

**Supplementary Table 1: Bivariate associations of socioeconomic and demographic characteristics with outcomes at 18 months (n=297)**

	ASQ total score			Hyperactivity			Opposition		Inattention		Physical aggression	
	N	corr or mean [IC 95%]	p*	N	corr or mean [IC 95%]	p*	corr or mean [IC 95%]	p*	corr or mean [IC 95%]	p*	corr or mean [IC 95%]	p*
<b>Maternal and pregnancy characteristics</b>												
Age at delivery (years)	297	0.11	0.05	288	-0.09	0.11	-0.14	0.02	-0.06	0.34	-0.01	0.80
BMI (kg/m <sup>2</sup> )	293	0.08	0.16	285	0.03	0.59	0.03	0.6	-0.12	0.05	0.03	0.62
Obesity												
Underweight	293	201.8 [182.9; 220.7]	0.03	285	11.6 [10.6; 13.2]	0.80	7.8 [7.0; 8.7]	0.63	5.4 [4.7; 6.1]	0.33	5.4 [4.5; 6.3]	0.72
Normal		225.3 [218.3; 232.2]			12.5 [12.0; 13.0]		8.2 [7.9; 8.5]		5.3 [5.0; 5.6]		5.2 [4.8; 5.5]	
Overweight		217.7 [209.3; 226.2]			12.5 [11.9; 13.1]		8.4 [8.0; 8.8]		5.0 [4.7; 5.4]		5.2 [4.8; 5.6]	
Obese		230.2 [220.5; 239.8]			12.6 [11.9; 13.3]		8.3 [7.7; 8.6]		5.0 [4.6; 5.3]		5.5 [5.0; 5.9]	
Parity	296			287								
Primiparous		224.6 [217.6; 231.7]	0.47		12.5 [12.0; 13.1]	0.77	8.6 [8.3; 9.0]	0.001	5.4 [5.1; 5.7]	0.01	4.8 [4.5; 5.2]	0.001
Multiparous		221.1 [215.1; 227.1]			12.4 [12.0; 12.9]		7.9 [7.7; 8.2]		5.0 [4.7; 5.2]		5.5 [5.3; 5.8]	
Education level	297			288								
≤12 years		215.9 [207.8; 223.9]	0.03		12.6 [12.1; 13.2]	0.87	8.0 [7.6; 8.4]	0.14	4.9 [4.7; 5.2]	0.05	5.5 [5.1; 5.8]	0.16
>12 years		226.6 [221.2; 232.0]			12.4 [12.0; 12.8]		8.3 [8.1; 8.6]		5.3 [5.1; 5.5]		5.1 [4.9; 5.4]	
Place of birth	297		0.014	288		0.64		0.3		0.76		0.01
French West Indies		225.4 [219.6; 231.2]			12.6 [12.2; 13.0]		8.3 [8.0; 8.6]		5.1 [4.9; 5.3]		5.1 [4.9; 5.4]	
Other West Indies		211.9 [201.2; 220.6]			12.5 [11.9; 13.1]		7.9 [7.5; 8.3]		5.2 [4.8; 5.5]		5.8 [5.4; 6.2]	
Metropolitan France, Europe and other		231.8 [218.8; 244.8]			12.1 [11.2; 13.0]		8.3 [7.7; 8.9]		5.3 [4.8; 5.8]		4.8 [4.2; 5.4]	
Tobacco use during pregnancy	297			288								
No		222.7 [217.8; 227.5]	0.88		12.4 [12.0; 12.7]	0.02	8.2 [7.9; 8.4]	0.08	5.2 [5.0; 5.3]	0.68	5.2 [5.0; 5.5]	0.42
Yes		221.5 [207.8; 235.2]			13.7 [12.7; 14.6]		8.9 [8.1; 9.7]		5.1 [4.6; 5.6]		5.5 [4.8; 6.3]	
Marital status	296			287								
With a partner		225.9 [219.7; 232.1]	0.13		12.4 [11.9; 12.8]	0.67	8.0 [7.7; 8.3]	0.01	5.2 [4.9; 5.4]	0.90	5.3 [5.0; 5.6]	0.88
Alone with family members		213.3 [202.5; 224.0]			12.7 [12.0; 13.5]		8.9 [8.4; 9.4]		5.2 [4.8; 5.6]		5.2 [4.7; 5.7]	
Alone		221.4 [213.0; 229.9]			12.6 [12.0; 13.2]		8.1 [7.7; 8.5]		5.1 [4.8; 5.4]		5.3 [4.9; 5.7]	

