



Calcium Supplementation in Pregnant Women to Prevent Preeclampsia

The Reproductive Care Program of Nova Scotia Recommends:

Calcium supplementation with ≥ 1 g of elemental calcium/day in those with low calcium intake to prevent preeclampsia.¹

Supplementation with ≥ 1 g/day of elemental calcium **in pregnant women with low dietary calcium intake (< 600 mg/day) reduces the risk of preeclampsia.**^{2,3} It also reduces the risk of:

- Developing hypertension³
- Maternal death or serious morbidity in women with low dietary calcium intake³
- Preterm birth in women of high risk³



Did You Know?

- Most prenatal multivitamins only contain a limited amount of calcium. For example, the recommended daily dose of Materna® Prenatal Multivitamin only contains 250 mg of elemental calcium.⁴
- For optimal absorption, calcium salts (except calcium citrate) should be taken with food, and doses of elemental calcium > 500 mg/day should be administered in divided doses.⁵
 - The administration time of calcium supplements or calcium rich foods should be spaced apart from some medications or supplements (e.g., iron or levothyroxine) due to impairment in absorption of one or both components.⁵
 - Encourage patients to speak to their pharmacist regarding appropriate timing of calcium supplementation and dietary calcium consumption.
- An alternative to calcium supplementation may be 3-4 dairy servings/day.²



Food	Serving Size	Calcium (mg)
Dairy and Dairy Alternatives		
Milk, 3.3% / 2% / 1% / skim	250 mL	291-324
Rice beverage, enriched	250 mL	319
Low fat cheddar or mozzarella cheese	50 g	323-453
Cheddar or mozzarella cheese	50 g	269-361
Yogurt, plain	175 mL	292-332
Yogurt, plain fat free	175 mL	253
Fruit and Vegetables		
Spinach, boiled and drained	125 mL	129
Kale, boiled and drained	125 mL	49
Orange juice, fortified with calcium	125 mL	185
Orange	1	52
Meat Alternatives		
Beans, white or navy	175 mL	91-141
Almonds	60 mL	89

For more info, see: https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fn-an/alt_formats/pdf/nutrition/fiche-nutri-data/nvscf-vnqau-eng.pdf

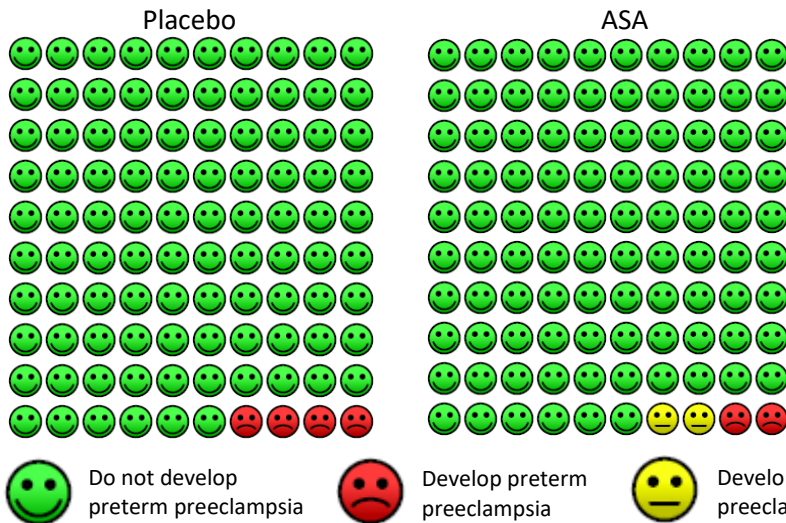
Low Dose ASA in High Risk Pregnant Women to Prevent Preeclampsia

The ASPRE trial¹ found that ASA 150 mg once daily at night started at 11-14 weeks gestation and continued until 36 weeks gestation reduced the risk of preterm preeclampsia compared to placebo in women at high risk (NNT = 38, 95% CI 23-101).

- In the absence of 150 mg ASA tablets, 2 x 81 mg ASA tablets (= 162 mg) can be used.²



Results of ASPRE: ASA vs. Placebo to Prevent Preterm Preeclampsia in High Risk Pregnant Women:



- There were **no significant differences in rates of adverse events** (including vaginal bleeding, anemia, and dyspepsia or heartburn) between ASA and placebo.
- Prior to starting ASA, patients should be assessed for bleeding risk.
- **Patients at high risk of bleeding** (e.g., those with bleeding disorders, peptic ulceration, or long term NSAID use) **were excluded from ASPRE.**

Cates Plot images have been produced using Dr Chris Cates' software, Visual Rx version 4, at: <https://www.nntonline.net/visualrx/>.

Who is at high risk of preeclampsia?

- The ASPRE trial used a risk calculator to determine risk: <https://fetalmedicine.org/research/assess/preeclampsia/first-trimester>
- The Reproductive Care Program of Nova Scotia suggests that patients at high risk of developing preeclampsia are those with **one or more "high risk" factors**. Patients with a **combination of at least two "moderate risk" factors may also be identified at high risk** for developing preeclampsia.²

High Risk Factors	Moderate Risk Factors
History of preeclampsia <i>especially</i> with an adverse outcome	Nulliparity
Multifetal gestation	Obesity (BMI > 30)
Chronic hypertension	Family history of preeclampsia in mother or sister
Type 1 or 2 diabetes mellitus	Age ≥ 40 years
Renal disease	African Canadian
Autoimmune disease (antiphospholipid syndrome, systemic lupus erythematosus)	Low socioeconomic status
	History of maternal low birth weight or small for gestational age, previous adverse pregnancy outcome, greater than 10 year pregnancy interval

- The SOGC have a similar, more comprehensive risk stratification scheme (Appendix 3)

Laminate references available in the handout following the "Hypertensive Disorders of Pregnancy References" section