



Exposure	Review (AMSTAR 2 rating)	Sex		Comparison	Outcome	Summary estimate (95% confidence interval)	I ²	GRADE rating	No. of studies (years published)	Sample	Study designs		
		Female Male	Pre Post								Obs	Int	
ABUSE/NEGLECT													
Abuse ^a	Nesari et al. [moderate]	■□	■□	No abuse experience	Low birth weight	OR 1.35 (1.14, 1.59)			69.0	LOW	11 (1994-2014)	218,061	■□
ALCOHOL													
Alcohol intake	Zhang et al. [critical]	□■	■□	No exposure	Congenital heart defects	OR 1.44 (1.19, 1.74)			90.0	LOW	24 (1997-2019)	48,141	■□
DIET & NUTRITION													
Mediterranean-type diet	Mijatovic-Vukas et al. [critical]	■□	■□	Not reported	Gestational diabetes	Narrative Inversely associated in all			-	LOW	3 (2012-2016)	22,485	■□
High AHEI diet	Mijatovic-Vukas et al. [critical]	■□	■□	Non adherence	Gestational diabetes	Narrative Inversely associated in both			-	LOW	2 (2012-2014)	29,691	■□
Iron/haem intake	Mijatovic-Vukas et al. [critical]	■□	■□	Lower intake	Gestational diabetes	Narrative Positively associated in both			-	LOW	2 (both 2011)	16,633	■□
FOLIC ACID & OTHER VITAMINS													
Folate supplementation	De-Regil et al. [high]	■□	■■	No intervention/placebo ^b	Congenital heart defects	RR 0.57 (0.24, 1.33)			0.0	LOW	3 (1991-1994)	5,612	□■
Folate supplementation	De-Regil et al. [high]	■□	■■	No intervention/placebo ^b	Low birth weight	RR 1.13 (0.84, 1.52)			6.5	LOW	2 (1994-2000)	5,048	□■
Folate supplementation	De-Regil et al. [high]	■□	■■	No intervention/placebo ^b	Miscarriage	RR 1.10 (0.94, 1.28)			5.0	LOW	5 (1981-2000)	7,391	□■
Folate supplementation	De-Regil et al. [high]	■□	■■	No intervention/placebo ^b	Neural tube defects	RR 0.31 (0.17, 0.58)			0.0	HIGH	5 (1981-2000)	6,708	□■
Folate supplementation	De-Regil et al. [high]	■□	■■	No intervention/placebo ^b	'Other' birth defects ^c	RR 0.94 (0.53, 1.66)			40.3	LOW	3 (1991-1994)	5,612	□■
Folate supplementation	De-Regil et al. [high]	■□	■■	No intervention/placebo ^b	Anomaly-related termination	RR 0.29 (0.15, 0.56)			0.0	HIGH	4 (1981-2000)	7,110	□■
Folate supplementation	Li et al. [critical]	■□	■■	Never/no use	Preterm birth	aOR 0.87 (0.84, 0.91)			0.0	LOW	8 (2004-2015)	496,442	■□
Folate supplementation	De-Regil et al. [high]	■□	■■	No intervention/placebo ^b	Twinning	RR 1.38 (0.89, 2.14)			0.0	LOW	4 (1991-2000)	7,280	□■
Vitamin supplementation	Rumbold et al. [high]	■□	■■	Minimal vitamins or none	Miscarriage	RR 1.07 (0.93, 1.24)			36.2	LOW	4 (1991-2003)	7,809	□■
Vitamin supplementation	Rumbold et al. [high]	■□	■■	Minimal vitamins or none	Stillbirth	RR 0.94 (0.48, 1.85)			0.0	LOW	3 (1991-2000)	7,785	□■
PHYSICAL ACTIVITY													
