

Supplementary Table 1: Included (n=708) and excluded (n=32) populations at birth

	MV	Included (n=708) % (N) or mean (\pm SD)	Excluded (n=32) % (N) or mean (\pm SD)	p*
Maternal and pregnancy characteristics				
Age at delivery (years)	0	30.2 (\pm 6.4)	29.2 (\pm 7.0)	0.42
BMI (kg/m ²)	14	26.4 (\pm 6.4)	26.6 (\pm 7.6)	0.89
Parity	2			
Primiparous		37.7% (266)	62.5% (12)	0.01
Multiparous		62.3% (440)	37.5% (20)	
Education level	2			
\leq 12 years		43.3% (306)	50.0% (16)	0.47
>12 years		56.7% (400)	50.0% (16)	
Place of birth	0			
French West Indies		58.1% (411)	53.1% (17)	0.82
Other West Indies		26.4% (187)	31.3% (10)	
Metropolitan France, Europe and other		15.5% (110)	15.6% (5)	
Tobacco use during pregnancy	0			
No		89.8 (636)	93.7% (30)	0.76
Yes		10.2 (72)	6.3% (2)	
Family situation	1			
With a partner		51.8% (366)	59.4% (19)	0.20
Single, with family members		18.4% (130)	25.0% (8)	
Single		29.4% (211)	15.6% (5)	
ZIKV exposure during pregnancy	0			
No		59.5% (421)	78.1% (25)	0.04
Yes		40.5% (287)	21.8% (7)	
Infants characteristics				
Gestational age at delivery (weeks)	2	38.7 (\pm 1.7)	33.4 (\pm 4.6)	<.0001
Birth weight	1	3109 (\pm 518)	2142 (\pm 993)	<.0001
Breastfeeding duration (months)	11	7.5 (\pm 6.7)	4.5 (\pm 5.2)	0.07

MV: Missing Values; ZIKV: Zika virus

* p-values obtained from Student's t, Wilcoxon, χ^2 or Fisher tests

Supplementary Table 2: Population characteristics and determinants of ZIKV infection and household insecticide use at 18-month follow-up

	18-month follow-up N=409		Domestic use of household insecticides			ZIKV			
	MV	% (N) or mean (±SD)	No use (n=146)	Use (n=263)	p	No (n=244)	Yes (n=165)	P*	
			% (N) or mean (±SD)	% (N) or mean (±SD)		% (N) or mean (±SD)	% (N) or mean (±SD)		
Maternal characteristics									
Age at delivery (years)	0	30.9 (±6.4)	29.8 (±6.3)	31.5 (±6.4)	0.01	31.5 (±6.3)	30.0 (±6.5)	0.02	
BMI (kg/m²)	7	26.3 (±6.4)	25.1 (±6.1)	27.0 (±6.5)	0.00	25.9 (±6.0)	26.9 (±6.9)	0.14	
Obesity	7								
		Underweight	5.2% (21)	9.7% (14)	2.7% (7)	0.00	5.8% (14)	4.4% (7)	0.90
		Normal	46.0% (173)	47.9% (69)	40.3% (104)		43.6% (105)	42.2% (68)	
		Overweight	28.9% (116)	23.6% (34)	31.8% (82)		28.2% (68)	29.8% (48)	
		Obese	22.9% (92)	18.8% (27)	25.2% (65)		22.4% (54)	23.6% (38)	
Maternal weight gain during pregnancy (kg)	7	9.3 (±7.0)	8.9 (±7.3)	9.5 (±6.9)	0.45	9 (±6.9)	9.7 (±7.3)	0.35	
Parity	2								
		Primiparous	39.8% (162)	41.4% (60)	38.9% (102)	0.63	38.7% (94)	41.5% (68)	0.57
		Multiparous	60.2% (245)	58.6% (85)	61.1% (160)		61.3% (149)	58.5% (96)	
Education level	0								
		≤12 years	36.7% (150)	41.1% (60)	34.2% (90)	0.17	35.6% (87)	38.2% (63)	0.60
		>12 years	63.3% (259)	58.9% (86)	65.8% (173)		64.4% (157)	61.8% (102)	
Place of birth	0								
		French West Indies	58.9% (241)	53.4% (78)	62.0% (163)	0.24	57.4% (140)	61.2% (101)	0.10
		Other West Indies	26.9% (110)	30.8% (45)	24.7% (65)		25.4% (62)	29.1% (48)	
		Metropolitan France, Europe and other	14.2% (58)	15.8% (23)	13.3% (35)		17.2% (42)	9.7% (16)	
Tobacco use during pregnancy	0								
		No	90.7% (371)	89.7% (131)	91.3% (240)	0.61	91.8% (224)	89.1% (147)	0.35
		Yes	9.3% (38)	10.3% (15)	8.7% (23)		8.2% (20)	10.9% (18)	
Length of pregnancy in wet season (days)	0	118.6 (±39.6)	118.0 (±40.9)	119.0 (±39.0)	0.99	99.6 (±40.3)	146.7 (±13.0)	<.0001	
Family situation	1								
		With a partner	56.6% (223)	60.3% (88)	51.5% (135)	0.22	58.6% (143)	48.8% (80)	0.06