Household income	275			275								
<450€		210.0 [193.6; 226.4]	0.001		12.9 [11.8; 14.0]	0.30	8.6 [7.8; 9.4]	0.14	5.7 [5.1; 6.3]	0.24	6.5 [5.7; 7.3]	0.01
451-800€		195.7 [180.9; 210.5]			13.5 [12.5; 14.5]		8.7 [8.0; 8.4]		5.4 [4.8; 5.9]		5.3 [4.6; 5.9]	
801-1500€		224.9 [217.1; 232.6]			12.3 [11.7; 12.8]		8.0 [7.6; 8.3]		5.0 [4.7; 5.3]		5.1 [4.7; 5.4]	
1501-3000€		225.4 [216.7; 234.0]			12.6 [12.0; 13.2]		8.1 [7.9; 8.5]		5.1 [4.8; 5.5]		5.4 [5.0; 5.8]	
>3000€		233.8 [222.7; 244.8]			12.3 [11.6; 13.1]		8.5 [8.0; 9.0]		5.4 [4.9; 5.8]		4.8 [4.3; 5.3]	
Maternal depression symptoms at 18 months <sup>a</sup>	273			273								
No		226.7 [221.7; 231.8]	0.01		12.3 [11.9; 12.7]	0.02	8.1 [7.8; 8.3]	0.07	5.1 [4.9; 5.3]	0.44	5.0 [4.8; 5.3]	0.001
Yes		209.5 [198.0; 221.0]			13.2 [12.5; 13.8]		8.6 [8.1; 9.0]		5.3 [4.9; 5.7]		6.0 [5.5; 6.4]	
<b>Infant characteristics</b>												
Gestational age at delivery (weeks)	297	0.002	0.97	288	-0.01	0.91	0.11	0.07	0.03	0.63	0.00	0.97
Sex	297			288								
Male		216.6 [209.9; 223.4]	0.01		12.8 [12.6; 13.2]	0.09	8.4 [8.1; 8.7]	0.06	5.3 [5.0; 5.5]	0.25	5.4 [5.1; 5.7]	0.13
Female		228.2 [222.1; 234.3]			12.2 [11.7; 12.7]		8.0 [7.7; 8.3]		5.1 [4.8; 5.3]		5.1 [4.8; 5.4]	
Breastfeeding duration (months)	295	0.18	0.002	286	0.01	0.83	0.06	0.35	0.04	0.54	0.03	654
Maternal stimulation score	288	0.37	<.0001	288	-0.04	0.49	-0.08	0.15	-0.04	0.55	-0.19	0.001
Corrected age at 18m assessment (months) <sup>b</sup>	297	0.14	0.02	288	0.01	0.78	0.08	0.13	0.07	0.26	-0.03	0.59

\*p-values obtained from Student t, Spearman correlation (corr) or Anova tests.

<sup>a</sup>Abbreviated (10-item) Center for Epidemiologic Studies Depression Scale.

<sup>b</sup>Age at 18-month assessment corrected for gestational age.

**Supplementary Table 2: Interaction analysis between blood lead levels, sex and ASQ scores at 18 months (n=297)**

	Blood lead levels	Male	Female	p interaction
		$\beta$ [95% CI] or [95% CI]	$\beta$ [95% CI] or [95% CI]	
<b>ASQ total score</b>	T1	(ref)	1.1 [-12.5; 14.8]	0.05
	T2	-9.3 [-23.3; 4.7]	-6.8 [-20.2; 6.5]	
	T3	-22.7 [-37.8; -8.1]	1.1 [-13.1; 15.4]	
<b>ASQ gross motor</b>	T1	(ref)	1.3 [0.5; 3.3]	0.75
	T2	1.1 [0.4; 2.6]	1.1 [0.6; 1.9]	
	T3	1.0 [0.4; 2.6]	1.2 [0.7; 1.9]	
<b>ASQ fine motor</b>	T1	(ref)	-1.2 [-5.8; 3.3]	0.09
	T2	-5.2 [-9.9; -0.6]	-1.5 [-6.9; 2.9]	
	T3	-7.3 [-11.9; -2.7]	-1.4 [-6.1; 3.2]	
<b>ASQ personal-social</b>	T1	(ref)	1.3 [-2.3; 4.8]	0.03
	T2	-1.0 [-4.6; 2.7]	-1.9 [-5.4; 1.5]	
	T3	-2.9 [-6.7; 0.9]	2.9 [-0.8; 6.6]	
<b>ASQ problem solving</b>	T1	(ref)	-1.4 [-6.5; 3.6]	0.30
	T2	-4.4 [-9.5; 0.8]	-4.8 [-9.8; 0.1]	
	T3	-11.0 [-16.2; -5.8]	-7.0 [-12.1; -1.9]	
<b>ASQ communication</b>	T1	(ref)	2.2 [-3.4; 7.7]	0.61
	T2	0.3 [-5.5; 6.0]	2.4 [-3.0; 7.9]	
	T3	-2.0 [-8.1; 4.0]	3.6 [-2.1; 9.4]	

