

# Your Bariatric Surgery Toolkit



A Member of Trinity Health



# Bariatric Surgery Step-by-Step



A Member of Trinity Health





## Introduction

Welcome to the team and the start of a journey to become a healthier person! You will achieve success with the right tools and support.

This is your Bariatric Surgery Toolkit, your essential resource for a successful weight loss and health improvement journey. The purpose of this toolkit is to provide you and your support system with the basic information to be successful before and after surgery. It may seem overwhelming at first, but this is a long-term plan, so take the time necessary to understand it, one page at a time. Please READ and RE-READ this until the information has stuck. Remember this is only a guide; you are an individual and your specific plan may vary. Always consult the bariatric team for specific recommendations.

**Surgery is one tool for a healthier life, but is not sufficient by itself.** You will need to combine it with healthy lifestyle change through better, more nutritious food choices, physical activity, and group support for long-term success. Most importantly, you are not alone. You have a team of health care professionals at St. Mary's Health Care system who will be supporting you and walking the journey with you.

Again, we are honored you have chosen us to be on your team and congratulate you on your bravery in taking an important first step to health improvement and weight loss.

Let's begin, one step at a time!



## Process Steps

- Initial bariatric surgery application completed and returned to our office
  - Complete all intake forms
  - Verify insurance coverage
- Attend bariatric surgery informational seminar
- Attend initial consultation and monthly preoperative appointments
  - Receive and review Your Bariatric Surgery Toolkit
  - Complete additional screening tools
  - Complete preoperative labs
  - Complete preoperative testing
  - Complete all preoperative consults
    - Bariatric dietitian (2-3 appointments or classes)
    - Bariatric psychologist clearance
    - PCP clearance
    - Anesthesia preoperative evaluation
  - Start making diet and physical activity changes
    - Keep a food journal (minimum of 2 weeks)
    - Complete a physical activity plan or exercise prescription from a certified personal trainer
  - Attend bariatric support group
- Insurance approval for surgery and surgery date scheduled
  - Stop smoking 6 weeks prior to surgery
  - Follow a 1-week high-protein, low-sugar, full liquid diet the week before surgery
  - Stop taking certain medications before surgery
  - Get all your bariatric supplements
  - Identify a support person

- Have bariatric surgery
  - Expected hospital stay of 1-2 days
- Advance through 5 stages of the bariatric surgery diet
  - Stage 1: Bariatric clear liquid diet
  - Stage 2: Bariatric full liquid diet
  - Stage 3: Bariatric pureed diet
  - Stage 4: Bariatric soft diet
  - Stage 5: Regular bariatric diet (remain on this diet for the rest of your life)
- Take micronutrient supplements
  - Bariatric chewable or liquid supplements (weeks 3-6 post-op)
  - Bariatric supplements (you will take these for the rest of your life)
- Follow-up with your bariatric surgeon
  - 2 weeks post-op
  - 6 weeks post-op
  - 3 months post-op
  - 6 months post-op
  - 1 year post-op
  - Yearly after the first year
- Continue to attend bariatric support group
- Continue focusing on diet, physical activity, and mental wellbeing

## Metabolic and Bariatric Surgery

Metabolic and bariatric surgery (MBS) or weight loss surgery, is a medical procedure performed for the purpose of weight loss. It affects both the patient's weight and metabolism (appetite and breakdown of food into energy). MBS consistently has been shown to be the most effective and longest-lasting treatment for obesity. MBS has been shown to be effective at improving or resolving several weight-related comorbidities, including type 2 diabetes, heart disease, hypertension, sleep apnea and some cancers. MBS also has been shown to be safer than many common general surgeries, including gallbladder removal, appendectomy and knee replacement.

Picking an experienced surgeon and hospital with a commitment to safety and quality helps to lower your risk. St. Mary's Hospital and your bariatric surgeon are committed to your safety and are working toward MBSAQIP accreditation.

### Some MBS Statistics:

- Studies have shown that patients may lose as much as 77% of their excess weight by 1 year.
  - Most maintain 50% of their excess weight loss by 5 years.
- MBS may reduce the risk of premature death by 30-50%.
- MBS only has a 0.1% risk of death and a 4% risk of major complication.

### Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP):

- MBSAQIP accredits bariatric centers in the United States.
- It provides bariatric surgery standards and ensures compliance with those standards.
- It is data driven.
  - Demographic, surgical and outcomes measures are entered into a national registry.
- It places an emphasis on quality improvement.
- It has been shown to decrease mortality.



## Gastric Sleeve and Roux-en-Y Gastric Bypass

The two procedures that are performed here are the Vertical Sleeve Gastrectomy (SG) and the Roux-en-Y Gastric Bypass (RYGB). These are the two most common bariatric procedures in the United States. Both procedures can lead to significant weight loss and resolution of comorbidities. Each procedure has its advantages and disadvantages, so you should work with your bariatric surgeon to determine the best procedure for you.