Physical activity (any type)	Mijatovic-Vukas et al. [critical]	■□	■□	No physical activity	Gestational diabetes	OR 0.70 (0.57, 0.85)			52.0	MODERATE	11 (1997-2016)	51,722	■□
Physical activity (high)	Aune et al. 2014a [critical]	■□	■□	Lowest level of physical activity	Pre-eclampsia	aRR 0.65 (0.47, 0.89)			0.0	MODERATE	5 (2003-2011)	10,317	■□

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												Female Male
AGE - PATERNAL												
<20 years	Jia et al. [low]	☐■	■☐	25-29 years	Spina bifida	OR 1.41 (1.10, 1.81)		0.0	LOW	3 (1995-2007)	7,864,762	■☐
35~39 years	du Fosse et al. [low]	☐■	■☐	<29 years	Miscarriage	aRE ^a 1.15 (0.92, 1.43)		75.6	LOW	9 (2002-2019)	70,944	■☐
40~44 years	du Fosse et al. [low]	☐■	■☐	<29 years	Miscarriage	aRE ^a 1.23 (1.06, 1.43)		16.8	MODERATE	9 (2002-2019)	70,944	■☐
>44 years	du Fosse et al. [low]	☐■	■☐	25-29 years	Miscarriage	aRE ^a 1.43 (1.13, 1.81)		0.0	MODERATE	4 (2004-2019)	48,371	■☐
AGE - MATERNAL												
≥35 years	Barbosa et al. [low]	■☐	■■	<35 years	Urinary incontinence	aOR 1.53 (1.45, 1.62)		0.0	LOW	4 (2007-2016)	45,824	■☐
≥45 years	Leader et al. [critical]	■☐	■■	<45 years	Abnormal Apgar score ^b	OR 2.49 (1.37, 4.54)		73.0	LOW	5 (2010-2014)	1,866,786	■☐
≥45 years	Leader et al. [critical]	■☐	■■	<45 years	Caesarean delivery	OR 4.00 (2.48, 6.43)		97.0	LOW	10 (1998-2014)	1,958,882	■☐
≥45 years	Leader et al. [critical]	■☐	■■	<45 years	Foetal loss	OR 2.60 (1.47, 4.62)		99.0	LOW	5 (2004-2014)	24,764,227	■☐
≥45 years	Leader et al. [critical]	■☐	■■	<45 years	Pregnancy complications	OR 3.32 (2.37, 4.67)		91.0	LOW	11 (1998-2014)	1,959,429	■☐
INTERPREGNANCY INTERVALS (IPI) - SHORT												
IPI <6 months	Conde-Agudelo et al.a [moderate]	■☐	■☐	IPI 18-23 months	Low birth weight	aOR 1.61 (1.39, 1.86)		87	LOW	4 (1997-2005)	1,717,455	■☐
IPI <6 months	Ahrens et al. [critical]	■☐	■☐	IPI ≥18 months	Preterm birth	Narrative Positively associated in eight of 10 studies		-	LOW	10 (2011-2017)	1,910,676	■☐
IPI <6 months	Conde-Agudelo et al.a [moderate]	■☐	■☐	IPI 18-23 months	Preterm birth	aOR 1.40 (1.24, 1.58)		69.0	LOW	8 (1997-2005)	3,146,300	■☐
IPI <6 months	Conde-Agudelo et al.a [moderate]	■☐	■☐	IPI 18-23 months	Small for gestational age	aOR 1.26 (1.18, 1.33)		89.0	LOW	6 (1989-2005)	2,828,207	■☐
INTERPREGNANCY INTERVALS (IPI/BI) - LONG												
IPI/BI >48 months	Conde-Agudelo et al.b [low]	■☐	■☐	IPI/BI <60 months	Pre-eclampsia	Narrative Positively associated in all studies		-	LOW	6 (2000-2005)	1606,426	■☐
IPI >59 months	Conde-Agudelo et al.a [moderate]	■☐	■☐	IPI 18-23 months	Low birth weight	aOR 1.43 (1.27, 1.62)		84.0	LOW	4 (1997-2005)	1,717,455	■☐
IPI >59 months	Conde-Agudelo et al.a [moderate]	■☐	■☐	IPI 18-23 months	Preterm birth	aOR 1.20 (1.17, 1.24)		95.0	LOW	7 (1990-2005)	3,057,157	■☐
