-1.02, 8.03)
	Trimester 3	-0.28 (-3.95, 3.38)	-1.53 (-10.10, 7.05)	1.64 (-3.30, 6.58)
	Pregnancy	-2.40 (-5.39, 0.59)	1.77 (-5.63, 9.18)	1.84 (-1.90, 5.57)
	Year 1	-0.88 (-3.56, 1.80)	0.93 (-6.40, 8.27)	2.70 (-0.79, 6.20)
	Year 2	-0.76 (-3.39, 1.88)	2.41 (-4.77, 9.60)	1.21 (-2.18, 4.61)
Any Outdoor Insecticide	Pre-pregnancy	1.70 (-1.33, 4.74)	2.87 (-5.16, 10.90)	1.68 (-2.19, 5.56)
	Trimester 1	1.61 (-1.35, 4.56)	3.28 (-4.11, 10.67)	0.63 (-3.20, 4.47)
	Trimester 2	0.73 (-2.12, 3.57)	4.62 (-2.64, 11.88)	2.71 (-0.90, 6.33)
	Trimester 3	1.38 (-1.57, 4.33)	-0.01 (-7.30, 7.28)	1.86 (-1.92, 5.64)
	Pregnancy	-0.59 (-3.25, 2.07)	2.33 (-4.19, 8.85)	2.16 (-1.07, 5.39)
	Year 1	0.18 (-2.26, 2.62)	1.77 (-4.50, 8.04)	2.18 (-0.94, 5.29)
	Year 2	0.49 (-1.95, 2.93)	4.06 (-2.12, 10.24)	0.73 (-2.33, 3.79)
Flea Collar Use	Pre-pregnancy	-4.48 (-10.18, 1.22)	-	2.97 (-5.76, 11.70)
	Trimester 1	-4.01 (-9.81, 1.80)	-	1.70 (-6.47, 9.86)
	Trimester 2	-4.30 (-9.82, 1.23)	-	4.24 (-3.64, 12.13)
	Trimester 3	-4.60 (-10.50, 1.29)	-	0.63 (-8.43, 9.68)
	Pregnancy	-4.45 (-9.63, 0.72)	-	3.44 (-3.58, 10.47)
	Year 1	-2.50 (-7.95, 2.94)	-	1.97 (-5.97, 9.91)
	Year 2	-2.25 (-7.49, 2.98)	-	-1.61 (-10.01, 6.80)
Flea Skin application	Pre-pregnancy	1.03 (-2.18, 4.24)	-10.61 (-19.26, -1.96)	3.08 (-1.03, 7.19)
	Trimester 1	1.46 (-1.64, 4.55)	-10.41 (-19.26, -1.57)	0.84 (-3.24, 4.92)
	Trimester 2	1.85 (-1.22, 4.92)	-11.73 (-20.92, -2.54)	0.67 (-3.48, 4.82)
	Trimester 3	2.02 (-1.13, 5.17)	-10.97 (-21.24, -0.71)	1.24 (-2.85, 5.33)
	Pregnancy	1.11 (-1.81, 4.02)	-11.09 (-19.80, -2.39)	0.89 (-2.89, 4.67)
	Year 1	1.07 (-1.79, 3.94)	-3.77 (-11.39, 3.84)	-0.77 (-4.25, 2.72)
	Year 2	1.30 (-1.61, 4.21)	-2.77 (-10.36, 4.83)	-0.32 (-3.76, 3.12)
Flea soap, shampoo, or powder	Pre-pregnancy	-2.73 (-6.51, 1.06)	-9.08 (-17.41, -0.76)	0.12 (-5.80, 6.04)
	Trimester 1	-2.18 (-6.01, 1.65)	-6.33 (-15.18, 2.52)	-1.18 (-7.26, 4.91)
	Trimester 2	-3.25 (-6.99, 0.49)	-6.93 (-16.63, 2.76)	-1.58 (-7.77, 4.60)
	Trimester 3	-3.08 (-6.93, 0.77)	-6.85 (-16.84, 3.14)	-0.74 (-6.85, 5.37)
	Pregnancy	-2.10 (-5.63, 1.42)	-6.38 (-15.06, 2.31)	0.75 (-4.66, 6.15)
	Year 1	-2.44 (-5.80, 0.92)	-3.74 (-13.18, 5.70)	0.43 (-4.32, 5.18)
	Year 2	-4.37 (-7.69, -1.04)	-3.21 (-12.38, 5.95)	-2.04 (-7.05, 2.98)

Bold typeface indicates statistical significance at $P < 0.05$. Associations for indoor professionally applied insecticides and flea collars among DD could not be assessed due to small sample sizes. Abbreviations: ASD, autism spectrum disorder; DD, developmental delay; DQ, developmental quotient; TD, typically developing; VABS, Vineland Adaptive Behavior Scales.

Supplemental Table S5. Beta (95% CI) and p-values for effect modification of sex on the association between insecticides and MSEL, by diagnosis.

Application	Exposure Period	ASD			DD			TD		
		Males (n = 653)	Females (n = 130)	<i>P</i> _{int}	Males (n = 129)	Females (n = 56)	<i>P</i> _{int}	Males (n = 422)	Females (n = 98)	<i>P</i> _{int}
Indoor	Pre-pregnancy	5.32 (-2.78, 13.41)	-	-	7.50 (-15.08, 30.08)	-	-	-7.91 (-15.65, -0.17)	-	-
Professionally	Trimester 1	7.24 (-0.91, 15.39)	-	-	-1.16 (-24.45, 22.14)	-	-	-6.60 (-14.69, 1.48)	-	-
Applied	Trimester 2	2.17 (-5.60, 9.94)	-	-	-1.18 (-29.01, 26.66)	-	-	-3.88 (-10.54, 2.79)	-	-
Insecticide	Trimester 3	5.02 (-2.46, 12.51)	-	-	-1.03 (-28.82, 26.76)	-	-	-2.83 (-9.52, 3.85)	-	-
	Pregnancy	7.20 (0.36, 14.05)	-	-	-1.16 (-24.45, 22.14)	-	-	-3.42 (-9.55, 2.70)	-	-
	Year 1	3.28 (-2.92, 9.47)	-	-	3.03 (-16.00, 22.05)	-	-	-0.71 (-6.53, 5.10)	-	-
	Year 2	1.67 (-4.43, 7.78)	-	-	5.97 (-7.91, 19.86)	-	-	1.89 (-3.74, 7.53)	-	-
Indoor	Pre-pregnancy	1.35 (-3.50, 6.19)	-11.12 (-30.95, 8.71)	0.23	-5.46 (-14.58, 3.66)	-14.74 (-31.05, 1.57)	0.32	-1.91 (-5.63, 1.82)	6.23 (-1.85, 14.32)	0.07
Non-	Trimester 1	3.79 (-0.95, 8.52)	-5.63 (-19.31, 8.05)	0.20	-7.97 (-16.71, 0.78)	-5.74 (-20.27, 8.79)	0.80	-3.47 (-7.22, 0.27)	5.31 (-2.81, 13.44)	0.05
professionally	Trimester 2	3.11 (-1.41, 7.63)	-8.47 (-20.78, 3.84)	0.08	-1.32 (-10.27, 7.64)	-5.80 (-18.85, 7.26)	0.58	-0.28 (-3.82, 3.27)	1.50 (-5.61, 8.62)	0.66
Applied	Trimester 3	3.32 (-1.59, 8.22)	4.00 (-10.32, 18.32)	0.93	-5.47 (-15.57, 4.63)	-7.31 (-19.74, 5.11)	0.82	0.04 (-3.72, 3.79)	-9.86 (-19.86, 0.14)	0.07
Insecticide	Pregnancy	2.76 (-1.30, 6.82)	-1.06 (-12.12, 9.99)	0.52	-1.33 (-9.21, 6.55)	-6.27 (-17.17, 4.63)	0.48	-1.97 (-5.05, 1.12)	2.28 (-3.99, 8.56)	0.23
	Year 1	3.61 (-0.19, 7.41)	-2.96 (-13.10, 7.18)	0.23	-0.58 (-8.26, 7.09)	-0.22 (-12.13, 11.68)	0.96	-2.00 (-4.84, 0.85)	3.54 (-2.17, 9.25)	0.09
	Year 2	2.11 (-1.69, 5.92)	-3.74 (-12.80, 5.32)	0.24	1.25 (-6.59, 9.08)	-5.90 (-16.78, 4.98)	0.30	-0.82 (-3.61, 1.96)	1.29 (-4.70, 7.27)	0.53
Any Indoor	Pre-pregnancy	1.77 (-2.65, 6.20)	5.38 (-9.71, 20.46)	0.65	-4.89 (-13.67, 3.89)	-11.73 (-26.19, 2.74)	0.42	-2.66 (-6.16, 0.84)	7.34 (-0.44, 15.11)	0.02
Insecticide	Trimester 1	4.14 (-0.25, 8.53)	0.42 (-11.88, 12.73)	0.58	-7.20 (-15.45, 1.05)	-5.07 (-18.12, 7.98)	0.79	-4.05 (-7.57, -0.53)	6.49 (-1.31, 14.29)	0.02
	Trimester 2	2.81 (-1.38, 7.01)	2.57 (-7.62, 12.77)	0.97	-1.32 (-9.90, 7.26)	-5.41 (-17.60, 6.77)	0.59	-0.65 (-3.98, 2.68)	1.47 (-5.65, 8.59)	0.60
	Trimester 3	4.08 (-0.33, 8.48)	4.83 (-7.46, 17.12)	0.91	-4.94 (-14.46, 4.58)	-7.36 (-19.78, 5.07)	0.76	-1.40 (-4.86, 2.06)	-6.41 (-15.83, 3.01)	0.33
	Pregnancy	3.93 (0.10, 7.76)	6.46 (-3.07, 15.98)	0.63	-1.29 (-8.91, 6.33)	-6.13 (-16.81, 4.55)	0.47	-2.30 (-5.25, 0.66)	2.26 (-4.00, 8.51)	0.20
	Year 1	2.91 (-0.73, 6.55)	-3.45 (-12.52, 5.62)	0.20	-0.12 (-7.48, 7.24)	5.08 (-6.45, 16.62)	0.46	-2.13 (-4.89, 0.64)	3.06 (-2.45, 8.58)	0.10
	Year 2	1.97 (-1.68, 5.61)	-2.45 (-10.94, 6.04)	0.35	1.80 (-5.52, 9.12)	-1.91 (-12.34, 8.52)	0.57	-0.89 (-3.57, 1.80)	1.47 (-4.31, 7.25)	0.47
Outdoor	Pre-pregnancy	-1.48 (-7.13, 4.18)	-3.67 (-17.98, 10.64)	0.78	-0.41 (-12.93, 12.12)	-	-	-0.98 (-5.35, 3.38)	2.38 (-6.11, 10.87)	0.49
Non-	Trimester 1	3.04 (-2.48, 8.56)	-2.80 (-14.76, 9.17)	0.38	-1.65 (-12.96, 9.66)	-	-	-2.72 (-7.05, 1.61)	5.17 (-2.96, 13.31)	0.09
professionally	Trimester 2	0.71 (-4.48, 5.90)	-7.82 (-20.13, 4.50)	0.21	0.55 (-10.71, 11.80)	-	-	0.62 (-3.26, 4.50)	2.58 (-6.39, 11.54)	0.69
Applied	Trimester 3	2.21 (-3.34, 7.76)	-6.67 (-19.86, 6.51)	0.22	-3.75 (-15.00, 7.50)	-	-	-3.05 (-7.27, 1.18)	4.01 (-5.39, 13.42)	0.18
Insecticide	Pregnancy	-0.60 (-5.15, 3.95)	-5.11 (-15.98, 5.76)	0.45	0.10 (-8.95, 9.15)	-	-	-1.80 (-5.03, 1.44)	2.71 (-4.08, 9.50)	0.24
	Year 1	2.24 (-1.85, 6.33)	-3.83 (-13.43, 5.76)	0.25	-3.83 (-12.83, 5.16)	-	-	0.49 (-2.56, 3.54)	0.73 (-5.79, 7.26)	0.95
	Year 2	1.26 (-2.76, 5.28)	-4.61 (-14.34, 5.13)	0.27	-1.40 (-10.35, 7.55)	-	-	-0.09 (-3.06, 2.87)	-1.35 (-7.49, 4.80)	0.72
Any Outdoor	Pre-pregnancy	1.56 (-3.00, 6.11)	-2.95 (-14.61, 8.71)	0.48	-2.30 (-12.43, 7.84)	0.39 (-16.11, 16.89)	0.79	-0.25 (-3.55, 3.05)	5.48 (-1.87, 12.82)	0.16
Insecticide	Trimester 1	3.84 (-0.66, 8.35)	-5.32 (-15.41, 4.77)	0.10	-1.23 (-10.49, 8.04)	0.33 (-14.99, 15.65)	0.86	-0.49 (-3.76, 2.77)	8.59 (1.25, 15.93)	0.03
	Trimester 2	2.37 (-1.96, 6.69)	-9.39 (-19.32, 0.53)	0.03	0.20 (-9.08, 9.47)	-3.40 (-17.94, 11.14)	0.68	1.15 (-1.90, 4.20)	5.79 (-1.81, 13.38)	0.27
	Trimester 3	2.62 (-1.85, 7.08)	-8.58 (-19.22, 2.06)	0.06	-4.66 (-14.23, 4.91)	-1.50 (-14.74, 11.73)	0.70	-0.79 (-3.98, 2.40)	7.15 (-0.70, 15.01)	0.07
	Pregnancy	0.51 (-3.52, 4.55)	-6.34 (-15.75, 3.07)	0.18	-0.56 (-8.80, 7.69)	-1.58 (-14.36, 11.20)	0.89	-0.48 (-3.23, 2.28)	5.70 (-0.69, 12.09)	0.08
	Year 1	2.45 (-1.27, 6.17)	-3.67 (-12.22, 4.88)	0.19	-4.14 (-12.28, 4.01)	8.70 (-2.83, 20.23)	0.07	1.06 (-1.64, 3.76)	4.29 (-1.53, 10.10)	0.32
	Year 2	2.11 (-1.59, 5.82)	-6.24 (-14.95, 2.48)	0.08	-2.63 (-10.68, 5.41)	6.67 (-4.75, 18.09)	0.19	0.36 (-2.29, 3.01)	2.47 (-3.12, 8.06)	0.50
Flea Collar	Pre-pregnancy	-2.60 (-11.33, 6.13)	-	-	-23.31 (-45.25, -1.38)	-	-	-3.20 (-10.66, 4.26)	-	-
Use	Trimester 1	-5.19 (-14.14, 3.75)	-	-	-23.31 (-45.25, -1.38)	-	-	-3.84 (-10.74, 3.07)	-	-
	Trimester 2	-7.12 (-15.57, 1.33)	-	-	-15.72 (-38.02, 6.59)	-	-	-0.97 (-8.13, 6.19)	-	-
	Trimester 3	-3.87 (-12.98, 5.25)	-	-	-16.59 (-38.94, 5.75)	-	-	-2.84 (-10.61, 4.94)	-	-
	Pregnancy	-6.12 (-14.19, 1.94)	-	-	-15.04 (-34.52, 4.43)	-	-	-3.00 (-9.14, 3.14)	-	-
	Year 1	-3.66 (-11.82, 4.49)	-	-	-9.58 (-29.04, 9.89)	-	-	-2.06 (-8.97, 4.85)	-	-
	Year 2	-6.95 (-15.10, 1.20)	-	-	-15.76 (-37.79, 6.26)	-	-	-5.23 (-12.36, 1.90)	-	-

