BODY BY
BARIATRICS

Supplementing Nutritional Deficiencies

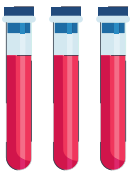
A Guide for
Non-Bariatric Specialists

DID YOU KNOW?

Bariatric beriberi can occur as early as within the first 1-3 postoperative months.

Vitamin B1 (Thiamine) Deficiency in Bariatric Post-Op Patients:

< 2.5-7.5 ug/dL

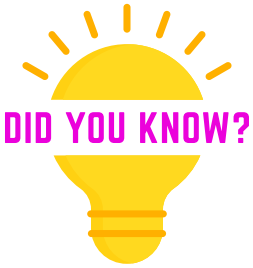


Thiamine Replacement

Daily Supplementation: *at least* 12 mg po (by mouth) or preferably a 50 mg dose of thiamine from 1-2 servings of multivitamin (MVI) with thiamine or a B-complex supplement.

Asymptomatic Deficiency: 100 mg po daily

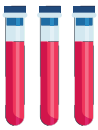
Dry Beriberi: To minimize the risk of severe consequences, *immediate* substitution of thiamine in clinical suspicion or prolonged parenteral nutrition is necessary. 100 mg/day of thiamine intravenously over a time period of several days are required followed by an enteral (iv) supplementation with high doses.



Ingested iron must be conjugated with Vitamin C. Take iron with a stool softener.

Iron Deficiency in Bariatric Post-Op Patients:

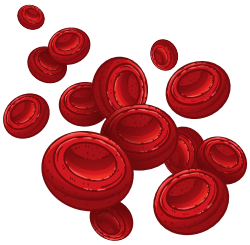
Iron < 50 ug/dL
TIBC > 450 ug/dL
Ferritin* <20 ug/dL



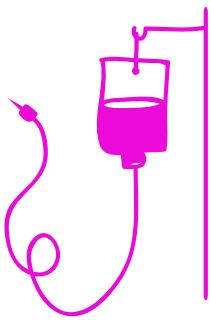
*Ferritin levels alone should NOT be used to diagnose deficiency because iron is an acute-phase reactant

Iron Replacement

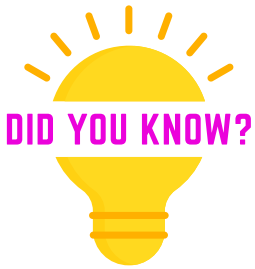
Daily Supplementation: *at least* 18 mg po from 1-2 servings of MVI or Ferrous Fumarate 60 mg po (need 45-60 mg elemental iron). Ensure iron is taken at least 2 hours apart from Calcium Supplementation and calcium rich food/drinks.



Mild Deficiency: Ferrous Sulfate, Ferrous Fumarate, or Ferronyl Iron daily to provide 150-200 mg to as high as 300 mg 2-3 times daily of elemental iron.



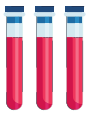
Moderate/Severe Anemia (Hb < 10): Referral to a Hematologist and iv Iron Transfusions.



Prevalence of vitamin D deficiency is reported to be as high as 90% in patients with obesity

Vitamin D Deficiency in Bariatric Post-Op Patients:

Vitamin D < 30-100
PTH > 15-65 pg/mL



Vitamin D Replacement

Daily Supplementation: All post-weight loss surgery patients should take daily Calcium Citrate supplementation that contains Vitamin D to avoid Vitamin D Deficiency or Secondary Hyperparathyroidism.

Mild Deficiency: Recommended vitamin D3 dose is 3000 IU daily, until blood levels of 25(OH)D are greater than sufficient (30 ng/mL).

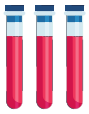
Moderate/Severe Deficiency (< 15 ng/mL): Patients should be prescribed a weekly dose of Ergocalciferol (Vitamin D2) 50,000 IU. Additional Vitamin D3 of at least 3000 IU/d and as high as 6000 IU/d.

DID YOU KNOW?

Two types of anemia can develop - Pernicious anemia (due to absence of intrinsic factor) and megaloblastic anemia which can lead to fatigue.

Vitamin B12 Deficiency in Bariatric Post-Op Patients:

B12 < 500 pg/mL



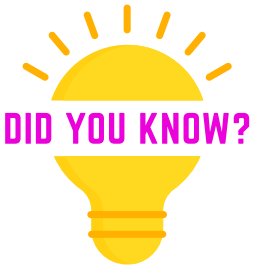
Vitamin B12 Replacement

Daily Supplementation: All patients should take a 1-2 servings of a daily MVI with Vitamin B12.

Mild Deficiency: Supplement dose for vitamin B12 in post-WLS patients varies based on route of administration:

- Orally by disintegrating tablet, sublingual, or liquid: 350–500 mg daily
- Nasal spray as directed by manufacturer
- Parenteral (IM or SQ): 1000 mg monthly

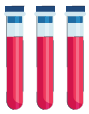
Severe Deficiency (< 200 pg/mL): Post-WLS patients with B12 deficiency should take 1000 mg/d (OTC, sublingual) to achieve normal levels and then resume dosages recommended to maintain normal levels.



Women of childbearing age should take 800–1000 mg oral folate daily as deficiency can result in neural tube defects.

Folic Acid Deficiency in Bariatric Post-Op Patients:

RBC folate < 305 nmol/L

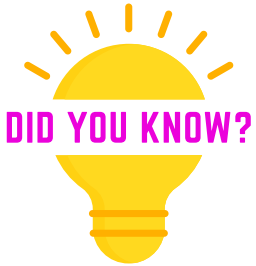


Folic Acid Replacement

Daily Supplementation: Post-WLS patients should take 400–800 mg oral folate daily from their multivitamin.

Deficiency: All post-WLS patients with folate deficiency should take an oral dose of 1000 mg of folate daily to achieve normal levels and then resume recommended dosage to maintain normal levels.

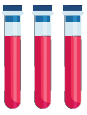
Of note, Folate supplementation above 1 mg/d is not recommended in post-WLS patients because of the potential masking of vitamin B12 deficiency



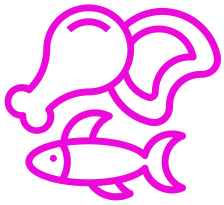
Protein helps with metabolism and promotes weight loss. We want you losing fat instead of muscle mass.

Inadequate Protein in Bariatric Post-Op Patients:

Prealbumin
< 16 and 35 mg/dL



Protein Supplementation



Daily Supplementation: You should strive for 60-90 grams of protein/day and 25-30 grams of protein per meal. Protein requirements are based on height: more mass, more musculature = more protein requirement.

Ideally, get your protein from food! There is a food matrix where all foods interact with each other. Chewing sends signals to our brains to expect satiety. Other macros and micros, like vitamins and minerals, are found in food, too. Supplements are used on an as-needed basis as just that - a supplement to our diet.