IPI >59 months	Conde-Agudelo et al.a [moderate]	■☐	■☐	IPI 18-23 months	Small for gestational age	aOR 1.29 (1.20, 1.39)		88.0	LOW	6 (1989-2005)	2,793,789	■☐
PARITY												
Multiparity	Barbosa et al. [low]	■☐	■☐	Nulliparity	Urinary incontinence	aOR 2.09 (1.07, 4.08)		90.0	LOW	4 (2007-2017)	29,799	■☐
Multiparity	Barbosa et al. [low]	■☐	■☐	Primiparity	Urinary incontinence	aOR 1.26 (0.97, 1.64)		49.0	LOW	4 (2007-2017)	24,121	■☐

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UNDERWEIGHT											
Underweight ^a	Rahman et al. [critical]	■□	■	'Normal' BMI	Antenatal hypertension*	OR 0.50 (0.40, 0.61)	0.0	MODERATE	5 (2005-2013)	37,577	■□
OVERWEIGHT / OBESITY											
Increasing BMI	Aune et al.b [low]	■□	■	Lowest category of BMI	Neonatal death	aRR 1.15 (1.07, 1.23)	78.5	MODERATE	12 (2005-2014)	3,321,555	■□
Increasing BMI	Aune et al.b [low]	■□	■	Lowest category of BMI	Miscarriage	aRR 1.16 (1.07, 1.26)	33.0	MODERATE	5 (1992-2011)	138,924	■□
Overweight ^a	Rahman et al. [critical]	■□	■	'Normal' BMI	Antenatal hypertension ^b	OR 2.27 (2.01, 2.56)	0.1	MODERATE	5 (2005-2013)	40,140	■□
Obesity ^a	Rahman et al. [critical]	■□	■	'Normal' BMI	Antenatal hypertension ^b	OR 5.61 (4.86, 6.46)	0.0	MODERATE	5 (2005-2013)	34,358	■□
Obesity ^a	Heslehurst et al. [critical]	■□	■	'Ideal' BMI	Foetal distress	OR 1.74 (1.67, 1.81)	87.7	MODERATE	6 (1998-2007)	628,337	■□
BMI ~25-29.9 kg/m ²	Torloni et al. [critical]	■□	■	BMI 20-24.9 kg/m ²	Gestational diabetes	OR 1.97 (1.77, 2.19)	55.6	MODERATE	17 (1995-2007)	395,338	■□
BMI >30 kg/m ²	Torloni et al. [critical]	■□	■	BMI 20-24.9 kg/m ²	Gestational diabetes	OR 3.76 (3.31, 4.28)	72.8	MODERATE	31 (1992-2007)	364,668	■□
BMI ≥30 kg/m ²	Gaudet et al. [critical]	■□	■	BMI <25 kg/m ²	Large for gestational age	OR 2.42 (1.16, 2.72)	97.0	MODERATE	13 (1995-2011)	1,234,580	■□
BMI ≥30 kg/m ²	Liu et al.b [critical]	■□	■	BMI 18.5-24.9 kg/m ²	Macrosomia	OR 2.92 (2.67, 3.20)	0.0	MODERATE	23 (2000-2015)	93,017	■□
BMI 25-29.9 kg/m ²	Adane et al. [critical]	■□	■	BMI 18.5-24.9 kg/m ²	Placental abruption	OR 0.84 (0.76, 0.93)	0.0	MODERATE	7 (2013-2019)	595,439	■□
BMI ≥30 kg/m ²	Adane et al. [critical]	■□	■	BMI 18.5-24.9 kg/m ²	Placental abruption	OR 0.77 (0.68, 0.87)	28.2	MODERATE	7 (2009-2019)	595,809	■□
BMI ~25-29.9 kg/m ²	Wang et al. [critical]	■□	■	BMI ~20-24.9 kg/m ²	Pre-eclampsia	aRR 1.70 (1.60, 1.81)	29.4	MODERATE	10 (1997-2012)	944,324	■□
BMI ~30-34.9 kg/m ²	Wang et al. [critical]	■□	■	BMI ~20-24.9 kg/m ²	Pre-eclampsia	aRR 2.93 (2.58, 3.33)	66.6	MODERATE	9 (1997-2012)	172,0331	■□
BMI ≥35 kg/m ²	Wang et al. [critical]	■□	■	BMI ~20-24.9 kg/m ²	Pre-eclampsia	aRR 4.14 (3.61, 4.75)	0.0	MODERATE	4 (2004-2012)	863,221	■□