ZIKV	Single with family members	17.2% (70)	15.8% (23)	18.0% (47)		13.9% (34)	22.0% (36)	
	Single	28.2% (115)	23.9% (35)	30.5% (80)		27.5% (67)	29.2% (48)	
	0							
	No		65.1% (95)	56.7% (149)	0.10			
	Yes		34.9% (51)	43.3% (114)				
Maternal self-reported depression symptoms at 18-month follow-up ^a	35							
	No	75.9 (284)	77.5% (107)	75% (177)	0.58	83.3% (190)	64.4% (94)	<.0001
	Yes	24.1 (90)	22.5% (31)	25% (59)		16.7% (38)	35.6% (52)	
Infants' characteristics								
Gestational age at delivery (weeks)	0	38.7 (±1.7)	38.6 (±1.7)	38.8 (±1.7)	0.32	38.6 (±1.8)	38.9 (±1.6)	0.14
Sex	0							
	Male	50.4% (206)	46.6% (68)	52.5% (138)	0.25	52.5% (128)	47.3% (78)	0,30
	Female	49.6% (203)	53.4% (78)	47.5% (125)		47.5% (116)	52.7% (87)	
Breastfeeding duration (months)	3	7.5 (±6.7)	7.9 (±6.6)	7.3 (±6.8)	0.17	7.3 (±6.8)	7.7 (±6.7)	0.51
Age at follow-up corrected for gestational age (months)	0	17.3 (±0.7)	16.8 (±0.8)	16.8 (±0.8)	0.84	16.7 (±0.8)	17.0 (±0.7)	0.00
Maternal stimulation score	11	11.9 (±2.0)	12.0 (±2.0)	11.9 (±2.1)	0.76	12.0 (±1.9)	11.9 (±2.2)	0.61

MV: Missing Values; ZIKV: Zika virus

* p-values obtained from Student's t, Wilcoxon, chi² or Fisher tests

^a Center for Epidemiologic Studies Depression Scale (10 items) dichotomized using the third quartile cutting point (>12)

Supplementary Table 3: Bivariate association between household insecticide use, ZIKV infection and birth outcomes (n=692) and 18-months-of-age outcomes (n=364)

	Head circumference (cm) (n=692)		Birth weight (g) (n=692)		ASQ Total score (n=364)		ASQ Gross Motor (n=364)		ASQ Fine Motor (n=364)		ASQ Personal-social (n=364)		ASQ Problem solving (n=364)		ASQ communication (n=364)		Hyperactivity (n=364)		Opposition (n=364)		Inattention (n=364)		Physical aggression (n=364)	
	β	95% CI	β	95% CI	β	95% CI	OR	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI
Non-users and ZIKV(-)	ref		ref		ref		ref		ref		ref		ref		ref		ref		ref		ref		ref	
Users and ZIKV(-)	-0.2	[-0.6 - 0.2]	-35	[-138 - 68]	3.0	[-7.4 - 13.4]	1.3	[0.7; 2.5]	3.2	[-0.2 - 6.5]	-1.3	[-4.0 - 1.3]	-0.2	[-3.9 - 3.5]	1.4	[-2.6 - 5.4]	0.1	[-0.6 - 0.9]	0.2	[-0.2 - 0.7]	0.1	[-0.3 - 0.5]	-0.1	[-0.6 - 0.4]
Non-users and ZIKV(+)	-0.3	[-0.8 - 0.2]	-75	[-215 - 65]	-7.0	[-20.7 - 6.8]	0.9	[0.4; 2.1]	-3.0	[-7.4 - 1.5]	-0.3	[-3.9 - 3.2]	-0.9	[-5.8 - 4.0]	-1.5	[-6.8 - 3.9]	0.3	[-0.6 - 1.3]	0.7	[0.1 - 1.3]	0.0	[-0.5 - 0.6]	0.2	[-0.5 - 0.8]
Joint exposure: User and ZIKV(+)	0.1	[-0.4 - 0.3]	16	[-92 - 124]	-10.4	[-21.6 - 0.8]	0.8	[0.4; 1.6]	-5.9	[-8.6 - -1.3]	-2.6	[-5.5 - 0.2]	0.7	[-4.7 - 3.2]	-2.1	[-6.4 - 2.3]	0.9	[0.1 - 1.7]	1.2	[0.7 - 1.7]	0.4	[-0.1 - 0.8]	0.6	[-0.1 - 1.2]

ZIKV: Zika virus, ASQ: Ages and Stages Questionnaire, QLSCD : Quebec Longitudinal Study of Child Development
B coefficient and 95%CI obtained from linear regression OR: Odds Ratio
Gross motor subscale dichotomized score at the median value of 60

Supplementary Table 4: Bivariate association between frequency of household insecticide use, ZIKV infection and birth outcomes (n=681), and 18-months-of-age outcomes (n=358)

