Table S1: Features of the studies included in the review

First author (year) (ref)	Location	Study period	Study design	Exposure(s)	Method of exposure assessment	Outcome(s)
General population studies						
Abeysena C (2009),[66] (2010),[67] (2010)[68]	Sri Lanka	2001-2002	Prospective cohort	Shift work Standing	Interviewer-administered questionnaire at ≤16, 28 and 36 weeks gestation	Pre term delivery (<37 wks) SGA (<10th percentile and <5th percentile) LBW (<2500g)
Ahlborg GJ (1990)[13]	Orebro, Sweden	1980-1983	Cross-sectional	Lifting	Self-administered questionnaire after delivery; exposure validated by hygienist in a subgroup	Pre term delivery (<37 wks) LBW (<2500g) LBW adjusted for gestational age
Al-Dabbagh SA (2006)[69]	Mosul, Iraq	2003-2004	Case-control hospital based	Physical activity	Face to face interview shortly after delivery	Pre term delivery (<37 wks)
Arafa MA (2007)[70]	Alexandria, Egypt	2004-2005	Cross-sectional	Shift work Standing	Face to face interview shortly after delivery	Pre term delivery (<37 wks) SGA (<10th percentile)
Bell JF (2008)[71]	US	1979-2000	Cohort, record linkage	Working hours Physical activity	Periodic national longitudinal survey; job exposure matrix based on occupational title	Preterm delivery (<37 wks) SGA (≤10th percentile)
Berkowitz GS (1983)[15]	New Haven, USA	1977-1978	Case-control hospital based	Working hours Standing Lifting	Expert interview after delivery	Preterm delivery (<37 wks)
Bonzini M (2009)[72]	UK	1993-2003	Prospective cohort	Working hours Shift work Standing Lifting	Nurse administered questionnaire at 11 weeks and 34 weeks gestation	Preterm delivery (<37 wks) SGA (<10th percentile)
Both MI (2010)[73]	UK	1991-1992	Prospective cohort	Shift work	Mail questionnaires distributed in both the first and second trimester	Preterm delivery (<37 wks) Birthweight (continuous)
Brink-Henriksen T (1995),[17] (1995)[18]	Denmark	1989-1991	Prospective cohort	Working hours Standing Lifting	Self administered questionnaire during pregnancy	Preterm delivery (<37 wks) Birthweight (continuous)
Burdorf A (2011)[89]	Rotterdam, Netherlands	2002-2006	Prospective cohort	Lifting	Mail questionnaire (almost all completed during pregnancy)	Preterm delivery (<37 wks) LBW (<3000g)
Ceron-Mireles P (1996)[19]	Mexico city, Mexico	1992	Cross-sectional	Working hours Standing Physical activity	Personal interview, soon after delivery	Preterm delivery (<37 wks) SGA (≤10th percentile)
Chang P-J (2010)[74]	Taiwan	2005-2006	Cross-sectional	Working hours Shift work	Home interview, 6 months after delivery	Gestational hypertension & pre-eclampsia

First author (year) (ref)	Location	Study period	Study design	Exposure(s)	Method of exposure assessment	Outcome(s)
Croteau A (2006),[75] (2007)[76]	Quebec, Canada	1997-1999	Case-control hospital-based	Working hours Shift work Standing Lifting	Telephone interview after delivery (median 30 days)	SGA (≤10th percentile) Preterm delivery (<37 wks) Very preterm delivery (<34 wks) was also analysed – see text.
Di Renzo GC (2011)[90]	Italy	2008	Cross-sectional	Physical activity	Medical record of employment (not stated, but probably antenatal)	Preterm delivery (<37 wks)
Fortier I (1995)[21]	Quebec, Canada	1989	Cross-sectional	Working hours Shift work Standing Lifting Physical activity	Telephone interview after delivery (median 6 wks)	Preterm delivery (<37 wks) SGA (<10th percentile)
Gisselmann MD (2008)[77]	Sweden	1980-1985	Prospective cohort, record linkage	Physical activity	Job-exposure matrix based on job title at national census in 1980 (linked to a national birth registry for the later period)	Preterm delivery (<37 wks) Very pre-term delivery (<32 wks) LBW (<2500g) Very LBW (<1500g) SGA (<10th percentile)
Gollenberg AL (2011)[91]	USA	2000-2003	Prospective cohort	Physical activity	Interviewer administered questionnaires, one before 24 wks (mean 15 wks) gestation and one later in pregnancy (mean 28 wks)	SGA (<10th percentile)
Haelterman E (2007)[78]	Quebec, Canada	1997-1999	Case-control	Working hours Shift work Standing Lifting	Telephone interview after delivery (median 31 days)	Gestational hypertension & pre-eclampsia
Hanke W (1999)[22]	Lodz, Poland	1996-1997	Cross-sectional	Shift work Standing Physical activity	Interview few days after delivery	SGA (<10th percentile)
Hartikainen-Sorri AL(1989)[23]	Finland	1982	Case-control, hospital based	Shift work Standing Physical activity	Mail questionnaire within 1 year of delivery	Preterm delivery (<37 wks)
Hatch M (1997)[24]	USA	1987-1989	Prospective cohort	Working hours Standing Lifting Physical activity	Telephone interview, mail questionnaire	LBW (≤3000g). Birthweight (continuous)
Hickey CA (1995)[25]	USA	1985-1988	Prospective cohort	Working hours Standing Physical activity	Self administered questionnaire during pregnancy	Preterm delivery (<37 wks)
Homer CJ (1990)[26]	USA	1979 - 1983	Cross-sectional	Physical activity	Derived from job title, using a validated physical effort scale	Preterm- delivery (<37 wks) LBW (<2500g) Birthweight (continuous)

First author (year) (ref)	Location	Study period	Study design	Exposure(s)	Method of exposure assessment	Outcome(s)
Jansen PW (2010)[79]	Rotterdam, Netherlands	2002-2006	Prospective cohort, population-based	Working hours	Mail questionnaire in later pregnancy (≥25 wks gestation)	Preterm- delivery (<37 wks) SGA (<10th percentile) Birthweight (continuous) Gestational hypertension & preeclampsia
Klebanoff MA (1990)[29]	USA	1984-1987	Prospective cohort	Standing Physical activity	Face to face interview	Preterm delivery (<37 wks) Birthweight (continuous)
Landsbergis PA (1996)[30]	USA	1987-1989	Prospective cohort	Working hours Physical activity	Telephone interview and mail update	Gestational hypertension & preeclampsia
Launer LJ (1990)[31]	Guatemala	1984-1986	Prospective cohort	Standing Physical activity	Face to face interview	Preterm delivery (<37 wks) SGA (≤10th percentile)
Magann EF (1996)[34]	Australia	1989-1991	Prospective cohort	Physical activity	Self administered questionnaire	Preterm delivery (<37 wks) Birthweight (continuous) SGA (<3rd & <10th percentile)
Magann EF (2005)[33]	San Diego, USA	Not specified	Prospective cohort	Standing Lifting	Face to face interview	Preterm delivery (<37 wks) SGA (undefined)
Mamelle N (1984)[35]	France	1977-1978	Cross-sectional	Working hours Shift work Standing Physical activity	Face to face interview	Preterm delivery (<37 wks)
Mamelle N (1987)[96]	Lyon, France	1984	Case control, hospital based	Physical activity	Face to face interview after delivery	Preterm delivery (<37 wks)
Marcoux S (1999)[36]	Quebec, Canada	1984-6	Case control, hospital based	Working hours	Face to face interview a few days after delivery	Gestational hypertension
McDonald AD (1988)[37] Armstrong BG (1989)[38]	Montreal, Canada	1982-1984	Cross-sectional	Working hours Shift work Standing Lifting Physical activity	Interview after delivery	Preterm delivery (<37 wks) LBW (≤2500g) % Predicted birthweight (by *job title*)*
Meyer BA (1985)[39]	USA	1981	Case control, population based	Standing	Based on job title according to an expert validated database	LBW (<2500g)
Meyer JD (2007)[82]	USA	2000	Cross-sectional	Physical activity	Based on job title according to expert job-exposure matrices of two kinds	Preterm delivery (<37 wks) LBW (<2500g)
Misra DP (1998)[40]	USA	1988-1989	Prospective cohort	Shift work Standing Lifting	Face to face interview or telephone interview	Preterm delivery (<37 wks)
Nelson K (2009)[83]	Bangkok, Thailand	2006-2007	Case control, hospital based	Physical activity	Face to face interview after delivery	Preterm delivery (<37 wks) Preterm rupture of membranes (<37 wks) Very preterm delivery (<32 wks)

First author (year) (ref)	Location	Study period	Study design	Exposure(s)	Method of exposure assessment	Outcome(s)
Newman RB (2001)[41]	USA	Not specified	Prospective cohort	Standing Physical activity	Face to face interview	Preterm rupture of membranes (<37 wks)
Nguyen N (2004)[97]	Hanoi, Vietnam	2002	Prospective cohort	Working hours Physical activity	Face to face interview	Preterm delivery (<37 wks)
Niedhammer D (2009)[84]	Ireland	2001	Prospective cohort	Working hours Shift work Physical activity	Self-completed questionnaire at 14-16 w ks	Preterm delivery (<37 wks) SGA (<10th percentile) LBW (≤2500g)
Nurminen T (1989)[42] (1989)[43]	Finland	1976-1982	Cross sectional	Shift work Standing Physical activity	Face to face expert interview 2-4 months after delivery	Preterm delivery (<37 wks) SGA (≤ 10th percentile) Gestational hypertension
Omokhodion FO (2010)[85]	Ibadan, Nigeria	2008	Cross-sectional	Standing Physical activity	Personal interview, usually within 48 hrs of delivery	Preterm delivery (<37 wks) LBW (<2500g)
Peoples-Sheps MD (1991)[44]	USA	1980	Cross-sectional	Working hours Physical activity	Derived by job title and mail interview	Preterm delivery (<37 wks) LBW (<2500g)
Pompeii LA (2005)[45]	North Carolina USA	1995-2000	Prospective cohort	Working hours Shift work Standing Lifting	Telephone or face to face interview	Preterm delivery (<37 wks) SGA (<10th percentile)
Rabkin CS (1990)[46]	London, England	1982-1984	Prospective cohort	Working hours Physical activity	Face to face expert interview	Birthweight (continuous)
Rao S (2003)[48]	Pune region, India	1994-1996	Prospective cohort	Physical activity	Interview before delivery	Preterm delivery (<37 wks) Birthweight (continuous)
Ritsmitchai S (1997)[98]	Songkhla, Thailand	1993	Case control, hospital based	Standing Lifting	Face to face interview, after delivery	Preterm delivery (≤37 wks)
Rodrigues T (2008)[86]	Portugal	Not stated	Case control, hospital based	Working hours Standing Physical activity	Interview within 96 hours of delivery	Preterm delivery (≤37 wks)
Saftlas AF (2004)[49]	Connecticut, USA	1988-1991	Prospective cohort	Standing	Face to face expert interview	Gestational hypertension & preeclampsia
Saurel-Cubizolles MJ (1987)[51]	France	1981	Cross-sectional	Working hours Shift work Standing Lifting Physical activity	Face to face expert interview, after delivery	Preterm delivery (<37 wks) LBW (<2500g)
Saurel-Cubizolles MJ (1991)[52]	France	1987-1988	Cross-sectional	Working hours Standing Lifting Physical activity	Face to face expert interview, after delivery	Preterm delivery (<37 wks)

