

Vitamin & Mineral Requirements for Patients after Bariatric Surgery

Roux-en-Y Gastric Bypass & Sleeve Gastrectomy

After bariatric surgery procedures (Roux-en-y gastric bypass or sleeve gastrectomy), vitamin and mineral absorption is compromised as the GI tract is altered. Patients need to take a number of vitamin/mineral supplements for life and have their micronutrient levels measured regularly. Supplementation recommendations should be individualized for each patient based on their specific nutritional intake and status. Here are some standard recommendations for supplementation.

Supplement Facts	
Vitamin & Mineral Supplements after RYGB or SG	
	Amount required per day
Vitamins	Daily Requirements
Vitamin A	5000-10,000 IU
Vitamin B1 (Thiamine)	3 mg
Vitamin B2 (Riboflavin)	3.4 mg
Vitamin B3 (Niacin)	40 mg
Pantothenic acid (B5)	20 mg
Vitamin B6	4 mg
Vitamin B12	500-1000 mcg
Folate	Under 1000 mcg
Biotin	60 mcg
Vitamin C	120 mg
Vitamin D	3000-4000 IU
Vitamin E	60 IU
Vitamin K	160 mcg
Minerals	
Calcium Citrate	1200-1500 mg
Iron*	45-60 mg
Zinc	15 mg
Copper	2 mg
Selenium	140 mcg
Magnesium	400 mg
Manganese	4 mg
Chromium	120 mcg
Molybdenum	50 mcg

**Ferrous sulfate, fumarate, gluconate
 RYGB = Roux-en-Y gastric bypass;
 SG = Sleeve gastrectomy

- Multivitamin-mineral (MV) supplement:**
 - Early post-op (0-3 months), chewable, liquid or crushed supplements are recommended.
 - Once patients are able tolerate solid foods: tablet or capsule supplements can be used.
 - Patients need 1-2 pills/day (see supplement facts on the left for daily requirements)
 - Should have equal vitamins to minerals (complete MV).
 - Each pill should have a minimum:
 - 1.2 mg Thiamine (vitamin B1)
 - Under 500 mcg Folate
 - 7.5 mg Zinc
 - 1 mg Copper
- Vitamin B12:**
 - 500 - 1000 mcg/day oral or sublingual or;
 - 1000 mcg/month intramuscularly.
 - Avoid time-released
- Calcium:**
 - Calcium citrate is preferred
 - 1200-1500 mg/day
 - Take in divided doses of 500-600 mg
 - Avoid taking within 2 hours of supplements containing iron.
- Vitamin D:**
 - 3000-4000 IU/day (total from all supplements)
- Elemental Iron:**
 - Iron in multivitamin is typically sufficient for most patients (men and post-menopausal women): look for supplements with 18mg iron/dose.
 - 45-60 mg/day (for menstruating women)
 - Ferrous sulfate is preferred
 - Avoid taking within 2 hours of calcium supplement.

ATTENTION: The above supplement recommendations are for standard daily requirements after bariatric surgery. All pre-operative and post-operative deficiencies should be replenished and monitored. Refer to the following references for treatment recommendations:

Mechanick JI, Youdin A, Jones DB, et al. Clinical practice guidelines for the perioperative nutritional, metabolic, and nonsurgical support of the bariatric surgery patient: cosponsored by American Association of Clinical Endocrinologists, the Obesity Society, and American Society for Metabolic and Bariatric Surgery. Surg Obes Relat Dis. 2013;9(2):159-161.

Cummings, S., & Isom, K.A. (2015). *Pocket Guide to Bariatric Surgery* (2nd ed.). Academy of Nutrition and Dietetics.

Multivitamin Supplements: Comparison Chart

Most supplement regimens require patients to take up to 9 supplements per day (i.e. 2 MV + vitamin B12 + 4-6 calcium + vitamin D + iron), making it difficult to adhere long-term. No single multivitamin/mineral supplement will provide all the micronutrients required after surgery, however some provide sufficient amounts for basic needs, minimizing the number of supplements to possibly just a multivitamin/mineral and calcium supplements. The following chart compares common multivitamin supplements in chewable, tablet/capsule or powder format in Canada and USA.

Brand Name	Pill Type	What does it look like	Dose	Does the Multivitamin Contain:					Comments
				Complete MV	Vitamin B12	Vitamin D	Iron	Calcium	
One-a-Day Women's 50+ (Blue Box)	Tablet	CANADA: www.oneaday.ca/en/products/multivitamins_for_women_over_50.html	1 per day	✓	25 mcg	1000 IU	✗	500 mg	▪ Additional iron, vitamin B12, vitamin D and calcium needed
One-a-Day Women's (Purple Box)	Tablet	CANADA: www.oneaday.ca/en/products/multivitamins_for_women.html	2 per day	✓	6 mcg	1000 IU	15 mg	500 mg*	▪ Additional vitamin B12, vitamin D and calcium needed
Kirkland Signature™ Formula Forte Women	Tablet	CANADA: www.costco.ca/Kirkland-Signature-%E2%84%A2-Formula-Forte-Women---365-Tablets.product.100097122.html	2 per day	✓	21 mcg	800 IU	7.5 mg	400 mg*	▪ Additional iron, vitamin B12, vitamin D and calcium needed
USA ONLY: Centrum Adult Chewable	Chewable	USA ONLY: www.centrum.com/centrum-chewables	2 per day	✓	12 mcg	800 IU	36 mg	216 mg	▪ Additional vitamin B12, vitamin D and calcium needed
Opurity® Bypass & Sleeve Optimized	Chewable	USA: www.opurity.com	1 per day	✓	350 mcg	1600 IU	30 mg	50 mg	▪ Additional calcium and vitamin D needed
Opurity® Complete	Capsules	USA: www.opurity.com	4 per day	✓	500 mcg	3000 IU	45 mg	✗	▪ Additional calcium needed
Celebrate Vitamins Multivitamin Soft Chews	Soft Chew	USA: www.celebratevitamins.com	2 per day	✓	500 mcg	3000 IU	✗	✗	▪ Additional iron and calcium needed
Celebrate Vitamins Multivitamin Complete	Chewable	USA: www.celebratevitamins.com	2 per day	✓	500 mcg	3000 IU	36 mg	✗	▪ Additional calcium needed
Celebrate Vitamins Multivitamin	Capsule	USA: www.celebratevitamins.com	3 per day	✓	500 mcg	3000 IU	✗	✗	▪ Additional iron and calcium needed
Celebrate Vitamins ENS 3 in 1	Powder	USA: www.celebratevitamins.com	2 per day	✓	500 mcg	4000 IU	✗	1000 mg	▪ Additional iron needed ▪ Contains 8g soluble fibre
Bariatric Advantage Complete Multi-Formula	Chewable	CANADA: www.bariatricadvantage.ca	2 per day	✓	100 mcg	1000 IU	✗	200 mg	▪ Additional iron, vitamin B12, vitamin D, and calcium needed
Bariatric Advantage Advanced Multi EA	Chewable	ORDERED IN USA ONLY: www.bariatricadvantage.com	2 per day	✓	500 mcg	3000 IU	45 mg	✗	▪ Additional calcium needed ▪ ONLY available if ordered in USA (not available for Canadian orders)

*Reminder: Multivitamins containing more than 250 mg calcium could jeopardize iron absorption.