	Head circumference (cm) (n=681)		Birth weight (g) (n=681)		ASQ Total score (n=358)		ASQ Gross Motor (n=358)		ASQ Fine Motor (n=358)		ASQ Personal-social (n=358)		ASQ Problem solving (n=358)		ASQ Communication (n=358)		Hyperactivity (n=358)		Opposition (n=358)		Inattention (n=358)		Physical aggression (n=358)	
	β	95% CI	β	95% CI	β	95% CI	OR	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI
1-3/month or less vs. non-users among the ZIKV(-)	0.1	[-0.4 - 0.7]	92	[-65 - 249]	-1.4	[-15.6 - 12.9]																		
1-3/week vs. non-users among the ZIKV(-)	-0.2	[-0.7 - 0.2]	-109	[-234 - 16]	0.9	[-11.9 - 13.7]	1.1	[0.5; 2.7]	3.7	[-1.0 - 8.3]	-1.4	[-5.1 - 2.2]	-1.8	[-6.8 - 3.2]	-0.5	[-6.0 - 5.0]	0.6	[-0.4 - 1.6]	0.3	[-0.3 - 1.0]	0.3	[-0.2 - 0.9]	-0.4	[-1.1 - 0.3]
1/day or more vs. non-users among the ZIKV(-)	-0.3	[-0.8 - 0.2]	-26	[-169 - 118]	13.7	[-1.7 - 29.0]	1.1	[0.5; 2.4]	2.8	[-1.4 - 6.9]	-1.5	[-4.8 - 1.8]	-1.2	[-5.7 - 3.3]	1.3	[-3.6 - 6.3]	-0.7	[-1.6 - 0.2]	-0.1	[-0.6 - 0.5]	-0.3	[-0.8 - 0.2]	0.2	[-0.4 - 0.8]
ZIKV(+) vs. ZIKV(-) among non-users	-0.2	[-0.8 - 0.2]	-75	[-214 - 65]	-6.96	[-20.6 - 6.7]	2.7	[0.9; 8.4]	3.3	[-1.7 - 8.3]	-0.3	[-4.3 - 3.7]	4.0	[-1.4 - 9.4]	4.5	[-1.5 - 10.5]	1.1	[0.0 - 2.2]	0.6	[-0.0 - 1.3]	0.4	[-0.2 - 1.0]	-0.3	[-1.0 - 0.4]
Joint effect of being user (1-3/month or less) and Zika(+) vs. non-user and Zika(-)	0.1	[-0.6 - 0.8]	18	[-174 - 211]	9.1	[-13.2 - 31.5]	0.9	[0.4; 2.1]	-2.9	[-7.4 - 1.5]	-0.3	[-3.9 - 3.2]	-0.9	[-5.7 - 3.9]	-1.5	[-6.8 - 3.9]	0.3	[-0.6 - 1.3]	0.7	[0.0 - 1.3]	0.0	[-0.5 - 0.6]	0.2	[-0.5 - 0.9]
Joint effect of being user (1-3/week) and Zika(+) vs. non-user and Zika(-)	-0.2	[-0.4 - 0.3]	-42	[-179 - 96]	-18.5	[-32.8 - -4.1]	2.0	[-0.9; 2.3]	0.6	[-6.7 - 7.8]	0.7	[-5.1 - 6.5]	1.1	[-6.8 - 9.0]	5.0	[-3.7 - 13.7]	0.3	[-1.2 - 1.9]	0.5	[-0.5 - 1.4]	0.0	[-0.9 - 0.9]	0.0	[-1.1 - 1.1]
Joint effect of being user (1/day or more) and Zika(+) vs. non-user and Zika(-)	0.1	[-0.4 - 0.6]	95	[-46 - 236]	-5.5	[-20.0 - 9.0]	0.4	[0.1; 1.7]	-6.7	11.4 - -2.1]	-3.2	[-6.9 - 0.5]	-2.7	[-7.8 - 2.4]	-5.8	[-11.4 - -0.3]	1.0	[-0.0 - 2.0]	1.3	[0.6 - 1.9]	0.4	[-0.1 - 1.0]	0.9	[0.2 - 1.6]
							2.5	[0.5; 11.7]	-4.0	[-8.7 - 0.7]	-3.0	[-6.7 - 0.7]	1.9	[-3.2 - 7.0]	0.2	[-5.5 - 5.8]	0.9	[-0.1 - 1.9]	1.3	[-0.7 - 2.0]	0.3	[-0.2 - 0.9]	0.5	[-0.2 - 1.2]

ZIKV: Zika virus, ASQ: Ages and Stages Questionnaire, QLSCD : Quebec Longitudinal Study of Child Development
B coefficient and 95%CI obtained from linear regression, OR: Odds Ratio
Gross motor subscale dichotomized score at the median value of 60
B coefficient and 95%CI obtained from linear regression

Supplementary Table 5a: Multivariate analysis between frequency of household insecticide use, Zika infection and birth outcomes (n=681)

	Head circumference (cm)	Birth weight (g)
	$\beta^{a, b}$ [95% CI]	$\beta^{a, c}$ [95% CI]
1-3/month or less vs. non-users among the ZIKV(-)	-0.1 [-0.6; 0.4]	-1 [-127; 125]
1-3/week vs. non-users among the ZIKV(-)	-0.3 [-0.7; 0.1]	-116 [-216; -16]
1/day or more vs. non-users among the ZIKV(-)	-0.4 [-0.9; 0.0]	-86 [-201; 29]
ZIKV(+) vs. ZIKV(-) among non-users	-0.4 [-0.9; 0.3]	-130 [-241; -19]
Joint effect of being user (1-3/month or less) and Zika(+) vs. non-user and Zika(-)	-0.2 [-0.8; 0.4]	-86 [-240; 68]
Joint effect of being user (1-3/week) and Zika(+) vs. non-user and Zika(-)	-0.3 [-0. 8; 0.1]	-87 [-197; 23]
Joint effect of being user (1/day or more) and Zika(+) vs. non-user and Zika(-)	-0.3 [-0.7; 0.2]	-38 [-151; 75]

ZIKV: Zika virus, β coefficient and 95%CI obtained from linear regression

^a adjusted for gestational age at delivery, maternal pre-pregnancy body mass index, parity

^b additionally adjusted for fetal sex

^c additionally adjusted for gestational age squared and maternal education level

Supplementary Table 5b: Multivariate analysis between frequency of household insecticide use, Zika infection and ASQ scores at 18 months of age (n=358)

