

Musgrove Park Hospital
Upper GI & Bariatric Surgery

Covid-19: B12 Intramuscular Injection Supplementation Guidance

Points to consider

- We recognise the current pressure on services and the requirements of vulnerable groups to self-isolate meaning some people are unable to access timely vitamin B12 injections.
- Patients with a gastric bypass and sleeve gastrectomy are high risk for B12 deficiency due to lack of intrinsic factor and, for gastric bypass, the bypassing of site of absorption. Although not routinely performed at Musgrove Park Hospital, patients with a duodenal switch, biliopancreatic diversion, one anastomosis (mini) gastric bypass and single anastomosis duodenal ileal switch (SADIS) are also at high risk.
- Our Trust guidance recommends that following gastric bypass and sleeve gastrectomy, patients receive hydroxocobalamin injections 1mg IM (intramuscular) after 6 months and repeatedly every 3 months, lifelong. The dose can be doubled to 2mg to reduce the frequency to every 6 months.
- Some patients require more frequent B12 injections, up to 6 weekly, due to associated onset of symptoms (such as tiredness, irritability, drop in mood and poor memory) or a vitamin B12 level <200.
- Our Trust guidance recommends lifelong, routine nutritional monitoring after all bariatric surgery (3 monthly in first year and yearly thereafter), including B12 and the active form of B12 (MMA/Methylmalonic Acid) if available. MMA should be considered if there is a history of B12 deficiency or pre-existing neuropathy.
- B12 deficiency should be treated before folic acid deficiency as they compete. Vitamin B12 deficiency may go undetected and is masked by folic acid treatment.
- Irreversible neurological complications can arise from B12 deficiency and may occur in the absence of megaloblastic anaemia.
- Other symptoms of B12 deficiency include:
 - a pale yellow tinge to the skin
 - a sore and red tongue (glossitis)
 - mouth ulcers
 - pins and needles (paraesthesia)
 - changes in walking and movement
 - disturbed vision
 - irritability
 - depression
 - changes in thought, feelings and behaviour
 - a decline in mental abilities, such as memory, understanding and judgement (dementia)
- Measure active vitamin B12 (MMA) if patient has neurological features (regardless of B12 levels and absence of cytopenias). In MPH/Somerset, this needs to be agreed with Dr David James, Consultant Biochemist (and a note added to the blood form) to be processed.

- Copper deficiency can also present with sign and symptoms of subacute combined degeneration of spinal cord and therefore 3 monthly vitamin B12 injections are safest for bariatric surgery patients to maintain vitamin B12 levels, which help in early diagnosis and management of copper deficiency.
- Bariatric surgery patients can have multiple coexisting nutritional deficiencies (some of them can be measured in the blood and many do not have lab analysis available like biotin etc.) and they have complex clinical presentations. Therefore sometimes it can be difficult to delineate if the sign and symptoms are due to vitamin B12 or other micronutrients like thiamine, copper, zinc, pantothenic acid, biotin etc.
- Large numbers of bariatric surgery patients have psychological issues which are likely to get more pronounced due to social isolation and anxiety around COVID-19. We want to minimise the need for patients to call NHS 111 and GPs – B12 deficiency could add to this re. mental and neurological issues.

Recommendations for patients after a gastric bypass and sleeve gastrectomy

- 1) All patients with suggestive neurological features (+/- severe cytopenias):**
Continue to get their scheduled 3 monthly vitamin B12 injections and measure active MMA.
- 2) All patients who are 6 months after their surgery and due their first B12 injection:**
Continue to get their scheduled first vitamin B12 injection. After this one, to follow the relevant recommendation as listed here.
- 3) All patients with BMI <40 kg/m² and serum vitamin B12 level >625 (normal range 120-625) in last 3 months:**
Skip one scheduled 3 monthly vitamin B12 injection. Patient to take oral 1000ug vitamin B12 supplement, once a day for up to 90 days.
- 4) All patients with BMI >40 kg/m² (high risk patients for COVID -19):**
Continue to get their 3 monthly vitamin B12 injections (unless serum vitamin B12 level >625, in this case treat as per point 3 above).
- 5) All patients with BMI <40kg/m² without any suggestive neurological features (+/-cytopenias) and vitamin B12 level between 200-625 (normal range 120-625) in last 3 months:**
Levels may be maintained on oral 1000ug vitamin B12 supplement, once a day for 60-90days. B12 to be monitored in 60-90 days followed by vitamin B12 injection if vitamin B12 level falls to <200 +/- concerning symptoms.
- 6) All pregnant women:**
Continue to get their scheduled 3 monthly vitamin B12 injections.
- 7) All patients who cannot have their B12 blood test:**
Continue to get their scheduled 3 monthly vitamin B12 injections
- 8) Following above, and in all cases, where B12 injections are not available:**
Patient should take oral B12 supplementation (in addition to routine post- bariatric supplementation) of 1000ug vitamin B12 oral supplementation, once a day. B12 should be measured at earliest available opportunity after 30 days of oral supplementation.

Important notes:

1. This is an interim arrangement
2. This guidance uses MPH reference range and ranges may differ between labs
3. 1000ug vitamin B12 oral supplementation can be obtained “over the counter” by the patient. Please refer to the reference below, O’Kane et al. (2020), for further details on where to obtain these
4. Over the counter supplements are not regulated and so their ingredients/content cannot be guaranteed
5. GPs may not be able to prescribe Cyanocobalamin (artificial B12) as prescription of Cyanocobalamin is not permitted by some local CCGs
6. IM vitamin B12 injections should start again as soon as possible as vitamin B12 levels may decrease on oral supplements
7. Patients should adhere to our recommendations for all vitamin and mineral supplementation as vitamin and mineral deficiencies can have an adverse impact on their immunity, predisposing them to infections
8. We will shortly be issuing separate guidelines about nutritional blood tests.

Reference:

O’Kane, M., Sharma, M. & Parretti, H. (2020). Vitamin B12 and bariatric surgery. Advice during Covid 19. Available at: <https://www.bomss.org.uk/wp-content/uploads/2020/04/BOMSS-COVID-19-and-vitamin-B12.pdf> [accessed 03.04.20]

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