### Estimate of Bariatric Surgery Numbers, 2011-2020

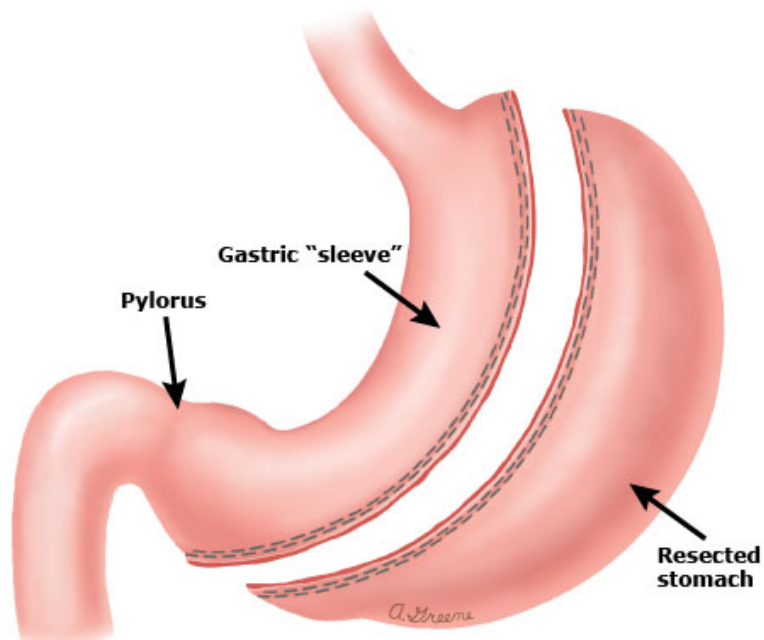
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Sleeve</b>	28,124	57,090	75,359	99,781	105,448	125,318	135,401	154,976	152,413	122,056
<b>RYGB</b>	57,986	64,875	61,218	51,724	45,276	40,316	40,574	42,945	45,744	41,280
<b>Band</b>	55,932	34,946	25,060	18,335	11,172	7,310	6,318	2,660	2,375	2,393
<b>BPD-DS</b>	1,422	1,730	1,790	772	1,176	1,236	1,588	2,123	2,272	3,555
<b>Revision</b>	9,480	10,380	10,740	22,195	26,656	30,077	32,238	38,971	42,881	22,022
<b>SADI</b>	—	—	—	—	—	—	—	—	—	488
<b>OAGB</b>	—	—	—	—	—	—	—	—	—	1,338
<b>Other</b>	5,056	3,979	4,833	193	6,272	5,665	5,606	5,847	6,060	1,221
<b>ESG</b>	—	—	—	—	—	—	—	—	—	1,500
<b>Balloons</b>	—	—	—	—	700	5,744	6,280	5,042	4,655	2,800
<b>Total</b>	<b>158,000</b>	<b>173,000</b>	<b>179,000</b>	<b>193,000</b>	<b>196,700</b>	<b>215,666</b>	<b>228,005</b>	<b>252,564</b>	<b>256,000</b>	<b>198,651</b>

The ASMBS total bariatric procedure numbers are based on the best estimation from available data (BOLD, ACS/MBSAQIP, National Inpatient Sample Data and outpatient estimations).

[Estimate of Bariatric Surgery Numbers, 2011-2020 | American Society for Metabolic and Bariatric Surgery \(asmbs.org\)](https://asmbs.org/Estimate-of-Bariatric-Surgery-Numbers-2011-2020)

## Vertical Sleeve Gastrectomy

The vertical sleeve gastrectomy is also called a sleeve gastrectomy (SG). During this procedure, about 80% of the stomach is removed, which is not reversible. This limits the amount of food that can be eaten by creating a smaller pouch. It decreases the stomach's capacity from about 1,200 ml to 180 ml. It does not reroute the intestines, so it is considered a restrictive procedure and not a malabsorptive procedure. It also causes hormonal changes that help with appetite suppression and comorbidity resolution. This procedure has been performed since 1988, so its risks, benefits, and outcomes have been extensively studied.



In a sleeve gastrectomy, the majority of the greater curvature of the stomach is removed and a tubular stomach is created. The tubular stomach has a small capacity, is resistant to stretching due to the absence of the fundus, and has few ghrelin (a gut hormone involved in regulating food intake)-producing cells.

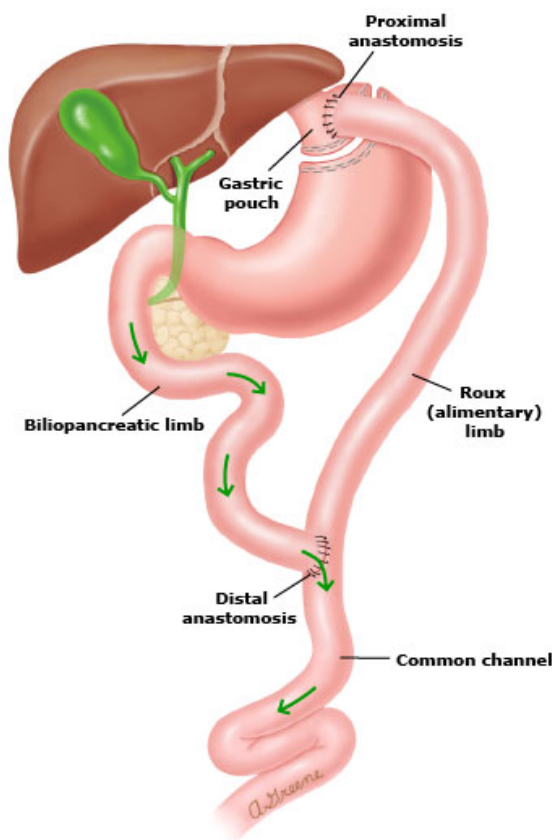
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## Roux-en-Y Gastric Bypass

The Roux-en-Y Gastric Bypass (RYGB) is considered the gold standard of bariatric operations. It involves creating a small pouch and rerouting the intestines. It works by restricting the amount of food you can eat, causing hormonal changes that help with appetite suppression and comorbidity resolution. It also changes the absorption of nutrients, which is why it is considered a malabsorptive procedure. Like SG, it is difficult to reverse. This procedure has been performed since the 1960s, so its risks, benefits and outcomes have been extensively studied. The RYGB has a relatively lower rate of complications when compared to other malabsorptive procedures (biliopancreatic diversion, duodenal switch).