	ASQ Total score $\beta^{a, b, e}$ [95% CI]	ASQ Gross Motor OR ^{a, d, e, f} [95% CI]	ASQ Fine Motor $\beta^{a, b, c, d, e, g}$ [95% CI]	ASQ Personal-social β^a [95% CI]	ASQ Problem solving β^a [95% CI]	ASQ Communication $\beta^{a, b, d, e, g}$ [95% CI]
1-3/month or less vs. non-users among the ZIKV(-)	3.2 [-9.9; 16.2]	.21 [0.5; 2.9]	4.4 [0.1; 8.8]	-0.8 [-4.4; 2.8]	-1.1 [-6.0; 3.8]	0.4 [-4.9; 5.6]
1-3/week vs. non-users among the ZIKV(-)	-2.3 [-14.0; 9.4]	1.0 [0.4; 2.1]	2.6 [-1.4; 6.]	-2 [-5.2; 1.3]	-2.1 [-6.6; 2.3]	0.6 [-4.1; 5.3]
1/day or more vs. non-users among the ZIKV(-)	9.4 [-4.8; 23.6]	2.4 [0.7; 7.9]	1.7 [-3.1; 6.4]	-0.7 [-4.6; 3.2]	3.2 [-2.1; 8.5]	2.9 [-2.9; 8.6]
ZIKV(+) vs. ZIKV(-) among non-users	-5.5 [-18.0; 6.9]	1.2 [0.5; 2.6]	-2.5 [-6.6; 1.7]	-0.0 [-3.5; 3.4]	-0.7 [-5.4; 4.0]	-1.5 [-6.5; 3.5]
Joint effect of being user (1-3/month or less) and Zika(+) vs. non-user and Zika(-)	2.4 [-18.1; 22.7]	2.1 [0.4; 10.3]	-0.4 [-7.2; 6.5]	-0.1 [-5.7; 5.6]	-0.1 [-7.8; 7.6]	2.1 [-6.1; 10.3]
Joint effect of being user (1-3/week) and Zika(+) vs. non-user and Zika(-)	-16.8 [-30.2; 3.5]	0.3 [0.1; 1.5]	-6.1 [-10.5; -1.6]	-3.3 [-7.0; 0.3]	-3. 3 [-8.3; 1.7]	-4.9 [-10.3; 0.4]
Joint effect of being user (1/day or more) and Zika(+) vs. non-user and Zika(-)	-2.7 [-16.0; 10.6]	2.8 [0.6; 13.7]	-2.3 [-6.8; 2.2]	-3.0 [-6.7; 0.6]	1.6 [-3.4; 6.6]	2.0 [-3.4; 7.3]

ZIKV: Zika virus, ASQ: Ages and Stages Questionnaire, β coefficient and 95%CI obtained from linear regression, OR: Odds Ratio

Gross motor subscale dichotomized score at the median value of 60

^a adjusted for maternal body mass index before pregnancy and maternal stimulation

^b additionally adjusted for breastfeeding duration and maternal depression score

^c additionally adjusted for family situation

^d additionally adjusted for maternal tobacco use during pregnancy

^e additionally adjusted for infant sex

^f additionally adjusted for maternal age at delivery

^g additionally adjusted for maternal education level

Supplementary Table 5c: Multivariate analysis between frequency of household insecticide use, Zika infection and behavioral outcomes at 18 months (N=358)

	Hyperactivity β^a [95% CI]	Opposition β^b [95% CI]	Inattention β^c [95% CI]	Physical aggression β^d [95% CI]
1-3/month or less vs. non-users among the ZIKV(-)	0.7 [-0.3; 1.7]	0.2 [-0.4; 0.9]	0.2 [-0.3; 0.8]	-0.4 [-1.1; 0.3]
1-3/week vs. non-users among the ZIKV(-)	-0.6 [-1.4; 0.3]	-0.0 [-0.6; 0.5]	-0.2 [-0.7; 0.3]	0.2 [-0.4; 0.8]
1/day or more vs. non-users among the ZIKV(-)	1.1 [0.1; 2.1]	0.6 [-0.1; 1.2]	0.3 [-0.2; 0.9]	-0.3 [-1.0; 0.4]
ZIKV(+) vs. ZIKV(-) among non-users	0.4 [-0.6; 1.3]	0.6 [0.0; 1.2]	0.0 [-0.5; 0.5]	0.1 [-0.6; 0.7]
Joint effect of being user (1-3/month or less) and Zika(+) vs. non-user and Zika(-)	0.3 [-1.3; 1.8]	0.2 [-0.7; 1.2]	-0.0 [-0.9; 0.8]	0.1 [-1.0; 1.1]
Joint effect of being user (1-3/week) and Zika(+) vs. non-user and Zika(-)	0.9 [-0.1; 1.9]	1.1 [0.5; 1.7]	0.5 [-0.1; 1.0]	0.6 [-0.1; 1.3]
Joint effect of being user (1/day or more) and Zika(+) vs. non-user and Zika(-)	0.5 [-0.5; 1.6]	0.9 [0.2; 1.5]	0.3 [-0.2; 0.1]	0.3 [-0.4; 0.9]

ZIKV: Zika virus, QLSCD : Quebec Longitudinal Study of Child Development, β coefficient and 95%CI obtained from linear regression

