

Supplementary Online Content

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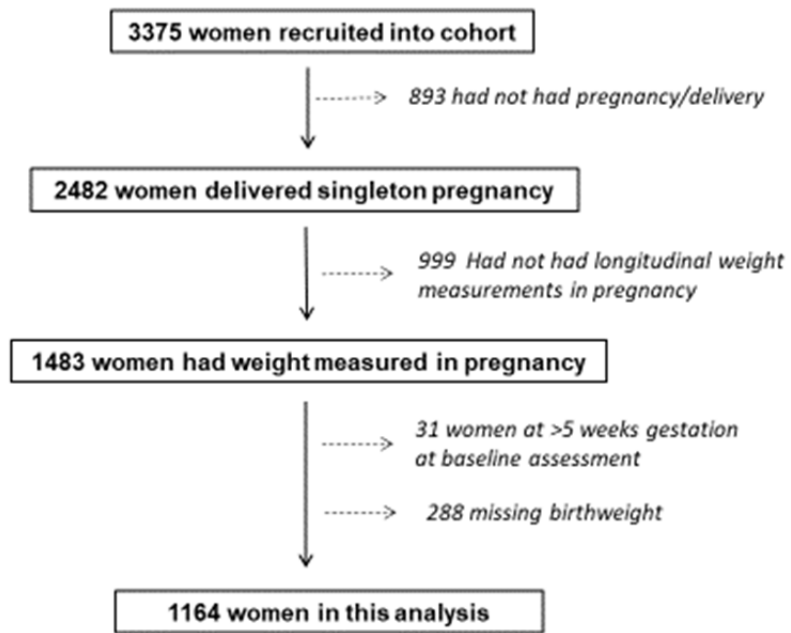
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This supplementary material has been provided by the authors to give readers additional information about their work.



eFigure 1 : Derivation of study population of 1164 women

eTable 1: Multiple Linear Regression Models With Restriction to Women With Delivery at ≥ 37 weeks

Associations of pre-pregnancy weight and weight gain within each gestational interval with (dependent variable) infant birthweight, in models adjusting for pre-pregnancy weight, weight gain in each interval, total length of gestation, and infant sex, in the observed data and multiple imputation data, with restriction to women with delivery at ≥ 37 weeks (n=1126)

Model	Maternal weight variable, kg	Infant Birthweight, g			
		Analyses with Observed Data		Analyses with Multiple Imputation Data	
		β	95% CI	β	95% CI
1	Pre-pregnancy weight	15.3	(9.2 - 21.4) *	15.8	(11.8 - 19.7) *
	Weight gain from pre-gravid to 14 weeks	12.0	(2.3 - 21.7) *	13.1	(5.8 - 20.5) *
2	Pre-pregnancy weight	14.7	(7.9 - 21.5) *	14.4	(10.5 - 18.3) *
	Weight gain from 14-18 weeks	26.9	(6.3 - 47.6) *	21.8	(6.1 - 37.4) *
3	Pre-pregnancy weight	14.5	(9.0 - 20.0) *	14.1	(10.2 - 17.9) *
	Weight gain from 19-23 weeks	8.3	(-10.5 - 27.0)	8.7	(-6.8 - 24.3)
4	Pre-pregnancy weight	13.8	(8.1 - 19.5) *	14.3	(8.7 - 20.0) *
	Weight gain from 24-28 weeks	22.5	(4.7 - 40.4) *	22.4	(4.8 - 40.1) *
5	Pre-pregnancy weight	15.3	(9.3 - 21.4) *	15.4	(9.4 - 21.4) *
	Weight gain from 29-30 weeks	-0.2	(-25.3 - 24.9)	-1.0	(-25.8 - 23.7)
6	Pre-pregnancy weight	24.5	(15.9 - 33.1) *	24.9	(16.6 - 33.3) *
	Weight gain from 31-32 weeks	-0.8	(-39.8 - 38.3)	-1.9	(-40.0 - 36.1)
7	Pre-pregnancy weight	21.2	(12.4 - 30.0) *	21.5	(12.9 - 30.2) *
	Weight gain from 33-34 weeks	16.9	(-38.4 - 72.3)	15.2	(-39.1 - 69.4)
8	Pre-pregnancy weight	15.0	(7.3 - 22.7) *	15.0	(7.4 - 22.5) *
	Weight gain from 35-36 weeks	13.6	(-24.0 - 51.2)	13.6	(-23.4 - 50.5)
9	Pre-pregnancy weight	17.1	(11.2 - 23.1) *	14.3	(10.4 - 18.3) *
	Weight gain from 37-38 weeks	-2.0	(-28.0 - 24.0)	12.1	(-10.8 - 35.1)
10	Pre-pregnancy weight	16.3	(10.2 - 22.5) *	14.2	(10.3 - 18.2) *
	Weight gain from 39-40 weeks	-7.6	(-40.4 - 25.1)	-1.4	(-31.8 - 29.0)

