Supplementary Table 3: Description of included systematic reviews

First Author **Country** **Last assessed up-to-date**	**Number of studies** **Sample size (range)**	**Population**	**Intervention** **Doses in IU**	**Comparison**	**Outcomes for which data are reported**
Bi Canada May 2018	24 RCTs 5,405 (30 – 965)	Population was healthy, pregnant women without prior vitamin D supplementation of more than 400 IU/d	Vitamin D in the form of cholecalciferol in 22 RCTs and in the form of ergocalciferol in 3 RCTs daily doses: 800 - 5000; weekly doses 35000 or 50000; fortnightly dose 50000; monthly dose 60000; bimonthly dose 60000; and bolus doses 60000 - 200 000	Placebo, no intervention or other dose of vitamin D	Primary: small for gestational age (indicated by birthweight less than the 10th percentile for gestational age, fetal or neonatal mortality Secondary: neonatal (25[OH]D) levels, congenital malformation, admission to a neonatal intensive care unit (NICU), Apgar scores, neonatal calcium levels, birth weight, low birth weight, gestational age, preterm birth, infant growth, asthma, respiratory infection, eczema, and allergy
Khaing Thailand October 2017 Roth Canada September 2017	19 RCTs 28,000 (30 – 9,178) 43 RCTs 8,406 (16 – 1,134)	Pregnant women of any gestational age Participants were pregnant at enrolment or enrolled before pregnancy and then followed-up in pregnancy	Calcium, vitamin D, combined calcium and vitamin D Vitamin D vs. placebo = 3; Calcium + vitamin D vs. calcium = 1 Vitamin D2 or D3, alone or in combination provided the co-intervention is similar in at least one other trial arm Daily doses: 400 – 5000; weekly doses: 714 – 7543; monthly doses: 1645 – 3289; bolus doses: 60000 – 1200000 (600000 x 2)	Placebo, a standard supplementation (e.g., folic acid), or no supplementation Placebo, no vitamin D, or vitamin D up to 600 IU/day (or a less frequent dose that would be about equivalent to 600 IU/day—for example, 4200 IU/week)	Primary: preeclampsia, eclampsia, proteinuria (dipstick urine 2+ or '300 mg/24 h), end-organ dysfunction, or utero-placental dysfunction after 20 weeks of gestation Primary: 25 OHD, preeclampsia, gestational diabetes, gestational hypertension, intra-uterine death/stillbirth, c-section, weight gain, preterm labor, death, adverse events, hospitalizations, birth weight, birth length, head circumference, low birth weight, small for gestational age, gestational age at birth, congenital malformations, neonatal death, respiratory infection, asthma, bone mineral content and density

First Author **Country** **Last assessed up-to-date**	**Number of studies** **Sample size (range)**	**Population**	**Intervention** **Doses in IU**	**Comparison**	**Outcomes for which data are reported**
Zhou China June 2016	6 RCTs; 9 prospective cohort; 4 nested case-control; 2 cross-sectional; 2 retrospective cohort; 1 case-control 28,391 (50 – 12,861)	Pregnant women without HIV infection	maternal serum 25-OHD or oral supplementation with vitamin D Daily doses of 1,000 to 4,000 IU; weekly doses of 400 daily for 9 weeks; 50,000 for 6 weeks; one time doses starting 60,000 or 2-4 doses of 120,000	no supplementation /placebo, or routine care (ferrous sulfate and calcium, but no vitamin D)	Preterm birth
Qin China August 2015	4 Prospective cohort; 4 Nested case-control; 1 case-control; 1 Retrospective cohort; 1 Cross-sectional 20,608 (134 – 12,861)	Pregnant women without pre-chronic disease or HIV infection, with singleton gestation	NR; measurement of maternal vitamin D levels		Preterm birth
Lu China February 2015	4 Case-control; 7 Cohort; 2 Cross sectional; 7 Nested case control 16,515 (122 – 4,090)	NR	NR; measurement of maternal vitamin D levels		Gestational diabetes
De-Regil / Palacios Switzerland / Puerto Rico February 2015	15 RCTs 2,833 (40 – 990)	Pregnant women of any gestational or chronological age, parity (number of births) and number of fetuses	Vitamin D daily doses: 200 - 2000 Vitamin D single dose: 200,000 – 600,000, and 35,000	No intervention / placebo	Primary: pre-eclampsia, gestational diabetes, vitamin D concentration, adverse effects, preterm birth, low birthweight Secondary: impaired glucose tolerance, c-section, gestational hypertension, maternal death, birth length, head circumference at birth, birthweight, admission to special care, stillbirth, neonatal death, very preterm birth

First Author **Country** **Last assessed up-to-date**	**Number of studies** **Sample size (range)**	**Population**	**Intervention** **Doses in IU**	**Comparison**	**Outcomes for which data are reported**
Newberry USA September 2014	2 RCTs; 2 prospective cohorts; 5 nested case-control 4,912 (160 – 1,141)	Primary population of interest is generally healthy people with no known disorders Only including studies for population contributing to pregnancy related outcomes	Vitamin D single doses (for RCT): 2000, 4000 followed by 1 month run-in at 2000	All participants enrolled into one of two vitamin D groups	Preeclampsia, preterm birth, small for gestational age
Perez-Lopez Spain March 2014	13 RCTs 2,299 (40 – 400)	Pregnant women of any gestational or chronologic age and parity, without previous disease history	Vitamin D alone vs. no treatment (placebo); vitamin D + calcium vs. no treatment (placebo); and vitamin D + calcium vs. calcium Daily doses ranged from 400 to 1,000; weekly doses ranged from 35,000 to 50,000; and single doses ranged from 200,000 to 600,000	Active controls, usual treatment without active control, and placebo	Primary: circulating 25-OHD, preeclampsia, gestational diabetes, small for gestational age, low birth weight, preterm birth, birthweight Secondary: birth length, c-section,
Wei Canada October 2012	13 Case-control; 8 cohort; 2 cross-sectional 12,898 (95 – 3,730)	Pregnant women without pre-existing chronic disease or HIV infection	NR; measurement of maternal vitamin D levels		Preeclampsia, gestational diabetes, preterm birth, small for gestational age
Harvey UK June 2012	17 Case-control; 48 cohort/cross-sectional; 9 RCT; 2 intervention studies (non-randomized) NR	Pregnant women or pregnant women and their offspring	vitamin D status [dietary intake, sunlight exposure, circulating 25(OH)D concentration] or supplementation of	For intervention studies: no intervention or placebo	Primary: neonatal hypocalcaemia, rickets in the offspring, offspring bone mass and maternal osteomalacia Secondary: offspring body composition; offspring preterm birth

First Author **Country** **Last assessed up-to-date**	**Number of studies** **Sample size (range)**	**Population**	**Intervention** **Doses in IU**	**Comparison**	**Outcomes for which data are reported**
			participants with vitamin D or food containing vitamin D (e.g. oily fish)		and later offspring health outcomes; maternal quality of life
Tabesh Iran December 2012	2 Cohort; 4 cross-sectional; 9 case-control 2,936 (32 – 697)	Normal pregnant women	NR; measurement of maternal vitamin D levels		Preeclampsia
Chung USA April 2009	60 RCT; 3 NRCT; 102 cohort or nested case-control; 11 SR NR	Generally healthy people with no known disorders	Vitamin D supplements (no analogues), calcium supplements, and combinations of supplements; food based interventions	NR	Pregnancy-related: preeclampsia, high blood pressure with or without proteinuria, preterm birth or low birth weight, infant mortality