Flea Skin application	Pre-pregnancy	1.69 (-3.41, 6.78)	-12.49 (-22.57, -2.40)	0.01	-10.32 (-20.41, -0.23)	-	-	2.30 (-1.37, 5.96)	1.85 (-5.15, 8.86)	0.91
	Trimester 1	1.94 (-2.97, 6.86)	-11.63 (-21.41, -1.85)	0.02	-12.90 (-22.92, -2.88)	-	-	1.07 (-2.57, 4.71)	4.40 (-2.46, 11.26)	0.40
	Trimester 2	3.62 (-1.24, 8.48)	-8.37 (-18.14, 1.41)	0.03	-13.14 (-23.85, -2.43)	-	-	0.79 (-2.93, 4.51)	2.09 (-4.77, 8.95)	0.74
	Trimester 3	2.48 (-2.57, 7.53)	-10.75 (-20.40, -1.09)	0.02	-11.88 (-23.58, -0.17)	-	-	2.48 (-1.20, 6.16)	2.51 (-4.11, 9.13)	>0.99
	Pregnancy	2.31 (-2.29, 6.91)	-12.51 (-21.88, -3.13)	0.01	-12.38 (-22.45, -2.31)	-	-	1.48 (-1.85, 4.80)	3.86 (-2.65, 10.37)	0.52
	Year 1	1.71 (-2.81, 6.22)	-11.48 (-20.64, -2.31)	0.01	-7.95 (-17.01, 1.10)	-	-	2.30 (-0.76, 5.35)	2.88 (-3.25, 9.01)	0.87
	Year 2	2.52 (-2.15, 7.18)	-6.16 (-15.25, 2.92)	0.09	-5.87 (-15.14, 3.40)	-	-	2.07 (-0.93, 5.07)	3.20 (-3.10, 9.49)	0.75
Flea soap, shampoo, or powder	Pre-pregnancy	-2.96 (-8.70, 2.78)	-22.20 (-39.11, -5.29)	0.04	-4.92 (-16.53, 6.69)	-4.64 (-19.34, 10.07)	0.98	-2.59 (-7.92, 2.74)	-1.85 (-11.23, 7.52)	0.89
	Trimester 1	-2.42 (-8.29, 3.44)	-21.95 (-37.84, -6.07)	0.02	3.56 (-8.46, 15.59)	-4.89 (-20.56, 10.78)	0.40	-1.74 (-6.97, 3.49)	-7.42 (-19.07, 4.23)	0.38
	Trimester 2	-5.38 (-11.27, 0.50)	-11.85 (-25.06, 1.36)	0.38	5.85 (-8.25, 19.96)	-4.84 (-20.50, 10.81)	0.31	-3.40 (-8.86, 2.07)	-4.13 (-14.85, 6.58)	0.90
	Trimester 3	-5.65 (-11.67, 0.38)	-11.95 (-25.68, 1.78)	0.41	3.25 (-11.72, 18.22)	-0.55 (-16.21, 15.12)	0.73	-3.80 (-9.16, 1.56)	-0.55 (-11.28, 10.17)	0.60
	Pregnancy	-2.89 (-8.37, 2.60)	-11.61 (-24.37, 1.14)	0.22	3.45 (-8.65, 15.56)	-1.24 (-16.12, 13.63)	0.63	-2.54 (-7.30, 2.22)	-3.52 (-12.95, 5.92)	0.86
	Year 1	-5.45 (-10.65, -0.25)	-12.17 (-24.85, 0.51)	0.34	-1.64 (-13.79, 10.50)	-1.36 (-19.18, 16.47)	0.98	-1.60 (-5.73, 2.52)	3.30 (-5.70, 12.30)	0.33
	Year 2	-7.29 (-12.46, -2.13)	-17.48 (-29.71, -5.24)	0.13	-4.21 (-16.28, 7.87)	0.16 (-16.15, 16.48)	0.67	-1.28 (-5.55, 2.99)	-1.29 (-12.06, 9.49)	>0.99

Bold typeface indicates statistical significance at $P < 0.05$. Dashes indicate that associations could not be estimated due to small sample sizes. Abbreviations: ASD, autism spectrum disorder; MSEL, Mullen Scales of Early Learning; P_{int} , P -value for interaction; VABS, Vineland Adaptive Behavior Scales.

Supplemental Table S6. Beta (95% CI) and p-values for effect modification of sex on the association between insecticides and VABS, by diagnosis.

