(COMET) Center for Obesity and Metabolic Health
Nutrition After Bariatric Surgery

Understanding behavior changes and long-term care after bariatric surgery
Get to know your dietitians

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We will evaluate your nutrition status and labs at your 2 weeks, 3 months, 6 months, 12 months, and annual follow-up visits
• Stages of the Diet after Surgery

• Vitamin and Mineral Supplementation

• Tips for Long-term Weight Loss and Health
Stages of Postoperative Diet
Stage I: CLEAR LIQUIDS

Days -1, 0 and 1

- Day -1 = Pre-op (1 day before surgery)
- Day 0 = Day of surgery
- Day 1 = Day after surgery

CLEAR LIQUIDS:

- Water or Ice chips
- Broth
- Diluted, clear 100% juice
  - (1/4 cup juice, ¾ water)
- Sugar-free Jell-O
- Sugar-free popsicle
Stage II: FULL LIQUIDS
Days 2 through 14

• Food / liquids that are blended to a THIN (milk-like) liquid consistency.
• BLEND and STRAIN
Stage II: FULL LIQUIDS
Days 2 through 14

- Protein shakes
- Water
  - try alkaline if tap water not tolerated

To Prepare Full Liquid Foods:
1. Use the blender until it is a thin liquid consistency
2. Mix with liquid item to thin (water, low-fat milk, or low sodium broth)
3. STRAIN
Protein Supplements

- **Protein shakes / powder** should meet the following:
  - 100-200 calories
  - < 10g sugar
  - < 15g carbohydrates
  - > 20g protein per serving

- Avoid predominantly “collagen” protein products – not a complete protein

- If lactose intolerant: Look for vegan products or “100% whey Isolate” and avoid “whey concentrate”

- Be prepared! Find several protein products that you like *before* surgery. Taste buds may change after surgery
Recommended Supplements

- Bariatric Advantage (www.bariatricadvantage.com)
- Bariatric Fusion (www.bariatricfusion.com)
- BiPro (www.biprousa.com) – discount code “UCLA”
- Ensure Max Protein (Walmart, Target, CVS)
- Premier Protein (Costco, Sam’s club)
- Pure Protein (Trader Joe’s, Ralph’s, www.pureprotein.com)
- Isopure (Vitamin Shoppe)
- Muscle Milk (Target, Walmart, Vitamin Shoppe)
- Orgain Organic Protein Powder (Walmart and www.orgain.com)
- Unjury (www.unjury.com)
- Vega (Target, Vitamin Shoppe)
Stage II: **FULL LIQUIDS**  
Days 2 through 14

- **Dairy products**
  - Milk
  - Plain yogurt (not Greek)
  - Kefir
Stage II: **FULL LIQUIDS**  
Days 2 through 14

- **Soups and broths**
  - choose low fat, low sodium, blended and strained
  - add unflavored / chicken broth flavored protein powder

To Prepare Full Liquid Foods:
1. Use the blender until it is a thin liquid consistency
2. Mix with liquid item to thin (water, low-fat milk, or low sodium broth)
3. STRAIN
Stage II Full Liquids - Key points

• Begin liquid protein supplements – goal of **80-100 grams protein**
  • Slowly work your way up to this, it can take 2-3 weeks to reach this goal

• Focus on rate of consumption – goal of **64 oz fluid** per day
  • Track volume
  • Slowly increase your rate

• **LISTEN TO YOUR BODY**
  • **STOP** at first sign of fullness, **BEFORE** you experience “stomach pain”
## Stage II FULL LIQUIDS Sample Menu