ZIKV: Zika virus, ASQ: Ages and Stages Questionnaire,  $\beta$  coefficient and 95%CI obtained from linear regression, OR: Odds ratio and 95%CI obtained from logistic regression for the ASQ gross motor model, p-value for interaction (additive or multiplicative scale).

Tertiles of lead concentration ( $\mu\text{g/L}$ ): T1 [2.2 - 9.2], T2 [9.2 - 13.3], T3[13.3 - 111].

ASQ total adjusted for sex, birth weight, parity, maternal pre-pregnancy BMI, ZIKV, maternal cadmium levels, breastfeeding duration, maternal depression and stimulation scores.

ASQ gross motor adjusted for sex, stimulation score, household income at follow-up, maternal selenium and mercury levels.

ASQ fine motor score adjusted on sex, parity, maternal pre-pregnancy BMI, maternal tobacco use during pregnancy, marital status, depression symptoms, breastfeeding duration, stimulation score and maternal mercury levels.

ASQ personal-social adjusted for sex, birth weight, gestational age at delivery, maternal education, stimulation score and maternal cadmium and mercury levels.

ASQ problem solving adjusted for sex, parity, maternal pre-pregnancy BMI, marital status, household income at follow-up and stimulation score.

ASQ communication adjusted for sex, maternal pre-pregnancy BMI, infant's age at assessment, maternal depression symptoms, household income at follow-up, stimulation score and maternal cadmium levels.

**Supplementary Table 3: Interaction analysis between blood lead levels, sex and behavioral scores at 18 months (n=288)**

	Blood lead levels	Male	Female	p interaction
		$\beta$ [95% CI]	$\beta$ [95% CI]	
<b>Hyperactivity</b>	T1	(ref)	-0.8 [-1.9; 0.3]	0.56
	T2	0.2 [-0.9; 1.3]	-0.5 [-1.5; 0.6]	
	T3	-0.6 [-1.7; 0.6]	-0.6 [-1.6; 0.5]	
<b>Opposition</b>	T1	(ref)	0.0 [-0.7; 0.7]	0.63
	T2	0.5 [-0.2; 1.2]	0.1 [-0.6; 0.8]	
	T3	0.2 [-0.5; 0.9]	-0.1 [-0.8; 0.6]	
<b>Inattention</b>	T1	(ref)	-0.3 [-0.8; 0.3]	0.92
	T2	0.1 [-0.5; 0.7]	-0.1 [-0.6; 0.5]	
	T3	-0.3 [-0.9; 0.3]	-0.4 [-0.9; 0.2]	
<b>Physical aggression</b>	T1	(ref)	1.0 [-2.6; 4.6]	0.08
	T2	-0.6 [-1.4; 0.0]	-0.4 [-1.1; 0.3]	
	T3	-0.2 [-0.9; 0.5]	-0.8 [-1.4; -0.1]	

ZIKV: Zika virus,  $\beta$  coefficient and 95%CI obtained from linear regression, p-value for interaction additive or multiplicative scale.

Tertiles of lead concentration ( $\mu\text{g/L}$ ): T1 [2.2 - 9.2], T2 [9.2 - 13.3], T3[13.3 - 111].

Hyperactivity score adjusted for sex, maternal depression and maternal cadmium levels.

Opposition score adjusted for sex, gestational age at delivery, parity, maternal education, household income, marital situation, maternal tobacco use during pregnancy and stimulation score.

Inattention score adjusted for sex, parity and maternal selenium levels.

Physical aggression score adjusted for sex, parity, household income, maternal depression symptoms, stimulation score and ZIKV.