Application	Exposure Period	ASD			DD			TD		
		Males (<i>n</i> = 657)	Females (<i>n</i> = 129)	P_{int}	Males (<i>n</i> = 129)	Females (<i>n</i> = 56)	P_{int}	Males (<i>n</i> = 422)	Females (<i>n</i> = 98)	P_{int}
Indoor Professionally Applied Insecticide	Pre-pregnancy	4.62 (-1.01, 10.25)	-	-	5.55 (-15.16, 26.26)	-	-	-4.79 (-14.51, 4.92)	-	-
	Trimester 1	5.22 (-0.53, 10.98)	-	-	4.16 (-17.28, 25.59)	-	-	-7.57 (-17.70, 2.55)	-	-
	Trimester 2	2.13 (-3.30, 7.56)	-	-	5.47 (-20.04, 30.99)	-	-	-1.69 (-10.04, 6.67)	-	-
	Trimester 3	5.63 (0.36, 10.90)	-	-	5.41 (-20.04, 30.86)	-	-	-0.68 (-9.06, 7.69)	-	-
	Pregnancy	5.36 (0.57, 10.15)	-	-	4.16 (-17.28, 25.59)	-	-	-0.62 (-8.30, 7.06)	-	-
	Year 1	0.54 (-3.81, 4.88)	-	-	7.00 (-10.66, 24.65)	-	-	2.51 (-4.76, 9.79)	-	-
	Year 2	1.16 (-3.07, 5.38)	0.63 (-9.08, 10.34)	0.92	5.45 (-7.27, 18.18)	11.86 (-6.35, 30.07)	0.57	3.41 (-3.69, 10.51)	-2.80 (-16.33, 10.73)	0.42
Indoor Non-professionally Applied Insecticide	Pre-pregnancy	0.93 (-2.47, 4.33)	-7.54 (-21.55, 6.48)	0.25	-2.37 (-10.86, 6.13)	-9.09 (-24.26, 6.09)	0.44	2.69 (-1.97, 7.36)	4.79 (-5.34, 14.91)	0.71
	Trimester 1	1.79 (-1.56, 5.14)	-4.33 (-14.01, 5.35)	0.24	1.49 (-6.67, 9.65)	-0.82 (-14.38, 12.73)	0.77	-1.53 (-6.23, 3.17)	7.20 (-3.00, 17.39)	0.13
	Trimester 2	0.96 (-2.23, 4.15)	-7.17 (-15.87, 1.54)	0.09	1.93 (-6.35, 10.21)	1.67 (-10.39, 13.73)	0.97	2.82 (-1.61, 7.25)	1.14 (-7.76, 10.03)	0.74
	Trimester 3	-0.81 (-4.27, 2.65)	0.82 (-9.31, 10.94)	0.76	-1.67 (-11.00, 7.67)	-0.95 (-12.44, 10.54)	0.93	3.91 (-0.79, 8.62)	-1.02 (-13.53, 11.49)	0.47
	Pregnancy	0.46 (-2.41, 3.33)	-2.31 (-10.14, 5.51)	0.51	1.88 (-5.42, 9.18)	-1.81 (-11.92, 8.29)	0.57	1.24 (-2.63, 5.10)	2.87 (-4.99, 10.73)	0.71
	Year 1	-0.28 (-2.95, 2.40)	-2.26 (-9.43, 4.91)	0.61	-1.06 (-8.11, 5.99)	1.66 (-9.28, 12.60)	0.68	-0.52 (-4.10, 3.07)	0.92 (-6.27, 8.12)	0.72
	Year 2	0.47 (-2.21, 3.15)	-1.00 (-7.40, 5.40)	0.68	0.75 (-6.47, 7.98)	-2.75 (-12.77, 7.28)	0.58	-0.85 (-4.34, 2.64)	1.86 (-5.63, 9.35)	0.52
Any Indoor Insecticide	Pre-pregnancy	1.91 (-1.19, 5.01)	1.51 (-9.13, 12.15)	0.94	-1.46 (-9.64, 6.71)	-6.02 (-19.47, 7.44)	0.57	1.29 (-3.11, 5.70)	5.89 (-3.90, 15.67)	0.40
	Trimester 1	2.70 (-0.40, 5.80)	0.16 (-8.53, 8.85)	0.59	1.90 (-5.79, 9.60)	-0.42 (-12.58, 11.74)	0.75	-2.58 (-7.01, 1.85)	8.12 (-1.69, 17.93)	0.05
	Trimester 2	1.46 (-1.49, 4.41)	-0.01 (-7.21, 7.19)	0.71	2.36 (-5.57, 10.29)	1.71 (-9.55, 12.96)	0.93	2.27 (-1.90, 6.44)	1.05 (-7.87, 9.96)	0.81
	Trimester 3	1.39 (-1.72, 4.50)	2.54 (-6.15, 11.22)	0.81	-0.82 (-9.63, 7.98)	-0.99 (-12.49, 10.50)	0.98	2.54 (-1.80, 6.88)	1.16 (-10.64, 12.97)	0.83
	Pregnancy	1.95 (-0.75, 4.65)	2.59 (-4.15, 9.33)	0.86	2.36 (-4.67, 9.39)	-1.37 (-11.22, 8.47)	0.55	1.09 (-2.62, 4.80)	2.85 (-5.01, 10.70)	0.69
	Year 1	0.11 (-2.44, 2.67)	-3.14 (-9.54, 3.27)	0.35	0.12 (-6.67, 6.91)	1.05 (-9.58, 11.68)	0.89	-0.64 (-4.13, 2.84)	-1.33 (-8.28, 5.62)	0.86
	Year 2	0.97 (-1.59, 3.52)	-1.67 (-7.66, 4.32)	0.43	1.31 (-5.42, 8.04)	1.62 (-7.97, 11.21)	0.96	-0.46 (-3.83, 2.91)	-0.40 (-7.65, 6.85)	0.99

Outdoor	Pre-pregnancy	-0.83 (-4.87, 3.20)	-1.23 (-11.89, 9.44)	0.95	3.60 (-7.88, 15.09)	-	-	5.18 (-0.31, 10.68)	4.43 (-6.26, 15.11)	0.90
Non-	Trimester 1	1.14 (-2.80, 5.08)	-3.23 (-11.98, 5.52)	0.37	4.09 (-6.27, 14.44)	-	-	-1.07 (-6.54, 4.40)	5.60 (-4.66, 15.87)	0.26
professionally	Trimester 2	-0.31 (-4.02, 3.39)	-3.47 (-12.50, 5.56)	0.53	6.46 (-3.78, 16.69)	-	-	4.02 (-0.87, 8.91)	2.76 (-8.52, 14.05)	0.84
Applied	Trimester 3	0.38 (-3.58, 4.33)	-4.38 (-14.11, 5.35)	0.37	-1.82 (-12.09, 8.44)	-	-	2.70 (-2.65, 8.04)	-1.52 (-13.40, 10.36)	0.52
Insecticide	Pregnancy	-1.81 (-5.04, 1.42)	-6.10 (-13.97, 1.78)	0.32	1.52 (-6.80, 9.85)	-	-	1.66 (-2.42, 5.75)	3.43 (-5.15, 12.00)	0.72
	Year 1	-0.03 (-2.93, 2.87)	-5.87 (-12.76, 1.01)	0.12	0.66 (-7.60, 8.93)	-	-	3.04 (-0.77, 6.85)	2.60 (-5.55, 10.75)	0.92
	Year 2	-0.04 (-2.89, 2.81)	-5.38 (-12.38, 1.62)	0.16	3.46 (-4.70, 11.62)	-	-	0.78 (-2.94, 4.49)	3.46 (-4.24, 11.15)	0.54
Any Outdoor	Pre-pregnancy	1.82 (-1.41, 5.06)	0.61 (-7.89, 9.11)	0.79	2.08 (-7.21, 11.38)	4.31 (-10.81, 19.42)	0.81	1.00 (-3.17, 5.17)	6.60 (-2.68, 15.89)	0.28
Insecticide	Trimester 1	2.64 (-0.57, 5.84)	-3.89 (-11.17, 3.39)	0.11	3.32 (-5.18, 11.81)	1.98 (-12.04, 16.00)	0.87	-0.72 (-4.85, 3.40)	9.09 (-0.17, 18.35)	0.06
	Trimester 2	1.65 (-1.44, 4.73)	-4.47 (-11.63, 2.70)	0.12	4.99 (-3.47, 13.45)	2.90 (-10.37, 16.17)	0.79	2.82 (-1.03, 6.68)	5.62 (-3.97, 15.20)	0.60
	Trimester 3	2.41 (-0.76, 5.59)	-5.02 (-12.72, 2.68)	0.08	-0.65 (-9.41, 8.11)	1.63 (-10.52, 13.77)	0.76	2.32 (-1.71, 6.36)	2.79 (-7.13, 12.71)	0.93
	Pregnancy	0.22 (-2.65, 3.08)	-5.42 (-12.18, 1.34)	0.13	2.01 (-5.57, 9.59)	1.89 (-9.85, 13.64)	0.99	1.91 (-1.57, 5.38)	6.52 (-1.54, 14.58)	0.30
	Year 1	0.89 (-1.74, 3.53)	-3.88 (-9.98, 2.23)	0.16	1.66 (-5.86, 9.19)	2.88 (-7.77, 13.54)	0.85	1.91 (-1.47, 5.30)	4.84 (-2.43, 12.12)	0.47
	Year 2	1.26 (-1.36, 3.89)	-4.39 (-10.62, 1.84)	0.10	3.34 (-4.01, 10.69)	5.81 (-4.64, 16.27)	0.70	-0.32 (-3.64, 3.00)	5.49 (-1.51, 12.48)	0.14
Flea Collar	Pre-pregnancy	-3.64 (-9.77, 2.49)	-	-	-18.43 (-38.58, 1.71)	-	-	0.69 (-8.65, 10.02)	-	-
Use	Trimester 1	-3.63 (-9.90, 2.65)	-	-	-18.43 (-38.58, 1.71)	-	-	-0.31 (-8.98, 8.35)	-	-
	Trimester 2	-3.61 (-9.54, 2.33)	-	-	-9.20 (-29.70, 11.30)	-	-	0.11 (-8.82, 9.05)	-	-
	Trimester 3	-3.84 (-10.22, 2.55)	-	-	-9.80 (-30.30, 10.71)	-	-	-2.47 (-12.22, 7.27)	-	-
	Pregnancy	-4.01 (-9.68, 1.65)	-	-	-11.62 (-29.59, 6.35)	-	-	0.56 (-7.13, 8.25)	-	-
	Year 1	-1.13 (-6.85, 4.59)	-	-	-6.72 (-24.64, 11.20)	-	-	-1.57 (-10.20, 7.06)	-	-
	Year 2	-0.33 (-6.05, 5.40)	-	-	-12.05 (-32.34, 8.24)	-	-	-4.31 (-13.23, 4.61)	-	-
Flea Skin	Pre-pregnancy	2.54 (-1.02, 6.11)	-4.99 (-12.18, 2.19)	0.06	-11.09 (-20.18, -1.99)	-	-	2.36 (-2.19, 6.92)	5.34 (-3.36, 14.05)	0.55
application	Trimester 1	2.78 (-0.65, 6.21)	-3.87 (-10.82, 3.09)	0.09	-11.78 (-20.84, -2.72)	-	-	0.14 (-4.40, 4.67)	3.27 (-5.28, 11.82)	0.52
	Trimester 2	2.82 (-0.58, 6.22)	-2.04 (-8.99, 4.91)	0.22	-11.86 (-21.55, -2.16)	-	-	-1.30 (-5.92, 3.31)	6.63 (-1.89, 15.15)	0.10
	Trimester 3	3.57 (0.04, 7.09)	-3.48 (-10.33, 3.37)	0.07	-11.98 (-22.52, -1.45)	-	-	-0.54 (-5.14, 4.05)	5.60 (-2.67, 13.87)	0.20
	Pregnancy	2.38 (-0.83, 5.60)	-4.33 (-11.00, 2.33)	0.07	-11.66 (-20.82, -2.50)	-	-	-0.31 (-4.46, 3.84)	5.54 (-2.59, 13.66)	0.20
	Year 1	2.30 (-0.87, 5.46)	-4.01 (-10.51, 2.50)	0.09	-5.79 (-14.08, 2.51)	-	-	-1.77 (-5.58, 2.04)	3.62 (-4.03, 11.28)	0.21
	Year 2	1.81 (-1.45, 5.06)	-0.34 (-6.78, 6.10)	0.56	-4.42 (-12.88, 4.04)	-	-	-0.37 (-4.12, 3.39)	1.07 (-6.81, 8.94)	0.75
Flea soap,	Pre-pregnancy	-1.88 (-5.88, 2.12)	-10.73 (-22.60, 1.13)	0.17	-7.71 (-18.24, 2.83)	-9.09 (-22.42, 4.25)	0.87	-3.38 (-10.09, 3.33)	8.93 (-2.87, 20.72)	0.08
shampoo, or	Trimester 1	-0.87 (-4.96, 3.21)	-12.12 (-23.27, -0.97)	0.06	-2.28 (-13.24, 8.67)	-10.94 (-25.20, 3.31)	0.34	-0.02 (-6.60, 6.57)	-6.35 (-21.01, 8.30)	0.44
powder	Trimester 2	-2.46 (-6.56, 1.63)	-7.24 (-16.50, 2.03)	0.36	-0.93 (-13.78, 11.92)	-10.93 (-25.19, 3.34)	0.30	-2.72 (-9.57, 4.14)	1.84 (-11.61, 15.29)	0.55
	Trimester 3	-2.64 (-6.84, 1.56)	-5.35 (-15.00, 4.30)	0.61	-2.83 (-16.45, 10.79)	-7.48 (-21.73, 6.78)	0.64	-2.76 (-9.49, 3.96)	6.48 (-6.98, 19.94)	0.23
	Pregnancy	-1.22 (-5.06, 2.61)	-6.93 (-15.90, 2.04)	0.25	-2.57 (-13.58, 8.45)	-9.47 (-22.98, 4.05)	0.43	-1.18 (-7.14, 4.78)	7.23 (-4.60, 19.05)	0.21
	Year 1	-1.90 (-5.54, 1.74)	-5.76 (-14.69, 3.17)	0.43	-2.92 (-14.08, 8.24)	-5.77 (-22.11, 10.58)	0.78	-0.88 (-6.04, 4.28)	6.92 (-4.36, 18.21)	0.22
	Year 2	-3.40 (-7.02, 0.21)	-9.87 (-18.50, -1.24)	0.18	-2.31 (-13.39, 8.78)	-3.70 (-18.68, 11.29)	0.88	-2.22 (-7.57, 3.13)	1.61 (-11.90, 15.12)	0.61

Bold typeface indicates statistical significance at $P < 0.05$. Dashes indicate that associations could not be estimated due to small sample sizes. Abbreviations: ASD, autism spectrum disorder; MSEL, Mullen Scales of Early Learning; P_{int} , P -value for interaction; VABS, Vineland Adaptive Behavior Scales.

