Nutrition Recommendations

Pre-surgery Routine:

Pre-procedure weight loss can reduce liver size and help make visualization of the stomach (in the abdominal cavity) easier for the surgeon. Programs may recommend weight loss or a specific diet plan in the weeks or months prior to surgery. This is pretty dependent on the program you are going through, their requirements, and potentially insurance requirements.

Foods: Post-surgery Routine (see 2 tables below):

A low-sugar, clear-liquid meal program can usually be initiated within 24 hours after any of the surgical bariatric procedures, but this diet and meal progression should be discussed with the surgeon and guided by the registered dietician (RD).

A consultation for postoperative meal initiation and progression must be arranged with an RD who is knowledgeable about the postoperative bariatric diet. Patients should receive education in a protocol-derived staged meal progression based on their surgical procedure.

In general, Surgery for Obesity and Related Diseases (2020) recommend the following considerations post-surgery:

- **Small meals:** Eat 3-6 small meals during the day and chew small bites of food thoroughly before swallowing. (Table 1-2)
- **During maintenance phase**: Eat at least 5 daily servings of fresh fruits and vegetables.
- Concentrated sweets should be eliminated from the diet after RYGB to minimize symptoms of dumping syndrome and after any bariatric procedure to reduce caloric intake.
- **Drinking fluids:** Typical patients should avoid drinking 30 minutes before or after eating solid food.
- **Calories:** Typical daily calorie intake the first week after surgery is 400 kcal/d and progresses to 600 to 800 kcal/d by weeks 3 to 4. Several months after surgery, patients may consume 1200 to 1500 kcal/d, with most patients consuming approximately 1500 to 1800 kcal/d 6 months postoperatively and long term. These are broad ranges and shouldn't be taken too literally. Follow your body's own guidance of hunger and fullness.
- **Breakdown of protein, carbohydrates, and fat, in summary (table 2):**
  - **Protein** intake should be individualized, assessed, and guided by your bariatric program. A minimal protein intake of 60 g/d -90 g/d should be adequate; higher amounts of protein intake—need to be assessed on an individualized basis.(**10-35% of daily intake – 30% ideal.**)
  - **Carbohydrates:** 50 g/d early states, up to 130 g/d maintenance. (**40-60% of daily intake ideal for weight loss/maintenance**)
  - **Fat:** 20-35% of daily intake; the bulk from unsaturated fats. (**20-35% of daily intake**)

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Table 1

Table 12
Dietary recommendations after bariatric procedure

Recommendations	UpToDate: postoperative nutritional management [857]	2008 ASMBS Allied Health Nutritional Guidelines [858]	Guidelines for perioperative care in bariatric surgery: ERAS Society Recommendations [568]	Academy of Nutrition and Dietetics Pocket Guide to Bariatric Surgery, second edition [859]
Diet progression	Surgeon or institution specific Stage 1 and 2: hydration and liquids • Clear liquid diet (brief period) • Full liquids and possibly pureed foods, which includes liquid sources of protein and small amounts of carbohydrates (up to several weeks after surgery) Stage 3: Solid foods with an emphasis on protein sources, some carbohydrates, and fiber (~10–14 d after surgery) Stage 4: Micronutrient supplementation (when patient reaches a stable or maintenance weight) Long-term diet: • Roux-en-Y gastric bypass: well-balanced diet containing all the essential nutrients possible postoperative diets may include ○ My Plate ○ DASH Diet The Vegetarian Resource Group • Sleeve gastrectomy: same advancement and recommendations post-SG as for post-RYGB • LAGB: generally resume a normal diet soon after surgery • Biliopancreatic diversion/duodenal switch: small, nutrient-dense meals that are high in protein, along with fruits, vegetables, whole grains, and omega-3 fatty acids and avoidance of concentrated sweets	Diet stage: Clear liquid (1–2 d after surgery) • Sugar-free or low sugar Full liquid (10–14 d after surgery) • Sugar-free or low sugar Pureed (10–14+ d) • Foods that have been blended or liquefied with adequate fluid Mechanically altered soft (>14 d after surgery) • Textured-modified • Require minimal chewing • Chopped, ground, mashed, flaked, or pureed foods Regular textured (6–8 wk after surgery) * Purpose of nutrition care after surgical weight loss procedures: • Adequate energy and nutrients to support tissue healing after surgery and support preservation of lean body mass during extreme weight loss • Foods and beverages must minimize reflux, early satiety, and dumping syndrome while maximizing weight loss and weight maintenance	Clear liquid meal regimen initiated a couple of hours postoperatively Balanced meal plan to include • >5 servings of fruit and vegetables daily for optimal fiber consumption, colonic function, and phytochemical intake Avoid concentrated sweets to reduce caloric intake and to minimize symptoms of dumping (gastric bypass)	Postoperative nutrition care of the bariatric patient has 2 distinct stages during the first year: • 0–3 mo • 3 mo–1 yr Typically described in stages: • Diet stage 1—clear liquid diet: very short term; used in the hospital on POD 1 and 2; liquids low in calories and sugar and free of caffeine, carbonation, and alcohol • Diet stage 2—full liquid diet: started between POD 2 and POD 3; continues for ~14 d; clear liquids + full liquids that are low in sugar with up to 25–30 g protein per serving • Diet stage 3—soft food texture progression: timing varies by type of surgery, and duration depends on patient's response to foods; replace protein-containing full liquids with soft, semisolid protein sources (moist, soft, diced, ground, or pureed), 3–5 times/d, as tolerated • Diet stage 4: regular solid food diet
Recommendations	UpToDate: postoperative nutritional management [857]	2008 ASMBS Allied Health Nutritional Guidelines [858]	Guidelines for perioperative care in bariatric surgery: ERAS Society Recommendations [568]	Academy of Nutrition and Dietetics Pocket Guide to Bariatric Surgery, second edition [859]

