

Table S1. Heart rate variability parameters.

Variable (unit)	Description	Associated ANS function
HR (bpm)	Heart rate, number of heart beats per minute	Sympathetic and parasympathetic
RMSSD (ms)	Root Mean Square of successive differences	Parasympathetic
SDNN (ms)	Standard Deviation of NN-Intervals (SDNN)	Overall HRV, sympathetic and parasympathetic
LF(m ²)	Absolute Power in low frequency band (0.04 - 0.15 Hz)	Sympathetic and parasympathetic
HF (m ²)	Absolute power in high frequency band (0.15 - 0.4 Hz)	Mainly parasympathetic
LF_n. u.	Relative power in the low frequency band in normalized units	Sympathetic and parasympathetic
HF_n. u.	Relative power in the high frequency band in normalized units	Mainly parasympathetic
LF/HF	LF-to-HF-ratio	Sympathovagal balance

Table S2. Gestational weight gain according to IOM recommendations (1).

Pre-pregnancy BMI (kg/m ²)		Recommended weight gain (IOM) (kg)
Underweight	< 18.5	12.5 - 18
Normal weight	18.5 - 24.9	11.5 - 16
Overweight	25 - 29.9	7 - 11.5
Obese	> 30	5 - 9

1. Institute of Medicine (US) and National Research Council (US) Committee to Reexamine IOM Pregnancy Weight Guidelines. *Weight Gain During Pregnancy: Reexamining the Guidelines*. (Rasmussen KM, Yaktine AL, eds.). National Academies Press (US); 2009. Accessed April 8, 2019. <http://www.ncbi.nlm.nih.gov/books/NBK32813/>.