Supplemental Table S7. Beta (95% CI) for association of flea insecticide with MSEL Subscale DQ.

	Application	Exposure Period	N (exp/unexp)	Visual Receptivity	Receptive Language	Expressive Language	Fine Motor
ASD	Flea Collar Use	Pre-pregnancy	30/737	-6.22 (-15.45, 3.01)	-4.06 (-13.73, 5.60)	-6.29 (-15.34, 2.76)	-4.52 (-12.15, 3.10)
		Trimester 1	29/738	-6.28 (-15.68, 3.13)	-4.41 (-14.25, 5.43)	-6.91 (-16.12, 2.31)	-5.68 (-13.44, 2.09)
		Trimester 2	32/736	-7.15 (-16.11, 1.80)	-8.58 (-17.96, 0.79)	-8.71 (-17.49, 0.07)	-7.15 (-14.54, 0.24)
		Trimester 3	28/732	-3.42 (-12.99, 6.14)	-5.83 (-15.83, 4.18)	-6.62 (-15.99, 2.74)	-4.60 (-12.51, 3.30)
		Pregnancy	37/726	-5.42 (-13.81, 2.97)	-6.75 (-15.52, 2.02)	-7.43 (-15.64, 0.78)	-5.66 (-12.58, 1.27)
		Year 1	33/733	-5.45 (-14.27, 3.37)	-5.55 (-14.78, 3.69)	-7.30 (-15.95, 1.35)	-4.71 (-12.00, 2.58)
		Year 2	36/731	-8.94 (-17.40, -0.48)	-8.36 (-17.24, 0.51)	-10.60 (-18.90, -2.30)	-6.86 (-13.86, 0.14)
	Flea Skin application	Pre-pregnancy	109/635	-2.62 (-7.79, 2.56)	-0.36 (-5.82, 5.11)	0.01 (-5.10, 5.13)	-1.20 (-5.48, 3.07)
		Trimester 1	120/627	-3.35 (-8.35, 1.65)	0.57 (-4.71, 5.84)	0.75 (-4.17, 5.67)	-0.87 (-4.99, 3.26)
		Trimester 2	122/624	-0.63 (-5.59, 4.33)	2.15 (-3.07, 7.37)	2.92 (-1.96, 7.79)	1.01 (-3.07, 5.09)
		Trimester 3	114/625	-1.25 (-6.35, 3.85)	0.23 (-5.14, 5.59)	0.30 (-4.71, 5.31)	-0.10 (-4.30, 4.10)
		Pregnancy	139/606	-2.47 (-7.19, 2.25)	0.17 (-4.81, 5.14)	0.88 (-3.77, 5.52)	-0.51 (-4.41, 3.38)
		Year 1	148/607	-2.29 (-6.92, 2.33)	0.22 (-4.66, 5.09)	0.19 (-4.35, 4.74)	-0.96 (-4.77, 2.85)
		Year 2	138/619	-0.53 (-5.24, 4.17)	1.52 (-3.44, 6.48)	1.71 (-2.91, 6.33)	0.35 (-3.53, 4.23)
	Flea soap, shampoo, or powder	Pre-pregnancy	71/683	-3.87 (-10.00, 2.27)	-6.01 (-12.43, 0.41)	-5.27 (-11.32, 0.77)	-4.14 (-9.25, 0.96)
		Trimester 1	69/684	-3.31 (-9.53, 2.90)	-6.40 (-12.89, 0.10)	-4.20 (-10.32, 1.92)	-4.57 (-9.74, 0.59)
		Trimester 2	73/682	-5.51 (-11.56, 0.55)	-8.28 (-14.61, -1.94)	-5.70 (-11.68, 0.27)	-5.27 (-10.30, -0.23)
		Trimester 3	69/676	-4.83 (-11.05, 1.39)	-9.29 (-15.80, -2.77)	-5.98 (-12.12, 0.16)	-5.39 (-10.58, -0.19)
		Pregnancy	85/663	-2.52 (-8.22, 3.17)	-6.26 (-12.22, -0.29)	-3.47 (-9.09, 2.15)	-3.88 (-8.63, 0.86)
		Year 1	94/665	-6.12 (-11.55, -0.70)	-8.80 (-14.47, -3.14)	-5.84 (-11.18, -0.49)	-4.18 (-8.70, 0.33)
		Year 2	96/662	-7.64 (-13.01, -2.26)	-10.54 (-16.16, -4.92)	-9.40 (-14.69, -4.12)	-6.88 (-11.36, -2.41)
DD	Flea Collar Use	Pre-pregnancy	5/177	-	-	-	-
		Trimester 1	5/177	-	-	-	-
		Trimester 2	5/177	-	-	-	-
		Trimester 3	5/170	-	-	-	-
		Pregnancy	6/174	-	-	-	-
		Year 1	7/178	-	-	-	-
		Year 2	6/179	-	-	-	-
	Flea Skin application	Pre-pregnancy	18/160	-15.21 (-27.07, -3.35)	-9.71 (-19.31, -0.12)	-7.73 (-19.16, 3.69)	-7.05 (-16.76, 2.65)
		Trimester 1	17/161	-16.13 (-28.22, -4.03)	-11.70 (-21.45, -1.95)	-7.89 (-19.56, 3.78)	-8.81 (-18.69, 1.07)
		Trimester 2	16/161	-17.88 (-30.47, -5.29)	-13.55 (-23.67, -3.44)	-10.43 (-22.51, 1.64)	-9.56 (-19.86, 0.75)
		Trimester 3	13/156	-14.50 (-28.70, -0.30)	-12.00 (-23.30, -0.70)	-8.27 (-21.68, 5.14)	-7.65 (-19.23, 3.93)
		Pregnancy	18/156	-16.99 (-28.83, -5.16)	-11.90 (-21.45, -2.36)	-8.86 (-20.21, 2.49)	-9.25 (-18.98, 0.48)
		Year 1	26/155	-11.94 (-22.23, -1.65)	-6.42 (-14.74, 1.90)	-3.22 (-13.15, 6.71)	-5.59 (-13.99, 2.81)
		Year 2	26/157	-8.96 (-19.28, 1.36)	-2.82 (-11.17, 5.53)	-2.30 (-12.22, 7.63)	-4.58 (-12.94, 3.79)
	Flea soap, shampoo, or powder	Pre-pregnancy	20/161	-9.96 (-21.35, 1.44)	-3.17 (-12.39, 6.05)	-5.91 (-16.79, 4.97)	-4.01 (-13.25, 5.23)
		Trimester 1	18/163	-4.96 (-17.07, 7.14)	1.26 (-8.48, 11.01)	2.96 (-8.56, 14.48)	-1.33 (-11.10, 8.43)
		Trimester 2	15/166	-4.72 (-17.99, 8.56)	0.58 (-10.10, 11.26)	2.22 (-10.41, 14.84)	-0.96 (-11.67, 9.74)
		Trimester 3	14/159	-4.69 (-18.42, 9.03)	0.02 (-10.95, 10.99)	2.10 (-10.83, 15.04)	0.19 (-10.90, 11.28)
		Pregnancy	19/160	-3.81 (-15.67, 8.05)	1.06 (-8.49, 10.61)	3.97 (-7.35, 15.28)	0.31 (-9.30, 9.91)
		Year 1	16/166	-7.41 (-20.16, 5.33)	0.99 (-9.28, 11.25)	1.95 (-10.28, 14.18)	-1.47 (-11.78, 8.84)
		Year 2	17/166	-9.71 (-22.09, 2.66)	-0.14 (-10.13, 9.86)	0.35 (-11.54, 12.24)	-3.05 (-13.06, 6.96)

TD	Flea Collar Use	Pre-pregnancy	14/500	-3.35 (-12.65, 5.94)	-2.80 (-11.93, 6.33)	-0.83 (-10.39, 8.74)	-0.42 (-8.29, 7.46)
		Trimester 1	16/498	-4.10 (-12.78, 4.58)	-1.49 (-10.01, 7.03)	-3.65 (-12.56, 5.27)	-1.27 (-8.62, 6.08)
		Trimester 2	17/495	-1.33 (-9.75, 7.08)	-2.46 (-10.71, 5.79)	-1.34 (-9.99, 7.32)	-2.14 (-9.28, 4.99)
		Trimester 3	13/498	-5.65 (-15.23, 3.93)	-0.20 (-9.65, 9.24)	-0.04 (-9.95, 9.86)	0.72 (-7.39, 8.83)
		Pregnancy	22/490	-3.39 (-10.86, 4.08)	-3.84 (-11.17, 3.48)	-3.75 (-11.43, 3.93)	-2.78 (-9.11, 3.55)
		Year 1	17/495	-4.37 (-12.84, 4.09)	1.61 (-6.71, 9.92)	1.25 (-7.45, 9.94)	0.97 (-6.20, 8.14)
		Year 2	15/497	-4.61 (-13.59, 4.36)	-3.04 (-11.85, 5.76)	-4.58 (-13.76, 4.60)	-2.85 (-10.43, 4.73)
	Flea Skin application	Pre-pregnancy	75/425	4.23 (-0.17, 8.64)	1.87 (-2.48, 6.22)	1.85 (-2.70, 6.41)	1.12 (-2.59, 4.83)
		Trimester 1	79/420	2.22 (-2.16, 6.59)	1.79 (-2.50, 6.09)	3.33 (-1.17, 7.83)	-0.09 (-3.76, 3.58)
		Trimester 2	74/426	3.36 (-1.08, 7.81)	-0.84 (-5.22, 3.53)	2.08 (-2.50, 6.67)	0.32 (-3.42, 4.06)
		Trimester 3	77/422	4.23 (-0.12, 8.58)	2.34 (-1.95, 6.64)	2.74 (-1.77, 7.24)	1.54 (-2.11, 5.19)
		Pregnancy	95/405	2.70 (-1.35, 6.74)	1.28 (-2.70, 5.25)	2.92 (-1.25, 7.08)	1.01 (-2.38, 4.41)
		Year 1	115/394	3.68 (-0.05, 7.41)	2.68 (-0.98, 6.35)	3.39 (-0.43, 7.22)	-0.19 (-3.34, 2.96)
		Year 2	118/390	4.10 (0.43, 7.77)	0.89 (-2.73, 4.52)	2.56 (-1.22, 6.33)	0.99 (-2.12, 4.09)
	Flea soap, shampoo, or powder	Pre-pregnancy	32/465	1.56 (-4.70, 7.83)	-4.08 (-10.20, 2.04)	-2.06 (-8.47, 4.35)	-3.94 (-9.21, 1.33)
		Trimester 1	30/466	-1.51 (-7.97, 4.95)	-2.75 (-9.06, 3.57)	-1.96 (-8.58, 4.65)	-4.72 (-10.16, 0.72)
		Trimester 2	29/469	-1.64 (-8.21, 4.94)	-5.55 (-11.99, 0.90)	-2.19 (-8.96, 4.57)	-4.37 (-9.88, 1.15)
		Trimester 3	30/465	-0.77 (-7.24, 5.71)	-4.39 (-10.75, 1.97)	-3.12 (-9.78, 3.54)	-3.97 (-9.38, 1.44)
		Pregnancy	39/458	-1.13 (-6.88, 4.62)	-3.30 (-8.94, 2.33)	-2.84 (-8.74, 3.05)	-3.16 (-7.98, 1.65)
		Year 1	52/454	1.95 (-3.11, 7.01)	-1.48 (-6.44, 3.48)	-2.23 (-7.40, 2.94)	-1.35 (-5.62, 2.92)
		Year 2	46/459	4.35 (-0.97, 9.68)	-2.67 (-7.90, 2.57)	-4.65 (-10.08, 0.79)	-2.97 (-7.47, 1.53)

Bold typeface indicates statistical significance at $P < 0.05$. Associations for flea collars among DD were not assessed due to small sample sizes. Abbreviations: ASD, autism spectrum disorder; DD, developmental delay; DQ, developmental quotient; MSEL, Mullen Scales of Early Learning; TD, typically developing

Supplemental Table S8. Beta (95% CI) for association of flea insecticide with VABS Subscale DQ.

