The recommendations found in the BCPRA GN protocols for reducing the risk of glucocorticoid-induced osteoporosis are based on the 2010 American College of Rheumatology guidelines for the prevention and treatment of glucocorticoid-induced osteoporosis and are supported by the 2013 Institute for Clinical Systems Improvement health care guidelines for diagnosis and treatment of osteoporosis.  

Calcium intake of 1200 to 1500 mg/day (supplement plus oral intake) and vitamin D supplementation of 800 to 1000 units are recommended for any dose or duration of glucocorticoid. [Level of evidence = A]

- This recommendation is based on two meta-analyses that found calcium and vitamin D to significantly increase the bone mineral density in the lumbar spine and/or forearm after two years with a non-statistically significant trend towards a reduced fracture risk.  
- Both meta-analyses recommended all patients prescribed glucocorticoids be given calcium and vitamin D prophylactic therapy due to their low cost and low risk of toxicity.

Alendronate is recommended for the following patient groups taking glucocorticoids. [Level of evidence = A]  

- Post-menopausal women and men greater than or equal to 50 years old starting glucocorticoids of any dose for greater than or equal to 3 months.  
- Pre-menopausal women of non-child bearing potential and men less than 50 years both with a history of fragility fracture starting greater than or equal to 5 mg/day of prednisone for greater than or equal to 1 month or any dose of prednisone for greater than or equal to 3 months.

- Pre-menopausal women of child bearing potential with a history of fragility fracture starting greater than or equal to 7.5 mg/day of prednisone for greater than or equal to 3 months.

- Bisphosphonates are not recommended in pre-menopausal women and men less than 50 years old starting glucocorticoids with no history of fragility fracture due to a lack of evidence.

Note: Consider avoiding bisphosphonates if the eGFR is persistently less than or equal to 30 ml/min/1.73 m².

In Canada, alendronate and risedronate are both approved by Health Canada to be used for prevention of glucocorticoid-induced osteoporosis.  

- Risedronate has weaker evidence for women of childbearing potential compared to alendronate [Level of evidence = C]  
- Note: risedronate requires BC Pharmacare special authority approval.

There is limited evidence (no RCTs) to guide the use and/or choice of GI prophylaxis in patients on glucocorticoids. This decision depends on physician and patient preference.

- Incidence rates for upper GI complications secondary to corticosteroid use varies in the literature. One study suggested an odds ratio of 1.8 (compared to those on no steroids) for upper GI bleed or perforation, although the absolute incidence rate is low (5%).

- High risk features where GI prophylaxis should be strongly considered include: concomitant use of NSAIDs, glucocorticoid duration greater than 3 months, total prednisone dose greater than 1000 mg and previous peptic ulceration.