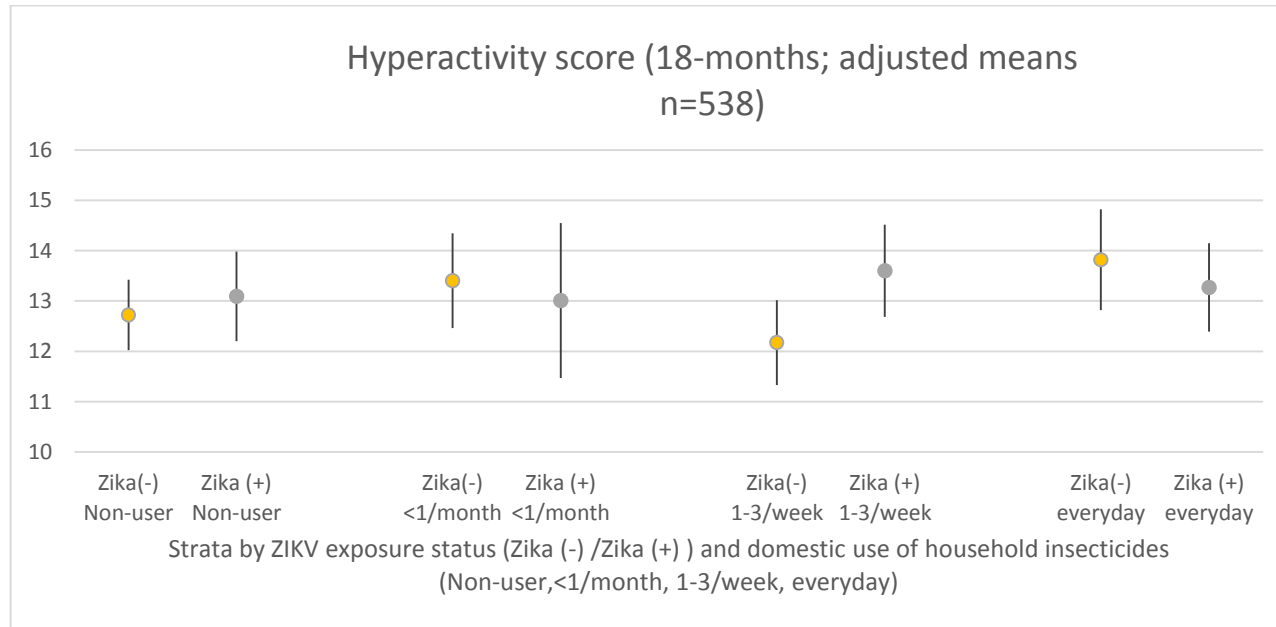
^a adjusted for maternal age at delivery, tobacco use during pregnancy and depression score, and infant sex

^b adjusted for gestational age at delivery, parity, maternal education level, marital status, tobacco use during pregnancy, depression and stimulation scores, and infant sex

^c adjusted for parity, maternal education level, tobacco use during pregnancy and stimulation score

^d adjusted for parity, maternal age at delivery, depression and stimulation scores, and infant sex

Supplementary Figure 1: Hyperactivity-adjusted mean scores according to ZIKV exposure and frequency of household insecticide use (n=358); p-value of interaction (additive scale) = 0.08; Yellow dots: Zika(-), Gray dots Zika(+)



Supplementary Table 6a: Sensitivity analysis using Zika determined using the ZIKA-DFA-FE algorithm: birth outcomes (n=432)

	Head circumference (cm) β^a [95% CI]	Birth weight (g) β^b [95% CI]
Non-users and ZIKV(-)	ref	ref
Users and ZIKV(-)*	-0.4 [-0.9; 0.0]	-92 [-202; 19]
Non-users and ZIKV(+)**	-0.7 [-1.2; -0.1]	-240 [-382; -98]
Joint exposure: User and ZIKV(+)**	-0.2 [-0.7; 0.2]	-124 [-236; -12]

ZIKV: Zika virus, β coefficient and 95%CI obtained from linear regression

^a adjusted for gestational age at delivery, maternal pre-pregnancy body mass index, parity, education level and fetal sex

^b additionally adjusted for gestational age squared

* Average change estimate of users vs. non-users among the ZIKV(-) mothers.

** Average change estimate of ZIKV(+) vs. ZIKV(-), among non-users of household insecticides

*** Estimate of the average change due to the combined presence of ZIKV infection and household insecticides

Supplementary Table 6b: Sensitivity analysis using Zika determined using the ZIKA-DFA-FE algorithm: ASQ scores at 18 months of age (n=221)

	ASQ Total score $\beta^{a, b, e}$ [95% CI]	ASQ Gross Motor OR ^{a, c, d, e} [95% CI]	ASQ Fine Motor $\beta^{a, b, c, e}$ [95% CI]	ASQ Personal- social β^a [95% CI]	ASQ Problem solving β^a [95% CI]	ASQ communication $\beta^{a, b, d, e}$ [95% CI]
Non-users and ZIKV(-)	ref	ref	ref	ref	ref	ref
Users and ZIKV(-)*	3.3 [-8.3; 14.9]	1.5 [0.6; 3.6]	2.5 [-1.6; 6.6]	-1.9 [-5.2; 1.5]	-0.6 [-5.4; 4.3]	3.0 [-2.1; 8.1]
Non-users and ZIKV(+)**	-1.0 [-15.6; 13.6]	1.1 [0.4; 3.1]	-2.8 [-7.9; 2.3]	0.3 [-3.9; 4.5]	0.34 [-5.7; 6.5]	1.1 [-5.2; 7.5]
Joint exposure: User and ZIKV(+)**	-9.6 [-21.8; 2.6]	0.7 [0.4; 1.2]	-4.0 [-8.3; 0.4]	-2.4 [-5.9; 1.1]	-0.8 [-5.9; 4.2]	-1.7 [-7.0; 3.6]

ZIKV: Zika virus, ASQ: Ages and Stages Questionnaire, β coefficient and 95%CI obtained from linear regression, OR: Odds Ratio

Gross motor subscale dichotomized score at the median value of 60

^a adjusted for maternal body mass index before pregnancy and maternal stimulation

^b additionally adjusted for breastfeeding duration, maternal education level and depression score

^c additionally adjusted for and family situation

^d additionally adjusted for maternal tobacco use during pregnancy

^e additionally adjusted infant sex

* Average change estimate of users vs. non-users among the ZIKV(-) mothers

** Average change estimate of ZIKV(+) vs. ZIKV(-), among non-users of household insecticides

*** Estimate of the average change due to the combined presence of ZIKV infection and household insecticides

Supplementary Table 6c: Sensitivity analysis using Zika determined using the ZIKA-DFA-FE algorithms: behavioral outcomes at 18 months of age