This figure depicts the components of a Roux-en-Y gastric bypass (RYGB) procedure. RYGB involves the creation of a small gastric pouch and an anastomosis to a Roux limb of jejunum that bypasses 75 to 150 cm of small bowel, thereby restricting food and limiting absorption.

Graphic 52350 Version 2.0

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## Typical Weight Loss Outcomes at 2 Years by Operation

Procedure	% Excess Weight Loss	% Total Weight Loss
SG	65%	30%
RYGB	75%	35%

ASMBS's Essentials of Bariatric and Metabolic Surgery App [Essentials of Bariatric and Metabolic Surgery on the App Store \(apple.com\)](#)

## Percent of Patients with Resolution of Comorbid Conditions by Operation

Procedure	Hypertension	Diabetes	Hyperlipidemia	Sleep Apnea	GERD
SG	65%	60%	75%	60%	75%
RYGB	75%	80%	85%	75%	95%

ASMBS's Essentials of Bariatric and Metabolic Surgery App [Essentials of Bariatric and Metabolic Surgery on the App Store \(apple.com\)](#)

## Benefits and Risk by Operation

Procedure	Benefits	Risks
SG	<ul style="list-style-type: none"> <li>- Easy to perform</li> <li>- No anastomosis</li> <li>- Few long-term complications</li> <li>- Metabolic effects</li> <li>- Versatile for challenging populations</li> </ul>	<ul style="list-style-type: none"> <li>- Leaks are difficult to manage</li> <li>- May worsen or cause reflux</li> </ul>
RYGB	<ul style="list-style-type: none"> <li>- Strong metabolic effect</li> <li>- Standardized technique</li> <li>- less than 5% major complication rate</li> <li>- Effective for reflux</li> </ul>	<ul style="list-style-type: none"> <li>- Few revisional options</li> <li>- Marginal ulcers</li> <li>- Internal hernias</li> <li>- Long-term micronutrient deficiencies</li> </ul>

[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 and Bariatric Surgery, Obesity Medicine Association, and American Society of Anesthesiologists \(endocrinepractice.org\)](#)

## What to Stop Prior to Bariatric Surgery

It is important that you go into surgery prepared. There are several things that you will need to stop prior to surgery. Some of these things need to be stopped to keep you safe while others need to be stopped because they are not allowed after surgery. Please follow these recommendations for a safer, more successful bariatric surgery.

### What you MUST Stop Prior to Bariatric Surgery

MUST Stop	When to Stop	When to Restart	Notes
Alcohol	As soon as possible	6 months after surgery (limit to 1 serving per month)	<ul style="list-style-type: none"> <li>- Alcohol abuse is a contraindication for surgery</li> <li>- Alcohol damages the liver, increasing your surgical risk</li> <li>- Alcohol is high in calories with little nutrition</li> <li>- Alcohol increases the risk of dumping syndrome* and bleeding ulcers</li> </ul>
Hormonal contraception	1 cycle prior to surgery	2 weeks after surgery	<ul style="list-style-type: none"> <li>- Hormonal contraception increased the risk for blood clots</li> <li>- Oral contraception is not well absorbed/recommended after Roux-en-Y gastric bypass (use Norplant or IUD)</li> </ul>
Hormone replacement therapy	3 weeks prior to surgery	2 weeks after surgery	<ul style="list-style-type: none"> <li>- Hormone replacement therapy increases the risk for blood clots</li> </ul>
NSAID-containing products	1 week before surgery	Never	<ul style="list-style-type: none"> <li>- NSAIDS increase bleeding risk during surgery</li> <li>- NSAIDS increase the risk of marginal ulcers after surgery</li> <li>- Please see the list of NSAIDs below</li> </ul>
Tobacco	At least 6 weeks before surgery	Never	<ul style="list-style-type: none"> <li>- Tobacco causes cancer, ulcers, poor healing and increased risk of complications</li> <li>- This restriction includes vaping, cigars, and chewing tobacco</li> </ul>

\*See section on Dumping Syndrome

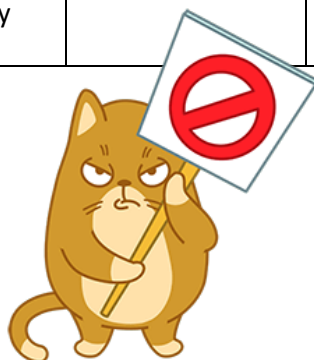
## Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)

Advil	Equagesic	Panalgesic
Alka Seltzer	Excedrin	Robaxisal
Aleve	Indocin	Sine-Aid
Aspirin	Midol	Sine-Off
Bayer Aspirin	Motrin	Toradol
BC Powders	Norgesic	Tolectin
Corcidin	Naproxyn	Traminicin
Congespirin	Pepto Bismol	Voltaren