First author (year) (ref)	Location	Study period	Study design	Exposure(s)	Method of exposure assessment	Outcome(s)
Saurel-Cubizolles MJ (2004)[53]	16 European countries	1994-1997	Case-control hospital based	Working hours Shift work Standing Lifting	Interview after delivery	Preterm delivery (<37 wks)
Savitz DA (1996)[54]	USA	1988	Cross-sectional	Working hours	Mail or telephone questionnaire	Preterm delivery (<37 wks) VLBW (<1500g) MLBW (1500-2499g) SGA (<10th percentile)
Schramm WF (1996)[55]	Missouri, USA	1989-1991	Case-control, population based	Standing Lifting	In-hospital interview or mail questionnaire	VLBW (<1500g) MLBW (1500-2499g)
Spinillo A (1995)[56]	Pavia, Italy	1990-1994	Case-control, hospital based	Working hours Standing Physical activity	Face to face expert interview	SGA (<10th percentile birthweight plus abdominal circumference <10th percentile) Pre-eclampsia
Tafari N (1980)[58]	Addis Ababa, Ethiopia	1976-1977	Cross-sectional	Physical activity	Face to face interview	Birthweight (continuous)
Teitelman AM (1990)[59]	New Haven, USA	1980-1982	Prospective cohort	Standing	Based on job title	Preterm delivery (<37 wks) Gestational age (in wks) LBW (<2500g) Birthweight (continuous)
Tuntiseranee P (1998)[60]	S Thailand	1994-1995	Prospective cohort	Working hours Standing Lifting Physical activity	Face to face expert interview at 17 & 32 wks	Preterm delivery (<37 wks) LBW (≤2500g) SGA (<10th percentile)
Vrijkotte TGM (2009)[88]	Amsterdam, Netherlands	2003-2004	Prospective cohort	Working hours Standing Physical activity	Mail questionnaire at about 15 wks gestation	SGA (<10th percentile) Birthweight (continuous)
Wergeland E (1997),[61] (1998)[62]	Norway	1989	Cross-sectional	Working hours Shift work Standing Lifting	Self-administered questionnaire after delivery	LBW (<2500g) Birthweight (continuous) Pre-eclampsia
Zhu JL (2004)[64]	Denmark	2004	Prospective cohort	Shift work	Telephone interview during pregnancy	Preterm delivery (<37 wks). LBW (<2500g) SGA (<10th percentile)
Zuckerman BS (1986)[65]	Boston, USA	1977-1979	Cross-sectional	Standing	Face to face interview, after delivery	Gestational age (in wks) Birthweight (continuous)
Studies in selected occupations						
Axelsson G (1989)[14]	Sweden	1980-1984	Cross-sectional	Shift work	Mail questionnaire *in hospital employees*	Birthweight (continuous)

First author (year) (ref)	Location	Study period	Study design	Exposure(s)	Method of exposure assessment	Outcome(s)
Bodin L (1999)[16]	Sweden	1980-1987	Cross-sectional	Working hours Shift work	Mail questionnaire *in midwives*	Preterm delivery (<37 wks) LBW (<2500g) SGA (<10th percentile) Birthweight (continuous)
Florack EIM (1995)[20]	Netherlands	1987-1989	Prospective cohort	Lifting Physical activity	Personal interview, before pregnancy *in hospital workers*	Gestational age (in wks vs expected term)* Birthweight (continuous)
Ha E (2002)[94]	Beijing, China	1996-1998	Cross-sectional	Standing	Face to face interview (timing unclear) in *petrochemical workers*	Birthweight (continuous)
Herdt-Losavio ML (2011)[92]	New York State, USA	1997-2003	Nested case-control	Working hours	Mail questionnaire in *licensed cosmetologists*	LBW (<2500g)
Irwin DE (1994)[27]	USA	1987-1989	Cross-sectional	Standing Lifting Physical activity	Based on job title using military data of activity *in Navy personnel*	Gestational hypertension & pre-eclampsia
Jurewicz J (2005)[80]	Poland	2001-2003	Cross-sectional	Physical activity	Based on main job held and estimates of energy expenditure in an observed sample of *glasshouse workers*	Preterm delivery (<37 wks)
Klebanoff MA (1990)[28]	USA	1985	Cross-sectional	Working hours	Mail questionnaire after delivery, (non-respondents contacted by telephone) *in medical graduates*	Preterm delivery (<37 wks) SGA (<10th percentile) Birthweight (continuous)
Lawson CC (2009)[81]	US	1992-2001	Cross-sectional	Working hours Shift work Standing Lifting	Mail questionnaire in *nurses* participating in the national *Nurses'* Health Study II	Pre-term delivery (<37 wks) Very preterm delivery (<34 wks) was also analysed.
Lima M (1999)[95]	Palmares, Brazil	1992	Cross-sectional	Working hours	Face to face expert interview, after delivery in low income low literacy *agricultural workers*	Birthweight (continuous)
Lin YC (2011)[93]	Taiwan	1997-2007	Cross-sectional	Shift work	Self-administered questionnaire in *semiconductor workers*	Birthweight (continuous)
Luke B (1995)[32]	USA	from 1980	Case control, population based	Working hours Shift work Standing Physical activity	Mail questionnaire *in nurses*	Preterm delivery (<37 wks)
Ramirez G (1990)[47]	USA	1981-1984	Cross-sectional	Physical activity	*Military* records	Preterm delivery (≤37 wks).
Saurel-Cubizolles MJ (1985)[50]	France	1979-1981	Cross-sectional	Physical activity	Face to face expert interview, after delivery in *hospital personnel*	Preterm delivery (<36.5 wks) LBW (<2500g) Gestational hypertension
Shirangi A (2009)[87]	Australia	1960-2000	Cross-sectional	Working hours	National mail questionnaire in *veterinarians*	Preterm delivery (<37 wks)

First author (year) (ref)	Location	Study period	Study design	Exposure(s)	Method of exposure assessment	Outcome(s)
Stinson JC (2003)[57]	USA	Not specified	Prospective cohort	Shift work Physical activity	Self administered questionnaire during pregnancy *in military personnel*	Preterm delivery (<37 wks)
Xu X (1994)[63]	Anhui, China	1992	Prospective cohort	Shift work	Face-to-face interview *in textile workers*	Preterm delivery (<37 wks) LBW (<2500g) Birth weight (continuous)

LBW =low birthweight; MLBW = moderately low birthweight; VLBW = very low birthweight; SGA = small for gestational age

* These non-comparable outcomes were not considered further in the review

Table S2: Weekly working hours, shift work, standing and risk of pre-term delivery

Authors (date)	Numbers in analysis	RR (95% CI)	Exposure		Higher potential for		Incomplete reporting	Pooled in meta-analysis
			Comparison	Timing	Bias	Confounding		
WEEKLY WORKING HOURS								
Cohort studies								
Bell JF (2008)[71]	3389	1.12 (0.84 - 1.49)	≥40 vs <40 h/w	Not stated	No	Yes	No	Yes
Bonzini M (2009)[72]	1318	1.03 (0.49 - 2.15)	≥40 vs <40 h/wk	11 weeks	No	No	No	Yes§
Bonzini M (2009)[72]	1287	1.01 (0.47 - 2.17)	≥40 vs <40 h/wk	19 weeks	No	No	No	No
Bonzini M (2009)[72]	797	0.59 (0.17 - 2.03)	≥40 vs <40 h/wk	34 weeks	No	No	No	Yes¶
Brink-Henriksen T (1995)[18]	927	1.87 (0.78 - 4.16)	≥45 vs <30 h/wk	16 weeks	No	No	No	Yes†§
Hickey CA (1995)[25]	183	0.68 (0.12 - 2.7)	>40 vs 1-20 h/wk	24 - 26 weeks	No	No	Yes	Yes†
Jansen PW (2010)[79]	4408	1.30 (0.81 - 2.10)	≥40 vs 1-24 h/wk	≥25 weeks	No	No	No	Yes†§
Nguyen N (2004)[97]	1709	1.6 (0.9 - 2.8)	>40 vs ≤40 h/wk	Not stated	No	Yes?	No	Yes
Niedhammer D (2009)[84]	481	2.25 (0.69 - 7.32)	≥40 vs 40 h/wk	Not stated	No	No	No	Yes§
Pompeii LA (2005)[45]	1037	0.6 (0.4 - 0.9)	>46 vs 35-45 h/wk	Trimester 1	No	No	No	No
Pompeii LA (2005)[45]	1037	0.4 (0.2 - 0.8)	>46 vs 35-45 h/wk	Trimester 2	No	No	No	No
Pompeii LA (2005)[45]	1037	0.3 (0.1 - 0.7)	>46 vs 35-45 h/wk	Trimester 3	No	No	No	No
Tuntiseranee P (1998)[60]	886	1.6 (0.8 - 3.3)	≥61 vs ≤50 h/wk	15 - 28 weeks	No	No	No	No
Case-control studies								
Croteau A (2007)[76]	5732	1.2 (1.0 - 1.6)	>40 vs 20-34 h/wk	Trimester 1	No	No	No	Yes§
Croteau A (2007)[76]	5732	1.2 (0.7 – 2.0)	>40 vs 20-34 h/wk	Trimester 1 & 2 but not 3	No	No	No	Yes¶
Luke B (1995)[32]	1470	1.6 (1.1 - 2.2)	>36 vs ≤36 h/wk	Not stated	No	No	No	No
Rodrigues T (2008)[86]	1328	1.16 (0.88 - 1.54)	≥40 vs <40 h/w	Any	No	Yes	No	Yes
Saurel-Cubizolles MJ (2004)[53]	2062	1.33 (1.1 - 1.6)	≥43 vs 30-39 h/wk	Trimester 1	No	No	Yes	Yes
Cross-sectional studies								
Bodin L (1999)[16]	1685	1.3 (0.6 - 2.7)	≥36 vs 21-35 h/wk	Trimester 2	No	Yes	No	No
Ceron-Mireles P (1996)[19]	2429	1.21 (0.9 - 1.62)	>50 vs 3-25 h/wk	Not stated	No	No	No	Yes§
Fortier I (1995)[21]	1833	1.14 (0.71 - 1.82)	≥40 vs <30 h/wk	Not stated	No	No	No	Yes§
Klebanoff MA (1990)[28]	989	1.2 (0.8 - 1.7)	Residents (>100 h) vs others	Any	No	No	No	No
Lawson CC (2009)[81]	6750	1.0 (0.8 - 1.4)	≥41 vs 21-40 h/wk	Trimester 1	No	No	No	Yes§
Mamelle N (1984)[35]	1928	1.7 (1.1 - 2.5)	>41 vs ≤40 h/wk	Not stated	No	Yes	Yes	Yes