(n=221)

	Hyperactivity β^a [95% CI]	Opposition β^b [95% CI]	Inattention β^c [95% CI]	Physical aggression β^d [95% CI]
Non-users and ZIKV(-)	ref	ref	ref	ref
Users and ZIKV(-)*	0.2 [-0.7; 1.2]	0.3 [-0.3; 0.8]	0.2 [-0.4; 0.7]	0.1 [-0.5; 0.8]
Non-users and ZIKV(+)**	0.7 [-1.1; 0.5]	1.0 [0.3; 1.7]	0.3 [-0.4; 1.0]	0.3 [-0.5; 1.1]
Joint exposure: User and ZIKV(+)**	0.6 [-0.4; 1.1]	0.9 [0.3; 1.6]	0.3 [-0.2; 0.9]	0.6 [-0.1; 1.3]

ZIKV: Zika virus, QLSCD : Quebec Longitudinal Study of Child Development, β coefficient and 95%CI obtained from linear regression

^a adjusted for maternal age at delivery, tobacco use during pregnancy, depression score and infant sex

^b adjusted for gestational age at delivery, parity, maternal education level, family situation, tobacco use during pregnancy, depression and stimulation scores, and infant sex

^c adjusted for parity, maternal education level, tobacco use during pregnancy and stimulation score

^d adjusted for maternal age at delivery, parity, depression and stimulation scores, and infant sex

* Average change estimate of users vs. non-users among the ZIKV(-) mothers

** Average change estimate of ZIKV(+) vs. ZIKV(-), among non-users of household insecticides

*** Estimate of the average change due to the combined presence of ZIKV infection and household insecticides

Supplementary Table 7a: Sensitivity excluding infants with head circumference below -2SD for gestational and sex (INTERGROWTH_21st charts): birth outcomes (n=649)

	Head circumference (cm) β^a [95% CI]	Birth weight (g) β^b [95% CI]
Non-users and ZIKV(-)	ref	ref
Users and ZIKV(-)*	-0.4 [-0.6; -0.1]	-100 [-183; -17]
Non-users and ZIKV(+)**	-0.5 [-0.9; -0.1]	-165 [-276; -53]
Joint exposure: User and ZIKV(+)**	-0.4 [-0.7; 0.0]	-98 [-185; -11]

ZIKV: Zika virus, β coefficient and 95%CI obtained from linear regression

^a adjusted for gestational age at delivery, maternal pre-pregnancy body mass index, parity, education level and fetal sex

^b additionally adjusted gestational age squared

* Average change estimate of users vs. non-users among the ZIKV(-) mothers

** Average change estimate of ZIKV(+) vs. ZIKV(-), among non-users of household insecticides

*** Estimate of the average change due to the combined presence of ZIKV infection and household insecticides

Supplementary Table 7b: Sensitivity analysis excluding infants with head circumference below -2SD for gestational and sex (INTERGROWTH_21st

charts): ASQ scores at 18 months of age (n=344)

	ASQ Total score	ASQ Gross Motor	ASQ Fine Motor	ASQ Personal- social	ASQ Problem solving	ASQ communication
	$\beta^{a, b, e}$ [95% CI]	OR ^{a, c, d, e} [95% CI]	$\beta^{a, b, c, e}$ [95% CI]	β^a [95% CI]	β^a [95% CI]	$\beta^{a, b, d, e}$ [95% CI]
Non-users and ZIKV(-)	ref	ref	ref	ref	ref	ref
Users and ZIKV(-)*	1.6 [-7.7; 10.8]	1.6 [0.8; 3.1]	3.4 [0.2; 6.6]	-1.1 [-4.3; 0.9]	-0.9 [-4.7; 2.8]	0.9 [-3.1; 4.8]
Non-users and ZIKV(+)**	-0.1 [-12.2; 12.1]	1.4 [0.6; 3.3]	-0.9 [-5.1; 3.2]	1.2 [-2.2; 4.6]	0.3 [-4.6; 5.2]	-1.2 [-6.3; 4.0]
Joint exposure: User and ZIKV(+)**	-9.0 [-19.1; 1.0]	0.8 [0.4; 1.7]	-3.5 [-7.0; -0.1]	-2.7 [-5.5; 0.1]	-0.8 [-4.9; 3.2]	-1.5 [-5.7; 2.7]

ZIKV: Zika virus, ASQ: Ages and Stages Questionnaire, β coefficient and 95%CI obtained from linear regression, OR: Odds Ratio

Gross motor subscale dichotomized score at the median value of 60

^aadjusted for maternal body mass index before pregnancy and maternal stimulation score

^b additionally adjusted for breastfeeding duration, maternal education level and depression score

^c additionally adjusted for and family situation

^d additionally adjusted for maternal tobacco use during pregnancy

^e additionally adjusted for infant sex

* Average change estimate of users vs. non-users among ZIKV(-) mothers

** Average change estimate of ZIKV(+) vs. ZIKV(-), among non-users of household insecticides

*** Estimate of the average change due to the combined presence of ZIKV infection and household insecticides

Supplementary Table 7c: Sensitivity analysis excluding infants with head circumference below -2SD for gestational and sex (INTERGROWTH_21st

charts): behavioral outcomes at 18-month (n=344)

