Clinician Factsheet: Treating Vitamin B_{12} Deficiency

Formulation	Dosing: Adult	Dosing: Pediatric*	Dosing: Geriatric	Dosing: Pregnancy/ Lactation
Oral (Cost: approx. $ .08/1000 μg) ❑ Very high dose oral therapy is effective in pernicious anemia, since approximately 1% of administered B_{12} is absorbed by passive diffusion and does not require Intrinsic Factor ❑ Indicated for: ♦ Patients without small bowel disease and likely to be adherant ♦ Initial treatment when rapid correction of deficiency is not required (ie, mild-to-moderate uncomplicated deficiency or mild anemia in patients without heart failure or atherosclerotic disease) ♦ Maintenance therapy ❑ Induction doses should be administered for 6 weeks–3 months, and continued until serum vitamin B_{12} or methylmalonic acid levels have normalized.	**Induction:** 1000–2000 μg/day **Maintenance:** 25–1000 μg/day	**Induction:** 1000 μg/day **Maintenance:** 1000 μg/day	**Induction:** Not recommended **Maintenance:** 1000 μg/day	**Induction:** Not recommended **Maintenance:** 1000 μg/day
Intranasal (Cost: approx. $26/1000 μg) ❑ Relatively new formulation for which little data are available ❑ At present, specifically indicated for maintenance therapy only ❑ May be useful for patients in whom gastrointestinal disease limits use of oral route, and parental therapy is contraindicated or undesirable.	**Induction:** Specific data not yet available. **Maintenance:** 500 μg once weekly	Specific data not yet available.	Specific data not yet available.	Specific data not yet available.
Parenteral (Cost: $3–10/1000 μg, plus cost of injection) ❑ Indicated for: ♦ Initial treatment in patients who require rapid correction of deficiency (ie, any patient with neurologic complications of deficiency, patients with anemia and heart failure, atherosclerotic disease, etc.) ♦ Maintenance therapy ♦ Patients with small bowel disease, nausea, or vomiting ♦ Patients unlikely to be adherent with oral or intranasal therapy	**Induction for uncomplicated cases:** 1000 μg/day for 5 days, then 1,000 μg/week for 4 weeks. **Maintenance:** 100–1000 μg every 1 to 3 months.	**Induction for hematological signs:** 10–50 μg/day for 5 to 10 days. **Maintenance:** 100–250 μg/month. **Induction for neurologic signs:** 100 μg/day for 10–15 days, then once–twice/week for several months–1 year. **Maintenance:** 250–1000 μg/month.	**Induction:** 100–1000 μg/day for 2–3 weeks. **Maintenance:** 100–1000 μg/month.	**Induction:** 1000 μg/week for 5–6 weeks. Serum levels should respond within 6 weeks. **Maintenance:** 1000 μg every 1–3 months.

*Optimal dosing of B_{12} in children is not well established; therefore, close monitoring of response to therapy is vital. Patients with congenital defects or deficiencies will require specific dosing regimens not listed here.