	Application	Exposure Period	N (exp/unexp)	Communication	Daily Living Skills	Socialization	Fine Motor Skills
ASD	Flea Collar Use	Pre-pregnancy	30/739	-7.84 (-15.98, 0.31)	-2.21 (-7.37, 2.94)	-4.83 (-11.65, 1.98)	-3.15 (-10.21, 3.91)
		Trimester 1	29/740	-7.21 (-15.51, 1.09)	-1.87 (-7.12, 3.38)	-3.45 (-10.40, 3.49)	-3.76 (-10.95, 3.43)
		Trimester 2	32/738	-7.96 (-15.86, -0.06)	-3.23 (-8.23, 1.77)	-1.43 (-8.05, 5.19)	-5.29 (-12.13, 1.56)
		Trimester 3	28/734	-6.17 (-14.61, 2.27)	-3.80 (-9.13, 1.54)	-0.97 (-8.03, 6.08)	-8.08 (-15.37, -0.79)
		Pregnancy	37/728	-7.75 (-15.15, -0.36)	-2.63 (-7.32, 2.05)	-2.28 (-8.47, 3.92)	-5.73 (-12.14, 0.68)
		Year 1	33/735	-3.34 (-11.14, 4.45)	-1.09 (-6.01, 3.83)	-1.30 (-7.82, 5.21)	-5.89 (-12.62, 0.84)
		Year 2	36/733	-3.22 (-10.71, 4.28)	-2.01 (-6.74, 2.72)	0.38 (-5.89, 6.66)	-5.39 (-11.86, 1.08)
	Flea Skin application	Pre-pregnancy	108/638	-1.14 (-5.73, 3.44)	0.77 (-2.09, 3.64)	4.04 (0.20, 7.88)	0.64 (-3.32, 4.61)
		Trimester 1	120/629	-1.49 (-5.93, 2.95)	1.69 (-1.06, 4.44)	4.15 (0.45, 7.84)	1.38 (-2.43, 5.18)
		Trimester 2	121/627	0.39 (-3.98, 4.77)	1.30 (-1.44, 4.03)	4.54 (0.87, 8.21)	0.89 (-2.89, 4.67)
		Trimester 3	113/628	-0.65 (-5.14, 3.84)	1.90 (-0.92, 4.72)	4.25 (0.48, 8.02)	2.29 (-1.59, 6.17)
		Pregnancy	139/608	-1.41 (-5.57, 2.76)	1.20 (-1.40, 3.81)	3.29 (-0.21, 6.79)	0.97 (-2.63, 4.57)
		Year 1	147/610	-0.37 (-4.44, 3.70)	0.88 (-1.70, 3.47)	3.49 (0.07, 6.91)	0.12 (-3.41, 3.65)
		Year 2	138/622	0.29 (-3.85, 4.43)	1.26 (-1.37, 3.89)	3.72 (0.25, 7.20)	-0.26 (-3.86, 3.33)
	Flea soap, shampoo, or powder	Pre-pregnancy	72/685	-3.60 (-9.05, 1.86)	-3.10 (-6.53, 0.33)	-1.74 (-6.24, 2.76)	-2.43 (-7.08, 2.22)
		Trimester 1	70/686	-2.69 (-8.21, 2.84)	-2.84 (-6.31, 0.63)	-1.35 (-5.90, 3.20)	-1.91 (-6.62, 2.79)
		Trimester 2	74/684	-4.52 (-9.91, 0.87)	-3.15 (-6.54, 0.24)	-1.89 (-6.33, 2.56)	-3.31 (-7.90, 1.28)
		Trimester 3	70/678	-4.07 (-9.62, 1.48)	-2.65 (-6.15, 0.84)	-1.71 (-6.28, 2.87)	-2.48 (-7.21, 2.25)
		Pregnancy	86/665	-1.42 (-6.50, 3.67)	-2.27 (-5.46, 0.93)	-1.01 (-5.19, 3.18)	-2.76 (-7.09, 1.57)
		Year 1	95/667	-3.36 (-8.18, 1.47)	-1.83 (-4.87, 1.20)	-1.84 (-5.84, 2.15)	-1.69 (-5.82, 2.44)
		Year 2	97/664	-5.83 (-10.62, -1.04)	-3.56 (-6.57, -0.56)	-3.21 (-7.18, 0.76)	-3.88 (-7.98, 0.21)
DD	Flea Collar Use	Pre-pregnancy	5/175				
		Trimester 1	5/175				
		Trimester 2	5/175				
		Trimester 3	5/168				
		Pregnancy	6/172				
		Year 1	7/176				
		Year 2	6/177				
	Flea Skin application	Pre-pregnancy	18/158	-6.91 (-16.79, 2.96)	-7.62 (-17.01, 1.77)	-16.62 (-27.26, -5.97)	-10.32 (-20.69, 0.05)
		Trimester 1	17/159	-6.75 (-16.84, 3.34)	-7.48 (-17.08, 2.12)	-16.64 (-27.53, -5.76)	-9.83 (-20.44, 0.78)
		Trimester 2	16/159	-8.08 (-18.54, 2.39)	-9.32 (-19.26, 0.62)	-18.16 (-29.49, -6.84)	-10.39 (-21.46, 0.68)
		Trimester 3	13/154	-5.86 (-17.68, 5.97)	-8.48 (-19.21, 2.25)	-18.61 (-31.31, -5.90)	-10.42 (-22.60, 1.77)
		Pregnancy	18/154	-7.82 (-17.71, 2.07)	-7.82 (-17.25, 1.61)	-17.52 (-28.23, -6.81)	-10.17 (-20.55, 0.22)
		Year 1	26/153	-0.34 (-9.06, 8.37)	-1.74 (-9.90, 6.43)	-9.88 (-19.26, -0.50)	-2.66 (-11.62, 6.31)
		Year 2	26/155	2.17 (-6.53, 10.87)	-1.80 (-9.96, 6.35)	-9.14 (-18.51, 0.22)	-1.75 (-10.74, 7.25)
	Flea soap, shampoo, or powder	Pre-pregnancy	20/159	-7.61 (-17.05, 1.82)	-6.75 (-15.70, 2.19)	-12.40 (-22.80, -2.00)	-9.25 (-19.13, 0.63)
		Trimester 1	18/161	-1.44 (-11.46, 8.59)	-6.45 (-15.90, 3.00)	-9.57 (-20.62, 1.49)	-7.86 (-18.33, 2.60)
		Trimester 2	15/164	-2.02 (-13.01, 8.97)	-7.51 (-17.86, 2.83)	-8.53 (-20.67, 3.61)	-9.72 (-21.16, 1.72)
		Trimester 3	14/157	-1.66 (-13.11, 9.80)	-8.00 (-18.32, 2.32)	-9.20 (-21.78, 3.39)	-8.47 (-20.15, 3.21)
		Pregnancy	19/158	-1.65 (-11.51, 8.21)	-6.91 (-16.19, 2.38)	-10.23 (-21.05, 0.59)	-6.64 (-16.82, 3.53)
		Year 1	16/164	3.24 (-7.54, 14.02)	-5.34 (-15.37, 4.68)	-6.75 (-18.52, 5.03)	-5.54 (-16.54, 5.46)
		Year 2	17/164	4.00 (-6.46, 14.45)	-3.71 (-13.45, 6.04)	-5.87 (-17.33, 5.58)	-6.53 (-17.28, 4.21)

TD	Flea Collar Use	Pre-pregnancy	14/500	-0.69 (-12.00, 10.63)	6.26 (-4.31, 16.83)	2.83 (-9.97, 15.62)	8.47 (-1.98, 18.92)
		Trimester 1	16/498	-3.31 (-13.89, 7.28)	7.34 (-2.54, 17.22)	2.45 (-9.50, 14.40)	4.29 (-5.48, 14.07)
		Trimester 2	17/495	3.30 (-6.94, 13.55)	6.55 (-3.02, 16.13)	5.12 (-6.43, 16.68)	6.03 (-3.44, 15.49)
		Trimester 3	13/498	-4.65 (-16.38, 7.07)	4.76 (-6.21, 15.73)	5.52 (-7.71, 18.75)	3.28 (-7.56, 14.13)
		Pregnancy	22/490	-1.51 (-10.63, 7.60)	5.22 (-3.29, 13.72)	7.72 (-2.54, 17.98)	5.27 (-3.14, 13.69)
		Year 1	17/495	-2.20 (-12.49, 8.09)	5.07 (-4.56, 14.69)	6.04 (-5.58, 17.67)	3.65 (-5.88, 13.18)
		Year 2	15/497	-7.65 (-18.49, 3.18)	1.18 (-9.03, 11.40)	-0.82 (-13.13, 11.50)	2.64 (-7.46, 12.74)
	Flea Skin application	Pre-pregnancy	75/425	2.96 (-2.40, 8.33)	3.16 (-1.82, 8.14)	3.43 (-2.62, 9.48)	3.45 (-1.47, 8.36)
		Trimester 1	79/420	2.35 (-2.96, 7.67)	1.08 (-3.86, 6.02)	-0.20 (-6.20, 5.80)	2.34 (-2.53, 7.21)
		Trimester 2	74/426	1.99 (-3.42, 7.40)	1.15 (-3.88, 6.17)	0.06 (-6.04, 6.17)	0.50 (-4.46, 5.46)
		Trimester 3	77/422	2.84 (-2.47, 8.16)	2.03 (-2.91, 6.97)	0.98 (-5.02, 6.99)	0.79 (-4.09, 5.67)
		Pregnancy	95/405	3.04 (-1.88, 7.96)	0.32 (-4.25, 4.89)	0.13 (-5.42, 5.69)	1.49 (-3.02, 6.00)
		Year 1	115/394	2.45 (-2.09, 6.98)	-0.60 (-4.82, 3.62)	-3.02 (-8.13, 2.08)	-0.34 (-4.51, 3.84)
		Year 2	118/390	1.12 (-3.34, 5.58)	-1.76 (-5.93, 2.40)	-1.26 (-6.30, 3.77)	1.07 (-3.05, 5.19)
	Flea soap, shampoo, or powder	Pre-pregnancy	32/465	-0.32 (-7.95, 7.32)	1.16 (-6.00, 8.32)	0.54 (-8.18, 9.25)	-1.55 (-8.58, 5.48)
		Trimester 1	30/466	0.02 (-7.84, 7.87)	-0.74 (-8.11, 6.62)	-2.16 (-11.13, 6.81)	-1.66 (-8.90, 5.58)
		Trimester 2	29/469	-1.60 (-9.59, 6.40)	-1.12 (-8.60, 6.36)	-1.29 (-10.40, 7.82)	-3.54 (-10.88, 3.81)
		Trimester 3	30/465	-3.18 (-11.05, 4.69)	-0.18 (-7.57, 7.20)	2.40 (-6.59, 11.40)	-2.33 (-9.57, 4.92)
		Pregnancy	39/458	0.77 (-6.20, 7.74)	1.32 (-5.20, 7.84)	2.09 (-5.86, 10.05)	-0.33 (-6.74, 6.09)
		Year 1	52/454	1.75 (-4.40, 7.90)	-0.56 (-6.32, 5.21)	-0.14 (-7.11, 6.82)	-0.06 (-5.71, 5.59)
		Year 2	46/459	-2.62 (-9.10, 3.85)	-2.88 (-8.97, 3.21)	-1.18 (-8.52, 6.16)	-3.25 (-9.22, 2.72)

