



Centre for Metabolic and Bariatric Surgery

Victoria General Hospital
2340 Pembina Hwy, Winnipeg, MB R3T 2E8
Phone: (204) 477-3540 Fax: (204) 477-3299

Dear:

Date:

RE:

DOB:

PHIN:

Your patient had bariatric surgery on DATE.

We are contacting you as the patient had surgery over one year ago and will no longer be actively followed at the Centre for Metabolic and Bariatric Surgery (CMBS). We ask that you collect the suggested lab values noted in this letter on an annual basis and please send a copy of these results to our clinic. A team member is available to meet with the patient in the future if the need arises.

The purpose of this letter is to provide information regarding long-term post-surgery processes to support weight loss and health outcome goals. We greatly appreciate your collaboration with this patient and the CMBS team in working towards continued success.

We have enclosed a list of recommendations our team has developed to facilitate the continued success and health of your patient after bariatric surgery.

Your patient was previously given an information booklet that outlines these recommendations as well as complications to watch for.

Please contact us if you have any questions regarding any of the above areas. If there are abnormal lab values regarding this patient, you are welcome to review them with us.

Yours in health,

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ONE YEAR AND GREATER POST BARIATRIC SURGERY RECOMMENDATIONS

These recommendations are intended to provide basic evidence-based information to assist in guiding practice and not intended to replace clinical judgement.

Vitamins and Mineral Supplements

Bariatric surgery patients have a high risk for developing vitamin and mineral deficiencies due to small stomach capacity, reduced absorption from food, and food intolerances. The patient will need to continue taking vitamin and mineral supplements for the remainder of his or her life to help prevent deficiency. Please refer to the chart below for types, dosage, and suggested timing of maintenance supplements.

Vitamin	Daily amount	Notes
Women's Multivitamin <u>MORNING</u>	1	Cut up or take a chewable. Your multivitamin should contain: iron, 400 microgram (0.4 mg) folic acid, 2 mg copper, as well as selenium and zinc.
Vitamin B12 <u>MORNING</u>	500-1000 mcg	Can be taken as a tablet, pill or self-dissolving strip
Calcium Citrate <u>LUNCH,SNACK AND SUPPER</u>	1200-1500 mg (elemental) Take 500mg 3x/day	Take separately from iron. Calcium supplements must be taken with food.
Vitamin D <u>TAKE WITH CALCIUM</u>	1000-2000 IU	You may be able to get enough Vitamin D through your multivitamin combined with your calcium supplements (as long as the calcium supplement has Vitamin D)
Iron-Ferrous Gluconate <u>AT BEDTIME ON EMPTY STOMACH</u>	25-40 mg elemental iron	Do not take with high calcium foods (dairy, fortified soy beverage, etc) or with calcium supplements.

Vitamin and mineral supplements should be taken in several doses throughout the day to improve absorption and tolerance.

NOTE: Do not take iron, calcium, zinc, or copper supplements at the same time. Do not take calcium or iron supplements at the same time as thyroid medications.



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Vitamin and mineral deficiencies may develop early post op or several years after surgery. If levels below normal range are identified, we suggest the following treatments:

Vitamin D: normal = 75-250 nmol/l.

- levels under 50 nmol/l: we suggest 50,000 IU vitamin D₂/week for 8 weeks, then a maintenance dose of 3000 IU daily.
- levels 50-74 nmol/l: treat with 3000IU daily.

Zinc: normal = 10-20 umol/l.

- We suggest 50mg elemental zinc for 14 days along with 4mg elemental copper as copper gluconate or trophic copper bisglycinate (available at Vita Health or other health food stores). Extra copper is needed during high dose zinc supplementation to prevent copper deficiency.
- Reassess level after 14 days.

Vitamin B12: normal = >180 pmol/l.

- We suggest 1000 mcg oral Vitamin B₁₂ daily. Consider IM Vitamin B₁₂ if levels are unresponsive to oral supplementation.

Ferritin: adequate stores = 50-300 ug/l.

- We suggest 60-65 mg ferrous sulfate with 250 mg Vitamin C, OD-QID to target.

Note: Some patients may develop refractory iron/ferritin deficiencies that are unresponsive to oral supplementation. Please consider alternate routes of mineral administration.

Iron: normal = 7.0-27.0 umol/l. We suggest the same treatment protocol as for ferritin.

Vitamin A: normal = 1.2-2.8 umol/l.

- We suggest 10000 IU/day for 14 days. Reassess after 8 weeks.

Thiamin: normal = 7-44 nmol/l.

- We suggest 20-30 mg p.o. daily with early symptoms of neuropathy.
- 50-100 mg per day IV or IM with protracted vomiting or advanced neuropathy.



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Labs

It is recommended that lab values are drawn on an annual basis (patients must be fasting for 12 hours in order to evaluate Vitamin A levels appropriately). Labs to follow are: CBC, Lytes, Glucose, BUN/Creat, LFT's, HbA1c, Iron, Ferritin, B12, Folate, Thiamine, Calcium, intact PTH, 25-D, Vit A, Zinc, and Albumin. Please see suggestions above for treatment of abnormal levels. Please contact the CMBS clinic with any additional concerns.

Medications

Avoid the use of NSAIDS to decrease the risk of developing ulcers. If they must be prescribed, limit their use to a maximum of 2 consecutive days.

Effects on absorption of some **oral/systemic** medications post bariatric surgery is unknown therefore it is important to monitor your patient closely. Specifically, time released/long acting medications, psychiatric medications and oral contraception.