*: the 95% confidence interval does not cross 0, indicating that there is a significant association between the indicated maternal weight variable and infant birthweight

eTable 2: Multiple Linear Regression Models With Exclusion of Women With Pre-Eclampsia

Associations of pre-pregnancy weight and weight gain within each gestational interval with (dependent variable) infant birthweight, in models adjusting for pre-pregnancy weight, weight gain in each interval, total length of gestation, and infant sex, in the observed data and multiple imputation data, with the exclusion of women with pre-eclampsia

Model	Maternal weight variable, kg	Infant Birthweight, g			
		Analyses with Observed Data		Analyses with Multiple Imputation Data	
		β	95% CI	β	95% CI
1	Pre-pregnancy weight	17.0	(10.4 - 23.7) *	16.4	(12.2 - 20.6) *
	Weight gain from pre-gravid to 14 weeks	15.3	(4.7 - 25.8) *	13.6	(5.9 - 21.3) *
2	Pre-pregnancy weight	16.3	(8.8 - 23.8) *	15.0	(10.9 - 19.2) *
	Weight gain from 14-18 weeks	29.2	(6.6 - 51.8) *	22.2	(5.5 - 38.9) *
3	Pre-pregnancy weight	14.3	(8.4 - 20.3) *	14.6	(10.5 - 18.7) *
	Weight gain from 19-23 weeks	10.6	(-9.5 - 30.8)	10.4	(-6.1 - 27.0)
4	Pre-pregnancy weight	13.8	(7.5 - 20.0) *	14.3	(8.2 - 20.5) *
	Weight gain from 24-28 weeks	14.8	(-4.9 - 34.5)	15.1	(-4.4 - 34.5)
5	Pre-pregnancy weight	16.3	(10.2 - 22.4) *	16.3	(10.3 - 22.3) *
	Weight gain from 29-30 weeks	-4.4	(-29.7 - 20.9)	-5.4	(-30.3 - 19.5)
6	Pre-pregnancy weight	25.3	(16.7 - 33.8) *	25.7	(17.4 - 34.1) *
	Weight gain from 31-32 weeks	-0.4	(-38.9 - 38.1)	-1.6	(-39.1 - 35.9)
7	Pre-pregnancy weight	22.7	(13.6 - 31.9) *	22.8	(13.8 - 31.8) *
	Weight gain from 33-34 weeks	14.8	(-41.1 - 70.7)	12.7	(-42.1 - 67.6)
8	Pre-pregnancy weight	16.9	(8.9 - 24.8) *	16.6	(8.9 - 24.3) *
	Weight gain from 35-36 weeks	2.2	(-37.1 - 41.5)	2.5	(-36.1 - 41.0)
9	Pre-pregnancy weight	17.9	(11.6 - 24.3) *	14.9	(10.8 - 19.0) *
	Weight gain from 37-38 weeks	7.8	(-19.0 - 34.7)	16.8	(-7.9 - 41.5)
10	Pre-pregnancy weight	16.4	(10.2 - 22.7) *	14.7	(10.6 - 18.9) *
	Weight gain from 39-40 weeks	-2.8	(-35.9 - 30.2)	1.7	(-32.2 - 35.5)