BMI ≥30 kg/m ²	Zhang et al. [critical]	■□	■	BMI <30 kg/m ²	Shoulder dystocia	aRR 1.76 (1.12, 2.77)	50.4	MODERATE	6 (2003-2016)	162,827	■□

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												Female Male
UNDERWEIGHT												
BMI <20 kg/m ²	Torloni et al. [critical]	■□	■■	BMI 20-24.9 kg/m ²	Gestational diabetes	OR 0.75 (0.69, 0.82)	0.50 1.00 2.00	16.8	LOW	16 (1997-2007)	356,403	■□
BMI <20 kg/m ²	Wang et al. [critical]	■□	■■	BMI 20-24.9 kg/m ²	Pre-eclampsia	aRR 0.77 (0.63, 0.95)		52.5	LOW	6 (1999-2009)	99,015	■□
BMI ≤18.5 kg/m ²	Liu et al.b [critical]	■□	■■	BMI 18.5-24.9 kg/m ²	Large for gestational age	OR 0.52 (0.44, 0.61)		45.8	LOW	9 (2001-2013)	103,415	■□
BMI ≤18.5 kg/m ²	Liu et al.b [critical]	■□	■■	BMI 18.5-24.9 kg/m ²	Macrosomia	OR 0.55 (0.47, 0.63)		34.2	LOW	28 (2001-2014)	170,484	■□
BMI <18.5 kg/m ²	Adane et al. [critical]	■□	■■	BMI 18.5-24.9 kg/m ²	Placental abruption	OR 1.38 (1.12, 1.70)		55.2	LOW	7 (2010-2019)	595,546	■□
BMI <18.5 kg/m ²	Liu et al.a [critical]	■□	■■	BMI 18.5-24.9 kg/m ²	Small for gestational age	OR 1.75 (1.51, 2.02)		80.0	LOW	10 (2005-2016)	170,569	■□
OVERWEIGHT / OBESITY												
Obesity ^a	Molyneaux et al. [low]	■□	■■	'Normal' weight	Antenatal depression	OR 1.43 (1.27, 1.61)		44.4	LOW	28 (2000-2013)	47,929	■□
Obesity ^a	Heslehurst et al. [critical]	■□	■■	'Ideal' BMI	Caesarean delivery	OR 2.00 (1.87, 2.15)		0.0	LOW	16 (1995-2006)	>58,429	■□
Obesity ^a	Heslehurst et al. [critical]	■□	■■	'Ideal' BMI	Failure to progress in labour	OR 2.31 (1.87, 2.84)		50.9	LOW	3 (1998-2007)	14,721	■□
Overweight ^a	Heslehurst et al. [critical]	■□	■■	'Ideal' BMI	Foetal distress	OR 2.06 (1.44, 2.96)		0.0	LOW	4 (2004-2007)	6,469	■□
Overweight ^a	Heslehurst et al. [critical]	■□	■■	'Ideal' BMI	Hospital stay (length of)	OR 2.56 (2.46, 2.67)		88.6	LOW	4 (1995-2006)	>9,511	■□
Obesity ^a	Heslehurst et al. [critical]	■□	■■	'Ideal' BMI	Hospital stay (length of)	OR 2.84 (2.77, 2.91)		94.4	LOW	4 (1995-2006)	>20,414	■□
Obesity ^a	Heslehurst et al. [critical]	■□	■■	'Ideal' BMI	Low Apgar score ^b	OR 1.69 (1.60, 1.80)		82.2	LOW	5 (1998-2005)	760,099	■□
Overweight ^a	Heslehurst et al. [critical]	■□	■■	'Ideal' BMI	Post-term pregnancy	OR 1.28 (1.20, 1.37)		51.5	LOW	3 (1995-2006)	50,989	■□
Obesity ^a	Heslehurst et al. [critical]	■□	■■	'Ideal' BMI	Post-term pregnancy	OR 1.41 (1.38, 1.45)		78.8	LOW	4 (1995-2006)	654,753	■□
BMI 25-29.9 kg/m ²	Liu et al.b [critical]	■□	■■	BMI 18.5-24.9 kg/m ²	Large for gestational age	OR 1.45 (1.29, 1.63)		67.7	LOW	13 (2001-2015)	138,290	■□
BMI 25-29.9 kg/m ²	Liu et al.b [critical]	■□	■■	BMI 18.5-24.9 kg/m ²	Macrosomia	OR 1.70 (1.55, 1.87)		48.6	LOW	27 (2004-2015)	446,753	■□
BMI ~25-29.9 kg/m ²	Balsells et al. [critical]	■□	■■	BMI ~18.5-24.9 kg/m ²	Miscarriage	RR 1.09 (1.04, 1.13)		28.0	LOW	23 (2002-2016)	138,988	■□