<table>
<thead>
<tr>
<th>Meal</th>
<th>Liquids</th>
<th>Liquid Goal</th>
<th>Protein (g)</th>
</tr>
</thead>
</table>
| Breakfast | Protein Shake  
                    | Sip water   | 5 ounces    | 15          |
|         |                                   | 5 ounces    |             |
| Snack   | Protein Shake  
                    | Sip water   | 5 ounces    | 15          |
|         |                                   | 5 ounces    |             |
| Lunch   | Blended & strained Soup w/ unflavored protein  
                    | Sip water   | 5 ounces    | 20          |
|         |                                   | 5 ounces    |             |
| Snack   | Protein Shake  
                    | Sip water   | 5 ounces    | 15          |
|         |                                   | 5 ounces    |             |
| Dinner  | Protein Shake  
                    | Sip water   | 5 ounces    | 15          |
|         |                                   | 5 ounces    |             |
| Snack   | Protein Shake  
                    | Sip water   | 5 ounces    | 15          |
|         |                                   | 5 ounces    |             |

**Kcal Goal: 600-800**  
Total: 60 oz  
Total: 95

- Space meals every 2-3 hours
- Remember to work your way up to this! It may take 5-10 days to be able to drink this much!

Goals:  
- 80-100 gm protein  
- 64 oz fluid per day
Stage II Full Liquids WARNINGS

• NO solid foods until designated time
• The greatest risk of developing leaks happen within the first 2 weeks after surgery
Stage III: SOFT FOODS
Weeks 3 through 5, Days 15-35

Foods that are pureed, blended, ground, mashed
Think baby food, spreadable consistency
SOFT FOODS:

**Protein and dairy**
- Scrambled egg, egg whites, poached eggs, soft boiled egg
- Low-fat cottage cheese
- Low-fat Greek yogurt
- Pureed meats, moist ground meats
  - Prepared with broth or in vegetable soup
- Soft fish, soft tofu
- Homemade egg/chicken/tuna salad
  - made with low fat plain Greek yogurt
- Vegetarian refried beans
  - Or homemade mashed / pureed beans

**Vegetables and fruit**
- Unsweetened applesauce
- Soft ripe banana
- Pureed fruit/veggies
  - Mix in protein powder
- Canned fruit in *water*
- Well-cooked soft vegetables
  - Carrots, spinach, cauliflower
- Low Fat, low sodium pureed soups
Stage III Soft Foods - Key points

• Continue liquid protein supplements – have at least 1-2 protein shakes per day to help reach goal of 80-100 grams protein per day

• Calorie goal of 600 – 800 kcal / day

• Limit portions to 4 oz per snack and 6 oz per meal
  • 3/4 cup (6 oz) of food per meal
  • 1/2 cup (4 oz) of food per snack

• Avoid caffeine – high acidity and is a diuretic, which is dehydrating

• Avoid starting regular texture food until 6 weeks post surgery!
Practicing portion control

• Measure out portions!

• Using smaller plates, bowls and utensils helps you feel fuller – like an optical illusion
## Stage III SOFT FOODS Sample Menu

<table>
<thead>
<tr>
<th>Meal</th>
<th>Foods</th>
<th>Amount</th>
<th>Protein (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast</td>
<td>Scrambled egg (soft) Low fat cottage cheese</td>
<td>1 1 Tablespoon</td>
<td>10</td>
</tr>
<tr>
<td>Snack</td>
<td>Protein Shake</td>
<td>5 fluid ounces (1/2 bottle)</td>
<td>15</td>
</tr>
<tr>
<td>Lunch</td>
<td>Tuna salad with low-fat plain Greek yogurt Pureed chicken veggie soup</td>
<td>2 ounces 2 Tablespoon</td>
<td>16</td>
</tr>
<tr>
<td>Snack</td>
<td>Protein Shake</td>
<td>5 fluid ounces (1/2 bottle)</td>
<td>15</td>
</tr>
<tr>
<td>Dinner</td>
<td>Steamed soft fish Mashed carrots Mashed sweet potato</td>
<td>2 ounces 1 Tablespoon 1 Tablespoon</td>
<td>14</td>
</tr>
<tr>
<td>Snack</td>
<td>Protein Shake</td>
<td>5 fluid ounces (1/2 bottle)</td>
<td>15</td>
</tr>
</tbody>
</table>