*: the 95% confidence interval does not cross 0, indicating that there is a significant association between the indicated maternal weight variable and infant birthweight

eTable 3. Multiple Linear Regression Models With Exclusion of Women With Gestational Diabetes

Associations of pre-pregnancy weight and weight gain within each gestational interval with (dependent variable) infant birthweight, in models adjusting for pre-pregnancy weight, weight gain in each interval, total length of gestation, and infant sex, in the observed data and multiple imputation data, with the exclusion of women with gestational diabetes

Model	Maternal weight variable, kg	Infant Birthweight, g			
		Analyses with Observed Data		Analyses with Multiple Imputation data	
		β	95% CI	β	95% CI
1	Pre-pregnancy weight	13.1	(6.5 - 19.7) *	14.9	(9.5 - 17.8) *
	Weight gain from pre-gravid to 14 weeks	10.9	(0.4 - 21.5) *	12.2	(6.0 - 38.8) *
2	Pre-pregnancy weight	12.7	(5.4 - 19.9) *	13.6	(10.9 - 19.2)*
	Weight gain from 14-18 weeks	26.5	(4.4 - 48.7) *	22.4	(6.0 - 38.8) *
3	Pre-pregnancy weight	13.7	(7.7 - 19.7) *	13.2	(9.1 - 17.3) *
	Weight gain from 19-23 weeks	10.3	(-10.4 - 31.0)	12.1	(-4.5 - 28.7)
4	Pre-pregnancy weight	12.8	(6.5 - 19.0) *	13.3	(7.1 - 19.5) *
	Weight gain from 24-28 weeks	16.6	(-3.0 - 36.2)	16.8	(-2.5 - 36.2)
5	Pre-pregnancy weight	14.4	(8.5 - 20.3) *	14.6	(8.8 - 20.5) *
	Weight gain from 29-30 weeks	0.6	(-24.0 - 25.1)	-0.8	(-25.0 - 23.4)
6	Pre-pregnancy weight	23.7	(15.6 - 31.8) *	24.0	(16.1 - 32.0)*
	Weight gain from 31-32 weeks	-25.2	(-66.4 - 16.1)	-26.3	(-66.5 -13.9)
7	Pre-pregnancy weight	20.9	(12.0 - 29.8) *	21.0	(12.3 - 30.0)*
	Weight gain from 33-34 weeks	14.4	(-40.7 - 69.5)	12.7	(-41.4 -66.8)
8	Pre-pregnancy weight	14.7	(6.9 - 22.4) *	14.5	(6.9 - 22.0) *
	Weight gain from 35-36 weeks	6.9	(-30.7 - 44.4)	7.1	(-29.8 - 43.9)
9	Pre-pregnancy weight	16.9	(10.7 - 23.2) *	13.5	(9.4 - 17.6) *
	Weight gain from 37-38 weeks	8.4	(-18.7 - 35.5)	16.3	(-8.6 - 41.2)
10	Pre-pregnancy weight	17.2	(10.9 - 23.5) *	13.4	(9.2 - 17.5) *
	Weight gain from 39-40 weeks	-4.3	(-37.3 - 28.8)	1.8	(-32.6 -36.1)

*: the 95% confidence interval does not cross 0, indicating that there is a significant association between the indicated maternal weight variable and infant birthweight

eTable 4: Multiple Linear Regression Models With Exclusion of Women Who Smoke

Associations of pre-pregnancy weight and weight gain within each gestational interval with (dependent variable) infant birthweight, in models adjusting for pre-pregnancy weight, weight gain in each interval, total length of gestation, and infant sex, in the observed data and multiple imputation data, with the exclusion of women who smoke