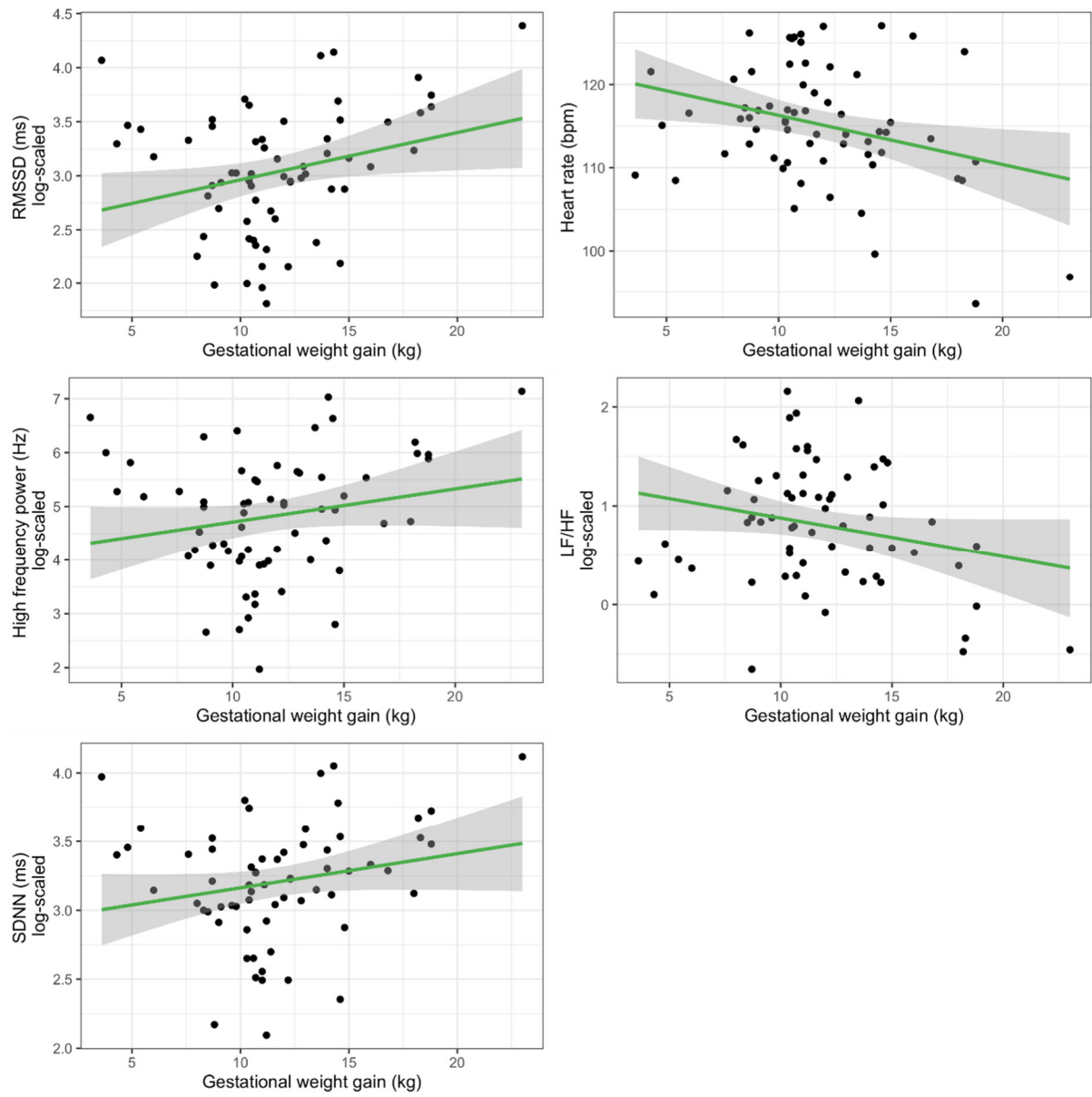


Figure S1. Association of total gestational weight gain with heart rate variability parameters of 2-year-old offspring in the whole cohort.

Table S3. Association of last trimester gestational weight gain on heart rate variability and heart rate in 2-year-old children of mothers with and without GDM .

	Heart rate (BPM)		RMSSD (ms)		SDNN (ms)		Low frequency (LF) power (m ²)		High frequency (HF) power (m ²)		LF_n. u.		HF_n. u.		LF/HF	
	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p
All children Interaction GWG x GDM-status	1.91 (0.69, 3.14)	0.0028	-0.13 (-0.23, -0.03)	0.0146	-0.09 (-0.17, -0.01)	0.0337	-0.11 (-0.26, 0.03)	0.1116	-0.22 (-0.42, -0.01)	0.0373	2.01 (-0.29, 4.32)	0.0856	-1.99 (-4.27, 0.29)	0.0852	0.10 (-0.01, 0.21)	0.0663
Children whose mothers had NGT	-1.34 (-2.24, -0.44)	0.0050	0.10 (0.02, 0.17)	0.0129	0.05 (0.00, 0.10)	0.0695	0.02 (-0.07, 0.12)	0.6280	0.13 (-0.01, 0.27)	0.0589	-2.20 (-3.84, -0.56)	0.0101	2.16 (0.55, 3.77)	0.0102	-0.11 (-0.19, -0.03)	0.0073
Children whose mothers had GDM	0.69 (-0.20, 1.58)	0.1214	-0.05 (-0.12, 0.03)	0.1871	-0.05 (-0.11, 0.02)	0.1595	-0.10 (-0.22, 0.02)	0.1024	-0.11 (-0.28, 0.06)	0.1983	0.16 (-1.61, 1.93)	0.8544	-0.17 (-1.93, 1.59)	0.8423	0.01 (-0.08, 0.09)	0.8504

Effect sizes (95% CI) and p-values of multivariate linear regression models for the association of last trimester gestational weight gain (GWG) with offspring heart rate (HR) and heart rate variability (HRV). Row 3 shows the values for the interaction of total GWG and GDM-status with HR and HRV parameters, adjusted for pre-gestational BMI and offspring sex. Row 4 and 5 shows the values from multivariate linear regression of total GWG with HR and HRV parameters adjusted for pre-gestational BMI and offspring sex in groups of NGT and GDM separately. Bold values indicate statistical significance, italic values indicate statistical trend.