Bold typeface indicates statistical significance at $P < 0.05$. Associations for flea collars among DD were not assessed due to small sample sizes. Abbreviations: ASD, autism spectrum disorder; DD, developmental delay; DQ, developmental quotient; MSEL, Mullen Scales of Early Learning; TD, typically developing

Supplemental Table S9. Beta (95% CI) for associations of frequency of each insecticide with MSEL Composite DQ.

Application	Exposure Period	Frequency	ASD		DD		TD	
			N Exp/unexp	Beta (95% CI)	N Exp/unexp	Beta (95% CI)	N Exp/unexp	Beta (95% CI)
Indoor Professionally Applied Insecticide	Pre-pregnancy	1-2 mos	10/734	7.05 (-6.81, 20.90)	5/176	-	7/498	-
		3 mos	24/734	7.63 (-1.39, 16.65)	1/176	-	5/498	-
	Trimester 1	1-2 mos	8/728	8.62 (-6.82, 24.05)	5/176	-	6/498	-
		3 mos	26/728	6.80 (-1.92, 15.51)	1/176	-	5/498	-
	Trimester 2	1-2 mos	18/717	8.98 (-1.33, 19.29)	4/177	-	10/494	-
		3 mos	26/717	1.44 (-7.28, 10.16)	1/177	-	6/494	-
	Trimester 3	1-2 mos	16/714	9.42 (-1.54, 20.37)	1/173	-	11/492	-
		3 mos	26/714	2.02 (-6.72, 10.75)	1/173	-	5/492	-
	Pregnancy	1-5 mos	26/703	14.44 (5.84, 23.04)	5/176	-	13/490	-
		6-9 mos	28/703	2.01 (-6.35, 10.36)	1/176	-	6/490	-
Indoor Non-professionally Applied Insecticide	Pre-pregnancy	1-2 mos	34/665	-3.69 (-11.39, 4.00)	12/152	-1.59 (-13.21, 10.03)	30/448	-0.20 (-5.03, 4.63)
		3 mos	68/665	2.47 (-3.12, 8.07)	15/152	-10.93 (-21.68, -0.18)	33/448	-0.82 (-5.40, 3.76)
	Trimester 1	1-2 mos	41/655	2.33 (-4.67, 9.33)	13/147	0.83 (-10.13, 11.80)	31/448	-2.85 (-7.60, 1.90)
		3 mos	71/655	2.81 (-2.65, 8.28)	19/147	-12.54 (-22.09, -2.99)	32/448	-1.06 (-5.71, 3.60)
	Trimester 2	1-2 mos	54/640	0.24 (-5.96, 6.44)	19/145	3.63 (-5.73, 12.99)	42/437	0.59 (-3.54, 4.72)
		3 mos	72/640	2.86 (-2.60, 8.31)	15/145	-11.43 (-21.99, -0.88)	32/437	-0.21 (-4.88, 4.45)
	Trimester 3	1-2 mos	37/658	3.01 (-4.35, 10.37)	11/144	-1.79 (-13.92, 10.35)	27/450	-2.85 (-7.98, 2.27)
		3 mos	66/658	3.41 (-2.26, 9.09)	19/144	-10.91 (-20.59, -1.24)	32/450	-0.31 (-4.97, 4.34)
	Pregnancy	1-5 mos	106/595	1.64 (-3.01, 6.30)	32/130	-1.01 (-8.60, 6.58)	78/403	-1.50 (-4.70, 1.71)
		6-9 mos	63/595	3.49 (-2.31, 9.29)	17/130	-10.02 (-20.01, -0.03)	29/403	0.28 (-4.62, 5.19)
Any Indoor Insecticide	Pre-pregnancy	1-2 mos	42/643	-1.73 (-8.69, 5.22)	15/148	-1.39 (-11.72, 8.93)	35/441	-0.86 (-5.36, 3.64)
		3 mos	88/643	3.59 (-1.40, 8.59)	16/148	-11.01 (-21.40, -0.61)	37/441	-1.25 (-5.60, 3.10)
	Trimester 1	1-2 mos	44/635	3.14 (-3.64, 9.92)	17/143	0.50 (-9.19, 10.19)	36/441	-3.13 (-7.57, 1.30)
		3 mos	93/635	3.76 (-1.12, 8.63)	20/143	-12.55 (-21.82, -3.28)	36/441	-1.47 (-5.88, 2.94)
	Trimester 2	1-2 mos	65/613	3.69 (-2.01, 9.39)	22/141	3.19 (-5.67, 12.05)	46/429	1.13 (-2.83, 5.10)
		3 mos	94/613	2.17 (-2.72, 7.06)	16/141	-11.46 (-21.69, -1.24)	38/429	-1.87 (-6.18, 2.44)
	Trimester 3	1-2 mos	48/631	5.55 (-0.96, 12.06)	12/142	-0.34 (-11.84, 11.17)	34/440	-3.38 (-7.95, 1.19)
		3 mos	87/631	3.16 (-1.87, 8.20)	20/142	-10.92 (-20.34, -1.50)	37/440	-1.34 (-5.69, 3.00)
	Pregnancy	1-5 mos	121/565	5.31 (0.90, 9.71)	35/129	-0.76 (-8.04, 6.53)	82/396	-1.73 (-4.86, 1.40)
		6-9 mos	86/565	3.20 (-1.87, 8.27)	18/129	-10.07 (-19.78, -0.37)	35/396	-0.79 (-5.28, 3.71)
Outdoor Non-professionally Applied Insecticide	Pre-pregnancy	1-2 mos	32/689	-4.76 (-12.66, 3.13)	6/172	0.19 (-15.95, 16.33)	34/459	0.61 (-3.99, 5.21)
		3 mos	44/689	0.28 (-6.50, 7.07)	5/172	-	14/459	-2.28 (-9.27, 4.71)
	Trimester 1	1-2 mos	35/680	2.76 (-4.83, 10.34)	9/167	-0.68 (-14.03, 12.67)	38/457	-0.76 (-5.11, 3.58)
		3 mos	50/680	1.60 (-4.78, 7.98)	7/167	-1.77 (-16.75, 13.22)	12/457	-1.21 (-8.77, 6.35)
	Trimester 2	1-2 mos	41/669	-5.51 (-12.54, 1.51)	12/165	2.11 (-9.60, 13.81)	40/450	1.21 (-3.01, 5.42)
		3 mos	54/669	3.01 (-3.14, 9.17)	6/165	-7.97 (-24.17, 8.23)	18/450	-0.38 (-6.56, 5.79)
	Trimester 3	1-2 mos	38/677	-1.82 (-9.13, 5.49)	11/156	-2.66 (-14.91, 9.59)	33/458	-3.48 (-8.13, 1.17)
		3 mos	43/677	3.20 (-3.67, 10.08)	9/156	-6.54 (-20.04, 6.97)	16/458	0.76 (-5.76, 7.27)
	Pregnancy	1-5 mos	89/631	-3.90 (-8.89, 1.10)	21/151	2.33 (-6.94, 11.61)	85/413	-1.24 (-4.33, 1.85)
		6-9 mos	42/631	3.89 (-3.05, 10.83)	7/151	-7.95 (-22.99, 7.09)	11/413	0.26 (-7.58, 8.09)