**Calorie Goal: 600-800**  
Total: 85 gm

** SIP SIP SIP water! (Stop 15 minutes before meal / Start 30 mins after)
Stage IV: SOLID FOODS

Start of Week 6, Day 36

- Expand your food choices *as tolerated*
  - introduce one new food item at a time

- Goal of **800-1200 calories, 80-100 grams protein/day**
  - Goal will vary from person to person

- Maintain goal of **64 ounces of fluid** per day - Sip! Sip! Sip!
  - No liquids 15 minutes before meals and 30 minutes afterwards

- Portion control 1/2 cup food per snack and 3/4 cup of food per meal
Stage IV Solid Foods- Key points

• Eat SLOWLY and CHEW your food - Take 20-30 minutes to eat each meal!

• STOP eating at the first sign of fullness

• Continue protein supplements to meet goal of **80-100 grams protein**
  • If this goal cannot be met from food alone, continue to incorporate protein shakes and supplements
## Stage IV Sample Menu: Solid Foods

<table>
<thead>
<tr>
<th>Meal</th>
<th>Foods</th>
<th>Amount</th>
<th>Protein (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast</td>
<td>Scrambled egg whites, 100% Whole grain toast</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>1 Slice</td>
<td>1 Slice</td>
<td>4</td>
</tr>
<tr>
<td>Snack</td>
<td>PB2 powder, 1/2 peeled apple</td>
<td>4 tbsp</td>
<td>10</td>
</tr>
<tr>
<td>Lunch</td>
<td>Steamed chicken breast, skinless, Spinach salad with olive oil and lemon juice</td>
<td>3 ounces</td>
<td>21</td>
</tr>
<tr>
<td>Snack</td>
<td>2% plain Greek yogurt, Strawberries</td>
<td>1/2 cup</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/4 cup</td>
<td></td>
</tr>
<tr>
<td>Dinner</td>
<td>Baked Salmon, Quinoa, cooked, Sauteed Mushrooms</td>
<td>3 ounces</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/4 cup</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/4 cup</td>
<td></td>
</tr>
<tr>
<td>Snack</td>
<td>Protein Shake</td>
<td>5 fluid ounces</td>
<td>15</td>
</tr>
</tbody>
</table>

**Kcal Goal: 800 – 1200**

Total: 92

Goals:
- **80-100 gm protein**
- **64 oz fluid**

**SIP SIP SIP water! (Stop 15 minutes before meal/Start 30 mins after)**
Making Positive Food Choices

- At mealtimes: Prioritize protein, then non-starchy vegetables, then carbohydrates
- Choose complex carbohydrates:
  - Whole grains, brown rice, quinoa, barley, starchy vegetables
- Avoid simple carbohydrates - low in nutritional value:
  - White bread, cookies, cakes, fruit juice
- Choose nutritionally dense foods:
  - Chicken breast, fish, eggs, low fat Greek yogurt, peanut butter, whole vegetables, whole fruits
- Avoid trigger foods:
  - Usually high in sugar and fats
- Tough meats:
  - Avoid steaks for 3-6 months after surgery
Post-Operative WARNINGS

- Avoid alcohol
  - It is dehydrating, high in calories

- Avoid carbonated (bubbly) drinks
  - The bubbles can give you gas, cause bloating and pain

- Avoid chewing gum
  - If you swallow it, gum can block the stomach opening

- Avoid drinking from a straw
  - You may drink too much too quickly, which can be painful
  - The straw makes you swallow air, which causes bloating
Post-Operative WARNINGS

• Do not drink with your meals - Stop 15 minutes before meal / Start 30 mins after

• Avoid items with greater than 10 grams of sugar

• Avoid coffee and caffeinated tea for 6 weeks after surgery
  • Try introducing decaf after 6 weeks
    • The caffeine in coffee or tea is a diuretic and can dehydrate you
    • Caffeine increases gastric acids, which causes heartburn and gastroesophageal reflux
  • Coffee may limit the absorption of calcium and iron in the gut
    • Limit yourself to <1 cup per day