**Supplementary Table 4: Sensitivity analysis excluding infants with head circumference below the -2SD for gestational age and sex (INTERGROWTH\_21<sup>st</sup> charts): ASQ scores at 18 months (n=281)**

	ASQ total score			ASQ gross motor			ASQ fine motor			ASQ personal-social			ASQ problem solving			ASQ communication		
	$\beta$ [95% CI]	p	p trend	OR [95% CI]	p	p trend	$\beta$ [95% CI]	p	p trend	$\beta$ [95% CI]	p	p trend	$\beta$ [95% CI]	p	p trend	$\beta$ [95% CI]	p	p trend
<b>Blood lead levels</b>																		
T1	(ref)	0.08	0.03	(ref)	0.30	0.35	(ref)	0.06	0.02	(ref)	0.45	0.65	(ref)	0.0002	<.0001	(ref)	0.82	0.92
T2	-6.8 [-16.4; 2.8]			1.0 [0.5; 2.1]			-2.8 [-6.1; 0.4]			-1.6 [-4.2; 1.0]			-3.3 [-7.0; 0.5]			1.0 [-3.1; 5.1]		
T3	-11.7 [-22.1; -1.4]			1.3 [0.7; 2.5]			-3.4 [-7.3; 0.43]			-0.6 [-3.3; 2.2]			-8.1 [-12.0; -4.3]			-0.3 [-4.8; 4.1]		
<b>Blood lead levels (log 10)</b>																		
ZIKV	-4.1 [-12.2; 4.0]	0.04		1.7 [0.5; 6.0]	0.63		-5.9 [-12.2; 0.5]	0.07		2.6 [-2.8; 7.9]	0.35		-14.5 [-21.8; -7.3]	<.0001		-2.5 [-11.0; 6.1]	0.57	
<b>ZIKV</b>																		
ZIKV	-4.1 [-12.2; 4.0]	0.32		1.4 [0.8; 2.4]	0.32		-3.5 [-6.3; -0.8]	0.01		0.1 [-2.0; 2.2]	0.93		0.3 [-2.8; -3.5]	0.83		-1.2 [-4.6; 2.2]	0.50	

ZIKV: Zika virus, ASQ: Ages and Stages Questionnaire,  $\beta$  coefficient and 95%CI obtained from linear regression, OR: odds ratio and 95%CI obtained from logistic regression.

Tertiles of lead concentration ( $\mu\text{g/L}$ ): T1 [2.2 - 9.2], T2 [9.2 - 13.3], T3 [13.3 - 111].

ASQ total adjusted for sex, birth weight, parity, maternal pre-pregnancy BMI, ZIKV, maternal cadmium levels, breastfeeding duration, maternal depression and stimulation scores; for the ZIKV model additionally adjusted for lead tertiles and infant's age at assessment.

ASQ gross motor adjusted for sex, stimulation score, household income at follow-up, maternal selenium and mercury levels; for the ZIKV model additionally adjusted for marital status and lead tertiles.

ASQ fine motor score adjusted on sex, parity, maternal pre-pregnancy BMI, maternal tobacco use during pregnancy, marital status, depression symptoms, breastfeeding duration, stimulation score, ZIKV and maternal mercury level; for the ZIKV model additionally adjusted for lead tertiles.

ASQ personal-social adjusted for sex, gestational age at delivery, birth weight, maternal education, stimulation score, and maternal cadmium and mercury levels; for the ZIKV model adjusted for sex, maternal education, stimulation score and maternal cadmium levels.

ASQ problem solving adjusted for sex, parity, maternal pre-pregnancy BMI, marital status, household income at follow-up and stimulation score; for the ZIKV model additionally adjusted for lead tertiles.

ASQ communication adjusted for sex, maternal pre-pregnancy BMI, infant age at assessment, maternal depression symptoms, household income at follow-up, stimulation score and maternal cadmium levels.

**Supplementary Table 5: Sensitivity analysis excluding infants with head circumference below the - 2SD for gestational age and sex (INTERGROWTH\_21st charts): behavioral outcomes at 18 months (n=273)**

	Hyperactivity			Opposition			Inattention			Physical aggression		
	$\beta$ [95% CI]	p	ptrend	$\beta$ [95% CI]	p	ptrend	$\beta$ [95% CI]	p	ptrend	$\beta$ [95% CI]	p	ptrend
<b>Blood lead levels</b>												
T1	(ref)	0.43	0.95	(ref)	0.44	0.73	(ref)	0.31	0.30	(ref)	0.75	0.46
T2	0.4 [-0.4; 1.2]			0.3 [-0.2; 0.8]			0.1 [-0.3; 0.5]			-0.1 [-0.6; 0.4]		
T3	-0.1 [-0.9; 0.8]			0.1 [-0.4; 0.6]			-0.2 [-0.6; 0.2]			-0.2 [-0.7; 0.3]		
<b>Blood lead levels (log 10)</b>	-0.1 [-1.7; 1.5]	0.91		-0.0 [-1.0; 0.9]	0.96		-0.0 [-0.9; 0.8]	0.93		-0.3 [-1.3; 0.6]	0.49	
<b>ZIKV</b>	0.7 [0.1; 1.4]	0.04		0.7 [0.3; 1.2]	0.0007		0.1 [-0.2; 0.5]	0.44		0.4 [-0.0; 0.8]	0.07	