Model	Maternal weight variable, kg	Infant Birthweight, g			
		Analyses with Observed Data		Analyses with Multiple Imputation data	
		β	95% CI	β	95% CI
1	Pre-pregnancy weight	14.3	(7.8 - 20.8) *	15.2	(11.1 - 19.4) *
	Weight gain from pre-gravid to 14 weeks	12.8	(2.3 - 23.2) *	12.9	(5.2 - 20.6) *
2	Pre-pregnancy weight	13.4	(6.1 - 20.6) *	13.9	(9.8 - 18.0) *
	Weight gain from 14-18 weeks	25.1	(2.9 - 47.2) *	21.7	(5.3 - 38.1) *
3	Pre-pregnancy weight	13.6	(7.7 - 19.5) *	13.5	(9.5 - 17.6) *
	Weight gain from 19-23 weeks	11.9	(-8.4 - 32.1)	12.1	(-4.4 - 28.5)
4	Pre-pregnancy weight	12.3	(6.2 - 18.5) *	12.8	(6.8 - 18.9) *
	Weight gain from 24-28 weeks	15.4	(-4.1 - 35.0)	15.7	(-3.6 - 35.0)
5	Pre-pregnancy weight	14.4	(8.4 - 20.4) *	14.4	(8.4 - 20.3) *
	Weight gain from 29-30 weeks	1.2	(-23.7 - 26.1)	0.4	(-24.2 - 24.9)
6	Pre-pregnancy weight	24.7	(16.1 - 33.2) *	25.0	(16.7 - 33.4) *
	Weight gain from 31-32 weeks	-0.6	(-39.4 - 38.2)	-1.6	(-39.5 - 36.2)
7	Pre-pregnancy weight	21.4	(12.6 - 30.2) *	21.5	(12.8 - 30.1) *
	Weight gain from 33-34 weeks	15.6	(-39.6 - 70.8)	13.8	(-40.4 - 68.1)
8	Pre-pregnancy weight	14.6	(6.9 - 22.3) *	14.4	(6.9 - 21.9) *
	Weight gain from 35-36 weeks	8.2	(-29.0 - 45.5)	8.4	(-28.1 - 45.0)
9	Pre-pregnancy weight	17.3	(11.0 - 23.5) *	13.8	(9.8 - 17.9) *
	Weight gain from 37-38 weeks	7.5	(-19.3 - 35.3)	16.5	(-8.3 - 41.3)
10	Pre-pregnancy weight	16.3	(10.0 - 22.6) *	13.6	(9.5 - 17.8) *
	Weight gain from 39-40 weeks	-2.3	(-35.5 - 30.8)	2.7	(-31.5 - 37.0)

*: the 95% confidence interval does not cross 0, indicating that there is a significant association between the indicated maternal weight variable and infant birthweight

eTable 5: Multiple Linear Regression Models With Additional Adjustment for Time From Pre-Gravid Assessment to Pregnancy

Associations of pre-pregnancy weight and weight gain within each gestational interval with (dependent variable) infant birthweight, in models adjusting for pre-pregnancy weight, weight gain in each interval, total length of gestation, infant sex, and time from pre-gravid assessment to pregnancy, in the observed data and multiple imputation data