\*This is a partial list, always check ingredients

## What You SHOULD Stop Prior to Bariatric Surgery

SHOULD Stop	When to Stop	When to Restart	Notes
Caffeine-containing beverages	Wean off as able prior to surgery	Never	<ul style="list-style-type: none"> <li>- Caffeine is found in coffee, soda, and some tea (green, black, some flavored, like Earl Gray). Decaffeinated tea and coffee are allowed.</li> <li>- Wean slowly prior to surgery to prevent caffeine withdrawal</li> <li>- Caffeine decreases calcium absorption</li> <li>- Caffeine can lead to dehydration or stomach ulcers after surgery</li> </ul>
Carbonated beverages	Prior to surgery	Never	<ul style="list-style-type: none"> <li>- Carbonated beverages are acidic and can overfill your pouch with air</li> <li>- Carbonated beverages can cause abdominal discomfort, reflux, ulcer formation, and weight regain</li> </ul>
Fruit juice/sugary beverages	Prior to surgery	Never	<ul style="list-style-type: none"> <li>- Sugary drinks include juice, soda, sports drinks, and sweet tea</li> <li>- Sugary drinks are high in calories and low in nutrients, contributing to weight regain</li> <li>- High-sugar foods can cause dumping syndrome</li> </ul>
Straws/chewing gum	Prior to surgery	Never	<ul style="list-style-type: none"> <li>- Drinking from a straw or chewing gum causes you to swallow air, causing abdominal discomfort and stretching your pouch</li> </ul>



## Pre-Bariatric Surgery Diet

For the whole week before your bariatric surgery, you will need to go on a low-sugar, full liquid diet. This diet will help transition you to the postop bariatric diet, jump start your weight loss, and decrease the size of your liver. You should not drink alcohol to help protect your liver. These steps will keep you safer during your surgery! It is important to make sure that you are getting enough protein – at least 60-80 grams per day – while you are on the pre-bariatric surgery diet. It is recommended that you drink 4-5 protein shakes and 64 oz of sugar-free liquids per day. Be aware that following such a restrictive diet may make you feel poorly but stick with it. It is a good idea not to schedule any important tests or meetings during this time. The night before your surgery, make sure that you stop eating and drinking at midnight.

### Examples of Low-Sugar Liquids

Examples of Low-Sugar Clear Liquids	Examples of Low-Sugar Full Liquids
<ul style="list-style-type: none"> <li>• Ice chips</li> <li>• Water</li> <li>• Broth</li> <li>• Sugar-free gelatin and popsicles</li> <li>• Sugar-free beverages (e.g., Crystal Light®, Diet V-8 Splash®, Sugar-Free Kool-Aid®, Gatorade®, and Zero-Sugar Vitamin Water®)</li> <li>• Coffee with sugar-free sweetener</li> </ul>	<ul style="list-style-type: none"> <li>• Bariatric Clear liquids</li> <li>• Protein drinks (please see “Protein Supplements” handout for examples)</li> <li>• Hot cereal (e.g., grits, and cream of wheat)</li> <li>• Fat-free or low-fat milk or unflavored milk-alternative</li> <li>• Reduced-fat cream soups</li> <li>• Low-fat and low-carbohydrate yogurt (smooth with no chunks of fruit or nuts)</li> <li>• Sugar-free pudding</li> </ul>

### Some of the Pre-Bariatric Surgery Diet Symptoms You May Experience

- Extreme hunger
- Fatigue
- Headache
- Nausea/vomiting
- Constipation
- Mood swings

These symptoms can be lessened by staying hydrated. Make sure you drink 64 oz of sugar-free fluids each day.

## Physical Activity Recommendations Right After Bariatric Surgery

It is important to get moving as soon as possible after bariatric surgery. Being active after surgery can decrease your risk of an upper respiratory infection, blood clots and constipation.

### Activity Recommendations After Bariatric Surgery:

- Get up as soon as possible
  - Sit in the chair for at least 6 hours a day
  - Walk the hospital hall at least 6 times
- Increase physical activity as tolerated
  - Walking on a treadmill (preferably with handlebars), elliptical, and/or riding on a stationary bike are the recommended activities for the first 6 weeks.

## Physical Activity Restrictions Right After Bariatric Surgery

You will have some physical activity restrictions for the first several weeks after surgery or until cleared to engage in regular activity by your bariatric surgeon.

### Activity Restrictions After Bariatric Surgery:

- Do not lift 15 pounds or more for first 6 weeks.
- No swimming for at least the first 4 weeks.
- Avoid bending and twisting exercises for the first 6 weeks.



# Life After Surgery

## Day of Surgery to 2 Months Post-op:

- Take liquid medications for the first 2 weeks after surgery.
- Do not drive an automobile until you are cleared by your bariatric surgeon to do so, usually at your first follow-up appointment.
  - Do not drive if you are still taking narcotic pain medication.
- The most rapid weight loss usually occurs during the first two months.
  - The entire first year is known as the honeymoon phase because it is when most of the weight loss occurs.
- At first, you should limit all liquids to 1 ounce (30 ml) every 15 minutes.
  - You will gradually be able to increase the amount of fluid that you take in at one time.
  - Increase fluids slowly to avoid overstretching the stomach pouch.
- Caloric intake typically ranges from 400-600 calories per day.
- Many people report decreased or fluctuating energy levels at this time.
- Many patients report taste changes after surgery, especially sweets.
  - This is an opportunity to expand your preferences for healthy foods like veggies.
- Many patients report decreased hunger or do not feel hungry at all.
  - You may need to treat nutrition, especially protein and fluids, like prescribed medications.
    - To help stay hydrated, bring water or protein drinks with you and keep water by your bedside at night.
- Many patients feel pain or tenderness on the left side of their belly.
  - This may last as long as 4 weeks.
  - Do not hesitate to call our office if you are concerned.
- It will take some time for you to recover.
  - It typically takes 2 weeks to recover from the surgical pain.
  - You can usually return to work after 4-6 weeks, depending on how strenuous the job.
- When you return to work, plan ahead.
  - Pack snacks/meals to bring, take breaks at work, talk with your boss about your needs, and exercise/walk at your lunch break or before/after work.
- Reach out for support. The first 2 months can be challenging both emotionally and physically.
  - Do not hesitate to seek professional counseling, online support groups, and/or attend support group meetings