ZIKV: Zika virus,  $\beta$  coefficient and 95%CI obtained from linear regression.

Tertiles of lead concentration ( $\mu\text{g/L}$ ): T1 [2.2 - 9.2], T2 [9.2 - 13.3], T3 [13.3 - 111].

Hyperactivity score adjusted for sex, ZIKV and maternal depression and maternal cadmium levels; for the ZIKV model additionally adjusted for tobacco use during pregnancy.

Opposition score adjusted for sex, gestational age at delivery, parity, maternal education, household income, marital situation, maternal tobacco use during pregnancy, ZIKV and stimulation score.

Inattention score adjusted for sex, parity and maternal selenium levels; for the ZIKV model additionally adjusted for maternal education, pre-pregnancy BMI and stimulation score.

Physical aggression score adjusted for sex, parity, household income, maternal depression symptoms, stimulation score and ZIKV.

**Supplementary Table 6: Sensitivity analysis excluding infants with head circumference below the -2SD for gestational age and sex (INTERGROWTH\_21<sup>st</sup> charts): Interaction analysis between blood lead levels, ZIKV exposure with ASQ (n=281) and behavioral (n=273) scores at 18 months**

	Blood lead levels	ZIKV -	ZIKV +	p interaction
		$\beta$ [95% CI] or OR [95% CI]	$\beta$ [95% CI] or OR [95% CI]	
ASQ total score	T1	(ref)	-3.8 [-17.9; 10.2]	0.92
	T2	-6.4 [-19.2; 6.5]	-11.2 [-247; 2.3]	
	T3	-13.1 [-26.5; 0.4]	-13.9 [-29.2; 0.4]	
ASQ gross motor	T1	(ref)	0.8 [0.3; 2.1]	0.49
	T2	0.9 [0.4; 2.3]	1.3 [0.8; 2.1]	
	T3	0.9 [0.4; 2.2]	1.2 [0.7; 2.2]	
ASQ fine motor	T1	(ref)	-4.9 [-8.9; 0.7]	0.48
	T2	-2.5 [-7.0; 1.9]	-6.8 [-12.1; -2.4]	
	T3	-5.3 [-9.7; -1.0]	-6.3 [-11.0; -1.5]	
ASQ personal-social	T1	(ref)	-0.7 [-4.4; 3.1]	0.14
	T2	-1.0 [-4.4; 2.5]	-3.0 [-6.6; 0.6]	
	T3	-2.3 [-5.9; 1.3]	0.9 [-2.9; 4.6]	
ASQ problem solving	T1	(ref)	-0.4 [-5.0; 5.8]	0.61
	T2	-3.0 [-8.0; 2.1]	-3.3 [-8.5; 2.0]	
	T3	-8.3 [-13.3; -3.4]	-7.4 [-12.9; 1.8]	
ASQ communication	T1	(ref)	-3.0 [-8.9; 2.8]	0.73
	T2	-0.4 [-5.9; 5.1]	-0.2 [-5.9; 5.5]	
	T3	-1.2 [-7.0; 4.5]	-2.1 [-8.2; 4.0]	
Hyperactivity	T1	(ref)	0.2 [-0.9; 1.3]	0.04
	T2	0.5 [-0.5; 1.5]	1.1 [0.0; 2.3]	
	T3	-0.8 [-1.8; 0.3]	1.0 [-0.1; 2.1]	
Opposition	T1	(ref)	0.5 [-0.3; 1.2]	0.68
	T2	0.2 [-0.5; 0.8]	1.0 [0.3; 1.8]	
	T3	-0.1 [-0.8; 0.6]	0.8 [0.3; 1.5]	
Inattention	T1	(ref)	-0.1 [-0.8; 0.4]	0.10
	T2	0.1 [-0.4; 0.7]	-0.1 [-0.7; 0.5]	
	T3	-0.5 [-1.1; 0.0]	0.1 [-0.5; 0.7]	
Physical aggression	T1	(ref)	-0.0 [-0.7; 0.7]	0.39
	T2	-0.4 [-1.0; 0.3]	0.2 [-0.6; 0.8]	
	T3	-0.5 [-1.1; 0.2]	0.2 [-0.5; 0.9]	

ZIKV: Zika virus, ASQ: Ages and Stages Questionnaire,  $\beta$  coefficient and 95%CI obtained from linear regression, OR: Odds ratio and 95%CI obtained from logistic regression for the ASQ gross motor model, p-value for interaction (additive or multiplicative scale).

