Nutrition care after bariatric surgery - getting it right

16 September, 2015 **Charlene Grosse** **0 comments** **Read Later**

When patients attend for their pre-surgery appointment I ask them how they see nutrition playing a role in their weight loss journey.

Why? My experience tells me patients, and at times their GPs, often downplay the role of postoperative nutrition in long-term health and yet nutritional deficiencies are a real possibility following bariatric surgery.

The main bariatric procedures in Australia are the Adjustable Gastric Band (AGB), Sleeve Gastrectomy (SG) and Roux-en Y Gastric Bypass (RYGB). All bariatric surgical procedures affect nutritional intake and some procedures may affect the absorption of macronutrients and/or micronutrients.

While the nutritional risks vary with each procedure, I have found no one is immune.

When weight loss and improved (sometimes resolved) comorbidities are occurring, nutrition deficiencies may seem insignificant, however they are a real concern for patients following bariatric surgery.

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Unmonitored deficiencies can leave patients vulnerable to both acute and chronic conditions, including changes in bone density and neurological damage (vitamin B12 deficiency).

As patients do not always attend for their follow-up care with their bariatric specialist team there is a key role for the GP to monitor and prevent nutritional deficiencies in patients following bariatric surgery.

Impact of bariatric surgery on nutrition

Micronutrient deficiencies are regularly seen in morbidly obese patients prior to bariatric surgery.

The most common deficiencies I see in practise include iron, vitamin B12, folate and Vitamin D. The surgeries further increase the nutritional risk to the patient as identified in Table 1.

Table 1: Impact of bariatric surgery on nutrition

Surgical procedure	Impact on Nutrition
AGB	No impact on absorption. Over tight gastric band affects nutrition quality of diet including protein and iron
SG	May be some impact on absorption including iron and vitamin B12
RYGB	Impacts on absorption of iron, vitamin B12, calcium and vitamin D. Long limb bypasses may affect absorption of protein, fat, vitamin A and trace elements

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With each of the weight loss surgeries, food portions are significantly reduced, however the quality of the food and fluid consumed and dysfunctional eating patterns can continue.

The risk of nutrient deficiency increases further in surgeries where malabsorption occurs (RYGB).

I have learnt I cannot assume that all patients are eating a well-balanced diet as some struggle to comply with the dietary recommendations. While most patients will tolerate a wide variety of foods following their first year of surgery some will form maladaptive eating behaviours, or have restricted food variety resulting in poor nutritional intake.

Vitamin, mineral and trace element monitoring and supplementation

Since dietary intake and nutrition is compromised following bariatric surgery, patients require life-long nutrition supplementation in addition to having a balanced diet. Nutritional monitoring and follow-up are essential for all patients to prevent clinically significant micronutrient deficiencies.

Supplementation guidelines are identified in table 2.

Table 2: Recommendations for vitamin and mineral supplementation

Daily Minimum Supplement	Daily Dosage
Daily minimum supplement, routine adult multivitamin plus mineral (includes iron, folic acid adn thiamine)	One for gastric banding and two for Sleeve and Roux-en Y
Elemental calcium	1,200-1,500 mg (from diet and as citrate supplements in divided doses)
Vitamin D	3,000 IU vitamin D (titrated to therapeutic levels)
Vitamin B12	As needed to maintain B12 levels - aim to keep levels >400pmol
Total iron	45-60mg (multivitamin + additional supplements) for Sleeve and Roux-en Y. Based on nutritional markers for gastric band
Other	Further variation to the basic supplement recommendation is required to maintain nutritional status if dietary intake plus routine supplements is insufficient, and for pregnancy planning

Patients' compliance with long-term multivitamin and mineral supplementation is often poor.

I have found the most common reason for this is the perception that current health and energy reflect their long term needs: "I feel great and full of life, I don't need to take them anymore."

Symptoms of vitamin and mineral deficiency are commonly nonspecific, and most characteristic physical findings are seen late in the course of nutrient deficiency. Alarmingly, there has been a reported case of a vitamin B12 deficient infant born to a postoperative gastric bypass patient who was (asymptomatically) deficient in this vitamin.

Despite early education on the need for lifelong vitamin and mineral supplementation with patients I believe compliance can be improved through regular checking. Supplementation should be tailored to the individual based on deficiencies prior to surgery, current levels of stores, changes in nutritional markers over time and patient compliance.

Monitoring nutritional markers

Laboratory confirmation is the most reliable indicator for early diagnosis of nutrient deficiency which can present many years post-operatively when the patient is in weight maintenance or a regain cycle.

In the first year nutritional markers should be tested every six months after RYGB and SG, on the anniversary for AGB, and then annually thereafter for all procedures as per Table 3.

Table 3: Annual blood tests following bariatric surgery

Nutrient marker	Surgical procedure	Surgical procedure	Surgical procedure
	Adjustable gastric band	Sleeve gastrectomy	Gastric bypass
Iron studies	Optional	Yes	Yes
Vitamin B12	Yes	Yes	Yes

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Folic acid	Optional	Optional	Yes
25 - vitamin D	Yes	Yes	Yes
Parathyroid hormone	Optional	Optional	Optional
Vitamin A	No	Optional	Yes
Vitamin E	No	Optional	Optional
Zinc	No	Optional	Optional
Selenium	No	No	Yes
Magnesium	No	Optional	Optional
Thiamine	NO	Persistent vomiting	Persistent vomiting
Copper	No	Optional	Yes

Despite the many positive bariatric surgery outcomes for patients I believe it is imperative to be aware of possible vitamin/mineral deficiencies and to encourage patients to commit to a lifetime of healthy eating habits.

A GP plays an important role in monitoring nutritional status and prevention of nutrient deficiencies while coordinating collaborative care with an Accredited Practising Dietitian (APD) and other members of the health care team to maximise the health benefits to the patient.

Charlene Grosse is an accredited practising dietitian who has specialised in the dietary management of weight loss surgery and gastrointestinal disease over the last eight years

References:

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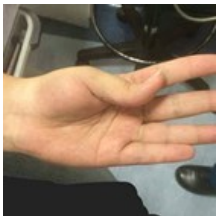


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