Authors (date)	Numbers in analysis	RR (95% CI)		Exposure		Higher potential for		Incomplete reporting	Pooled in meta-analysis
				Comparison	Timing	Bias	Confounding		
McDonald AD (1988)[37]	22761	1.34	P<0.05	≥46 vs <46 h/wk	Not stated	No	No	No	No*
Peoples-Sheps MD (1991)[44]	1853	1.1	(0.7 - 1.8)	≥40 vs 1-20 h/wk	Not stated	No	No	No	Yes§
Saurel-Cubizolles MJ (1987)[51]	2245	0.59	(0.21 - 1.37)	≥42 vs <42 h/wk	Trimester 1	No	Yes	Yes	No
Saurel-Cubizolles MJ (1991)[52]	873	1.0	(0.4 - 2.5)	>45 vs ≤45 h/wk	Not stated	No	No	Yes	No
Savitz DA (1996)[54]	1015	1.1	(0.8 - 1.5)	≥40 vs no paid work	5 months	No	No	No	Yes†§
Shirangi A (2009)[87]	744	3.69	(1.40 - 9.72)	>45 vs <35 h/wk	Any	No	No	No	Yes§
SHIFT WORK									
Cohort studies									
Abeysena C (2010)[68]	737	2.20	(1.22 - 3.95)	Shifts + exposure to physical/ chemical hazards vs not	Trimester 1	No	Yes	No	No
Abeysena C (2010)[68]	631	1.28	(0.48 - 3.39)	Shifts + exposure to physical/ chemical hazards vs not	Trimester 2	No	Yes	No	No
Abeysena C (2010)[68]	582	1.05	(0.31 - 3.58)	Shifts + exposure to physical/ chemical hazards vs not	Trimester 3	No	Yes	No	No
Bonzini M (2009)[72]	1318	1.14	(0.43 - 2.93)	Night shifts (yes vs no)	11 weeks	No	No	No	Yes§
Bonzini M (2009)[72]	1287	1.07	(0.37 - 3.05)	Night shifts (yes vs no)	19 weeks	No	No	No	Yes¶
Both MI (2010)[73]	~11720	1.14	(0.65 - 2.01)	Shifts vs none	Trimester 1	No	No	No	Yes§
Both MI (2010)[73]	~11720	0.73	(0.30 - 1.78)	Shifts vs none	Trimester 3	No	No	No	No
Both MI (2010)[73]	~11720	1.80	(0.77 - 4.20)	Night shifts (yes vs no)	Trimester 1	No	No	No	No
Both MI (2010)[73]	11123	0.67	(0.47 - 0.95)	Night shifts (yes vs no)	Trimester 3	No	No	No	Yes¶
Misra DP (1998)[40]	1166	1.0	(0.59 - 1.69)	Shifts vs none	Trimesters 1 & 2	No	No	No	Yes†§
Niedhammer D (2009)[84]	481	1.68	(0.44 - 6.34)	Shifts vs none	Not stated	No	No	No	Yes§
Pompeii LA (2005)[45]	1796	1.5	(1.0 - 2.1)	Regular night work (yes vs no)	Trimester 1	No	No	No	Yes§
Pompeii LA (2005)[45]	1796	1.6	(1.0 - 2.8)	Regular night work (yes vs no)	Trimester 2	No	No	No	No
Pompeii LA (2005)[45]	1796	1.8	(0.8 - 3.4)	Regular night work (yes vs no)	Trimester 3	No	No	No	Yes¶
Stinson JC (2003)[57]	359	1.8	(0.93 - 3.53)	Night vs day	22 - 26 weeks	No	No	No	Yes†§
Xu X (1994)[63]	887	2.0	(1.1 - 3.4)	Rotating shift work (yes vs no)	Not stated	No	No	No	Yes§
Zhu JL (2004)[64]	35662	0.97	(0.8 - 1.17)	Rotating shift work vs daytime work	Trimesters 1 & 2	No	No	No	Yes†§
Case-control studies									
Croteau A (2007)[76]	5732	0.9	(0.7 - 1.2)	Night shifts (yes vs no)	Trimester 1	No	No	No	Yes§

Authors (date)	Numbers in analysis	RR (95% CI)		Exposure		Higher potential for		Incomplete reporting	Pooled in meta-analysis
				Comparison	Timing	Bias	Confounding		
Croteau A (2007)[76]	5732	1.0	(0.6 – 1.7)	Night shifts (yes vs no)	Trimester 1 & 2 but not 3	No	No	No	Yes[¶]
Croteau A (2007)[76]	5732	1.0	(0.9 - 1.3)	Shift work vs regular schedule	Trimester 1	No	No	No	No
Croteau A (2007)[76]	5732	0.8	(0.5 – 1.7)	Shift work vs regular schedule	Trimester 1 & 2 but not 3	No	No	No	No
Hartikainen-Sorri AL (1989)[23]	358	0.86	(0.51 - 1.45)	Shift work (yes vs no)	Not stated	No	Yes	Yes	Yes
Luke B (1995)[32]	1470	1.5	(1.1 - 2.1)	Evening/night vs day	Not stated	Yes	No	No	Yes
Saurel-Cubizolles MJ (2004)[53]	6309	0.97	(0.8 - 1.1)	Shift work (yes vs no)	Trimester 1	No	No	Yes	Yes
Cross-sectional studies									
Arafa MA (2007)[70]	730	1.13	(0.65 - 1.89)	Shifts vs mornings only	Not stated	No	Yes	Yes	Yes
Bodin L (1999)[16]	1685	5.6	(1.9 - 16.4)	Night vs day	Trimester 2	No	Yes	No	Yes[†]
Fortier I (1995)[21]	4118	1.03	(0.72 - 1.48)	Shift work vs day only	Not stated	No	No	No	Yes[§]
Lawson CC (2009)[81]	6750	1.1	(0.8 - 1.5)	Night vs day only	Trimester 1	No	No	No	Yes[§]
Lawson CC (2009)[81]	6750	0.7	(0.5 - 1.1)	Rotating shifts vs day only	Trimester 1	No	No	No	No
Mamelle N (1984)[35]	1928	1.6	(1.0 - 2.5)	Shift and night work vs none	Not stated	No	Yes	Yes	Yes
McDonald AD (1988)[37]	22761	1.18	P>0.05	Changing shift vs not	Not stated	No	No	No	No*
Nurminen T (1989)[42]	unclear	0.9	(0.7 - 1.1)	Shift work (yes vs no)	Not stated	No	No	No	Yes[§]
Saurel-Cubizolles MJ (1987)[51]	2261	0.8	(0.16 - 2.51)	Night vs day	Trimester 1	No	Yes	Yes	Yes
STANDING									
Cohort studies									
Abeysena C (2010)[68]	690	1.34	(0.71 - 1.81)	Standing/walking ≥4 vs <4 h/d	Trimester 1	No	Yes	No	Yes
Abeysena C (2010)[68]	631	0.80	(0.47 - 3.5)	Standing/walking ≥4 vs <4 h/d	Trimester 2	No	Yes	No	No
Abeysena C (2010)[68]	582	0.80	(0.47 - 1.46)	Standing/walking ≥4 vs <4 h/d	Trimester 3	No	Yes	No	Yes[¶]
Bonzini M (2009)[72]	1318	0.92	(0.49 - 1.70)	Standing/walking ≥4 vs <4 h/d	11 weeks	No	No	No	Yes[§]
Bonzini M (2009)[72]	1287	0.76	(0.39 - 1.49)	Standing/walking ≥4 vs <4 h/d	19 weeks	No	No	No	No
Bonzini M (2009)[72]	797	0.99	(0.39 - 2.51)	Standing/walking ≥4 vs <4 h/d	34 weeks	No	No	No	Yes[¶]
Brink Henriksen T (1995)[18]	4259	1.2	(0.6 - 2.4)	>5 vs 0-2 h/d	16 weeks	No	No	No	Yes[†§]
Hickey CA (1995)[25]	612	1.11	(0.61 - 2.11)	>3 vs ≤3 h/d	24 - 26 weeks	No	No	Yes	No
Klebanoff MA (1990)[29]	7101	1.31	(1.01 - 1.71)	≥8 vs 0 h/d	1 - 5 months	No	No	No	Yes[†§]
Launer LJ (1990)[31]	4168	1.56	(1.04 - 2.6)	Standing vs sitting	Not stated	No	No	No	No
Magann EF (2005)[33]	485	1.64	(0.88 - 3.06)	≥4 vs <4 h/d	Trimester 1	No	No	No	Yes[§]
Misra DP (1998)[40]	1166	1.05	(0.63 - 1.71)	≥3 vs <3 h/d	Trimesters 1 & 2	No	Yes	No	No

