Electronic Supplementary Material (ESM)

ESM Table 1: Rates of teenage pregnancies occurring in teenage girls with and without childhood-onset type 1 diabetes. *Values are absolute numbers of teenage pregnancies (mean annual rate of teenage pregnancies per 1000 teenage girls with 95% confidence intervals for the specified time period)*

	Teenage girls with type 1 diabetes experiencing pregnancy resulting in legal birth	Teenage girls without type 1 diabetes experiencing pregnancy resulting in legal birth
1999-2003[a]	17 (7.3 per 1000 95% CI 4.6, 11.7)	14,526 (19.2 per 1000, 95% CI 18.9, 19.5)
2004-2008	26 (9.6 per 1000, 95% CI 7.6, 16.2)	15,043 (19.4 per 1000, 95% CI 19.1, 19.7)
2009-2013	25 (8.8 per 1000, 95% CI 7.3, 15.8)	11,206 (15.3 per 1000, 95% CI 15.0, 15.6)
1999-2013	68 (8.6 per 1000 95% CI 6.8, 10.9)	40,775 (18.0 per 1000, 95% CI 17.8, 18.2)

[a] Since there were no births to mothers with type 1 diabetes prior to 1999, comparison of teenage pregnancy rates begins in 1999.

It is not possible to report annual teenage pregnancy rates due to the small numbers of teenage pregnancies in women with type 1 diabetes, and the risk of compromising the anonymity of these individuals.

ESM table 2: Number (%) of births affected by each adverse outcome, with crude and adjusted odds ratios for adverse outcomes in women with childhood-onset type 1 diabetes compared with women without childhood-onset type 1 diabetes (reference group).

Adverse outcome	Births to women with childhood-onset type 1 diabetes n=330	Births to women without childhood-onset type 1 diabetes n=197,466	Crude odds ratio (95% CI)	Adjusted odds ratio (95% CI)
Pre-eclampsia	52 (15.8%)	10,557 (5.4%)	3.31 (2.46, 4.46)	3.06 (2.26, 4.14) [a]
Preterm births (births <37th week of pregnancy)	154 (47.1%)	14,164 (7.3%)	11.36 (9.14, 14.12)	10.61 (8.48, 13.29)) [b]
Macrosomia (birth weight ≥ 4000grams)	55 (16.9%)	19,988 (10.1%)	1.77 (1.53, 2.06)	12.04 (8.66, 16.74) [c]
Low birth weight (birth weight ≤2500 grams)	54 (16.6%)	14,784 (7.5%)	2.58 (2.23, 2.98)	0.25 (0.18, 0.35) [c]
Stillbirths	14 (4.2%)	830 (0.42%)	10.50 (6.12, 18.01)	3.45 (1.90, 6.26) [d]
Congenital malformations	40 (12.1%)	8469 (4.3%)	3.08 (2.21, 4.29)	3.18 (2.29, 4.44) [a]
Children with at least 1 hospital admission during first year of life	206 (62.4%)	65,467 (33.2%)	3.35 (2.68, 4.19)	1.78 (1.41, 2.25) [e]

[a] Adjusted models control for maternal age, maternal deprivation quintile, parity, maternal smoking, and sex of baby

[b] Additionally adjusted for pre-eclampsia, and congenital malformation

[c] Additionally adjusted for pre-eclampsia, congenital malformation, and gestational age at delivery

[d] Additionally adjusted for gestational age at delivery, and birth weight

[e] Additionally adjusted for delivery by Caesarean section, gestational age at delivery, birth weight, breastfeeding, and congenital malformation

ESM Table 3: Causes of perinatal admissions amongst the infants of mothers with childhood-onset type 1 diabetes. *The number of admissions is shown alongside the % of all perinatal admissions (n=178.) Causes of perinatal admissions are categorised and defined according to the International Classification of Diseases, 10th revision [30].*

Cause of perinatal admission	Number of admissions (% of all perinatal admissions)
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery, and disorders related to length of gestation, fetal growth, and birth trauma	62 (34.8%)
Transitory endocrine and metabolic disorders specific to fetus and newborn[a]	57 (32.0%)
Respiratory and cardiovascular disorders specific to the perinatal period	21 (11.8%)
Haemorrhagic and haematological disorders of fetus and newborn	13 (7.3%)
Digestive system disorders of fetus and newborn	7 (3.9%)
Other	18 (10.1%)

[a] all admissions coded as being for transitory endocrine and metabolic disorders specific to fetus and newborn were due to neonatal hypoglycaemia.

It is not possible to provide this data for teenage and older women with type 1 diabetes separately due to the low numbers of infants born to teenage mothers with type 1 diabetes being admitted for these individual reasons, and the risk of compromising the anonymity of individuals as a result.

ESM table 4: Number (%) of births affected by each adverse outcome by group. Comparison is made between births to teenage and young adult mothers (reference group) for women with and without childhood-onset type 1 diabetes, with results shown as crude and adjusted odds ratios. An interaction term (maternal diabetes x teenage mother) was included in the regression model.