## 2 to 6 Months After Surgery:

- Your new stomach will gradually be able to hold more food.
  - At 6 months, portion sizes generally range from ½-1 cup of food at a meal.
- Aim for 3 meals per day with 1-2 snacks.
  - Meals should take approximately 30 minutes to eat.
  - Stop eating when you feel pain, discomfort, or fullness.
  - Continue to keep liquids separate from food.
- Calorie intake during this time typically ranges from 600-800 calories per day.
- Hair loss is most likely to occur at this time.
  - Ensure that you are eating adequate protein.
- Aim to incorporate regular physical activity into your daily routine.
  - Aim for 30-90 total minutes of moderate physical activity most days.

## 6 Months to 1 Year After Surgery:

- Some weight plateaus will occur.
  - If you are concerned about a plateau, please call our office or your bariatric dietitian.
- Food intolerances continue to improve.
  - Continue to increase the variety of foods eaten.
- Aim for 3 meals and 2 snacks per day.
  - Meal size is approximately ½-1 cup.
  - Meals should take approximately 30 minutes to eat.
  - Stop eating when you feel pain, discomfort, or fullness.
  - Continue to keep liquids separate from food.
- Appetite and hunger usually return.
  - It may be helpful to monitor both protein and calories.
- Calorie intake during this time typically ranges from 600-1,000 calories per day.
- Be aware that old habits may start to come back into your lifestyle.
  - Find coping strategies. A support group is a great resource.
- Continue your regular physical activity.
  - Increase the variety to keep from getting bored.
- The rate of hair loss slows; hair begins to grow back.
- Many patients report feeling cold more often.
  - It may be due to a loss of body fat, which helps insulate you and keep you warm.
  - It may be due to low iron.
    - Make sure you are following-up with your bariatric surgeon so that he can monitor your nutrient levels.
- Continue to reach out for support.
  - Do not hesitate to seek professional counseling, online support groups, and/or attend support group meetings.

## One Year and On:

- Food intolerances will likely improve with time.
- Calorie intake during this time typically ranges from 1,000-1,200 calories per day.
  - Calorie intake for maintenance will vary from person to person.
- Aim for 3 meals and 2 snacks daily.
  - Typical meal size is 1-1 ½ cups.
    - Meal size can vary from person to person.
- Weight regain can occur if healthy eating/exercise habits are not developed or maintained.
  - Check your weight weekly.
  - Continue to track calories.
    - This a key to weight loss/gain and maintenance.
  - Continue your physical activity routine.
    - Variety can be helpful when trying to break plateaus.
- Continue taking your supplements as recommended.
  - Follow up with your bariatric surgeon yearly for routine monitoring.
    - If you move, make sure that you find a new bariatric doctor for follow-ups.
  - Ask your primary care doctor for a bone density scan every 2 years.
- Some patients may have low blood sugar episodes.
  - Call your primary care doctor, our office, or your bariatric dietitian if you have symptoms of low blood sugar.

**Congratulations on all the lifestyle changes that you have made in the last year and for all of those that you will continue to make!**



## Successful Weight Loss After Bariatric Surgery

While bariatric surgery is a powerful tool to help you lose weight, it is not a silver bullet. Your compliance with diet and lifestyle recommendations will influence how much weight you lose. Weight loss occurs when you eat fewer calories than you burn. So, make sure that you are eating nutrient-dense, lower-calorie foods and getting plenty of physical activity. Most of the weight that you lose will be lost in the first year after surgery. After that, the goal is to maintain your weight loss. If you are not mindful about your activity level and how/what you eat, you run the risk of not meeting your weight loss goals or regaining the weight that you have lost. If you are concerned about your weight regain or lack of weight loss, please call our office.

### Helpful Guidelines for Successful Weight Loss:

- Keep a food and activity log
- Aim for 30-90 minutes of physical activity most days of the week
- Weigh yourself weekly (at the same time with the same amount of clothing)
- Eat slowly (it should take 30-45 minutes to complete a meal)
- Wait at least 20 minutes before getting seconds
- Limit distractions during meals and snacks
  - Eat at the table, not your desk or couch
- Wait 5-15 minutes before indulging in cravings
- Read food labels and measure your portions
- Eat less fat and sugar; eat more fiber and protein
- Get enough sleep (7-9 hours)
- Eat out less than 3 times per week
- Don't keep problem foods around
- Drink 6-8 cups (48-64 ounces) of sugar-free, caffeine-free beverages daily to stay hydrated

### Factors Associated with Weight Regain/Weight Loss After Bariatric Surgery

Factors Causing Weight Regain	Factors Supporting Weight Loss
<ul style="list-style-type: none"> <li>• Eating sweets</li> <li>• Anxiety/emotional eating</li> <li>• Portion size/overeating</li> <li>• Food urges/binge eating</li> <li>• Grazing (eating throughout the day)</li> <li>• Eating fast food</li> <li>• Genetics</li> <li>• Length of time after surgery</li> </ul>	<ul style="list-style-type: none"> <li>• Compliant with diet and multivitamin recommendations</li> <li>• Eating nutrient-dense foods</li> <li>• Eagerness to increase physical activity</li> <li>• Self-esteem</li> <li>• Social support</li> <li>• Listening to your body/stop eating when full</li> </ul>

## Medical Complications After Bariatric Surgery

Bariatric surgery, like all surgeries, runs the risk of complications and death. The overall likelihood of major complications is 4%; the risk of death is only 0.1%. Your risk varies based on your health and weight prior to surgery, your physician's skill and experience, the facility's/physician's commitment to safety and quality improvement, and chance. Please note that this section is not an exhaustive list of complications but covers the more common potential complications. If you have symptoms that are concerning and you are worried that you may have a potential complication, please call our office. Dr. Carr and St. Mary's Hospital in Athens have made a commitment to safety by pursuing MBSAQIP accreditation. St. Mary's Hospital also has the TogetherSafe program aimed at helping Trinity Health, which includes St. Mary's, become the safest healthcare system in America.