Any Outdoor Insecticide	Pre-pregnancy	1-2 mos	42/634	-3.94 (-10.94, 3.06)	8/161	-1.83 (-15.85, 12.20)	49/421	0.74 (-3.16, 4.63)
		3 mos	89/634	3.12 (-1.89, 8.12)	14/161	-1.05 (-12.06, 9.95)	37/421	0.26 (-4.13, 4.64)
	Trimester 1	1-2 mos	40/624	0.93 (-6.23, 8.09)	10/156	-2.25 (-15.11, 10.61)	52/420	1.19 (-2.58, 4.97)
		3 mos	101/624	2.97 (-1.78, 7.73)	17/156	0.64 (-9.30, 10.59)	35/420	0.29 (-4.22, 4.79)
	Trimester 2	1-2 mos	48/608	-3.68 (-10.28, 2.92)	13/154	2.28 (-9.05, 13.60)	56/409	2.04 (-1.60, 5.68)
		3 mos	108/608	2.38 (-2.25, 7.02)	16/154	-2.81 (-13.11, 7.48)	43/409	0.71 (-3.37, 4.78)
	Trimester 3	1-2 mos	46/618	-3.86 (-10.58, 2.85)	11/146	-3.82 (-16.02, 8.37)	55/417	-0.26 (-3.95, 3.43)
		3 mos	94/618	3.33 (-1.57, 8.23)	19/146	-3.72 (-13.47, 6.02)	35/417	0.38 (-4.11, 4.88)
	Pregnancy	1-5 mos	96/571	-3.58 (-8.47, 1.31)	23/140	1.19 (-7.70, 10.08)	105/369	0.16 (-2.71, 3.02)
		6-9 mos	95/571	2.48 (-2.42, 7.38)	16/140	-2.89 (-13.24, 7.45)	35/369	0.21 (-4.31, 4.72)
Flea Collar Use	Pre-pregnancy	1-2 mos	1/737	-	5/177	-	2/500	-
		3 mos	29/737	-	0/177	-	12/500	-
	Trimester 1	1-2 mos	3/738	-	1/177	-	4/498	-
		3 mos	26/738	-	4/177	-	12/498	-
	Trimester 2	1-2 mos	9/736	-12.61 (-27.25, 2.03)	1/177	-	2/495	-
		3 mos	23/736	-6.05 (-15.29, 3.18)	4/177	-	15/495	-
	Trimester 3	1-2 mos	6/732	-4.95 (-22.77, 12.87)	1/170	-	1/498	-
		3 mos	22/732	-5.17 (-14.66, 4.32)	4/170	-	12/498	-
	Pregnancy	1-5 mos	14/726	-6.37 (-18.14, 5.39)	2/174	-	11/490	-7.46 (-15.34, 0.41)
		6-9 mos	23/726	-6.27 (-15.52, 2.97)	4/174	-	11/490	0.49 (-7.30, 8.28)
Flea Skin application	Pre-pregnancy	1-2 mos	27/635	-4.72 (-13.42, 3.98)	4/160	-	24/425	1.47 (-3.97, 6.92)
		3 mos	82/635	0.13 (-5.06, 5.31)	14/160	-	51/425	2.64 (-1.24, 6.53)
	Trimester 1	1-2 mos	29/627	-5.60 (-14.00, 2.79)	2/161	-	27/420	-2.19 (-7.39, 3.01)
		3 mos	91/627	0.87 (-4.10, 5.84)	15/161	-	52/420	3.84 (-0.01, 7.69)
	Trimester 2	1-2 mos	33/624	-2.71 (-10.64, 5.22)	1/161	-	25/426	-2.78 (-8.17, 2.60)
		3 mos	89/624	2.82 (-2.19, 7.83)	15/161	-	49/426	3.23 (-0.70, 7.16)
	Trimester 3	1-2 mos	30/625	-5.43 (-13.64, 2.79)	2/156	-	34/422	2.43 (-2.23, 7.09)
		3 mos	84/625	1.62 (-3.50, 6.75)	11/156	-	43/422	2.93 (-1.22, 7.08)
	Pregnancy	1-5 mos	51/606	-4.60 (-11.07, 1.87)	5/156	-	46/405	-0.13 (-4.22, 3.96)
		6-9 mos	88/606	1.90 (-3.13, 6.94)	13/156	-	49/405	3.91 (-0.03, 7.86)
Flea soap, shampoo, or powder	Pre-pregnancy	1-2 mos	12/683	-10.30 (-23.01, 2.41)	8/161	-8.81 (-22.90, 5.28)	14/465	-0.64 (-7.58, 6.29)
		3 mos	59/683	-3.97 (-9.91, 1.97)	12/161	-3.76 (-15.34, 7.82)	18/465	-3.29 (-9.43, 2.85)
	Trimester 1	1-2 mos	12/684	-9.85 (-22.61, 2.90)	5/163	-3.77 (-21.52, 13.98)	14/466	-1.75 (-8.68, 5.18)
		3 mos	57/684	-3.78 (-9.82, 2.25)	13/163	0.70 (-10.53, 11.92)	16/466	-3.60 (-10.12, 2.91)
	Trimester 2	1-2 mos	19/682	-9.08 (-19.20, 1.05)	5/166	-2.16 (-19.81, 15.49)	10/469	-3.57 (-11.75, 4.61)
		3 mos	54/682	-5.51 (-11.69, 0.66)	10/166	0.01 (-12.85, 12.87)	19/469	-3.36 (-9.37, 2.64)
	Trimester 3	1-2 mos	15/676	-13.55 (-24.91, -2.18)	5/159	0.89 (-16.93, 18.71)	17/465	-3.80 (-10.12, 2.52)
		3 mos	54/676	-4.69 (-10.88, 1.50)	9/159	-1.44 (-15.01, 12.13)	13/465	-2.09 (-9.31, 5.13)
	Pregnancy	1-5 mos	31/663	-1.83 (-9.84, 6.18)	9/160	0.65 (-12.73, 14.03)	23/458	-1.90 (-7.41, 3.60)
		6-9 mos	54/663	-5.64 (-11.82, 0.54)	10/160	0.13 (-12.80, 13.06)	16/458	-3.62 (-10.17, 2.93)

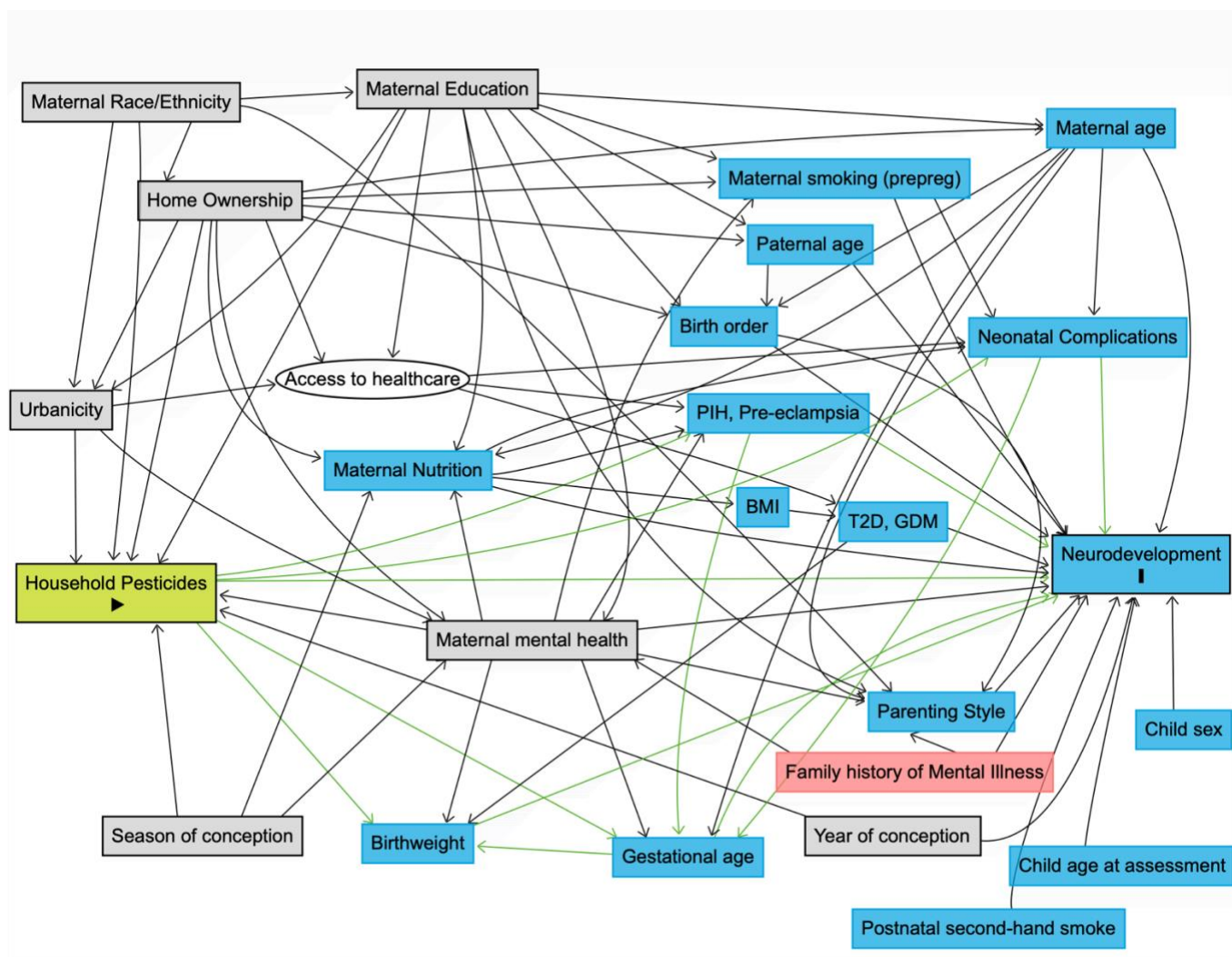
Bold typeface indicates statistical significance at $P < 0.05$. Abbreviations: ASD, autism spectrum disorder; DD, developmental delay; DQ, developmental quotient; TD, typically developing; VABS, Vineland Adaptive Behavior Scales

Supplemental Table S10. Beta (95% CI) for associations of frequency of each insecticide with VABS Composite DQ.