Tertiles of lead concentration ( $\mu\text{g/L}$ ): T1 [2.2 - 9.2], T2 [9.2 - 13.3], T3 [13.3 - 111].

ASQ total adjusted for sex, birth weight, parity, maternal pre-pregnancy BMI, ZIKV, maternal cadmium levels, breastfeeding duration, maternal depression and stimulation scores.

ASQ gross motor adjusted for sex, stimulation score, household income at follow-up, maternal selenium and mercury levels.

ASQ fine motor score adjusted on sex, parity, maternal pre-pregnancy BMI, maternal tobacco use during pregnancy, marital status, depression symptoms, breastfeeding duration, stimulation score and maternal mercury levels.

ASQ personal-social adjusted for sex, birth weight, gestational age at delivery, maternal education, stimulation score and maternal cadmium and mercury levels.

ASQ problem solving adjusted for sex, parity, maternal pre-pregnancy BMI, marital status, household income at follow-up and stimulation score.

ASQ communication adjusted for sex, maternal pre-pregnancy BMI, infant's age at assessment, maternal depression symptoms, household income at follow-up, stimulation score and maternal cadmium levels.

ZIKV: Zika virus,  $\beta$  coefficient and 95%CI obtained from linear regression, p-value for interaction additive or multiplicative scale.

Hyperactivity score adjusted for sex, maternal depression and maternal cadmium levels.

Opposition score adjusted for sex, gestational age at delivery, parity, maternal education, household income, marital situation, maternal tobacco use during pregnancy and stimulation score.

Inattention score adjusted for sex, parity and maternal selenium levels.

Physical aggression score adjusted for sex, parity, household income, maternal depression symptoms, stimulation score and ZIKV.

**Supplementary Table 7: Sensitivity analysis using Zika determined using the ZIKA-DFA-FE algorithm: ASQ scores at 18 months of age (n=183)**

	ASQ total score			ASQ gross motor			ASQ fine motor			ASQ personal-social			ASQ problem solving			ASQ communication			
	$\beta$ [95% CI]	p	p trend	OR [95% CI]	p	p trend	$\beta$ [95% CI]	p	p trend	$\beta$ [95% CI]	p	p trend	$\beta$ [95% CI]	p	p trend	$\beta$ [95% CI]	p	p trend	
<b>Blood lead levels</b>																			
T1	(ref)	0.01	0.01	(ref)	0.51	0.60	(ref)	0.01	0.003	(ref)	0.07	0.06	(ref)	0.001	0.0003	(ref)	0.79	0.91	
T2	-16.0 [-27.5; -4.5]			1.4 [0.6; 3.2]			-3.3 [-7.3; 0.7]			-3.5 [-6.6; -0.4]			-4.8 [-9.3; -0.3]			-1.6 [-6.8; 3.5]			
T3	-17.2 [-30.0; -4.4]			1.3 [0.5; 3.0]			-6.6 [-11.0; -2.3]			-3.2 [-6.7; 0.4]			-9.1 [-14.0; -4.2]			-0.2 [-6.1; 5.6]			
<b>Blood lead levels (log 10)</b>																			
ZIKV	-24.1 [-51.2; 2.9]	0.08		2.3 [0.4; 12.5]	0.32		-9.6 [-18.5; -1.2]	0.03		-2.9 [-10.3; 4.4]	0.43		-13.1 [-22.9; -3.4]	0.01		0.6 [-11.4; 12.6]	0.92		
ZIKV	-7.4[-16.9; 2.1]	0.12		1.5 [0.7; 3.0]	0.26		-5.2 [-8.6; -1.8]	0.002		-0.8 [-3.5; 1.9]	0.56		0.9 [-2.8; 4.7]	0.62		-3.1 [-7.3; 1.0]	0.14		

ZIKV: Zika virus, ASQ: Ages and Stages Questionnaire,  $\beta$  coefficient and 95%CI obtained from linear regression, OR: odds ratio and 95%CI obtained from logistic regression.