### Potential Medical Complications:

- Bleeding
- Leak
- Wound infection
- Strictures/stenosis
- Marginal ulcer
- Intestinal obstruction/internal hernia
- Incisional hernia
- Intussusception
- Organ injury
- Ruptured pouch
- Blood clots (DVT/PE)
- Respiratory complications
- Death



## Bleeding

Bleeding is a potential complication of bariatric surgery, usually in the early postoperative period. It is estimated to occur in 0.5-5.8% of all bariatric surgery cases. There are several potential causes of bleeding including leaks, ulceration, and fistulas. Postoperative bleeding can lead to several negative outcomes. If you experience any symptoms of a bleed, please call our office and go to the Emergency Department.

### Potential Complications of Bleeding:

- Blood transfusion
- Need for reoperation
- Longer hospital stay
- ICU admission
- ER visit
- Hospital readmission
- Death

### Symptoms of Bleeding:

- Fast heart rate
- Pale appearance
- Shortness of breath
- Tiredness
- Dizziness
- Fainting
- Melena (bloody poop)
- Hematemesis (vomiting blood)



## Leak

A leak is one of the most serious potential complications after bariatric surgery and is estimated to occur in up to 5.8% of all bariatric surgeries. This defect causes digestive liquids or foods to spill into the abdominal cavity, causing infection and peritonitis (inflammation of the peritoneal cavity). These infections can be serious and life-threatening. Most leaks will occur between a few days and up to several weeks after surgery. **It is important to be on guard for the symptoms of a leak and seek treatment immediately if you suspect a potential leak to minimize the risk of potential complications and death.** Please go to the Emergency Department and call our office if you suspect a potential leak.

### Symptoms of a Leak:

- Fast heart rate (greater than 120 beats per minute)
- Fever
- Chills
- Stomach pain
- Chest pain
- Breathing quickly/short of breath
- Fluid leaking from the incision
- Nausea/vomiting
- Left shoulder pain
- Low blood pressure
- Decreased urine
- Feeling of discomfort or dread

### Possible Complications of a Leak:

- Ulcers
- Scarring
- Stricture or stenosis (narrowing)
- Fistula (opening between 2 organs or an organ and the skin)
- Aspiration pneumonia

## Wound Infection

Anytime that you have surgery, you run the risk of getting an infection at your surgical site. Most surgical site infections occur within the first 2-3 weeks of surgery. The risk for a surgical site infection following an open bariatric surgery is 15%, which is similar to the risk for obese patients undergoing non-bariatric abdominal surgery. Some patient traits place you at increased risk for wound infections. Wound infections place you at increased risk for further complications. However, the risk for a surgical site wound infection is significantly decreased by administering antibiotics at the time of surgery and using a laparoscopic/robotic surgical technique, all of which are the standard of care for your bariatric surgeon. It is also important that you understand how to care for your wound before you leave the hospital. If you notice any of the symptoms of a surgical site infections, please call our office.

### Patient/Surgical Traits Increasing the Risk for Surgical Site Wound Infections:

- BMI equal to or greater than 50
- Asthma history
- Smoking
- Sleep apnea history
- Diabetes history
- Urinary incontinence right before/after surgery
- Difficulty walking around after surgery
- Longer surgery
- Inappropriately timed antibiotics

### Additional Complications Related to Surgical Site Wound Infections:

- Emergency Department visits
- Hospital readmissions
- Interventions
- Death

### Symptoms of a Surgical Site Wound Infection:

- Redness or pain at the surgical site
- Drainage of cloudy or yellow/green fluid from the surgical wound
- Wound dehiscence (wound reopens)
- Fever

## Stricture/Stenosis

A stricture or stenosis is the narrowing of any part of your anatomy. It is most common at the gastrojejunostomy. It has an incidence rate of 6-20%, with the higher incidence in Roux-en-Y gastric bypass patients, and usually presents several weeks after surgery. To decrease your risk of developing a stricture, don't smoke. This complication often improves without surgery, but may require an endoscopic dilation or surgical revision. Prolonged vomiting can lead to a thiamin deficiency. Keep your eye out for symptoms of a stricture. Please call our office if you have symptoms of a stricture.

### Symptoms of a Stricture:

- Reflux
- Nausea/vomiting
- Difficulty swallowing
- Difficulty tolerating liquids

## Marginal Ulcer

A marginal ulcer is one of the most common complications after a Roux-en-Y gastric bypass with a reported incidence of 0.6-16%. There are several things that you can do to minimize your risk of developing a marginal ulcer. A perforated marginal ulcer is a life-threatening complication, so it is important to look out for the symptoms and seek treatment if an ulcer is suspected. Please call our office if you have symptoms of a marginal ulcer.

