

Appendix 1. Parameter Estimates of Continuously Measured Gestational Age and Birth Weight by Interpregnancy Interval Category

		Interpregnancy Interval (months)											
		0-5		6-11		12-17		18-23		24-59		60+	
Outcome variable and model		b	99% CI	b	99% CI	b	99% CI		b	99% CI	b	99% CI	
Gestational age													
	Model 1	-2.17	-2.36 – -1.98	-0.67	-0.78 – -0.56	-0.30	-0.40 – -0.20	Ref	-0.27	-0.36 – -0.19	-1.23	-1.35 – -1.12	
	Model 2	-1.87	-2.07 – -1.68	-0.61	-0.72 – -0.50	-0.31	-0.41 – -0.21	Ref	-0.21	-0.29 – -0.12	-0.96	-1.09 – -0.83	
	Model 3	-1.79	-1.99 – -1.61	-0.58	-0.69 – -0.47	-0.31	-0.40 – -0.21	Ref	-0.20	-0.29 – -0.12	-0.96	-1.09 – -0.83	
	Model 4	-1.40	-1.59 -- -1.21	-0.56	-0.67 -- -0.45	-0.32	-0.42 -- -0.23	Ref	-0.17	-0.26 -- -0.09	-0.90	-1.03 -- -0.78	
Model 5 / Cousin-comparison		-1.47	-1.83 – 1.10	-0.74	-0.94 -- -0.54	-0.43	-0.61 -- -0.26	Ref	-0.08	-0.23 – 0.07	-0.43	-0.65 -- -0.21	
Model 6 / Sibling-comparison		-0.77	-1.02 - 0.51	-0.68	-0.84 - 0.51	-0.42	-0.57 - -0.26	Ref	0.24	0.11 – 0.38	-0.23	-0.42 - -0.05	
Model 7 / Post-birth interval		-3.24	-3.39 -- -2.88	-0.44	-0.67 -- -0.21	0.00	-0.22 – 0.22	Ref	0.15	-0.02 – 0.33	0.28	0.08 – 0.47	
Birth weight adjusted for gestational age													
	Model 1	-44.18	-51.53 -- -36.83	-2.77	-6.99 – 1.46	3.93	0.17 – 7.70	Ref	-9.01	-12.31 -- -5.72	-55.32	-59.74 -- -50.89	
	Model 2	-18.62	-26.01 – -11.24	3.24	-0.98 – 7.45	3.51	-0.24 – 7.26	Ref	-3.61	-6.93 – -0.31	-29.71	-34.73 – -24.70	

Model 3	-14.25	-21.63 -- -6.86	4.72	0.51 -- 8.93	3.72	-0.03 -- 7.46	Ref	-3.58	-6.88 -- -0.27	-29.46	-34.47 -- -24.45
Model 4	-4.31	-11.58 -- 2.95	5.17	1.02 -- 9.31	3.16	-0.52 -- 6.84	Ref	-2.34	-5.59 -- 0.91	-26.43	-31.36 -- -21.51
Model 5 / Cousin-comparison	-7.76	-20.42 -- 4.90	3.67	-3.62 -- 10.97	-0.35	-6.90 -- 6.20	Ref	3.48	-2.29 -- 9.24	-12.87	-20.88 -- -4.86
Model 6 / Sibling-comparison	2.79	5.71 -- 11.29	2.56	7.99 -- 2.87	0.12	-4.98 -- 5.23	Ref	4.15	-0.34 -- 8.65	-6.57	-12.67 -- -0.46
Model 7 / Post-birth interval	-55.51	-68.72 -- -42.30	-8.44	-16.98 -- 0.10	-8.94	-17.06 -- -0.83	Ref	-4.96	-11.59 -- 1.68	-9.01	-16.15 -- -1.86