Tertiles of lead concentration ( $\mu\text{g/L}$ ): T1 [2.2 - 9.2], T2 [9.2 - 13.3], T3[13.3 - 111].

ASQ total adjusted for sex, birth weight, parity, maternal pre-pregnancy BMI, ZIKV, maternal cadmium levels, breastfeeding duration, maternal depression and stimulation scores; for the ZIKV model additionally adjusted for lead tertiles and infant's age at assessment.

ASQ gross motor adjusted for sex, stimulation score, household income at follow-up, maternal selenium and mercury levels; for the ZIKV model additionally adjusted for marital status and lead tertiles.

ASQ fine motor score adjusted on sex, parity, maternal pre-pregnancy BMI, maternal tobacco use during pregnancy, marital status, depression symptoms, breastfeeding duration, stimulation score, ZIKV and maternal mercury level; for the ZIKV model additionally adjusted for lead tertiles.

ASQ personal-social adjusted for sex, gestational age at delivery, birth weight, maternal education, stimulation score, and maternal cadmium and mercury levels; for the ZIKV model adjusted for sex, maternal education, stimulation score and maternal cadmium levels.

ASQ problem solving adjusted for sex, parity, maternal pre-pregnancy BMI, marital status, household income at follow-up and stimulation score; for the ZIKV model additionally adjusted for lead tertiles.

ASQ communication adjusted for sex, maternal pre-pregnancy BMI, infant's age at assessment, maternal depression symptoms, household income at follow-up, stimulation score and maternal cadmium levels.



**Supplementary Table 8: Sensitivity analysis using Zika determined using the ZIKA-DFA-FE algorithms: behavioral outcomes at 18-months (n=174)**

	Hyperactivity			Opposition			Inattention			Physical aggression		
	$\beta$ [95% CI]	p	ptrend	$\beta$ [95% CI]	p	ptrend	$\beta$ [95% CI]	p	ptrend	$\beta$ [95% CI]	p	ptrend
<b>Blood lead levels</b>												
T1	(ref)	0.28	0.19	(ref)	0.06	0.08	(ref)	0.67	0.98	(ref)	0.66	0.36
T2	0.7 [-0.2; 1.6]			0.7 [0.1; 1.3]			0.2 [-0.3; 0.7]			0.1 [-0.5; 0.7]		
T3	0.6 [-0.2; 1.6]			0.5 [-0.1; 1.1]			-0.0 [-0.6; 0.5]			0.3 [-0.3; 0.9]		
<b>Blood lead levels (log 10)</b>	1.5 [-0.7; 3.6]	0.19		1.2 [-0.0; 2.5]	0.06		0.5 [-0.6; 1.6]	0.41		0.5 [-0.8; 1.8]	0.48	
<b>ZIKV</b>	0.6 [-0.1; 1.4]	0.10		0.6 [0.1; 1.1]	0.01		0.3 [-0.1; 0.7]	0.19		0.6 [0.0; 1.1]	0.03	

ZIKV: Zika virus,  $\beta$  coefficient and 95%CI obtained from linear regression.

Tertiles of lead concentration ( $\mu\text{g/L}$ ): T1 [2.2 - 9.2], T2 [9.2 - 13.3], T3[13.3 - 111].

Hyperactivity score adjusted for sex, ZIKV and maternal depression and maternal cadmium levels; for the ZIKV model additionally adjusted for tobacco use during pregnancy.

Opposition score adjusted for sex, gestational age at delivery, parity, maternal education, household income, marital situation, maternal tobacco use during pregnancy, ZIKV and stimulation score.

Inattention score adjusted for sex, parity and maternal selenium levels; for the ZIKV model additionally adjusted for maternal education, pre-pregnancy BMI and stimulation score.

Physical aggression score adjusted for sex, parity, household income, maternal depression symptoms, stimulation score and ZIKV.