Model	Maternal weight variable, g	Infant Birthweight, g			
		Analyses with Observed Data		Analyses with Multiple Imputation Data	
		β	95% CI	β	95% CI
1	Pre-pregnancy weight	14.6	(8.5 - 20.7) *	15.7	(11.6 - 19.8) *
	Weight gain from pre-gravid to 14 weeks	11.2	(1.4 - 21.1) *	11.7	(4.2 - 19.2) *
2	Pre-pregnancy weight	14.2	(7.3 - 21.1) *	14.8	(10.7 - 18.9) *
	Weight gain from 14-18 weeks	27.3	(5.9 - 48.6) *	22.0	(6.5 - 37.5) *
3	Pre-pregnancy weight	14.9	(9.3 - 20.5) *	14.4	(10.3 - 18.5) *
	Weight gain from 19-23 weeks	8.4	(-10.7 - 27.4)	7.3	(-8.3 - 22.9)
4	Pre-pregnancy weight	13.2	(7.6 - 19.0) *	13.8	(8.2 - 19.5) *
	Weight gain from 24-28 weeks	20.0	(1.8 - 38.1) *	19.7	(1.8 - 37.6) *
5	Pre-pregnancy weight	14.2	(7.9 - 20.5) *	14.2	(8.0 - 20.4) *
	Weight gain from 29-30 weeks	3.8	(-22.5 - 30.0)	2.8	(-23.0 - 28.7)
6	Pre-pregnancy weight	21.0	(12.1 - 29.8) *	21.3	(12.7 - 29.9) *
	Weight gain from 31-32 weeks	9.0	(-32.4 - 50.4)	8.1	(-32.2 - 48.3)
7	Pre-pregnancy weight	18.8	(9.8 - 27.9) *	19.2	(10.3 - 28.1) *
	Weight gain from 33-34 weeks	26.0	(-29.3 - 81.4)	24.4	(-29.8 - 78.6)
8	Pre-pregnancy weight	14.5	(6.6 - 22.3) *	14.5	(6.8 - 22.1) *
	Weight gain from 35-36 weeks	9.5	(-28.8 - 47.8)	9.5	(-28.1 - 47.0)
9	Pre-pregnancy weight	16.7	(10.6 - 22.8) *	14.6	(10.5 - 18.7) *
	Weight gain from 37-38 weeks	-1.8	(-28.1 - 24.6)	11.4	(-12.1 - 34.8)
10	Pre-pregnancy weight	18.1	(11.3 - 24.9) *	14.6	(10.5 - 18.7) *
	Weight gain from 39-40 weeks	-12.5	(-45.3 - 20.3)	-3.4	(-34.8 - 28.1)

*: the 95% confidence interval does not cross 0, indicating that there is a significant association between the indicated maternal weight variable and infant birthweight

eTable 6: Multiple Linear Regression Models With Exclusion of Those in Whom Time From Pregravid Assessment to Pregnancy Exceeded the 90th Percentile of the Distribution of This Variable

Associations of pre-pregnancy weight and weight gain within each gestational interval with (dependent variable) infant birthweight, in models adjusting for pre-pregnancy weight, weight gain in each interval, total length of gestation, and infant sex, in the observed data and multiple imputation data, with exclusion of those women in whom the time from pre-gravid assessment to pregnancy exceeded the 90th percentile of the distribution of this variable

Model	Maternal weight variable, kg	Infant Birthweight, g			
		<i>Analyses with Observed Data</i>		<i>Analyses with Multiple Imputation data</i>	
		β	95% CI	β	95% CI
1	Pre-pregnancy weight	13.7	(6.5 - 20.8) *	15.6	(11.5 - 19.8) *
	Weight gain from pre-gravid to 14 weeks	11.9	(0.7 - 23.0) *	13.2	(5.5 - 20.9) *
2	Pre-pregnancy weight	13.6	(5.6 - 21.6) *	14.4	(10.3 - 18.4) *
	Weight gain from 14-18 weeks	30.8	(7.0 - 54.5) *	22.0	(5.6 - 38.3) *
3	Pre-pregnancy weight	14.2	(7.9 - 20.6) *	14.0	(9.9 - 18.0) *
	Weight gain from 19-23 weeks	13.4	(-8.2 - 35.1)	11.3	(-5.2 - 27.8)
4	Pre-pregnancy weight	11.8	(5.3 - 18.4) *	13.0	(7.0 - 19.1) *
	Weight gain from 24-28 weeks	12.7	(-8.4 - 33.8)	15.6	(-3.6 - 34.8)
5	Pre-pregnancy weight	14.6	(8.2 - 21.1) *	15.3	(9.3 - 21.3) *
	Weight gain from 29-30 weeks	-6.5	(-34.2 - 21.3)	-2.3	(-27.2 - 22.5)
6	Pre-pregnancy weight	26.2	(17.4 - 35.1) *	25.0	(16.7 - 33.3) *
	Weight gain from 31-32 weeks	-2.9	(-42.6 - 36.8)	-2.0	(-40.0 - 35.9)
7	Pre-pregnancy weight	22.2	(12.4 - 32.1) *	21.5	(12.8 - 30.1) *
	Weight gain from 33-34 weeks	-3.5	(-63.3 - 56.2)	13.8	(-40.4 - 68.1)
8	Pre-pregnancy weight	16.8	(7.9 - 25.8) *	15.5	(7.9 - 23.0) *
	Weight gain from 35-36 weeks	15.4	(-24.8 - 55.7)	4.8	(-32.0 - 41.5)
9	Pre-pregnancy weight	18.7	(11.8 - 25.6) *	14.3	(10.2 - 18.3) *
	Weight gain from 37-38 weeks	17.1	(-14.1 - 48.4)	16.9	(-8.1 - 41.8)
10	Pre-pregnancy weight	15.6	(9.0 - 22.2) *	14.1	(10.0 - 18.2) *
	Weight gain from 39-40 weeks	-4.2	(-38.5 - 30.0)	2.3	(-32.1 - 36.8)