### Ways to Minimize the Risk of Developing a Marginal Ulcer:

- Avoid caffeine and carbonated beverages
- Avoid alcohol
- Don't smoke
- Limit stress
- Avoid NSAIDs (Motrin, Aleve, and Ibuprofen/Advil)

### Symptoms of Marginal Ulcers:

- Nausea
- Abdominal pain
- Gastrointestinal bleeding
- Stomal stenosis
- Perforation

## Intestinal Obstruction/Internal Hernia

A bowel obstruction/blockage can develop after bariatric surgery, with an incidence rate of 3-5%. This obstruction may be caused by adhesions, internal hernia, incisional hernia, or intussusception. An internal hernia is the herniation of the small intestine through a defect. Internal hernias require surgical closure. A bowel obstruction due to an internal hernia can cause the bowel to lose oxygen and die, which could lead to a bowel resection and short bowel syndrome. If you suspect that you have an intestinal obstruction, please go to the Emergency Department and call our office.

### Symptoms of a Bowel Obstruction:

- Intermittent, crampy, or sharp abdominal pain unrelated to eating
- Nausea/vomiting
- Inability to pass gas/stool
- Bloating
- Decreased appetite
- Constipation/diarrhea

## Incisional Hernia

An incisional hernia, herniation of the bowel through the incision, is a common complication of open bariatric procedures, occurring up to 19% of the time. Incisional hernias require surgical correction. However, this risk is greatly reduced by using a laparoscopic or robotic procedure, which is our bariatric surgeon's standard of care. Incisional hernias place you at increased risk for bowel obstruction. Please call our office if you notice a bulge at your incision site.

## Intussusception

Intussusception happens when part of the intestines folds in on itself. This is a rare but deadly complication of bariatric surgery and requires immediate medical attention. Intussusception places you at increased risk of a bowel obstruction. If you suspect that you have intussusception, please go to the Emergency Department and call our office.

### Symptoms of Intussusception:

- Belly pain that comes and goes
- Nausea/vomiting

## Organ Injury

A nearby organ may be injured during bariatric surgery. While the spleen is the most likely organ to be injured, there is a very low risk that the liver or intestines may be injured, too. The incidence of splenic injury after a Roux-en-Y gastric bypass is less than 1%. If this complication occurs, you may need a splenic repair or removal of your spleen to stop the bleeding.

## Ruptured Pouch

A ruptured stomach pouch is a rare complication of bariatric surgery. The main cause of a ruptured pouch is overeating, so listen to your body and stop when you feel full. The pouch in the early postoperative period can only hold 2-3 tablespoons of food at a time. You are likely to stretch the pouch over time by consistently overeating and taking in excess air, which will lessen the amount of weight that you lose.

## Blood Clot (DVT/PE)

A blood clot that forms in a vein deep inside your body – deep vein thrombosis (DVT) – can travel to the lung, becoming a pulmonary embolism (PE), which can be fatal. The incidence of blood clots after bariatric surgery is 0.3-2.4%. In the hospital, you may get medication (anticoagulants) to thin out your blood and may use a sequential compression device (SCD) to help minimize your risk of developing a postoperative blood clot. An SCD uses sleeves that wrap around your leg and inflate periodically to help keep your blood from clotting. You can also minimize your risk by walking, as soon as possible and for as long as possible, after surgery. You are at risk for blood clots when you go home too, so your bariatric surgeon may send you home on blood thinning (anticoagulant) medication. You should also walk as much as possible and do other things to decrease your risk for developing a blood clot. If you notice symptoms of a blood clot, go to the Emergency Department and call our office.

### Ways to Minimize Your Risk for Developing a Blood Clot:

- Move
  - Walk at least every 2-3 hours
- Don't smoke
- Lower your cholesterol
  - Plaque on artery walls may break off and form a clot, causing a heart attack or stroke
- Lose weight
- Wear loose clothing

### Symptoms of a DVT:

- Swelling
- Pain
- Soreness
- Warmth
- Redness/discoloration of the skin

### Symptoms of a PE:

- Chest pain
- Dizziness
- Fainting
- Difficulty breathing/shortness of breath
- Blue discoloration of lips and skin
- Coughing up blood
- Increased heart rate
- Low blood pressure



## Respiratory Complications

Postoperative pneumonia and respiratory failure are the most common non-wound complications after bariatric surgery, with an incidence rate of 18.7%. Oxygen insufficiency and atelectasis (collapsed lung) are other possible respiratory complications. They increase the risk for intubation (needing a breathing tube), and also increase hospital length of stay, need for ICU admission, and risk of death. Several risk factors for respiratory complications have been identified. There are things that you can do to decrease your risk of respiratory complications. If you notice symptoms of respiratory failure after you go home, please go to the Emergency Department or call our office.

### Risk Factors for Developing Respiratory Complications:

- Heart failure or stroke history
- Shortness of breath at rest
- Increased age
- History of COPD
- History of diabetes
- Increased weight
- Prolonged anesthesia time
- Type of bariatric procedure
- Smoking

### Ways to Minimize your Risk of Respiratory Complications:

- Don't smoke
- Walk as much as possible
- Use the incentive spirometer
- Practice deep breathing exercises
- Use oxygen or CPAP as directed

### Symptoms of Respiratory Complications:

- Cough
- Shortness of breath
- Chest pain
- Fatigue/drowsiness
- Blue discoloration of skin or lips
- Fever/chills
- Breathing quickly
- Difficulty speaking
- Confusion/blurred vision

## Death

The mortality rate for bariatric procedures is 0.1% – that's one tenth of one percent. Though it is rare, it is important that you understand the risk and serious nature of the procedure. Please read the information in this toolkit carefully, and be sure to ask your surgeon about any questions or concerns you may have.