Authors (date)	Numbers in analysis	RR (95% CI)		Exposure		Higher potential for		Incomplete reporting	Pooled in meta-analysis
				Comparison	Timing	Bias	Confounding		
Newman RB (2001)[41]	1218	1.69	(1.2 - 2.38)	>3 vs ≤3 h/d	22 - 24 weeks	No	No	No	No
Pompeii LA (2005)[45]	977	1.2	(0.9 - 1.7)	>30 vs 6-15 h/wk	Trimester 1	No	No	Yes	Yes
Pompeii LA (2005)[45]	977	0.9	(0.6 - 1.2)	>30 vs 6-15 h/wk	Trimester 2	No	No	Yes	No
Pompeii LA (2005)[45]	977	1.3	(0.8 – 2.3)	>30 vs 6-15 h/wk	Trimester 3	No	No	Yes	Yes[¶]
Teitelman AM (1990)[59]	708	2.72	(1.24 - 5.95)	Standing still >3 h/d vs continuous active motion	Trimester 1 (mostly)	No	No	No	No
Tuntiseranee P (1998)[60]	1121	0.9	(0.3 - 2.3)	≥5 vs ≤4 h/d	15 - 28 weeks	No	No	No	Yes[†§]
Case-control studies									
Berkowitz GS (1983)[15]	186	1.36	(0.73 - 2.55)	Most/all of the time vs none/little of the time	Not stated	No	Yes	No	No
Croteau A (2007)[76]	5732	1.1	(0.9 - 1.3)	≥7 vs <2 h/d	Trimester 1	No	No	No	Yes[§]
Croteau A (2007)[76]	5732	1.0	(0.7 - 1.5)	≥7 vs <2 h/d	Trimester 1 & 2 but not 3	No	No	No	Yes[¶]
Hartikainen-Sorri AL (1989)[23]	358	1.16	(0.71 - 1.9)	Standing-moving vs not	Not stated	No	Yes	No	No
Luke B (1995)[32]	1470	2.42	(1.37 - 4.62)	>4 vs <4 h/d	Not stated	Yes	No	No	Yes
Ritsmitchai S (1997)[98]	446	0.58	(0.12 – 2.75)	>3 vs <3 h/d	Trimester 1 & 2, but not 3	No	Yes	No	No
Ritsmitchai S (1997)[98]	446	4.10	(1.29- 13.1)	>3 vs <3 h/d	All trimesters	No	Yes	No	No
Rodrigues T (2008)[86]	1328	0.92	(0.66 - 1.30)	Standing vs sitting at work	Any	No	Yes	No	No
Saurel-Cubizolles MJ (2004)[53]	4810	1.26	(1.1 - 1.5)	>6 vs <2 h/d	Trimester 1	No	No	Yes	Yes
Cross-sectional studies									
Arafa MA (2007)[70]	599	1.03	(0.86 - 1.59)	Standing vs sitting at work	Not stated	No	Yes	Yes	No
Ceron-Mireles P (1996)[19]	2429	1.16	(0.89 - 1.51)	>7 vs ≤7 h/d	Not stated	No	No	No	No
Fortier I (1995)[21]	3502	0.88	(0.59 - 1.33)	≥6 vs <3 h/d	Not stated	No	No	No	Yes[§]
Lawson CC (2009)[81]	6750	1.3	(1.0 - 1.7)	Standing/walking ≥9 vs 0-4 h/d	Trimester 1	Yes	No	No	Yes
Mamelle N (1984)[35]	1928	1.6	(1.0 - 1.9)	≥3 vs <3 h/d	Not stated	No	Yes	Yes	No
McDonald AD (1988)[37]	22761	1.07	P>0.05	Standing ≥8 vs <8 h/d	Not stated	No	No	No*	No
Omokhodion FO (2010)[85]	997	1.10	(0.42 – 2.85)	<6 vs ≤6 h/d	Not stated	No	No	No	No
Saurel-Cubizolles MJ (1987)[51]	2269	1.29	(0.85 - 1.94)	Standing (yes vs no)	Trimester 1	No	Yes	Yes	No
Saurel-Cubizolles MJ (1991)[52]	874	1.59	(0.82 - 3.19)	Standing (often/always vs none/sometimes)	Not stated	No	No	Yes	No

h/wk = hours per week; h/d= hours per day
§ contributed both to the overall meta-analysis and to sensitivity analysis

† contributed both to the overall meta-analysis and to meta-analysis of late pregnancy risk
¶ contributed only to meta-analysis of late pregnancy risk
* not pooled as a standard error could not be derived from the published data
Note that the term RR (relative risk) is used generically to encompass a variety of published effect measures (odds ratios, incidence density ratios, hazard ratios etc)

Table S3: Lifting, physical activity and risk of pre-term delivery

Authors (date)	Numbers in analysis	RR (95% CI)		Exposure		Higher potential for		Incomplete reporting
				Comparison	Timing	Bias	Confounding	
LIFTING								
Cohort studies								
Ahlborg GJ (1990)[13]	3389	1.29	(0.69 - 2.4)	≥12 kg >50 x/wk vs none	Not stated	No	No	No
Bonzini M (2009)[72]	1318	0.69	(0.21 - 2.26)	Lifting ≥25 kg by hand	11 weeks	No	No	No
Bonzini M (2009)[72]	1287	1.10	(0.33 - 3.63)	Lifting ≥25 kg by hand	19 weeks	No	No	No
Brink Henriksen T (1995)[18]	3410	0.93	(0.45 - 1.75)	Lifting ≥12 kg ≥10 x/d vs never	16 weeks	No	No	No
Burdorf A (2011)[89]	6302	0.55	(0.32 - 0.95)	>5 kg by hand, often/always vs seldom/never	Not specified	No	No	No
Magann EF (2005)[33]	318	1.14	(0.32 - 3.18)	Lifting ≥11kg >6x/hour	Trimester 1	No	No	No
Misra DP (1998)[40]	1166	1.49	(0.61 - 3.28)	Lifting heavy objects on the job (yes vs no)	Trimesters 1 & 2	No	No	No
Pompeii LA (2005)[45]	1176	1.3	(0.9 - 1.8)	Lifting ≥25 lbs ≥13 vs 0 x/wk	Trimester 1	No	No	No
Pompeii LA (2005)[45]	1176	1.3	((0.8 - 2.1)	Lifting ≥25 lbs ≥13 vs 0 x/wk	Trimester 2	No	No	No
Pompeii LA (2005)[45]	1176	1.3	(0.6 - 2.9)	Lifting ≥25 lbs ≥13 vs 0 x/wk	Trimester 3	No	No	No
Tuntiseranee P (1998)[60]	1108	0.9	(0.4 - 2.1)	>12 kg, 1-10 x/d vs none	15 - 28 weeks	No	No	No
Case-control studies								
Berkowitz GS (1983)[15]	231	0.81	(0.43 - 1.49)	Lifting on the job	Not stated	No	Yes	No
Croteau A (2007)[76]	5732	0.9	(0.8 - 1.1)	≥7 vs 0 kg	Trimester 1	No	No	No
Croteau A (2007)[76]	5732	1.0	(0.7 - 1.4)	≥7 vs 0 kg	Trimester 1 & 2 but not 3	No	No	No
Ritsmitchai S (1997)[98]	446	0.86	(0.39 - 1.89)	>10 kg 3x/d in routine work	Trimester 1 & 2, but not 3	No	Yes	No
Ritsmitchai S (1997)[98]	446	2.91	(1.29 - 6.58)	>10 kg 3x/d in routine work	All trimesters	No	Yes	No
Saurel-Cubizolles MJ (2004)[53]	4786	1.02	(0.8 - 1.2)	Loads carried >20 kg vs none	Trimester 1	No	No	No
Cross-sectional studies								
Fortier I (1995)[21]	3078	0.87	(0.52 - 1.45)	≥10 kg vs none	Not stated	No	No	No
Lawson CC (2009)[81]	6750	1.2	(0.8 - 2.0)	≥16 vs <1 x/d	Trimester 1	Yes	No	No
McDonald AD (1988)[37]	22761	1.25	P<0.01	Lifting heavy weights ≥15 vs <15 x/d	Not stated	No	No	No

Authors (date)	Numbers in analysis	RR (95% CI)		Exposure		Higher potential for		Incomplete reporting
				Comparison	Timing	Bias	Confounding	
Saurel-Cubizolles MJ (1987)[51]	2262	1.35	(0.77 - 2.24)	Carrying of heavy loads (yes vs no)	Trimester 1	No	Yes	No
Saurel-Cubizolles MJ (1991)[52]	874	1.31	(0.64 - 2.58)	Lifting heavy loads (often/always vs none/sometimes)	Not stated	No	No	No
PHYSICAL ACTIVITY								
Cohort studies								
Bell JF (2008)[71]	3389	1.16	(1.03 - 1.30)	Work attribute index - time running/walking/climbing/standing	Not stated	No	No	No
Gisselmann MD (2008)[77]	356887	1.10*	P<0.001	High physical demands vs low	Not stated	No	Yes	No
Hickey CA (1995)[25]	612	0.7	(0.41 - 1.18)	Occupational fatigue score (≥3 vs <3)	24 - 26 weeks	No	No	No
Klebanoff MA (1990)[29]	7100	1.04	(0.76 - 1.42)	Heavy work ≥4 vs 0 h/d	1 - 5 months	No	No	No
Launer LJ (1990)[31]	4168	1.11	(0.77 - 1.62)	Manual vs office work	Not stated	No	No	No
Magann EF (1996)[34]	531	1.26	(0.64 - 2.6)	>2900 vs <2300 kcal/d energy expenditure	16 - 18 weeks	No	Yes	No
Newman RB (2001)[41]	1218	1.17	(1.01 - 1.35)	Physical activity score	22 - 24 weeks	No	No	No
Niedhammer D (2009)[84]	481	1.20	(0.25 -1.86)	Job very physically active vs less	Not stated	No	No	No
Nguyen N (2004)[97]	1709	2.4	(1.8 - 3.3)	Physically demanding work (yes vs, no)	Not stated	No	Yes?	No
Rao S (2003)[48]	508	0.8	(0.4 - 1.6)	High vs low activity	18 weeks	No	No	No
Rao S (2003)[48]	485	1.2	(0.6 - 2.3)	High vs low activity	28 weeks	No	No	No
Stinson JC (2003)[57]	359	1.79	(0.93 - 3.44)	Fatigue score >660 ('severe' vs ≤660) high vs low	22 - 26 weeks	No	No	No
Tuntiseranee P (1998)[60]	346	1.2	(0.4 - 3.8)	High vs low	15 - 28 weeks	No	No	No
Case-control studies								
Al-Dabbagh SA (2006)[69]	400	1.70	(1.02 - 2.84)	Heavy manual work (yes vs no)	Not stated	Yes	Yes?	Yes
Hartikainen-Sorri AL (1989)[23]	358	0.81	(0.46 - 1.43)	Heavy physical loading (yes vs no)	Not stated	No	Yes	No
Jurewicz J (2005)[80]	386	1.7	(0.6 - 5.0)	>1000 vs ≤1000 kcal/shift	Not stated	Yes	Yes	No
Luke B (1995)[32]	1470	1.4	(1.1 - 1.9)	Occupational fatigue score (≥3 vs <3)	Not stated	Yes	No	Yes
Mamelle N (1987)[96]	600	1.1	(0.78 - 1.54)	High vs low exertion	Not stated	No	Yes	Yes

