

Annual Review Checklist

If you are managing a patient who has undergone bariatric surgery, the list below provides you with a guide for long term post-surgical care. Whilst this list is not exhaustive, we hope it is of use for the ongoing care of your patient.

1. Micronutrient monitoring and management

- a. Your patient will require annual micronutrient monitoring lifelong. Please see table 1 below. It is recommended that your patient attend their local public hospital Queensland Pathology collection centre for this blood test to avoid potential out of pocket costs.
- b. Your patient will require lifelong vitamin supplementation
 - i. 2 x Multivitamins daily (Centrum Advanced/Men/Women or BN multivitamins are suggested)
 - ii. 1200mg calcium daily (within supplementation and diet)
 - iii. Additional supplementation as per micronutrient monitoring

2. Diabetes management

- a. Your patient may or may not be on diabetic pharmacotherapy. Could you please continue to monitor their glycaemic control as per usual practice. If your patient's diabetes is in remission, we would suggest at least annual HbA1c (sooner if significant weight regain). If necessary, your patient can be referred to the local Queensland Health Endocrinology service.

3. Bone health

- a. Please ensure your patient is achieving adequate calcium intake (as per micronutrient supplementation advice above) and Vitamin D remains replete.
- b. Please perform periodic bone densitometry (approximately every 2 years but may vary according to bone density and rate of bone loss).

4. Ongoing weight management

After bariatric surgery, long term lifestyle modification is required. Post-operative engagement with healthy lifestyle education may assist with maintaining the improved health outcomes from bariatric surgery, long term. Therefore, it is recommended that referral to a community -based dietitian and/or psychologist or group program is considered.

5. Surgical complications to be aware of

- a. Internal Hernia
- b. Dumping syndrome
- c. Dysphagia

Acute surgical complications should present to the local hospital emergency department.

Table 1. Evidenced based guidelines recommend for ongoing micronutrient monitoring after 12 months¹

Test	Guideline recommended monitoring frequency ^{1*}	
	Sleeve gastrectomy	Gastric bypass
Albumin	Annually	Annually
Corrected Calcium	Annually	Annually
Phosphate	Annually	Annually
Magnesium	Annually	Annually
Full Blood Count	Annually	Annually
Iron Studies	Annually	Annually
Vitamin B12	Annually	Annually
Serum Copper	No	Annually
Serum Ceruloplasmin (functional marker for copper)		
Serum Folate	Annually	Annually
Serum Thiamine	Annually, more	Annually
25-OH vitamin D	Annually	Annually
Red Cell Glutathione peroxidase (functional marker for selenium)	No	Annually
Plasma Glutathione peroxidise (functional marker for selenium)	No	Annually
Serum Zinc	Annually	Annually
Serum Vitamin A	No	Annually
Serum Ascorbate (vitamin C)	No	Annually

PTH	Annually	Annually
CRP	Annually	Annually
24-hour urine calcium	Annually	Annually

*Assuming no deficiency or other medical condition requiring these tests at different time points and frequency. Use clinical judgement for frequency if there is a deficiency present or a history of deficiency on supplementation.

Reference list:

1. Parrott, J., Frank, L., Rabena, R., Craggs-Dino, L., Isom, K. A. & Greiman, L. (2017). American Society for Metabolic and Bariatric Surgery Integrated Health Nutritional Guidelines for the Surgical Weight Loss Patient 2016 Update: Micronutrients. *Surgery for Obesity and Related Diseases*, 13: 727-741.
2. Thomson, CD. 2004. Assessment of requirements for selenium and adequacy of selenium status: a review. *European Journal of Clinical Nutrition*. Vol 58. pp. 231-402
3. Tanumihardjo SA. Biomarkers of vitamin A status: what do they mean? In: World Health Organization. Report: Priorities in the assessment of vitamin A and iron status in populations, Panama City, Panama, 15–17 September 2010. Geneva, World Health Organization, 2012.
4. Institute of Medicine. Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium and Carotenoids. National Academy Press: Washington DC, 2000.
5. Duncan, A., Talway, D., McMillan, D. C., Stefanowicz, F. & O'Reilly, D. S. J. (2012). Quantitative data on the magnitude of the systemic inflammatory response and its effect on micronutrient status based on plasma measurements. *The American Journal of Clinical Nutrition*, 95: 64-71.