	Births to women with childhood-onset type 1 diabetes n=330			Births to women without childhood-onset type 1 diabetes n=197,466			
	Teenage mothers n=68	Young adult mothers n=262	Adjusted odds ratio	Teenage mothers n=43,506	Young adult mothers n=153,960	Adjusted odds ratio	Adjusted odds ratio for interaction term maternal diabetes x teenage mother
Pre-eclampsia	13 (19.1%)	39 (14.9%)	1.27 (0.62, 2.62)[a]	2513 (5.8%)	8044 (5.2%)	0.93 (0.89, 0.98)[a]	1.26 (0.62, 2.54) [a]
Preterm births (births <37th week of pregnancy)	28 (41.2%)	126 (48.1%)	0.91 (0.50, 1.63)[b]	3412 (8.1%)	10,752 (7.1%)	1.08 (1.03, 1.13)[b]	0.69 (0.40, 1.21) [b]
Macrosomia (birth weight ≥ 4000grams)	13 (19.1%)	42 (16.0%)	1.22 (0.53, 2.81)[c]	3335 (7.7%)	16,653 (10.8%)	0.90 (0.87, 0.94)[c]	1.48 (0.70, 3.16) [c]
Low birth weight (birth weight ≤2500 grams)	9 (13.2%)	45 (17.2%)	0.89 (0.36, 2.21)[c]	3691 (9.1%)	11,093 (7.2%)	0.91 (0.86, 0.96)[c]	0.83 (0.36, 1.92) [c]
Stillbirths	[f]	[f]	0.27 (0.03, 2.41)[d]	156 0.4%)	674 (0.4%)	0.68 (0.56, 0.82)[d]	0.43 (0.05, 3.74) [d]
Congenital malformations	9 (13.2%)	31 (11.8%)	1.29 (0.56, 2.96)[a]	2015 (4.6%)	6454 (4.2%)	1.05 (1.00, 1.11)[a]	1.04 (0.47, 2.31) [a]
Children with at least 1 hospital admission during first year of life	57 (83.8%)	149 (56.9%)	5.91 (2.63, 13.25)[e]	16,354 (37.6%)	49,113 (31.9%)	1.22 (1.19, 1.25)[e]	3.54 (1.74, 7.18) [e]

[a] Adjusted for maternal deprivation quintile, parity, maternal smoking, and sex of baby
[b] Additionally adjusted for pre-eclampsia, congenital malformations
[c] Additionally adjusted for pre-eclampsia, congenital malformations, and gestational age at delivery
[d] Additionally adjusted for gestational age at delivery, and birth weight
[e] Additionally adjusted for delivery by Caesarean section, gestational age at delivery, birth weight, breastfeeding, and congenital malformations
[f] number suppressed as less than 5 per cell or would allow a value of less than 5 to be calculated

ESM Table 5: Results of subgroup analysis comparing pregnancy outcomes for women with type 1 diabetes of ≤10 years duration, and those with type 1 diabetes of >10 years duration.

Number (%) of births affected by each adverse outcome, with crude and adjusted ORs for adverse obstetric outcomes for babies with mothers with childhood-onset type 1 diabetes of >10 years duration compared with babies with mothers with childhood-onset type 1 diabetes of ≤10 years duration (reference group).

	Mothers with T1D ≤10 years duration (n=84)	Mothers with T1D >10 years duration. (n=246)	Crude odds ratio	Adjusted odds ratio
Pre-eclampsia	15 (17.9%)	37 (15.0%)	1.23 (0.64, 2.37)	1.02 (0.46, 2.24)[a]
Preterm births (births <37th week of pregnancy)	33 (40.2%)	121 (49.4%)	0.88 (0.47, 1.66)	0.81 (0.48, 1.38) [b]
Macrosomia (birth weight ≥ 4000grams)	21 (24.3%)	34 (14.0%)	2.08 (1.13, 3.83)	2.24 (0.96, 5.21) [c]
Low birth weight (birth weight ≤2500 grams)	12 (14.5%)	42 (17.3%)	0.82 (0.42, 1.60)	1.12 (0.39, 3.17) [c]
Stillbirth	[f]	[f]	0.79 (0.22, 2.91)	1.11 (0.23, 5.32)[d]
Congenital malformations	10 (11.9%)	30 (12.2%)	0.97 (0.45, 2.09)	0.91 (0.37 2.26) [a]
Children with at least 1 hospital admission during first year of life	58 (69.0%)	148 (60.2%)	1.48 (0.87, 2.51)	0.70 (0.34, 1.45)[e]

[a] Adjusted for maternal age, maternal deprivation quintile, parity, maternal smoking, and sex of baby
[b] Additionally adjusted for pre-eclampsia, congenital malformations
[c] Additionally adjusted for pre-eclampsia, congenital malformations, and gestational age at delivery
[d] Additionally adjusted for gestational age at delivery, and birth weight
[e] Additionally adjusted for delivery by Caesarean section, gestational age at delivery, birth weight, breastfeeding, and congenital malformations
[f] number suppressed as less than 5 per cell or would allow a value of less than 5 to be calculated