Application	Exposure Period	Frequency	ASD		DD		TD	
			N	Beta (95% CI)	N	Beta (95% CI)	N	Beta (95% CI)
			Exp/unexp		Exp/unexp		Exp/unexp	
Indoor Professionally Applied Insecticide	Pre-pregnancy	1-2 mos	11/736	2.84 (-6.48, 12.15)	5/176	-	7/498	-
		3 mos	24/736	6.77 (0.40, 13.14)	1/176	-	5/498	-
	Trimester 1	1-2 mos	8/731	3.28 (-7.61, 14.17)	5/176	-	6/498	-
		3 mos	26/731	5.84 (-0.32, 11.99)	1/176	-	5/498	-
	Trimester 2	1-2 mos	19/719	3.43 (-3.68, 10.54)	4/177	-	10/494	-
		3 mos	26/719	2.26 (-3.91, 8.44)	1/177	-	6/494	-
	Trimester 3	1-2 mos	16/717	8.74 (1.03, 16.46)	1/173	-	11/492	-
		3 mos	26/717	2.81 (-3.34, 8.96)	1/173	-	5/492	-
	Pregnancy	1-5 mos	27/705	7.37 (1.39, 13.35)	5/176	-	13/490	-
		6-9 mos	28/705	3.19 (-2.74, 9.12)	1/176	-	6/490	-
Indoor Non-professionally Applied Insecticide	Pre-pregnancy	1-2 mos	35/667	-1.00 (-6.37, 4.36)	12/152	-1.83 (-12.67, 9.02)	30/448	2.89 (-3.18, 8.95)
		3 mos	68/667	1.42 (-2.54, 5.37)	15/152	-4.05 (-14.08, 5.97)	33/448	3.09 (-2.66, 8.84)
	Trimester 1	1-2 mos	41/658	1.14 (-3.81, 6.08)	13/147	11.19 (1.07, 21.31)	31/448	-0.07 (-6.06, 5.92)
		3 mos	71/658	1.24 (-2.62, 5.11)	19/147	-5.92 (-14.73, 2.90)	32/448	0.07 (-5.80, 5.94)
	Trimester 2	1-2 mos	54/643	0.33 (-4.05, 4.71)	19/145	7.69 (-0.97, 16.35)	42/437	2.81 (-2.38, 8.00)
		3 mos	72/643	-0.03 (-3.88, 3.83)	15/145	-6.08 (-15.85, 3.69)	32/437	2.58 (-3.28, 8.45)
	Trimester 3	1-2 mos	37/661	-1.67 (-6.86, 3.53)	11/144	1.05 (-10.25, 12.35)	27/450	1.57 (-4.89, 8.03)
		3 mos	66/661	0.07 (-3.94, 4.08)	19/144	-4.86 (-13.87, 4.15)	32/450	3.78 (-2.09, 9.64)
	Pregnancy	1-5 mos	106/598	0.35 (-2.95, 3.64)	32/130	1.61 (-5.49, 8.70)	78/403	1.54 (-2.49, 5.57)
		6-9 mos	63/598	0.33 (-3.77, 4.43)	17/130	-3.16 (-12.51, 6.19)	29/403	2.33 (-3.84, 8.50)
	Pre-pregnancy	1-2 mos	44/644	-0.36 (-5.16, 4.44)	15/148	-0.64 (-10.28, 9.01)	35/441	1.37 (-4.30, 7.04)
		3 mos	88/644	3.20 (-0.32, 6.72)	16/148	-3.70 (-13.41, 6.02)	37/441	2.47 (-3.01, 7.95)
	Trimester 1	1-2 mos	44/638	1.73 (-3.05, 6.51)	17/143	9.33 (0.34, 18.32)	36/441	-2.08 (-7.68, 3.51)
		3 mos	93/638	2.86 (-0.58, 6.30)	20/143	-5.61 (-14.20, 2.98)	36/441	0.44 (-5.13, 6.01)
	Trimester 2	1-2 mos	66/615	1.94 (-2.05, 5.93)	22/141	7.26 (-0.94, 15.46)	46/429	2.04 (-2.96, 7.04)
		3 mos	94/615	0.91 (-2.54, 4.36)	16/141	-5.60 (-15.07, 3.88)	38/429	2.10 (-3.33, 7.53)
	Trimester 3	1-2 mos	48/634	1.87 (-2.73, 6.47)	12/142	2.44 (-8.27, 13.16)	34/440	-0.01 (-5.79, 5.77)
		3 mos	87/634	1.45 (-2.10, 5.01)	20/142	-4.54 (-13.31, 4.24)	37/440	3.42 (-2.07, 8.91)
Any Indoor Insecticide	Pregnancy	1-5 mos	122/567	2.65 (-0.45, 5.74)	35/129	2.19 (-4.60, 8.98)	82/396	1.29 (-2.66, 5.24)
		6-9 mos	86/567	1.82 (-1.76, 5.41)	18/129	-2.75 (-11.78, 6.29)	35/396	1.77 (-3.89, 7.44)
	Pre-pregnancy	1-2 mos	32/694	-2.30 (-7.89, 3.29)	6/172	-	34/459	6.26 (0.46, 12.07)
		3 mos	42/694	0.24 (-4.67, 5.15)	5/172	-	14/459	2.36 (-6.46, 11.19)
	Trimester 1	1-2 mos	35/685	0.35 (-5.02, 5.72)	9/167	3.54 (-8.70, 15.77)	38/457	0.71 (-4.80, 6.21)
		3 mos	48/685	0.44 (-4.17, 5.04)	7/167	3.83 (-9.87, 17.54)	12/457	0.13 (-9.45, 9.71)
	Trimester 2	1-2 mos	41/674	-3.77 (-8.74, 1.21)	12/165	11.00 (0.37, 21.63)	40/450	3.23 (-2.11, 8.57)
		3 mos	52/674	1.60 (-2.83, 6.03)	6/165	-5.21 (-19.90, 9.47)	18/450	4.14 (-3.68, 11.95)
	Trimester 3	1-2 mos	38/682	-2.18 (-7.36, 2.99)	11/156	-1.77 (-13.04, 9.51)	33/458	-0.62 (-6.52, 5.28)
		3 mos	41/682	1.46 (-3.51, 6.42)	9/156	-1.52 (-13.93, 10.89)	16/458	6.28 (-1.98, 14.54)
	Pregnancy	1-5 mos	89/636	-4.52 (-8.05, -0.99)	21/151	4.12 (-4.42, 12.67)	85/413	2.09 (-1.83, 6.00)
		6-9 mos	40/636	2.12 (-2.89, 7.13)	7/151	-5.04 (-18.87, 8.79)	11/413	-0.12 (-10.03, 9.80)
Outdoor Non-professionally Applied Insecticide	Pre-pregnancy	1-2 mos	32/694	-2.30 (-7.89, 3.29)	6/172	-	34/459	6.26 (0.46, 12.07)
		3 mos	42/694	0.24 (-4.67, 5.15)	5/172	-	14/459	2.36 (-6.46, 11.19)
	Trimester 1	1-2 mos	35/685	0.35 (-5.02, 5.72)	9/167	3.54 (-8.70, 15.77)	38/457	0.71 (-4.80, 6.21)
		3 mos	48/685	0.44 (-4.17, 5.04)	7/167	3.83 (-9.87, 17.54)	12/457	0.13 (-9.45, 9.71)
	Trimester 2	1-2 mos	41/674	-3.77 (-8.74, 1.21)	12/165	11.00 (0.37, 21.63)	40/450	3.23 (-2.11, 8.57)
		3 mos	52/674	1.60 (-2.83, 6.03)	6/165	-5.21 (-19.90, 9.47)	18/450	4.14 (-3.68, 11.95)
	Trimester 3	1-2 mos	38/682	-2.18 (-7.36, 2.99)	11/156	-1.77 (-13.04, 9.51)	33/458	-0.62 (-6.52, 5.28)
		3 mos	41/682	1.46 (-3.51, 6.42)	9/156	-1.52 (-13.93, 10.89)	16/458	6.28 (-1.98, 14.54)
	Pregnancy	1-5 mos	89/636	-4.52 (-8.05, -0.99)	21/151	4.12 (-4.42, 12.67)	85/413	2.09 (-1.83, 6.00)
		6-9 mos	40/636	2.12 (-2.89, 7.13)	7/151	-5.04 (-18.87, 8.79)	11/413	-0.12 (-10.03, 9.80)

Any Outdoor Insecticide	Pre-pregnancy	1-2 mos	42/639	-1.86 (-6.81, 3.10)	8/161	0.73 (-12.12, 13.58)	49/421	4.01 (-0.91, 8.94)
		3 mos	87/639	3.42 (-0.15, 6.99)	14/161	4.24 (-5.84, 14.32)	37/421	-1.35 (-6.90, 4.19)
	Trimester 1	1-2 mos	40/629	-0.46 (-5.53, 4.60)	10/156	0.14 (-11.62, 11.90)	52/420	1.75 (-3.03, 6.52)
		3 mos	99/629	2.44 (-0.95, 5.83)	17/156	5.09 (-4.01, 14.18)	35/420	-1.02 (-6.72, 4.69)
	Trimester 2	1-2 mos	48/613	-2.67 (-7.34, 2.00)	13/154	8.42 (-1.91, 18.76)	56/409	3.41 (-1.20, 8.02)
		3 mos	106/613	2.26 (-1.04, 5.57)	16/154	1.56 (-7.83, 10.94)	43/409	1.82 (-3.34, 6.98)
	Trimester 3	1-2 mos	46/623	-1.00 (-5.76, 3.76)	11/146	-3.55 (-14.75, 7.64)	55/417	0.31 (-4.36, 4.98)
		3 mos	92/623	2.57 (-0.92, 6.07)	19/146	2.02 (-6.92, 10.96)	35/417	4.26 (-1.43, 9.95)
	Pregnancy	1-5 mos	96/576	-3.39 (-6.84, 0.07)	23/140	3.07 (-5.11, 11.26)	105/369	3.11 (-0.51, 6.72)
		6-9 mos	93/576	2.28 (-1.21, 5.78)	16/140	1.15 (-8.38, 10.68)	35/369	-0.58 (-6.27, 5.12)
Flea Collar Use	Pre-pregnancy	1-2 mos	1/739	-	5/177	-	2/500	-
		3 mos	29/739	-	./177	-	12/500	-
	Trimester 1	1-2 mos	3/740	-	1/177	-	4/498	-
		3 mos	26/740	-	4/177	-	12/498	-
	Trimester 2	1-2 mos	9/738	-2.20 (-12.48, 8.08)	1/177	-	2/495	-
		3 mos	23/738	-5.11 (-11.60, 1.37)	4/177	-	15/495	-
	Trimester 3	1-2 mos	6/734	-5.49 (-17.97, 6.99)	1/170	-	1/498	-
		3 mos	22/734	-4.36 (-11.00, 2.29)	4/170	-	12/498	-
	Pregnancy	1-5 mos	14/728	-3.08 (-11.34, 5.18)	2/174	-	11/490	6.07 (-3.88, 16.02)
		6-9 mos	23/728	-5.28 (-11.77, 1.21)	4/174	-	11/490	0.87 (-8.98, 10.71)
Flea Skin application	Pre-pregnancy	1-2 mos	27/638	-1.37 (-7.44, 4.71)	4/160	-	24/425	2.96 (-3.83, 9.76)
		3 mos	81/638	1.83 (-1.81, 5.47)	14/160	-	51/425	3.13 (-1.72, 7.97)
	Trimester 1	1-2 mos	30/629	-0.73 (-6.51, 5.06)	2/161	-	27/420	-2.14 (-8.67, 4.38)
		3 mos	90/629	2.18 (-1.31, 5.67)	15/161	-	52/420	2.35 (-2.47, 7.17)
	Trimester 2	1-2 mos	33/627	-0.53 (-6.07, 5.01)	1/161	-	25/426	-2.32 (-9.06, 4.43)
		3 mos	88/627	2.74 (-0.78, 6.25)	15/161	-	49/426	2.16 (-2.76, 7.07)
	Trimester 3	1-2 mos	30/628	-0.13 (-5.87, 5.60)	2/156	-	34/422	-0.09 (-5.95, 5.77)
		3 mos	83/628	2.80 (-0.79, 6.39)	11/156	-	43/422	2.26 (-2.95, 7.47)
	Pregnancy	1-5 mos	52/608	-1.34 (-5.83, 3.15)	5/156	-	46/405	-1.21 (-6.34, 3.93)
		6-9 mos	87/608	2.54 (-1.00, 6.08)	13/156	-	49/405	2.81 (-2.14, 7.76)
Flea soap, shampoo, or powder	Pre-pregnancy	1-2 mos	12/685	-2.71 (-11.62, 6.20)	8/161	-	14/465	2.92 (-5.89, 11.73)
		3 mos	60/685	-2.73 (-6.86, 1.41)	12/161	-	18/465	-2.06 (-9.87, 5.75)
	Trimester 1	1-2 mos	12/686	0.39 (-8.54, 9.33)	5/163	-	14/466	2.72 (-6.05, 11.50)
		3 mos	58/686	-2.73 (-6.93, 1.48)	13/163	-	16/466	-4.62 (-12.87, 3.64)
	Trimester 2	1-2 mos	19/684	-4.24 (-11.33, 2.86)	5/166	-	10/469	-0.95 (-11.27, 9.38)
		3 mos	55/684	-2.91 (-7.20, 1.38)	10/166	-	19/469	-1.92 (-9.52, 5.67)
	Trimester 3	1-2 mos	15/678	-3.73 (-11.72, 4.25)	5/159	-	17/465	1.10 (-6.91, 9.11)
		3 mos	55/678	-2.90 (-7.22, 1.42)	9/159	-	13/465	-3.16 (-12.31, 5.98)
	Pregnancy	1-5 mos	31/665	-0.61 (-6.24, 5.02)	9/160	-	23/458	4.38 (-2.56, 11.32)
		6-9 mos	55/665	-2.94 (-7.24, 1.36)	10/160	-	16/458	-4.45 (-12.71, 3.81)

Bold typeface indicates statistical significance at $P < 0.05$. Abbreviations: ASD, autism spectrum disorder; DD, developmental delay; DQ, developmental quotient; TD, typically developing; VABS, Vineland Adaptive Behavior Scales



Legend

- ▶ exposure
- outcome
- ancestor of exposure
- ancestor of outcome
- ancestor of exposure and outcome
- adjusted variable
- unobserved (latent)
- other variable
- causal path
- biasing path

Supplemental Figure S1. Directed acyclic graph (DAG) for the association of prenatal exposure to household insecticides and autism spectrum disorder (ASD), in the CHARGE study population. Figure generated using DAGitty⁴. Variables in grey were selected by DAGitty as a minimally sufficient adjustment set and all but season of conception was included in the final multivariable regression model. Abbreviations: BMI, body mass index; GDM, gestational diabetes; T2D, type II diabetes,