Authors (date)	Numbers in analysis	RR (95% CI)	Exposure		Higher potential for		Incomplete reporting
			Comparison	Timing	Bias	Confounding	
Nelson K (2009)[83]	697	2.07¶ (0.81 - 5.28)	Heavy vs light exertion	Not stated	No	No	No
Rodrigues T (2008)[86]	1328	0.72 (0.29 - 1.81)	High physically demanding job (yes vs no)	Any	No	Yes	No
Cross-sectional studies							
Ceron-Mireles P (1996)[19]	2429	1.25 (0.97 - 1.6)	Job requires physical effort (yes vs no)	Not stated	No	No	No
Di Renzo GC (2011)[90]	7634	1.95 (1.18 - 3.21)	Physical work (vs intellectual)	Not stated	No	Yes	Yes
Fortier I (1995)[21]	1829	0.87 (0.49 - 1.54)	'Important' vs none	Not stated	No	No	No
Homer CJ (1990)[26]	773	2.0 (1.1 - 3.9)	High vs low exertion job	Not stated	No	No	No
Mamelle N (1984)[35]	1928	1.7 (1.1 - 2.0)	High vs low exertion	Not stated	No	Yes	No
McDonald AD (1988)[37]	22761	1.10 P>0.05	Great physical effort (yes vs no)	Not stated	No	No	No
Meyer (2007)[82]	26408	1.04 (0.93 - 1.15)	Highest physical demands (JCQ)	Not stated	No	No	No
Meyer (2007)[82]	26408	1.09 (0.98 - 1.22)	Highest physical demands (O*NET)	Not stated	No	No	No
Nurminen T (1989)[43]	675	1.4 (1.1 - 1.7)	Work with a moderate physical load vs sedentary	Trimester 3	No	No	No
Omokhodion FO (2010)[85]	974	1.52 (0.97 - 2.39)	Physical exertion (yes vs no)	Not stated	No	No	No
Peoples-Sheps MD (1991)[44]	535	1.1 (0.6 - 2.1)	High vs low strength requirement	Not stated	No	No	No
Ramirez G (1990)[47]	1960	1.75 (1.12 - 2.75)	Very heavy vs low physical demands	Not stated	No	No	Yes
Saurel-Cubizolles MJ (1985)[50]	580	4.11 (2.15 - 7.78)	Activity score (2/3 vs 0/1 strenuous items)	Not stated	No	Yes	No
Saurel-Cubizolles MJ (1987)[51]	2262	2.13 (1.16 - 3.76)	Activity score (3/4 items vs none)	Trimester 1	No	Yes	No
Saurel-Cubizolles MJ (1991)[52]	874	1.2 (0.5 - 2.5)	Activity score (2/3 vs 0/1 items)	Not stated	No	No	No

x/wk = times per week; x/day = times per day

JCQ – Job Content Questionnaire; O*NET – O*Net Resource Center directory of job attributes

¶ OR for preterm delivery (<37 wks) – also presented were premature rupture of membranes (OR 0.86, 95%CI 0.322-3.27) and very preterm delivery (<32 wks) (for which the scope for inflationary bias is rated higher - OR 4.57, 95%CI 1.65-12.64)

* delivery at <37 wks; for <32 wks the corresponding figure was 1.08 (P>0.05)

RR (relative risk) is used generically to encompass a variety of published effect measures (odds ratios, incidence density ratios, hazard ratios etc)

Table S4: Occupational activity and risk of being small-for-gestational age at delivery

Authors (date)	Numbers in analysis	RR (95% CI)	Exposure		Higher potential for		Incomplete reporting	Pooled in meta-analysis
			Comparison	Timing	Bias	Confounding		
WEEKLY WORKING HOURS								
Cohort studies								
Bell JF (2008)[71]	3389	1.06 (0.75 - 1.48)	≥40 vs <40 h/w	Not stated	No	Yes	No	Yes
Bonzini M (2009)[72]	1318	1.11 (0.66 - 1.88)	≥40 vs <40 h/wk	11 weeks	No	No	No	Yes[§]
Bonzini M (2009)[72]	1287	1.19 (0.70 - 2.01)	≥40 vs <40 h/wk	19 weeks	No	No	No	No
Bonzini M (2009)[72]	797	1.29 (0.67 - 2.47)	≥40 vs <40 h/wk	34 weeks	No	No	No	Yes[¶]
Jansen PW (2010)[79]	4403	1.01 (0.73 - 1.39)	≥40 vs 1-24 h/wk	≥25 weeks	No	No	No	Yes[†§]
Niedhammer D (2009)[84]	479	1.42 (0.58 - 3.51)	≥40 vs 40 h/wk	Not stated	No	No	No	Yes[§]
Pompeii LA (2005)[45]	1037	1.1 (0.7 – 1.7)	>46 vs 35-45 h/wk	Trimester 1	No	No	No	No
Pompeii LA (2005)[45]	1037	1.0 (0.6 - 1.8)	>46 vs 35-45 h/wk	Trimester 2	No	No	No	No
Tuntiseranee P (1998)[60]	886	2.1 (0.6 - 7.0)	≥61 vs ≤50 h/wk	15 - 28 weeks	No	Yes	No	No
Vrijkotte TGM (2009)[88]	7135	1.1 (0.8 - 1.5)	≥32 vs 8-23 h/wk	Trimester 1	No	No	No	No
Cross-sectional studies								
Bodin L (1999)[16]	1685	1.1 (0.7 - 1.9)	≥36 vs 21-35 h/wk	Trimester 2	No	Yes	No	No
Ceron-Mireles P (1996)[19]	2406	1.59 (1.14 - 2.22)	>50 vs 3-25 h/wk	Not stated	No	Yes	No	Yes
Fortier I (1995)[21]	1833	0.99 (0.7 - 1.39)	≥40 vs <30 h/wk	Not stated	No	No	No	Yes[§]
Klebanoff MA (1990)[28]	989	0.9 (0.6 - 1.3)	Residents (>100 h) vs others	Any	No	No	No	No
Savitz DA (1996)[54]	589	0.8 (0.6 - 1.2)	≥40 vs no paid work	5 months	No	No	No	Yes[†§]
Case-control studies								
Croteau A (2006)[75]	5905	1.0 (0.8 - 1.1)	≥40 vs 20-34 h/wk	Trimester 1	No	No	No	Yes[§]
Croteau A (2006)[75]	5905	1.1 (0.8 -1.5)	≥40 vs 20-34 h/wk	Trimester 1 & 2 but not 3	No	No	No	Yes[¶]
Spinillo (1995)[56]	513	1.62 (0.93 - 2.85)	≥30 vs >30 h/wk	Trimester 2 & 3	No	No	No	No
SHIFT WORK								
Cohort studies								
Abeysena C (2009)[66]	690	1.47 (0.81 - 2.67)	Shifts + exposure to physical/ chemical hazards at work vs not	Trimester 1	No	Yes	No	No
Abeysena C (2009)[66]	600	2.25 (0.99 - 5.07)	Shifts + exposure to physical/ chemical hazards at work vs not	Trimester 2	Yes?	Yes	No	No

Authors (date)	Numbers in analysis	RR (95% CI)		Exposure		Higher potential for		Incomplete reporting	Pooled in meta-analysis
				Comparison	Timing	Bias	Confounding		
Abeysena C (2009)[66]	550	3.31	(1.34 - 8.15)	Shifts + exposure to physical/ chemical hazards at work vs not	Trimester 3	Yes?	Yes	No	No
Bonzini M (2009)[72]	1318	0.92	(0.43 - 1.97)	Night shifts (yes vs no)	11 weeks	No	No	No	Yes§
Bonzini M (2009)[72]	1287	0.92	(0.41 - 2.06)	Night shifts (yes vs no)	19 weeks	No	No	No	Yes¶
Niedhammer D (2009)[84]	479	1.32	(0.50 - 3.46)	Shifts vs none	Not stated	No	No	No	Yes§
Pompeii LA (2005)[45]	1796	1.3	(0.8 - 2.2)	Regular night work (yes vs no)	Trimester 1	No	No	No	Yes§
Pompeii LA (2005)[45]	1796	1.4	(0.9 - 2.4)	Regular night work (yes vs no)	Trimester 2	No	No	No	Yes¶
Zhu JL (2004)[64]	35662	1.07	(0.94 - 1.21)	Rotating shift work vs daytime work	Trimesters 1 & 2	No	No	No	Yes†§
Cross-sectional studies									
Arafa MA (2007)[70]	730	1.96	(0.73 - 4.75)	Shifts vs mornings only	Not stated	No	Yes	Yes	Yes
Bodin L (1999)[16]	1685	0.8	(0.4 - 1.8)	Night vs day	Trimester 2	No	Yes	No	Yes†
Fortier I (1995)[21]	4118	0.98	(0.75 - 1.27)	Shift work vs day only	Not stated	No	No	No	Yes§
Hanke W (1999)[22]	1064	1.0	(0.19 - 3.26)	Shift work (yes vs no)	Not stated	No	No	No	Yes§
Nurminen T (1989)[42]	738	1.5	(1.0 - 2.4)	Shift work (yes vs no)	'Most of pregnancy'	No	Yes	No	Yes
Case-control studies									
Croteau A (2006)[75]	5905	0.8	(0.7 - 1.0)	Night shifts (yes vs no)	Trimester 1	No	No	No	Yes§
Croteau A (2006)[75]	5905	0.7	(0.4 - 1.1)	Night shifts (yes vs no)	Trimesters 1 & 2, not 3	No	No	No	Yes¶
Croteau A (2006)[75]	5905	1.2	(1.0 - 1.4)	Shift work vs regular work	Trimester 1	No	No	No	No
Croteau A (2006)[75]	5905	1.5	(1.0 - 2.1)	Shift work vs regular work	Trimesters 1 & 2, not 3	No	No	No	No
LIFTING									
Cohort studies									
Ahlborg GJ (1990)[13]	3389	0.65	(0.24 - 1.77)	≥12 kg >50 x/wk vs none	Not stated	No	No	No	-
Bonzini M (2009)[72]	1318	1.09	(0.53 - 2.27)	Lifting ≥25 kg by hand	11 weeks	No	No	No	-
Bonzini M (2009)[72]	1287	1.06	(0.44 - 2.55)	Lifting ≥25 kg by hand	19 weeks	No	No	No	-
Magann EF (2005)[33]	485	0.81	(0.47 – 1.41)	≥4 vs <4 h/d	Trimester 1	No	No	No	-
Magann EF (2005)[33]	318	0.59	(0.20 – 1.74)	Lifting ≥11kg >6x/hour	Trimester 1	No	No	No	-
Pompeii LA (2005)[45]	1176	1.2	(0.7 – 2.0)	Lifting ≥25 lbs ≥13 vs 0 x/wk	Trimester 1	No	No	No	-
Pompeii LA (2005)[45]	1176	1.2	((0.6 - 2.2)	Lifting ≥25 lbs ≥13 vs 0 x/wk	Trimester 2	No	No	No	-
Tuntiseranee P (1998)[60]	1108	0.5	(0.1 - 1.7)	>12 kg, 1-10 x/d vs none	15 - 28 weeks	No	Yes	No	-