BMI ≥30 kg/m ²	Balsells et al. [critical]	■□	■■	BMI ~18.5-24.9 kg/m ²	Miscarriage	RR 1.21 (1.15, 1.27)		20.0	LOW	22 (2002-2014)	121,393	■□
BMI ≥30 kg/m ²	Liu et al.b [critical]	■□	■■	BMI 18.5-24.9 kg/m ²	NICU admission	OR 1.91 (1.60, 2.29)		66.3	LOW	17 (1998-2015)	72,398	■□
BMI 25-29.9 kg/m ²	Liu et al.b [critical]	■□	■■	BMI 18.5-24.9 kg/m ²	Small for gestational age	OR 0.71 (0.66, 0.76)		37.4	LOW	11 (2001-2015)	77,726	■□

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							0.50	1.00	2.00	3.00					
		Female Male	Pre Post											Obs Int	
INTERPREGNANCY WEIGHT LOSS															
Loss of >1 kg/m ²	Timmermans et al. [low]	■□	■□	BMI maintenance (-1 to 1 kg/m ²)	Large for gestational age	aOR 0.80 (0.66, 0.98)					95.0	LOW	4 (2006-2019)	102,496	■□
Loss of >1 kg/m ²	Timmermans et al. [low]	■□	■□	BMI maintenance (-1 to 1 kg/m ²)	Preterm birth	aOR 1.40 (1.08, 1.83)					72.0	LOW	2 (2014-2019)	8,406	■□
Loss of >1 kg/m ²	Oteng-Ntim et al. [low]	■□	■□	BMI maintenance (-2 to 2 kg/m ²)	Small for gestational age	aOR 1.31 (1.06, 1.63)					53.5	LOW	3 (2004-2016)	49,008	■□
INTERPREGNANCY WEIGHT GAIN															
Gain of >1 kg/m ²	Oteng-Ntim et al. [low]	■□	■□	BMI maintenance (-2 to 2 kg/m ²)	Small for gestational age	aOR 0.83 (0.70, 0.99)					56.8	LOW	3 (2004-2016)	49,008	■□
Gain of 1-<3 kg/m ²	Timmermans et al. [low]	■□	■□	BMI maintenance (-1 to 1 kg/m ²)	Caesarean delivery	aOR 1.13 (1.06, 1.20)					51.0	MODERATE	4 (2006-2017)	158,364	■□
Gain of ≥3 kg/m ²	Oteng-Ntim et al. [low]	■□	■□	BMI maintenance (-2 to 2 kg/m ²)	Caesarean delivery	aOR 1.72 (1.32, 2.24)					89.1	MODERATE	4 (2006-2016)	341,960	■□
Gain of 1-<3 kg/m ²	Teulings et al. [critical]	■□	■□	BMI maintenance (-1 to 1 kg/m ²)	Gestational diabetes	aOR 1.51 (1.22, 1.80)					71.0	MODERATE	5 (2006-2015)	251,992	■□
Gain of ≥3 kg/m ²	Teulings et al. [critical]	■□	■□	BMI maintenance (-1 to 1 kg/m ²)	Gestational diabetes	aOR 2.37 (1.40, 3.34)					91.0	MODERATE	4 (2006-2017)	234,772	■□
Gain of 1-<3 kg/m ²	Timmermans et al. [low]	■□	■□	BMI maintenance (-1 to 1 kg/m ²)	Large for gestational age	aOR 1.33 (1.11, 1.60)					0.0	MODERATE	4 (2006-2019)	138,205	■□
Gain of ≥3 kg/m ²	Timmermans et al. [low]	■□	■□	BMI maintenance (-1 to 1 kg/m ²)	Large for gestational age	aOR 1.54 (1.28, 1.86)					0.0	MODERATE	4 (2006-2019)	103,350	■□
Gain of ≥2 kg/m ²	Martinez-Hortelano et al. [low]	■□	■□	BMI maintenance (-2 to 2 kg/m ²)	Gestational hypertension	OR 1.45 (1.11, 1.80)					76.1	MODERATE	6 (1999-2017)	239,150	■□
Gain of ≥2 kg/m ²	Martinez-Hortelano et al. [low]	■□	■□	BMI maintenance (-2 to 2 kg/m ²)	Pre-eclampsia	OR 1.39 (1.18, 1.60)					39.2	LOW	5 (2006-2017)	364,943	■□