	Hyperactivity β^a [95% CI]	Opposition β^b [95% CI]	Inattention β^c [95% CI]	Physical aggression β^d [95% CI]
Non-users and ZIKV(-)	ref	ref	ref	ref
Users and ZIKV(-)*	0.2 [-0.5; 1.0]	0.2 [-0.3; 0.7]	0.4 [-0.4; 0.4]	-0.1 [-0.7; 0.4]
Non-users and ZIKV(+)**	0.6 [-0.4; 1.6]	0.6 [-0.4; 1.2]	0.0 [-0.5; 0.5]	-0.0 [-0.7; 0.7]
Joint exposure: User and ZIKV(+)**	0.8 [0.0; 1.6]	0.9 [-0.4; 1.4]	0.3 [-0.1; 0.7]	0.4 [-0.2; 0.9]

ZIKV: Zika virus, QLSCD : Quebec Longitudinal Study of Child Development, β coefficient and 95%CI obtained from linear regression

^aadjusted for maternal age at delivery, tobacco use during pregnancy, depression score and infant sex

^badjusted for gestational age at delivery, parity, maternal education level, family situation, tobacco use during pregnancy, depression and stimulation scores, and infant sex

^cadjusted for parity, maternal education level, tobacco use during pregnancy and stimulation score

^dadjusted for maternal age at delivery, parity, depression and stimulation scores, and infant sex

* Average change estimate of users vs. non-users among ZIKV(-) mothers.

** Average change estimate of ZIKV(+) vs. ZIKV(-), among non-users of household insecticides

*** Estimate of the average change due to the combined presence of ZIKV infection and household insecticides

Supplementary Table 8a: Sensitivity excluding infants using imputed data: birth outcomes (n=708)

	Head circumference (cm) β^a [95% CI]	Birth weight (g) β^b [95% CI]
Non-users and ZIKV(-)	ref	ref
Users and ZIKV(-)*	-0.3 [-0.6; 0.0]	-74 [-155; 7]
Non-users and ZIKV(+)**	-0.4 [-0.8; 0.0]	-138 [-248; -29]
Joint exposure: User and ZIKV(+)**	-0.3 [-0.6; 0.0]	-66 [-152; 18]

ZIKV: Zika virus, B coefficient and 95%CI obtained from linear regression

^a adjusted for gestational age at delivery, maternal pre-pregnancy body mass index, parity, education level and fetal sex

^b additionally adjusted gestational age squared

* Average change estimate of users vs. non-users among ZIKV(-) mothers.

** Average change estimate of ZIKV(+) vs. ZIKV(-), among non-users of household insecticides

*** Estimate of the average change due to the combined presence of ZIKV infection and household insecticides

Supplementary Table 8b: Sensitivity analysis using imputed data: ASQ scores at 18 months of age (n=409)

	Total score $\beta^{a, b, e}$ [95% CI]	Gross Motor OR ^{a, c, d, e} [95% CI]	Fine Motor $\beta^{a, b, c, e}$ [95% CI]	Personal-social β^a [95% CI]	Problem solving β^a [95% CI]	ASQ communication $\beta^{a, b, d, e}$ [95% CI]
Non-users and ZIKV(-)	ref	ref	ref	ref	ref	ref
Users and ZIKV(-)*	3.3 [-5.8; 12.6]	1.4 [0.7; 2.6]	3.3 [0.3; 6.3]	-0.8 [-3.3; 1.7]	-0.5 [-4.1; 3.0]	1.4 [-2.3; 5.1]
Non-users and ZIKV(+)**	-7.4 [-19.5; 11.3]	0.9 [0.4; 2.0]	-2.7 [-6.7; 1.2]	-1.2 [-5.2; 2.7]	0.9 [-4.7; 6.6]	-1.3 [-6.1; 3.5]
Joint exposure: User and ZIKV(+)**	-7.5 [-17.3; 2.3]	0.9 [0.5; 1.8]	-3.5 [-6.7; -0.3]	-2.3 [-4.9; 0.4]	-1.5 [-5.2; 2.3]	-0.2 [-4.1; 3.7]

ZIKV: Zika virus, ASQ: Ages and Stages Questionnaire, β coefficient and 95%CI obtained from linear regression, OR: Odds Ratio

Gross motor subscale dichotomized score at the median value of 60

^aadjusted for maternal body mass index before pregnancy and maternal stimulation score

^b additionally adjusted for breastfeeding duration, maternal education level and depression score

^c additionally adjusted for and family situation

^d additionally adjusted for maternal tobacco use during pregnancy

^e additionally adjusted for infant sex

* Average change estimate of users vs. non-users among ZIKV(-) mothers.

** Average change estimate of ZIKV(+) vs. ZIKV(-), among non-users of household insecticides

*** Estimate of average change due to the combined presence of ZIKV infection and household insecticides

Supplementary Table 8c: Sensitivity analysis using imputed data: behavioral outcomes at 18-month (n=398)

	Hyperactivity β^a [95% CI]	Opposition β^b [95% CI]	Inattention β^c [95% CI]	Physical aggression β^d [95% CI]
Non-users and ZIKV(-)	ref	ref	ref	ref
Users and ZIKV(-)*	0.2 [-0.5; 0.9]	0.2 [-0.3; 0.6]	0.1 [-0.3; 0.4]	-0.2 [-0.6; 0.3]
Non-users and ZIKV(+)**	0.2 [-0.7; 1.4]	0.1 [-0.3; 0.6]	-0.1 [-0.6; 0.4]	0.1 [-0.5; 0.7]
Joint exposure: User and ZIKV(+)**	0.8 [0.0; 1.6]	0.9 [0.4; 1.4]	0.3 [-0.1; 0.7]	0.4 [-0.1; 0.9]

ZIKV: Zika virus, QLSCD : Quebec Longitudinal Study of Child Development, β coefficient and 95%CI obtained from linear regression

^aadjusted for maternal age at delivery, tobacco use during pregnancy and depression score, and infant sex

^b adjusted for gestational age at delivery, parity, maternal education level, family situation, tobacco use during pregnancy, depression and stimulation scores, and infant sex

^c adjusted for parity, maternal education level, tobacco use during pregnancy and stimulation score

^d adjusted for maternal age at delivery, parity, depression and stimulation scores, and infant sex

* Average change estimate of users vs. non-users among ZIKV(-) mothers.