Authors (date)	Numbers in analysis	RR (95% CI)	Exposure		Higher potential for		Incomplete reporting	Pooled in meta-analysis
			Comparison	Timing	Bias	Confounding		
Cross-sectional studies								
Fortier I (1995)[21]	3078	1.03 (0.71 - 1.51)	≥10 kg vs none	Not stated	No	No	No	-
Case-control studies								
Croteau A (2006)[75]	5905	1.0 (0.9 - 1.2)	≥7 vs 0 kg	Trimester 1	Yes	No	No	-
Croteau A (2006)[75]	5905	1.2 (0.9 - 1.6)	≥7 vs 0 kg	Trimesters 1 & 2, not 3	Yes	No	No	-
STANDING								
Cohort studies								
Abeysena C (2009)[66]	690	0.93 (0.61 - 1.40)	Standing/walking≥4 vs <4 h/d	Trimester 1	No	Yes	No	Yes
Abeysena C (2009)[66]	600	1.26 (0.79 - 2.02)	Standing/walking≥4 vs <4 h/d	Trimester 2	No	Yes	No	No
Abeysena C (2009)[66]	550	0.88 (0.55 - 1.44)	Standing/walking≥4 vs <4 h/d	Trimester 3	No	Yes	No	Yes[¶]
Bonzini M (2009)[72]	1287	1.06 (0.67 - 1.69)	Standing/walking ≥4 vs <4 h/d	19 weeks	No	No	No	Yes[§]
Bonzini M (2009)[72]	797	0.86 (0.45 - 1.64)	Standing/walking ≥4 vs <4 h/d	34 weeks	No	No	No	Yes[¶]
Launer LJ (1990)[31]	5035	1.21 (1.02 - 1.44)	Standing vs sitting	Not stated	No	Yes	No	No
Pompeii LA (2005)[45]	977	1.1 (0.7 - 1.7)	>30 h/w vs 6-15 h/w	Trimester 1	No	No	No	Yes[§]
Pompeii LA (2005)[45]	977	1.0 (0.6 - 1.5)	>30 h/w vs 6-15 h/w	Trimester 2	No	No	No	Yes[¶]
Tuntiseranee P (1998)[60]	1121	2.0 (0.7 - 5.4)	≥5 vs ≤4 h/d	15 - 28 weeks	No	Yes	No	Yes[†§]
Vrijkotte TGM (2009)[88]	7055	1.0 (0.8 - 1.4)	Standing/walking ≥4 vs <2.5 h/d	Trimester 1	No	No	No	Yes[§]
Cross-sectional studies								
Ceron-Mireles P (1996)[19]	2379	1.4 (1.03 - 1.91)	>7 vs ≤7 h/d	Not stated	No	Yes	No	No
Fortier I (1995)[21]	3502	1.42 (1.02 - 1.95)	≥6 vs <3 h/d	Not stated	No	No	No	Yes[§]
Hanke W (1999)[22]	1064	0.89 (0.48 - 1.62)	Mostly standing posture at work (yes vs no)	Not stated	No	No	No	No
Nurminen T (1989)[43]	676	1.0 (0.4 - 2.3)	Standing work vs sedentary	Trimester 3	No	Yes	No	No
Case-control studies								
Croteau A (2006)[75]	5905	1.0 (0.8 - 1.2)	≥7 vs <2 h/d	Trimester 1	Yes	No	No	Yes
Croteau A (2006)[75]	5905	0.9 (0.6 - 1.3)	≥7 vs <2 h/d	Trimesters 1 & 2, not 3	Yes	No	No	Yes[¶]
Spinillo (1995)[56]	513	1.65 (0.90 - 3.03)	Standing/walking vs sitting	Trimester 2 & 3	Yes	No	No	No
PHYSICAL ACTIVITY								

Authors (date)	Numbers in analysis	RR (95% CI)	Exposure		Higher potential for		Incomplete reporting	Pooled in meta-analysis
			Comparison	Timing	Bias	Confounding		
Cohort studies								
Bell JF (2008)[71]	3389	1.03 (0.91 - 1.17)	Work attribute index - running/ walking/climbing/standing time	Not stated	No	No	No	-
Gisselmann MD (2008)[77]	354389	0.97 P>0.05	High physical demands vs low	Not stated	No	Yes	No	-
Gollenberg AL (2011)[91]	1040	0.76 (0.46 - 1.25)	Third vs first quartile (occupational activity composite)	Trimester 1	No	No	No	-
Gollenberg AL (2011)[91]	1040	0.79 (0.47 - 1.34)	Third vs first quartile (occupational activity composite)	Trimester 2	No	No	No	-
Launer LJ (1990)[31]	5035	1.32 (1.12 - 1.56)	Manual vs office work	Not stated	No	Yes	No	-
Magann EF (1996)[34]	531	0.8 (0.42 - 1.45)	>2900 vs <2300 kcal/d energy expenditure	16 - 18 weeks	No	Yes	No	-
Niedhammer D (2009)[84]	479	1.44 (0.53 -3.86)	Job very physically active vs less	Not stated	No	No	No	-
Tuntiseranee P (1998)[60]	346	0.7 (0.2 - 3.2)	High vs low	15 - 28 weeks	No	Yes	No	-
Vrijkotte TGM (2009)[88]	7103	1.2 (0.9 - 1.7)	High vs low physical workload	Trimester 1	No	No	No	-
Cross-sectional studies								
Ceron-Mireles P (1996)[19]	2379	1.4 (1.03 - 1.91)	>7 vs ≤7 h/d	Not stated	No	Yes	No	-
Fortier I (1995)[21]	1829	0.87 (0.56 - 1.35)	'Important' vs none	Not stated	No	No	No	-
Hanke W (1999)[22]	1064	0.89 (0.48 - 1.62)	Mostly standing posture at work (yes vs no)	Not stated	No	No	No	-
Nurminen T (1989)[43]	524	2.4 (1.3 - 4.6)	Work with a moderate physical load vs sedentary	Trimester 3	No	Yes	No	-
Case control studies								
Spinillo (1995)[56]	513	2.40 (1.36 - 4.21)	Moderate/heavy vs light physical effort at work	Trimester 2 & 3	Yes	No	No	-

h/wk = hours per week; h/d= hours per day; x/wk = times per week
RR (relative risk) is used generically to encompass a variety of published effect measures (odds ratios, incidence density ratios, hazard ratios etc)
§ contributed both to the overall meta-analysis and to sensitivity analysis
† contributed both to the overall meta-analysis and to meta-analysis of late pregnancy risk
¶ contributed only to meta-analysis of late pregnancy risk

Table S5: Risk of low birthweight and very low birthweight and pattern of occupational activity

Authors (date)	Outcome	Numbers in analysis	RR (95% CI)	Exposure		Higher potential for		Incomplete reporting
				Comparison	Timing	Bias	Confounding*	
WEEKLY WORKING HOURS								
Cohort studies								
Hatch M (1997) [24]	LBW	188	1.2 (0.5 - 2.3)	>40 vs ≤20 h/wk	Trimester 1	No	No	No
Hatch M (1997) [24]	LBW	148	1.1 (0.4 - 3.2)	>40 vs ≤20 h/wk	Trimester 2	No	No	No
Hatch M (1997) [24]	LBW	122	1.7 (0.6 - 5.0)	>40 vs ≤20 h/wk	Trimester 3	No	No	No
Niedhammer D (2009)[84]	LBW	538	1.80 (0.56 - 5.80)	≥40 vs <40 h/wk	Not stated	No	No	No
Tuntiseranee P (1998)[60]	LBW	886	1.2 (0.6 - 2.3)	≥61 vs ≤50 h/wk	15 - 28 weeks	No	Yes	No
Cross-sectional studies								
Bodin L (1999)[16]	LBW	1685	1.5 (0.7 - 3.1)	≥36 vs 21-35 h/wk	Trimester 2	No	Yes	No
McDonald AD (1988)[37]	LBW	unclear	1.24 P<0.05	≥46 vs <46 h/wk	Not stated	No	No	No
Peoples-Sheps MD (1991)[44]	LBW	2379	1.7 (1.03 - 2.68)	≥40 vs 21-39 h/wk	Not stated	No	Yes	No
Saurel-Cubizolles MJ (1987)[51]	LBW	2375	0.96 (0.42 - 1.95)	≥42 vs <42 h/wk	Trimester 1	No	Yes	Yes
Savitz DA (1996)[54]	MLB	768	0.9 (0.8 - 1.1)	≥40 vs no paid work	5 months	No	No	No
Savitz DA (1996)[54]	VLB	696	0.9 (0.7 - 1.0)	≥40 vs no paid work	5 months	No	No	No
Case-control studies								
Herdt-Losavio ML (2011)[92]	LBW	283	1.43 (0.82 - 2.49)	>30 vs ≤30 h/wk	Not specified	Yes	No	No
SHIFT WORK								
Cohort studies								
Abeysena C (2010)[67]	LBW	739	1.13 (0.56 - 2.39)	Shifts + exposure to physical/ chemical hazards at work vs not	Trimester 1	No	Yes	No
Abeysena C (2010)[67]	LBW	633	1.47 (0.55 - 3.93)	Shifts + exposure to physical/ chemical hazards at work vs not	Trimester 2	No	Yes	No
Abeysena C (2010)[67]	LBW	583	0.71 (0.16 - 3.07)	Shifts + exposure to physical/ chemical hazards at work vs not	Trimester 3	No	Yes	No
Abeysena C (2010)[67]	<5th c SGA	690	1.50 (0.48 - 1.40)	Shifts + exposure to physical/ chemical hazards at work vs not	Trimester 1	No	Yes	No
Abeysena C (2010)[67]	<5th c SGA	600	3.38 (1.38 - 8.29)	Shifts + exposure to physical/ chemical hazards at work vs not	Trimester 2	Yes?	Yes	No

Authors (date)	Outcome	Numbers in analysis	RR (95% CI)		Exposure		Higher potential for		Incomplete reporting
					Comparison	Timing	Bias	Confounding*	
Abeysena C (2010)[67]	<5th c SGA	530	3.51	(1.23 - 9.99)	Shifts + exposure to physical/ chemical hazards at work vs not	Trimester 3	Yes?	Yes	No
Niedhammer D (2009)[84]	LBW	538	0.92	(0.26 - 3.26)	Shift work vs none	Not stated	No	No	No
Xu X (1994)[63]	LBW	887	2.1	(1.1 - 4.1)	Rotating shift work (yes vs no)	Not stated	No	No	No
Zhu JL (2004)[64]	LBW	35662	1.02	(0.68 - 1.51)	Rotating shift work vs daytime work	Trimesters 1 & 2	No	No	No
Cross-sectional studies									
Bodin L (1999)[16]	LBW	1685	1.9	(0.6 - 5.8)	Night vs day	Trimester 2	No	Yes	No
McDonald AD (1988)[37]	LBW	unclear	1.38	P<0.01	Changing shift vs not	Not stated	No	No	No
Saurel-Cubizolles MJ (1987)[51]	LBW	2392	1.28	(0.4 - 3.21)	Night vs day	Trimester 1	No	Yes	Yes
LIFTING									
Cohort studies									
Ahlborg GJ (1990)[13]	LBW	3389	0.7	(0.29 - 1.68)	≥12 kg >50 x/wk vs none	Not stated	No	No	No
Burdorf A (2011)[89]	LBW	6201	0.75	(0.32 - 0.95)	>5 kg by hand, often/always vs. seldom/never	Not specified	No	No	No
Hatch M (1997) [24]	LBW	569	0.6	(0.3 - 1.1)	High vs low	Trimester 1	No	No	No
Hatch M (1997) [24]	LBW	513	1.1	(0.6 - 2.1)	High vs low	Trimester 2	No	No	No
Hatch M (1997) [24]	LBW	479	1.3	(0.7 - 2.6)	High vs low	Trimester 3	No	No	No
Tuntiseranee P (1998)[60]	LBW	1108	0.5	(0.2 - 1.2)	>12 kg, 1-10 x/d vs none	15 - 28 weeks	No	Yes	No
Case-control studies									
Schramm WF (1996)[55]	MLB	1582	0.92	(0.8 - 1.14)	Carrying of loads >9 kg on most days (yes vs no)	'On most days'	No	Yes	No
Schramm WF (1996)[55]	VLB	1560	0.85	(0.69 - 1.04)	Carrying of loads >9 kg on most days (yes vs no)	'On most days'	Yes	Yes	No
Cross-sectional studies									
McDonald AD (1988)[37]	LBW	unclear	1.26	P<0.01	Lifting heavy weights ≥15 vs <15x/d	Not stated	No	No	No
Saurel-Cubizolles MJ (1987)[51]	LBW	2391	1.13	(0.74 - 1.71)	Carrying of heavy loads (yes vs no)	Trimester 1	No	Yes	Yes
Wergeland E (1998) [62]	LBW	1542	2.4	(1.3 - 4.4)	Lifting heavy loads (10-20 kg) (yes vs no)	Trimester 1	No	No	No
STANDING									