Models were adjusted for the following measured covariates: *Model 1*: offspring sex, year of birth; *Model 2*: Model 1 + maternal and paternal age, highest education, nationality, different fathers; *Model 3*: Model 2 + maternal and paternal criminality, attempted suicide, substance misuse, and severe mental illness; *Model 4*: Model 3 + first-born preterm birth, low birth weight, and small for gestational age; *Model 5 / Cousin-comparison*: offspring sex, year of birth, maternal and paternal age, highest education, nationality, different fathers, maternal and paternal criminality, attempted suicide, substance misuse, and severe mental illness, first-born preterm birth, low birth weight, and small for gestational age; *Model 6 / Sibling-comparison*: offspring sex, year of birth, maternal and paternal age, parity, different father; *Model 7 / Post-birth interval*: offspring sex, year of birth, maternal and paternal age, highest education, nationality, different fathers, maternal and paternal criminality, attempted suicide, substance misuse, and severe mental illness, first-born preterm birth, low birth weight, and small for gestational age. Bold font indicates statistical significance with 99% confidence interval.

Appendix 2. Fully Adjusted Odds Ratios Predicting Adverse Birth Outcomes Across Interpregnancy Interval and Model Stratified by Year of Birth

		Interpregnancy Interval (months)									
		0-5		6-11		12-17		18-23	24-59		60+
Outcome variable and cohort	OR	99% CI	OR	99% CI	OR	99% CI		OR	99% CI	OR	99% CI
Preterm birth											
Cohort: 1973 – 1984	1.72	1.49 – 1.99	1.29	1.16 – 1.44	1.10	0.99 – 1.22	Ref	1.07	0.99 – 1.22	1.45	1.29 – 1.64
Cohort: 1985 – 1996	1.41	1.25 – 1.59	1.12	1.03 – 1.21	0.98	0.91 – 1.06	Ref	1.10	0.91 – 1.06	1.48	1.35 – 1.62
Cohort: 1997 – 2009	1.46	1.26 – 1.70	1.11	1.01 – 1.22	1.05	0.96 – 1.14	Ref	1.18	1.10 – 1.27	1.65	1.50 – 1.83
Full cohort 1973 - 2009	1.51	1.39 – 1.63	1.16	1.10 – 1.22	1.03	0.98 – 1.08	Ref	1.11	1.07 – 1.16	1.51	1.43 – 1.60
Low birth weight											
Cohort: 1973 – 1984	1.45	1.21 – 1.74	1.13	0.99 – 1.30	1.03	0.91 – 1.17	Ref	1.05	0.95 – 1.16	1.50	1.29 – 1.73
Cohort: 1985 – 1996	1.22	1.05 – 1.42	0.99	0.89 – 1.10	0.95	0.86 – 1.04	Ref	1.15	1.05 – 1.25	1.60	1.44 – 1.79
Cohort: 1997 – 2009	1.11	0.90 – 1.36	0.95	0.83 – 1.08	0.93	0.83 – 1.04	Ref	1.17	1.06 – 1.29	1.72	1.51 – 1.94
Full cohort 1973 - 2009	1.25	1.13 – 1.39	1.01	0.94 – 1.08	0.96	0.90 – 1.03	Ref	1.12	1.06 – 1.18	1.61	1.50 – 1.73
Small for gestational age											
Cohort: 1973 – 1984	1.26	1.04 – 1.52	1.06	0.93 – 1.22	1.04	0.92 – 1.17	Ref	1.03	0.93 – 1.14	1.31	1.13 – 1.52
Cohort: 1985 – 1996	1.04	0.86 – 1.25	0.92	0.81 – 1.04	0.98	0.88 – 1.09	Ref	1.24	1.12 – 1.37	1.60	1.41 – 1.81
Cohort: 1997 – 2009	0.85	0.65 – 1.12	0.75	0.64 – 0.89	0.95	0.83 – 1.10	Ref	1.15	1.02 – 1.29	1.54	1.32 – 1.80
Full cohort 1973 - 2009	1.06	0.94 – 1.20	0.91	0.84 – 0.99	0.99	0.92 – 1.06	Ref	1.14	1.06 – 1.21	1.54	1.42 – 1.66

Models were adjusted for the following measured covariates: offspring sex, maternal and paternal age, highest education, nationality, different fathers, maternal and paternal criminality, attempted suicide, substance misuse, and severe mental illness, first-born preterm birth, low birth weight, and small for gestational age. Bold font indicates statistical significance with 99% confidence interval.