** Average change estimate of ZIKV(+) vs. ZIKV(-), among non-users of household insecticides

*** Estimate of the average change due to the combined presence of ZIKV infection and household insecticides

Supplementary Table 9a: Sensitivity excluding infants with sickle cell anemia or hospitalized for convulsion without fever: birth outcomes (n=686)

	Head circumference (cm) β^a [95% CI]	Birth weight (g) β^b [95% CI]
Non-users and ZIKV(-)	ref	ref
Users and ZIKV(-)*	-0.3 [-0.6; 0.0]	-81 [-164; 2]
Non-users and ZIKV(+)**	-0.4 [-0.8; 0.0]	-129 [-240; -17]
Joint exposure: User and ZIKV(+)**	-0.3 [-0.6; 0.1]	-75 [-161; 12]

ZIKV: Zika virus, β coefficient and 95%CI obtained from linear regression

^a adjusted for gestational age at delivery, maternal pre-pregnancy body mass index, parity, education level and fetal sex

^b additionally adjusted gestational age squared

* Average change estimate of users vs. non-users among ZIKV(-) mothers.

** Average change estimate of ZIKV(+) vs. ZIKV(-), among non-users of household insecticides

*** Estimate of the average change due to the combined presence of ZIKV infection and household insecticides

Supplementary Table 9b: Sensitivity analysis excluding infants with sickle cell anemia or hospitalized for convulsion without fever: ASQ scores at 18

months of age (n=358)

	ASQ Total score	ASQ Gross Motor OR ^{a, b, c, d, e} [95% CI]	ASQ Fine Motor $\beta^{a, b, c, e}$ [95% CI]	ASQ Personal- social β^a [95% CI]	ASQ Problem solving β^a [95% CI]	ASQ communication $\beta^{a, b, d, e}$ [95% CI]
	$\beta^{a, b, e}$ [95% CI]					
Non-users and ZIKV(-)	ref	ref	ref	ref	ref	ref
Users and ZIKV(-)*	1.0 [-8.5; 10.5]	1.4 [0.7; 2.6]	2.8 [-0.4; 6.0]	-1.4 [-4.0; 1.2]	-0.9 [-4.5; 2.8]	0.9 [-3.0; 4.7]
Non-users and ZIKV(+)**	-5.9 [-18.3; 6.6]	1.1 [0.5; 2.5]	-2.5 [-6.6; 1.7]	0.1 [-3.4; 3.4]	-0.7 [-5.5; 4.1]	-1.6 [-6.6; 3.5]
Joint exposure: User and ZIKV(+)**	-9.2 [-19.5; 1.1]	0.8 [0.4; 1.6]	-3.6 [-7.1; -0.2]	-2.8 [-5.6; 0.1]	-1.1 [-5.0; 2.8]	-1.4 [-5.6; 2.8]

ZIKV: Zika virus, ASQ: Ages and Stages Questionnaire, β coefficient and 95%CI obtained from linear regression, OR: Odds Ratio

Gross motor subscale dichotomized score at the median value of 60

^aadjusted maternal body mass index before pregnancy and maternal stimulation score

^b additionally adjusted for breastfeeding duration, maternal education level and depression score

^c additionally adjusted for family situation

^d additionally adjusted for maternal tobacco use during pregnancy

^e additionally adjusted for infant sex

* Average change estimate of users vs. non-users among ZIKV(-) mothers

** Average change estimate of ZIKV(+) vs. ZIKV(-), among non-users of household insecticides

*** Estimate of average change due to the combined presence of ZIKV infection and household insecticides

Supplementary Table 9c: Sensitivity analysis excluding infants with sickle cell anemia or hospitalized for convulsion without fever: behavioral outcomes at 18-month (n=358)

	Hyperactivity β^a [95% CI]	Opposition β^b [95% CI]	Inattention β^c [95% CI]	Physical aggression β^d [95% CI]
Non-users and ZIKV(-)	ref	ref	ref	ref
Users and ZIKV(-)*	0.3 [-0.4; 1.0]	0.3 [-0.2; 0.7]	0.1 [-0.3; 0.5]	-0.1 [-0.6; 0.4]
Non-users and ZIKV(+)**	0.4 [-0.6; 1.3]	0.7 [0.1; 1.3]	-0.1 [-0.6; 0.5]	0.1 [-0.5; 0.7]
Joint exposure: User and ZIKV(+)**	0.8 [-0.0; 1.6]	1.0 [0.5; 1.5]	0.3 [-0.1; 0.7]	0.5 [-0.1; 1.0]

ZIKV: Zika virus, QLSCD : Quebec Longitudinal Study of Child Development, β coefficient and 95%CI obtained from linear regression

^aadjusted for maternal age at delivery, tobacco use during pregnancy and depression score, and infant sex

^badjusted for gestational age at delivery, parity, maternal education level, family situation, tobacco use during pregnancy, depression and stimulation scores, and infant sex

^cadjusted for parity, maternal education level, tobacco use during pregnancy and stimulation score

^dadjusted for maternal age at delivery, parity, depression and stimulation scores, and infant sex

* Average change estimate of users vs. non-users among ZIKV(-) mothers.

** Average change estimate of ZIKV(+) vs. ZIKV(-), among non-users of household insecticides

*** Estimate of the average change due to the combined presence of ZIKV infection and household insecticides