Authors (date)	Outcome	Numbers in analysis	RR (95% CI)		Exposure		Higher potential for		Incomplete reporting
					Comparison	Timing	Bias	Confounding*	
Cohort studies									
Abeysena C (2010)[67]	LBW	739	0.72	(0.46 - 1.14)	Standing/walking ≥4 vs 4 h/d	Trimester 1	No	Yes	No
Abeysena C (2010)[67]	LBW	633	1.60	(0.90 - 2.84)	Standing/walking ≥4 vs 4 h/d	Trimester 2	No	Yes	No
Abeysena C (2010)[67]	LBW	583	1.28	(0.71 - 2.31)	Standing/walking ≥4 vs 4 h/d	Trimester 3	No	Yes	No
Abeysena C (2010)[67]	<5th c SGA	690	0.82	(0.48 - 1.40)	Standing/walking ≥4 vs 4 h/d	Trimester 1	No	Yes	No
Abeysena C (2010)[67]	<5th c SGA	600	0.91	(0.50 - 1.63)	Standing/walking ≥4 vs 4 h/d	Trimester 2	Yes?	Yes	No
Abeysena C (2010)[67]	<5th c SGA	550	0.60	(0.31 - 1.11)	Standing/walking ≥4 vs 4 h/d	Trimester 3	Yes?	Yes	No
Hatch M (1997) [24]	LBW	569	0.7	(0.3 - 1.3)	≥8 vs <8 h/d	Trimester 1	No	No	No
Hatch M (1997) [24]	LBW	511	0.7	(0.3 - 1.6)	≥8 vs <8 h/d	Trimester 2	No	No	No
Hatch M (1997) [24]	LBW	477	0.7	(0.3 - 1.6)	≥8 vs <8 h/d	Trimester 3	No	No	No
Teitelman AM (1990)[59]	LBW	708	1.58	(0.51 - 4.94)	Standing still >3 h/d vs continuous active motion	Trimester 1 (mostly)	No	No	No
Tuntiseranee P (1998)[60]	LBW	1121	1.6	(0.8 - 16.5)	≥5 vs ≤4 h/d	15 - 28 weeks	No	Yes	No
Case-control studies									
Meyer BA (1985)[39]	LBW	5822	1.19	(0.96 - 1.48)	Standing vs sitting	Not stated	No	Yes	No
Schramm WF (1996)[55]	MLB	1582	1.06	(0.86 - 1.31)	>3 vs ≤3 h/d	'On most days'	No	Yes	No
Schramm WF (1996)[55]	VLB	1560	1.01	(0.82 - 1.24)	>3 vs ≤3 h/d	'On most days'	Yes	Yes	No
Cross-sectional studies									
McDonald AD (1988)[37]	LBW	-	1.02	P>0.05	Standing ≥8 vs <8 h/d	Not stated	No	No	No
Omokhodion FO (2010)[85]	LBW	993	1.92	(0.79 - 4.7)	<6 vs ≤6 h/d	Not stated	No	No	No
Saurel-Cubizolles MJ (1987)[51]	LBW	2400	1.13	(0.73 - 1.72)	Standing (yes vs no)	Trimester 1	No	Yes	Yes
Wergeland E (1998)[62]	LBW	1542	0.5	(0.3 - 1.0)	Standing/walking (yes vs no)	Trimester 1	No	No	No
PHYSICAL ACTIVITY									
Cohort studies									
Gisselmann MD (2008)[77]	LBW	355734	1.06	P<0.05	High physical demands vs low	Not stated	No	Yes	No
Gisselmann MD (2008)[77]	VLB	355734	1.06	P>0.05	High physical demands vs low	Not stated	No	Yes	No
Niedhammer D (2009)[84]	LBW	538	4.32	(1.24 - 15.0)	Job v physically active vs. less	Not stated	No	No	No
Tuntiseranee P (1998)[60]	LBW	346	1.1	(0.5 - 5.0)	High vs low	15 - 28 weeks	No	Yes	No
Cross-sectional studies									
Homer CJ (1990)[26]	LBW	773	2.7	(1.5 - 4.8)	High vs low exertion job	Not stated	No	No	No
McDonald AD (1988)[37]	LBW	unclear	1.02	P>0.05	Great physical effort (Yes vs No)	Not stated	No	No	No

Authors (date)	Outcome	Numbers in analysis	RR (95% CI)		Exposure		Higher potential for		Incomplete reporting
					Comparison	Timing	Bias	Confounding*	
Meyer (2007)[82]	LBW	26408	0.99	(0.87 - 1.13)	Highest physical demands (JCQ)	Not stated	No	No	No
Meyer (2007)[82]	LBW	26408	1.13	(0.99 - 1.29)	Highest physical demands (O*NET)	Not stated	No	No	No
Omokhodion FO (2010)[85]	LBW	993	1.43	(0.88 - 2.34)	Physical exertion (yes vs no)	Not stated	No	No	No
Peoples-Sheps MD (1991)[44]	LBW	502	0.6	(0.1 - 2.2)	High vs low strength requirement	Not stated	No	Yes	Yes
Saurel-Cubizolles MJ (1985)[50]	LBW	587	1.64	(0.65 - 3.79)	Activity score (2/3 vs 0/1 strenuous items	Not stated	No	Yes	No
Saurel-Cubizolles MJ (1987)[51]	LBW	2389	1.95	(1.1 - 3.34)	Activity score (3/4 items vs none)	Trimester 1	No	Yes	Yes

LBW - low birthweight
MLB - moderately low birthweight
VLB - very low birthweight
RR – measure of relative risk
<5th c SGA – below the 5th centile after allowing for gestational age

* As described in the text, risk estimates were classified as having a higher potential for confounding if they did not take account both of smoking and at least one of: socioeconomic status, maternal height, or pre-pregnancy weight. Additionally, outcomes in this table do not allow for gestational age.

Table S6: Mean differences in birthweight by pattern of occupational activity

Authors (date)	Numbers in analysis	Mean difference (grams) (95% CI)	Exposure		Higher potential for		Incomplete reporting
			Comparison	Timing	Bias	Confounding*	
WEEKLY WORKING HOURS							
Cohort studies							
Hatch M (1997) [24]	188	-70.8 (-201.7 to 60.1)	>40 vs ≤20	Trimester 1	No	No	No
Hatch M (1997) [24]	148	-57 (-203.2 to 89.2)	>40 vs ≤20	Trimester 2	No	No	No
Hatch M (1997) [24]	122	-82.2 (-238 to 73.6)	>40 vs ≤20	Trimester 3	No	No	No
Jansen PW (2010)[79]	4408	-45 (-89 to -1)	>40 vs 1-24 h/wk	>25 weeks	No	No	No
Vrijkotte TGM (2009)[88]	7135	-43 (-80 to -6)	>32 vs 8-23 h/wk	Trimester 1	No	No	No
Cross-sectional studies							
Bodin L (1999)[16]	1685	-60 (-112 to -8)	≥36 vs 21 - 35)	Trimester 2	No	No	No
Klebanoff MA (1990)[28]	989	-32 -	residents (>100 h) vs others	Any	No	Yes	No
Lima M (1999)[95]	250	-70 (-198 to 70)	≥30 vs 9-29 h/wk	Trimester 2 & 3	No	Yes	No
Wergeland E (1998)[62]	3159	-84 (-124 to -44)	≥35 vs <35	Trimester 1	No	Yes	No
SHIFT WORK							
Cohort studies							
Both MI (2010)[73]	8879	27.6 (11.8 to 43.5)	Night shifts vs not	Trimester 2	No	No	No
Both MI (2010)[73]	8879	91.4 (-15.0 to 197.8)	Night shifts vs not	Trimester 3	No	No	No
Both MI (2010)[73]	~11720	1.7 (-12.8 to 16.2)	Shifts vs not	Trimester 2	No	No	No
Both MI (2010)[73]	~11720	45.5 (-10.3 to 101.3)	Shifts vs not	Trimester 3	No	No	No
Xu X (1994)[63]	887	-79 (-161 to 3)	Rotating shift vs not	Not stated	No	Yes	No
Zhu JL (2004)[64]	35662	10 (-8 to 28)	Rotating shift work vs daytime work	Trimesters 1 & 2	No	Yes	No
Cross-sectional studies							
Axelsson G (1989)[14]	52	-312 (-705 to 81)	Rotating shift vs days, birth order 2 non-smokers	Trimesters 2 & 3	No	Yes	Yes
Axelsson G (1989)[14]	67	195 (-169 to 559)	Rotating shift vs days, birth order 1 non-smoker	Trimesters 2 & 3	No	Yes	Yes
Axelsson G (1989)[14]	25	-421 (-1043 to 202)	Rotating shift vs days, birth order 2 smokers	Trimesters 2 & 3	No	Yes	Yes
Axelsson G (1989)[14]	58	-438 (-996 to 90)	Rotating shift vs days, birth	Trimesters 2 & 3	No	Yes	Yes