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*Table from Surgery for Obesity and Related Diseases (2020)

Table 2

Table 12 (*continued*)

Recommendations	UpToDate: postoperative nutritional management [857]	2008 ASMBS Allied Health Nutritional Guidelines [858]	Guidelines for perioperative care in bariatric surgery: ERAS Society Recommendations [568]	Academy of Nutrition and Dietetics Pocket Guide to Bariatric Surgery, second edition [859]
Fluids	Throughout all the diet stages, patients should be counseled to consume adequate fluid to prevent dehydration	N/A	>1.5 L daily	48–64 oz/d • Women: 48 oz/d • Men: 64 oz/d • 50% goal should be met with clear liquids
Protein	46 g/d—women 56 g/d—men Protein needs: • Should constitute 10%–35% of daily caloric intake • Weight maintenance: .8–1.2 g/kg weight per day • Active weight loss: 1.2 g/kg weight (BPD/DS may require 1.5–2.0 g/kg weight per day)	Exact needs have yet to be defined	Should average 60–120 g daily	Guidelines for protein consumption not defined
Carbohydrates	• Early postoperative—50 g/d • As diet intake increases—130 g/d	N/A	N/A	N/A
Fat	20%–35% of the daily caloric intake; bulk of the fat intake should be unsaturated fat	N/A	N/A	N/A
Behavior	• Eat slowly • Chew food extensively • Stop eating as soon as reach satiety • Avoid taking food and beverages at the same time • Simple sugars should be limited to <10% of daily caloric intake	Avoid/delay • Concentrated sweets • Carbonated beverages • Fruit juice • High-saturated fat, fried foods • Soft doughy bread, pasta, rice • Tough, dry, red meat • Nuts, popcorn, other fibrous foods • Caffeine • Alcohol	• Multiple small meals each day • Chewing food thoroughly without drinking beverages at the same time • Consume fluids slowly	• Practice mindful eating • Chew all food until it is smooth • Make sure food is soft and moist enough to swallow without sticking • Do not drink liquids during meals • Wait 30 min after eating before resuming fluid intake • Avoid bread, rice, and pasta until able to comfortably consume adequate protein, vegetables, and fruits
Recommendations	UpToDate: postoperative nutritional management [857]	2008 ASMBS Allied Health Nutritional Guidelines [858]	Guidelines for perioperative care in bariatric surgery: ERAS Society Recommendations [568]	Academy of Nutrition and Dietetics Pocket Guide to Bariatric Surgery, second edition [859]

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Table from Surgery for Obesity and Related Diseases (2020)

Foods: Post-surgery Routine (continued)

Setting up your meal plan: EXA MPLE (Should be individualized to meet your body's needs)

Eating for Body Type (to encourage weight loss)	**Carbs** **(4 calories per gm)**	**Protein** **(4 calories per gm)**	**Fats** **(9 calories per gm)**
Compact and muscular body build (medium proportion of fat)	**50%**	**30%**	**20%**
Soft round body build with (high proportion of fat)	**40%**	**30%**	**30%**

*Resource: VShred (2020). Fitness and Nutrition site. http://www.vshred.com

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Fluids:

Each surgeon and bariatric program may have their own specific recommendations and regimens regarding the amount of fluids to drink.

Surgery for Obesity and Related Diseases (2020), recommend: Once you can tolerate oral intake, fluids should be consumed slowly, preferably at least 30 minutes after meals to prevent GI symptoms, and in sufficient amounts to maintain adequate hydration *(See table 2: Range of 48-64 ounces, 1.5 L daily = 50 ounces).*

Vitamins

Each surgeon and bariatric program may have their own specific recommendations and regimens. Surgery for Obesity and Related Diseases (2020), daily nutritional supplementation for patients include:

- **Multivitamin(s):** Chewable or tablets (each containing iron, folic acid, and thiamine). Amounts of multi-vitamin may vary dependent on type of surgical procedure completed. (200% RDA typical for most procedures, 100% RDA for Gastric Bands)
- **Elemental calcium:** (1200–1500 mg/d for SG and RYGB and 1800– 2400 mg/d for BPD/DS in diet and in divided doses)
- **Vitamin D:** At least 1200-1500 IU of vitamin D. Vitamin D recommendations may be higher until levels are at recommended range.
- **Iron:** Total iron as 18 to 60 mg via multivitamins and additional supplements
- **Vitamin B12:** (parenterally as sublingual, subcutaneous, or intramuscular preparations; orally if determined to be adequately absorbed). May be included in your multi-vitamin.

References:

Surgery for Obesity and Related Diseases (2020), Clinical practice guidelines for the perioperative nutrition, metabolic, and nonsurgical support of patients undergoing bariatric procedures – 2019 update: cosponsored by American Association of Clinical Endocrinologists/American College of Endocrinology, The Obesity Society, American Society for Metabolic & Bariatric Surgery, Obesity Medicine Association, and American Society of Anesthesiologists. Pg.175-247

VShred (2020), Fitness and Nutrition. http://vshred.com