**Supplementary Table 9: Sensitivity analysis using Zika determined using the ZIKA-DFA-FE algorithms: Interaction analysis between blood lead levels, ZIKV exposure with ASQ (n=183) and behavioral (n=174) scores at 18 months**

	ZIKV-		ZIKV+		p interaction
	Blood lead levels	$\beta$ [95% CI] or OR [95% CI]	$\beta$ [95% CI] or OR [95% CI]		
ASQ total score	T1	(ref)	-7.0 [-23.9; 9.9]		0.99
	T2	-15.5 [-31.1; 0.0]	-23.2 [-38.5; -8.3]		
	T3	-17.5 [-34.4; -0.6]	-23.8 [-41.3; -6.5]		
ASQ gross motor	T1	(ref)	1.3 [0.6; 2.7]		0.23
	T2	0.8 [0.3; 2.6]	1.7 [0.7; 4.1]		
	T3	0.6 [0.2; 2.1]	1.4 [0.6; 3.3]		
ASQ fine motor	T1	(ref)	-4.8 [-10.5; 1.0]		0.71
	T2	-2.1 [-7.6; 3.3]	-9.1 [-16.8; -4.6]		
	T3	-7.2 [-12.9; -1.5]	-9.1 [-14.4; -3.7]		
ASQ personal-social	T1	(ref)	-2.0 [-6.8; 2.7]		0.20
	T2	-3.3 [-7.6; 1.0]	-5.1 [-9.3; -0.9]		
	T3	-5.6 [-10.3; -1.0]	-2.1 [-6.9; 2.8]		
ASQ problem solving	T1	(ref)	0.2 [-6.3; 6.8]		0.90
	T2	-5.0 [-11.2; 1.2]	-4.5 [-14.5; -0.9]		
	T3	-10.0 [-16.5; -3.6]	-7.7 [-14.6; -0.8]		
ASQ communication	T1	(ref)	-4.7 [-12.0; 2.6]		0.50
	T2	-3.5 [-10.6; 3.5]	-3.3 [-10.0; 3.4]		
	T3	0.3 [-7.2; 7.9]	-4.9 [-12.8; 2.8]		
Hyperactivity	T1	(ref)	0.7 [-0.6; 2.1]		0.06
	T2	1.3 [0.0; 2.5]	0.8 [-0.4; 2.1]		
	T3	0.1 [-1.2; 1.4]	2.0 [0.6; 3.4]		
Opposition	T1	(ref)	0.3 [-0.6; 1.3]		0.58
	T2	0.6 [-0.2; 1.4]	1.1 [0.4; 1.9]		
	T3	0.2 [-0.2; 1.0]	1.2 [0.3; 2.1]		
Inattention	T1	(ref)	0.3 [-0.4; 1.1]		0.08
	T2	0.5 [-0.2; 1.2]	0.1 [-0.5; 0.9]		
	T3	-0.3 [-0.2; 0.5]	0.7 [-0.1; 1.5]		
Physical aggression	T1	(ref)	-0.0 [-0.8; 0.8]		0.31
	T2	-0.2 [-1.1; 0.6]	0.6 [-0.1; 1.7]		
	T3	-0.0 [-0.9; 0.8]	0.8 [-0.1; 1.7]		

ZIKV: Zika virus, ASQ: Ages and Stages Questionnaire,  $\beta$  coefficient and 95%CI obtained from linear regression, OR: Odds ratio and 95%CI obtained from logistic regression for the ASQ gross motor model, p-value for interaction (additive or multiplicative scale).

Tertiles of lead concentration ( $\mu\text{g/L}$ ): T1 [2.2 - 9.2], T2 [9.2 - 13.3], T3 [13.3 - 111].

ASQ total adjusted for sex, birth weight, parity, maternal pre-pregnancy BMI, ZIKV, maternal cadmium levels, breastfeeding duration, maternal depression and stimulation scores.

ASQ gross motor adjusted for sex, stimulation score, household income at follow-up, maternal selenium and mercury levels.

ASQ fine motor score adjusted on sex, parity, maternal pre-pregnancy BMI, maternal tobacco use during pregnancy, marital status, depression symptoms, breastfeeding duration, stimulation score and maternal mercury levels.

ASQ personal-social adjusted for sex, birth weight, gestational age at delivery, maternal education, stimulation score and maternal cadmium and mercury levels.

ASQ problem solving adjusted for sex, parity, maternal pre-pregnancy BMI, marital status, household income at follow-up and stimulation score.

ASQ communication adjusted for sex, maternal pre-pregnancy BMI, infant's age at assessment, maternal depression symptoms, household income at follow-up, stimulation score and maternal cadmium levels.

ZIKV: Zika virus,  $\beta$  coefficient and 95%CI obtained from linear regression, p-value for interaction additive or multiplicative scale.

Hyperactivity score adjusted for sex, maternal depression and maternal cadmium levels.

Opposition score adjusted for sex, gestational age at delivery, parity, maternal education, household income, marital situation, maternal tobacco use during pregnancy and stimulation score.

Inattention score adjusted for sex, parity and maternal selenium levels.