Authors (date)	Numbers in analysis	Mean difference (grams) (95% CI)	Exposure		Higher potential for		Incomplete reporting
			Comparison	Timing	Bias	Confounding*	
			order 1 smoker				
Bodin L (1999)[16]	1685	36 (-46 to 119)	Night vs day shift	Trimester 2	No	Yes	No
Bodin L (1999)[16]	1685	39 (-45 to 123)	Three shifts vs day	Trimester 2	No	Yes	No
Lin YC (2011)[93]	101	-273 (-431 to -116)	Day-night rotating shifts (persistent vs. never)	Not stated	No	Yes	Yes
LIFTING							
Cohort studies							
Florack E (1995)[20]	128	-21 (-209 to 167)	≥1 vs <1 h/d	Pre-pregnancy	No	No	Yes
Hatch M (1997) [24]	569	18.9 (-69.8 to 107.7)	High vs low	Trimester 1	No	No	No
Hatch M (1997) [24]	513	-44.8 (-147.1 to 57.5)	High vs low	Trimester 2	No	No	No
Hatch M (1997) [24]	479	-23.6 (-135.7 to 88.5)	High vs low	Trimester 3	No	No	No
Cross-sectional studies							
Wergeland E (1998)[62]	3274	11 (-34 to 56)	Lifting heavy loads (10 - 20 kg) (yes vs no)	Trimester 1	No	Yes	No
STANDING							
Cohort studies							
Brink-Henriksen T (1995)[17]	4249	-40 (-107 to 27)	≥4 vs <4 h/d uninterrupted	16 weeks	No	No	No
Brink-Henriksen T (1995)[17]	4249	-49 (-108 to 10)	>5 vs ≤2 h/d	16 weeks	No	No	No
Hatch M (1997) [24]	569	1.8 (-98.4 to 102)	≥8 vs <8 h/d	Trimester 1	No	No	No
Hatch M (1997) [24]	511	-0.8 (-123.5 to 121.9)	≥8 vs <8 h/d	Trimester 2	No	No	No
Hatch M (1997) [24]	477	-30.7 (-149.5 to 88.1)	≥8 vs <8 h/d	Trimester 3	No	No	No
Klebanoff MA (1990)[29]	7101	-32 -	≥8 vs 0 h/d	1 - 5 months	No	No	No
Teitelman AM (1990)[59]	708	-24.7 (-111.6 to -62.2)	Standing still >3 h/d vs continuous active motion	Trimester 1 (mostly)	No	No	No
Vrijkotte TGM (2009)[88]	7055	-18 (-55 to 19)	Standing/walking ≥4 vs <2.5 h/d	Trimester 1	No	No	No
Cross-sectional studies							
Ha E (2002)[94]	950	-27.8 (-87.2 to 31.6)	Standing ≥3 vs < 3 h/d	Not stated	No	Yes	No
Wergeland E (1998)[62]	3284	20 (-20 to 60)	Standing/walking (yes vs no)	Trimester 1	No	Yes	No

Authors (date)	Numbers in analysis	Mean difference (grams) (95% CI)		Exposure		Higher potential for		Incomplete reporting
				Comparison	Timing	Bias	Confounding*	
Zuckerman (1986)[65]	942	2	-	Standing at work (yes vs no)	Trimester 3	No	Yes	Yes
PHYSICAL ACTIVITY								
Cohort studies								
Florack E (1995)[20]	128	-60	(-256 to 136)	High vs low intensity score	6 - 22 wks	No	No	Yes
Florack E (1995)[20]	118	-58	(-236 to 120)	High vs low intrensity score	23 - 30 wks	No	No	Yes
Florack E (1995)[20]	98	-67	(-265 to 131)	High vs low intensity score	31 - 40 weeks	No	No	Yes
Hatch M (1997) [24]	569	-49.6	(-177.4 to 78.2)	High vs low	Trimester 1	No	No	No
Hatch M (1997) [24]	511	-21.6	(-179.6 to 136.4)	High vs low	Trimester 2	No	No	No
Hatch M (1997) [24]	477	-51.7	(-216.3 to 112.9)	High vs low	Trimester 3	No	No	No
Klebanoff MA (1990)[29]	7100	51	-	Heavy work vs not	1 - 5 months	No	No	No
Magann EF (1996)[34]	531	183	(40 to 326)	>2900 vs <2300 kcal/d energy expenditure	16 - 18 weeks	No	Yes	No
Rao S (2003)[48]	433	-111	(-155 to -67)	High vs low activity (farming)	18 weeks	No	Yes	No
Vrijkotte TGM (2009)[88]	7055	-21	(-64 to 22)	High vs low physical workload	Trimester 1	No	No	No
Cross-sectional studies								
Homer CJ (1990)[26]	773	-160	(-230 to -89)	High vs low exertion	Not stated	No	No	No
Tafari N (1980)[58]	41	-204	(-424 to 16)	Hard vs light work, maternal wt <49 kg	Not stated	No	Yes	Yes
Tafari N (1980)[58]	61	-164	(-344 to 16)	Hard vs light work, maternal wt 49 - 58 kg	Not stated	No	Yes	Yes
Tafari N (1980)[58]	28	-216	(-605 to 173)	Hard vs light work, maternal wt >58 kg	Not stated	No	No	Yes

* As described in the text, risk estimates were classified as having a higher potential for confounding if they did not take account both of smoking and at least one of: socioeconomic status, maternal height, or pre-pregnancy weight. Additionally, we sought evidence that account was taken of gestational age.

Table S7: Occupational activity and the risks of pre-eclampsia and pregnancy-induced hypertension

Authors (date)	Outcome	Numbers in analysis	RR (95% CI)	Exposure		Higher potential for		Incomplete reporting
				Comparison	Timing	Bias	Confounding	
WEEKLY WORKING HOURS								
Cohort studies								
Landsbergis PA (1996)[30]	PIH	575	1.1 (0.2 - 5.7)	41-49 vs <35 h/wk	Trimester 1	No	No	No
Jansen PW (2010)[79]	PIH	4327	0.76 (0.47 - 1.24)	≥40 vs 1-24 h/wk	≥25 weeks	No	No	No
Jansen PW (2010)[79]	PE	4327	0.96 (0.50 - 1.84)	≥40 vs 1-24 h/wk	≥25 weeks	No	No	No
Case-control studies								
Marcoux S (1999)[36]	PIH	267	0.85 (0.48 - 1.54)	≥35 vs ≤21 h/wk	First 20 weeks	No	No	No
Haelterman E (2007)[78]	PIH	4480	1.1 (0.5 - 2.4)	>40 vs 20-34 h/wk	Trimester 1	Yes	No	No
Haelterman E (2007)[78]	PE	4483	1.2 (0.6 - 2.5)	>40 vs 20-34 h/wk	Trimester 1	Yes	No	No
Cross-sectional studies								
Chang P-J (2010)[74]	PIH	12404	1.18 (0.90 – 1.55)	>40 vs. ≤ 40 h/wk	Not stated	No	Yes*	No
SHIFT WORK								
Cross-sectional studies								
Nurminen T (1989)[42]	PIH	890	0.9 (0.4 - 1.9)	2 or 3 shift work vs none	'Most of pregnancy'	No	Yes	No
Wergeland E (1997)[61]	PE	3281	1.3 (0.8 - 1.9)	Shift work (yes vs no)	Trimester 1	No	No	No
Case-control studies								
Haelterman E (2007)[78]	PIH	4480	1.0 (0.5 - 2.0)	≥1 vs. 0 night work hrs/wk	Trimester 1	Yes	No	No
Haelterman E (2007)[78]	PE	4483	1.0 (0.5 - 2.0)	≥1 vs. 0 night work hrs/wk	Trimester 1	Yes	No	No
LIFTING								
Case-control studies								
Haelterman E (2007)[78]	PIH	4480	1.1 (0.7 - 1.7)	≥7 kg, ≥10x/d vs. never	Trimester 1	Yes	No	No
Haelterman E (2007)[78]	PE	4483	1.1 (0.7 - 1.7)	≥7 kg, ≥10x/d vs. never	Trimester 1	Yes	No	No
Cross-sectional studies								
Irwin DE (1994)[27]	PIH	2413	1.1 (0.8 - 1.6)	≥13.6 vs ≤4.5 kg/d	Not stated	No	Yes	No
Irwin DE (1994)[27]	PE	2420	0.68 (0.47 - 0.98)	≥13.6 vs ≤4.5 kg/d	Not stated	No	Yes	No
Wergeland E (1997)$_{61}$	PE	3284	1.7 (1.2 - 2.5)	Lifting heavy loads (10-20 kg) (yes vs no)	Trimester 1	Yes	No	No

Authors (date)	Outcome	Numbers in analysis	RR (95% CI)		Exposure		Higher potential for		Incomplete reporting
					Comparison	Timing	Bias	Confounding	
STANDING									
Cohort studies									
Saftlas AF (2004)[49]	PIH	1009	1.26	(0.83 - 1.91)	Sitting <34% vs ≥67% of the time	Trimester 1	No	No	No
Saftlas AF (2004)[49]	PE	1009	0.72	(0.32 - 1.59)	Sitting <34% vs ≥67% of the time	Trimester 1	No	No	No
Case-control studies									
Haelterman E (2007)[78]	PIH	4480	0.7	(0.4 - 1.6)	≥1 vs 0 hrs stood on the spot	Trimester 1	Yes	No	No
Haelterman E (2007)[78]	PE	4483	2.9	(1.7 - 5.0)	≥1 vs 0 hrs stood on the spot	Trimester 1	Yes	No	No
Cross-sectional studies									
Irwin DE (1994)[27]	PIH	2882	1.0	(0.71 - 1.4)	≥2/3 vs ≤1/3 of time	Not stated	No	Yes	No
Nurminen T (1989)[42]	PIH	687	1.1	(0.6 - 2.0)	Standing work vs sedentary	Trimester 3	Yes	Yes	No
Irwin DE (1994)[24]	PE	2879	0.82	(0.57 - 1.2)	≥2/3 vs ≤1/3 of time	Not stated	No	Yes	No
Wergeland E (1997)[61]	PE	3294	0.7	(0.5 - 1.0)	Standing/walking (yes vs no)	Trimester 1	Yes	No	No
PHYSICAL ACTIVITY									
Cohort studies									
Landsbergis PA (1996)[30]	PIH	575	0.7	(0.2 - 2.5)	Physical activity score (>200 vs ≤200)	Trimester 1	No	No	No
Landsbergis PA (1996)[30]	PE	575	0.7	(0.2 - 2.5)	Physical activity score (>200 vs ≤200)	Trimester 1	No	No	No
Case-control studies									
Spinillo A (1995)[56]	PE	480	2.1	(1.18 - 3.75)	Activity score (moderate/high vs mild/none)	Trimester 1	Yes	No	No
Cross-sectional studies									
Irwin DE (1994)[24]	PIH	2665	1.2	(0.83 - 1.6)	≥2/3 vs ≤1/3 of time	Not stated	No	Yes	No
Irwin DE (1994)[24]	PE	2668	0.75	(0.52 - 1.1)	≥2/3 vs ≤1/3 of time	Not stated	No	Yes	No
Nurminen T (1989)[42]	PIH	529	1.1	(0.4 - 3.2)	Work with a moderate physical load vs sedentary	Trimester 3	Yes	Yes	No
Saurel-Cubizolles MJ (1985)[50]	PIH	591	3.47	(2.04 - 5.83)	Activity score (2/3 vs 0/1 strenuous items)	Not stated	Yes	Yes	Yes

h/wk = hours per week; kg/d = kilograms per day
PIH - Gestational hypertension
PE - Pre-eclampsia
RR (relative risk) is used generically to encompass a variety of published effect measures (odds ratios, incidence density ratios, hazard ratios etc)
* Crude analysis is presented here to provide a baseline of working, rather than unemployed women (but BMI and parity appeared to have little effect on the results