• Excess calories
  • Coffee and tea drinks (latte, frappuccino, creamers, chai teas, etc) are high in processed sugars, fats, and calories
  • Use low fat milk, unsweetened almond/soy milk and avoid sugars and artificial sweeteners in your drinks
Post-Operative **WARNINGS**

**Beware of Dumping Syndrome**

- **Early Dumping:**
  - Immediate reaction to sugar and fat
  - Symptoms: Diarrhea or nausea

- **Late Dumping:**
  - Occurs 2 hours after a meal that is usually high in carbohydrate and contains little to no protein (avoid by always having a protein with meals)
  - Symptoms: Fatigue, sleepiness, lightheadedness, near fainting, sweating, low blood pressure, reactive hypoglycemia

**What can cause Dumping:**

- Anything with more than 10-15 grams sugar
- Milkshakes, coffee drinks, fruit juice, sport drinks
  - High fat liquids and foods:
  - Creamy soups, alfredo sauce
Post-Operative **WARNINGS**

**Gout Flares**

- Gout flares may develop after surgery due to rapid weight loss and high protein intake.

- Avoid foods high in purine:
  - Turkey
  - Some seafood: anchovies, herring, sardines, mussels, scallops, trout, haddock, mackerel and tuna

- Increase consumption of:
  - Low-fat dairy (greek yogurt, milk, cottage cheese, etc)
  - Whole grains (quinoa, whole wheat bread, brown rice, etc)
  - Fluids (alkaline water, herbal tea)
Vitamins and Minerals
Supplementation

• Why do we need to take vitamins / minerals?
  • Bypass creates a degree of malabsorption and sleeve creates a degree of restriction
  • You are at an increased risk of not receiving enough vitamins and minerals from your food

• We recommend life long supplementation

• We will regularly monitoring your blood values in order to measure body requirements
  • 3 month, 6 month, 12 month and annual appointments
Vitamin and Mineral Supplementation

**Everyone**
BEGIN DAY 2 POST OP (FULL LIQUIDS)
- Multivitamin
- B-complex

**If Doctor Recommends**
- Calcium Citrate**
- Folic Acid
- Iron
- Vitamin D
- Vitamin A
- Zinc

** For gastric sleeve patients >45 yo and all RYGB patients

Begin at 6 weeks post-op (regular diet phase)
Multi-Vitamins

• Look for a well balanced daily multi-vitamin containing 100% of daily value (Multi-plus, Multi-Complete)
  • Choose a complete adult formula such as
    • www.bariatricadvantage.com – discount code UCLA
    • www.bariatricfusion.com
    • www.barilife.com
    • www.PatchMD.com - Available at 100 UCLA Medical plaza
    • www.procarenow.com – Bariatric one a day

• **Route/Form:**
  • Capsule
  • Chewable/Chew
  • Liquid: usually 30 cc once a day
  • Transdermal patch
  • NO GUMMIES!
  • NO children’s formulas!
B-Complex

• Well balanced daily B-complex that includes:
  • B1, B6, B9 and B12

Route/Form:
• Capsule, Chewable, or Liquid
• Take as directed on the bottle unless otherwise specified by your Doctor
Calcium

• **Name**: Calcium Citrate

• **Route/Form:**
  - Capsule, patch, chewable, or liquid

• **Oral Dose:**
  - 1000-1200 mg per day PLUS 400-800 IU Vitamin D
  - 500 – 600 mg is absorbed at one time
  - Space at least 3 hours apart
  - If taking an iron supplement space iron and calcium apart by 2-3 hours.
# American Society for Metabolic and Bariatric Surgery