Alcohol and Tobacco

We strongly recommend patients maintain a smoke free status after surgery to prevent gastritis and ulcer formation. All patients are counseled extensively on this pre operatively. Alcoholic beverages should be avoided for at least 1 year following surgery. Alcohol can irritate the stomach pouch, cause liver damage and contains empty calories which can lead to poor nutrition and weight regain. If the patient wishes to reintroduce alcohol, they should do so in a safe environment as tolerance to alcohol changes post bariatric surgery.

Physical Activity

We recommend that patients achieve a minimum of 150-200 mins/week of moderate to vigorous cardiovascular activity for health benefits (eg: swimming, brisk walking, biking). For long term weight maintenance following bariatric surgery, it is recommended that patients achieve > 250 mins/week. If the patient plans to increase their activity, this should be done slowly (20 – 30 min/week) over a period of several months.

In order to maintain lean body mass and decrease the risk of falls, resistance/strength training 2-3 times/week is suggested.

Psychological Health

There can be a risk of worsening, re-occurrence, or new onset of depression, anxiety or other mental health concerns, particularly in the first year after this surgery, so please review mental health status with your patient. There is also a risk of transfer addictions, meaning that addictive-type eating behaviors may shift to other addictions, such as gambling, alcohol, or other substance use, so this is also important to screen for.

Pregnancy

Please ensure female patients within childbearing years have adequate birth control. For hormonal contraception, please be advised that absorption rates may change following surgery and additional contraception may be required. It is important not to become pregnant for **at least 12 to 18 months following bariatric surgery**. This will help ensure optimal weight outcomes



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for the woman and will minimize the risk of malnutrition for both mother and fetus. Pregnant women should be advised to gain weight within the Institutes of Medicine guidelines based on pre-pregnancy BMI; weight loss during pregnancy is not recommended. An evaluation of micronutrient deficiencies at the beginning of pregnancy for women who have had bariatric surgery is advised. Please refer patient to a bariatric dietitian or bariatric surgery centre immediately as micronutrient supplements, protein intake, and caloric intake need to be adjusted with pregnancy.

Diet

- Chew food 15-20 times for each bite.
- Keep foods moist to make swallowing and digestion easier.
- Meals should take 30 minutes with 30 seconds between each bite.
- Eat 3 meals and 1-3 snacks daily.
- Use small plates and utensils to assist in portion control. Limit your portion sizes of solid food to approximately a **1 cup serving** at each meal.
- Do not eat when stressed or distracted and do not skip meals. Avoid overeating as this may lead to nausea and vomiting.
- Follow body signals of hunger (if present) and fullness.
- Drink at least 6-8 cups of fluid per day, sipping throughout the day to prevent dehydration.
- DO NOT drink with meals. Stop drinking 30 minutes before eating and do not drink for 30 minutes after a meal.
- Consume 60-80g protein per day. Eat protein first at meals, followed by vegetables, then grains if they are tolerated.
- Journal protein and fluid intake daily.
- Do not drink carbonated drinks, do not use straws, and do not chew gum. These behaviours are likely to cause excess gas and discomfort, and may lead to expansion of the stomach pouch.
- Foods that may not be tolerated include: rice, pasta, corn, popcorn, fresh bread, tough meats like steak or pork and some tough fruit and vegetable skins.

Potential Complications after Bariatric Surgery

Gastric Ulcers

Gastric ulcers are possible any time after bariatric surgery and may develop several years post-operatively. It is important for the patient to avoid the use of tobacco, alcohol, and NSAIDS.

Hernias

Two kinds of hernias may occur after bariatric surgery, incisional hernia and internal hernia. Please consult the bariatric surgeon regarding your concerns.



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Acid Reflux

Some patients will experience reflux in the months following bariatric surgery. This usually decreases greatly or completely resolves within 2 years. In order to help alleviate these symptoms, encourage your patient to avoid caffeine, acidic goods, peppermint and alcohol. Some patients will require a proton pump inhibitor to control symptoms.

Excess or Loose Skin

Excess skin is a common side effect of substantial weight loss. For many, it is considered a sign of success. However, for some, infection and ulcerations of the skin might develop. Referral to a plastic surgeon may be recommended but not until the patient's weight has stabilized (typically 1-2 years post bariatric surgery). Please contact Manitoba Health regarding your patient's eligibility for coverage.

Dumping Syndrome

Dumping syndrome can occur in this patient population. If your patient is symptomatic, review the patient's diet 15-30 minutes (early dumping) or 1-3 hours (late dumping) before the episode occurred to determine if high fat or high carbohydrate foods were consumed. Encourage the patient to avoid these foods in order to avoid dumping syndrome.

Weight Regain

Factors contributing to weight regain may include:

- Increased caloric intake.
- Eating a meal or snack > 6 times a day (grazing intake pattern).
- Drinking fluids with solid foods (may increase total intake of solid foods).
- Adapting to feelings of fullness over time and increasing portions to achieve same level of fullness.
- Consuming caloric beverages and/or calorie dense foods.
- Decrease in or discontinuation of physical activity.
- Decrease in or discontinuation of food and activity tracking.
- Maintenance of caloric intake, but a decrease in energy expenditure (e.g. injury).
- Decrease in metabolic rate (advancing age, decreased muscle mass, medications, disease or endocrine factors).
- Changes to physical or mental health issues affecting lifestyle behaviors.