*: the 95% confidence interval does not cross 0, indicating that there is a significant association between the indicated maternal weight variable and infant birthweight

eTable 7: Multiple Linear Regression Models With Adjustment for Pregravid Body Mass Index in Place of Pregravid Weight

Associations of pre-pregnancy BMI and weight gain within each gestational interval with (dependent variable) infant birthweight, in models adjusting for pre-pregnancy BMI, weight gain in each interval, total length of gestation, and infant sex, in the observed data and multiple imputation data

Model	Maternal weight variable	Infant Birthweight, g			
		Analyses with Observed Data		Analyses with Multiple Imputation Data	
		β	95% CI	β	95% CI
1	Pre-pregnancy BMI	32.0	(14.7 - 49.2) *	36.1	(24.9 - 47.3) *
	Weight gain from pre-gravid to 14 weeks	11.9	(1.4 - 22.5) *	12.7	(5.0 - 20.5) *
2	Pre-pregnancy BMI	31.7	(12.4 - 50.9) *	33.2	(22.1 - 44.2) *
	Weight gain from 14-18 weeks	26.8	(4.3 - 49.3) *	22.5	(6.3 - 38.7) *
3	Pre-pregnancy BMI	35.8	(20.2 - 51.5) *	32.1	(21.2 - 43.1) *
	Weight gain from 19-23 weeks	11.3	(-9.0 - 31.7)	12.2	(-4.6 - 28.9)
4	Pre-pregnancy BMI	28.7	(12.2 - 45.2) *	29.5	(13.3 - 45.8) *
	Weight gain from 24-28 weeks	19.2	(-0.2 - 38.6)	19.5	(0.3 - 38.7) *
5	Pre-pregnancy BMI	39.6	(22.6 - 56.6) *	39.9	(23.0 - 56.8) *
	Weight gain from 29-30 weeks	-1.7	(-27.6 - 24.1)	-2.5	(-28.0 - 22.9)
6	Pre-pregnancy BMI	59.2	(36.7 - 81.8) *	59.5	(37.4 - 81.5) *
	Weight gain from 31-32 weeks	2.7	(-37.1 - 42.4)	2.1	(-36.8 - 40.9)
7	Pre-pregnancy BMI	60.8	(36.7 - 84.9) *	58.3	(34.8 - 81.9) *
	Weight gain from 33-34 weeks	13.4	(-41.5 - 68.3)	12.2	(-41.9 - 66.3)
8	Pre-pregnancy BMI	42.6	(21.3 - 63.9) *	40.9	(20.2 - 61.6) *
	Weight gain from 35-36 weeks	9.4	(-28.1 - 47.0)	9.6	(-29.3 - 46.5)
9	Pre-pregnancy BMI	44.2	(27.1 - 61.2) *	32.5	(21.5 - 43.5) *
	Weight gain from 37-38 weeks	8.9	(-18.1 - 35.9)	16.1	(-8.9 - 41.2)
10	Pre-pregnancy BMI	38.3	(22.0 - 54.6) *	32.0	(22.9 - 43.0) *
	Weight gain from 39-40 weeks	-0.1	(-33.3 - 33.1)	4.0	(-30.2 - 38.3)

*: the 95% confidence interval does not cross 0, indicating that there is a significant association between the indicated maternal weight variable and infant birthweight