**ASMBS Guidelines**

<table>
<thead>
<tr>
<th>Nutrients</th>
<th>ASMBS Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A</td>
<td>5,000-10,000 IU/day</td>
</tr>
<tr>
<td>Vitamin D3</td>
<td>3,000 IU/day</td>
</tr>
<tr>
<td>Folic Acid</td>
<td>400-800 mcg/day</td>
</tr>
<tr>
<td></td>
<td>(Women of childbearing age 800-1000 mcg/day)</td>
</tr>
<tr>
<td>Vitamin B12 (Cobalamin)</td>
<td>350-500 mcg/day</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>120 mg/day</td>
</tr>
<tr>
<td>Thiamin B1</td>
<td>12 mg/day</td>
</tr>
<tr>
<td>Biotin</td>
<td>600 mcg/day</td>
</tr>
<tr>
<td>Calcium</td>
<td>1,200-1,500 mg/day</td>
</tr>
<tr>
<td>Iron</td>
<td>45-60 mg/day</td>
</tr>
<tr>
<td>Zinc</td>
<td>16-22 mg/day</td>
</tr>
<tr>
<td>Copper</td>
<td>2 mg/day</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>90-120 mcg/day</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>15 mg/day</td>
</tr>
</tbody>
</table>
Fiber Supplement

• Why do you need it?
  • Promote regularity, prevent constipation

• Dose:
  • Variable per person, as needed

• Forms:
  • Powder: Metamucil, Benefiber, Psyllium Husks

• Note: **64 oz of water** and **exercise** helps move things along
Probiotics
May begin with full liquids, day 2 post op

• Helps promote gut health, healthy microbiota
  • Promotes maintaining a healthy weight
• May help with bowel movements
• May help defend against post-operative infection
• Suggested route:
  • Yogurt, kombucha tea, kefir, capsules
• At least 10 billion CFU
  • Better to be refrigerated
  • Look for date “at time of expiration”
    • NOT “time of manufacture”
FAQs

• Will I lose my hair?
  • Common side effect of rapid weight loss
    • Will come back when weight and kcal intake is stable (~1 year post op)
    • Try Maxi Hair supplement, 1 tsp flaxseed oil, meeting protein recommendations

• Can my stomach stretch back?
Tips for Long-Term Success
• Set realistic goals for weight reduction
  • 60 – 80% of excess body weight

• Make sure goals are within your control
  • Focus on behavior changes
  • What could you put on a star chart?

• Keep a diary – record those significant events of success and achievement!
  • What are the “non-scale” reasons you are having this surgery?
• Keep your post-op appointments!  
  2 weeks, 3 months, 6 months, 12 months and annually  
  Our team will help provide you the support you need for long-term success

• Regular attendance at Support Group meetings  
  • First Saturday of every month  
  • View topics on our website: surgery.ucla.edu/bariatrics

• Consider consistent therapy and non-UCLA groups

• DON’T READ THE BLOGS!
Exercise Guidelines

- **Week 1 – 6**: Walk, elliptical, stationary bike
  - NO swimming/hot tub
  - Moderate and consistent movement plan

- **Week 6+**: Most restrictions are lifted
  - Ease into weight lifting
  - As you heal, you will need to change:
    - **Duration** of time you exercise
    - **Distance** of each type of exercise
    - **Type** of exercise:
      - Biking, swimming, tennis, weight lifting
    - **Intensity**:
      - Level, speed, or resistance of machine
Mindful Dietary Habits

- **DO NOT** advance to next stage until designated time
- Listen to what your bodily cues, learn to stop just before the first sign of fullness
- Use smaller plates and utensils
- Eat slower - spend 20-30 minutes on meals
  - Cut food into small bite size pieces
  - Chew to liquid consistency
  - Set utensils down between bite
- Fluids between meals not with meals
- Limit/avoid alcoholic beverages
Mindful Dietary Habits

The Hunger Scale

1. Ravenous
2. Hungry
3. Pangs
4. Neutral
5. Satisfied
6. Full
7. Stuffed
8. Sick
Review

• What supplements will everyone need to take after surgery?
  • Vitamins?
  • Food group / macronutrient?

• How many weeks after surgery can you begin a regular texture diet?

• How many months after surgery should you avoid tough meat?
Reminders

- Homework link will be sent via email
- EMMI Video will be emailed
  - Will be scheduled by your dietitian
  - You have ~30 days to complete it