## Nutritional Complications After Bariatric Surgery

Bariatric surgery decreases your stomach's capacity and may reroute your intestines, causing malabsorption, which leads to rapid weight loss. However, this also places you at increased risk for nutrition-related complications. It is important to try to prevent these complications by sticking to your bariatric diet and recommended multivitamin and mineral regimen. There are also some steps that you may take if complications do occur. If you are concerned about complications or they don't resolve, please call our office.

### Potential Nutritional Complications:

- Nausea/vomiting
- Dehydration
- Dumping syndrome
- Post-bariatric hypoglycemia (PBH)
- Gallstones
- Gastroesophageal Reflux Disease (GERD)
- Diarrhea
- Constipation
- Gas/flatulence
- Halitosis (bad breath)
- Nutrient deficiencies
  - Please see the section on "Post-Bariatric Surgery Micronutrient Supplementation Recommendations"
  - Nutritional deficiencies can cause anemia, irreversible nerve damage/impaired mobility, bone loss, mental dysfunction, and poor immunity

## Nausea/Vomiting

Nausea and vomiting may happen after bariatric surgery. Initially, nausea and vomiting may be related to the anesthesia. You will not be discharged from the hospital until your nausea and vomiting are controlled and you are able to tolerate a liquid diet. Once you are home, these symptoms are usually caused by diet and not surgery. If you experience nausea and vomiting, please look at and adjust your diet as needed. However, if nausea and vomiting persist, please call our office.

### Common Causes of Nausea/Vomiting After Bariatric Surgery:

- Drinking too fast
  - Initially, you should drink 1 ounce (30 ml) every 15 minutes and increase as tolerated
- Eating solid foods too soon after surgery
  - You're on a liquid diet for the first 2 weeks after surgery
- Not chewing food well enough
  - Food may feel "stuck"
- Eating too fast
  - It should take you 30-45 minutes to complete a meal
- Drinking liquids with meals or too soon after a meal
- Drinking with a straw
- Drinking carbonated beverages
- Not listening to your body when it signals your stomach is full and you should stop eating
  - Eating with distractions or when stressed can cause overeating
- Eating foods that you do not tolerate
- Surgical issues
  - May be right after surgery or years later
  - E. g., ulcers, bowel obstructions, strictures, and hernias
- Gallbladder disease

## Dehydration

Vomiting, diarrhea, or not drinking enough (at least 48-64 ounces per day) can all lead to dehydration after bariatric surgery. Dehydration places you at an increased risk for Emergency Department visits or hospital readmission. It is important to try to prevent dehydration and treat it as soon as possible if it does occur. Please see the "Hydration After Bariatric Surgery" section for more details. If you think that you may be dehydrated, please call our office.

## Dumping Syndrome

After bariatric surgery, especially Roux-en-Y gastric bypass, you may experience a negative reaction to eating high-sugar/high-carbohydrate foods. These foods can move too quickly into the small bowel and cause abdominal and blood sugar issues. This is called dumping syndrome. Dumping syndrome may happen minutes or hours after you eat. It is important to avoid eating high-sugar foods to both decrease your risk for dumping syndrome and help promote weight loss/maintenance. Your risk for dumping syndrome decreases over time, but it may take 12-18 months. If you have changed your diet and are still having symptoms of dumping syndrome, please call our office.

### Symptoms of Dumping Syndrome:

- Early dumping syndrome (within 15 minutes of eating)
  - Feeling bloated or full
  - Nausea/vomiting
  - Abdominal cramps/diarrhea
  - Flushing
  - Dizziness/lightheadedness
- Late dumping syndrome (1-4 hours after eating)
  - Sweating
  - Weakness
  - Flushing
  - Dizziness/lightheadedness
  - Fast heart rate

### Tips for Preventing or Treating Dumping Syndrome:

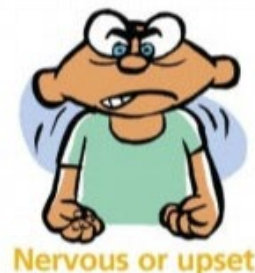
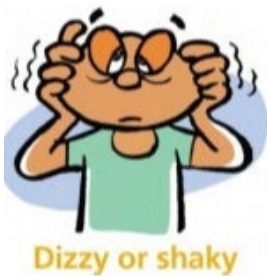
- Eat smaller, more frequent meals
- Eat slowly and chew well
- Avoid large amounts of simple sugars, carbohydrates, and milk products (keep sugar less than or equal to 5 grams and dairy products less than or equal to 12 grams of carbohydrate per serving)
  - Avoid high-sugar foods such as candy, sugar-coated cereal, chocolate milk, dessert, donuts, frosting, ice cream/sherbet, jams/jelly, lemonade/Koolaid®, milkshakes/malts, pastries, sweet pickles, pudding, soda/soft drinks/sweet tea, sweet rolls, syrup, and table sugar
  - Look for sugar ingredients on the label
    - Barley malt/isomalt, brown/cane/confectioners/granulated/invert/raw/table sugar, corn/high fructose corn/maple syrup, corn sweeteners, dextrose, fructose, glucose, honey, lactose, maltose, molasses, sorghum, sucrose, and turbinado
  - Choose diabetic-friendly liquid medication (liquid meds may contain sugar)
  - Eat more dietary fiber
- Balance your meals with more protein and healthy fat
- Lie on your back for 30 minutes after eating
  - Note: This may worsen reflux
- Don't drink for 20-30 minutes before and after eating

## Post-Bariatric Hypoglycemia (PBH)

Post-bariatric hypoglycemia (BPH) – low blood sugar – can happen at any time after bariatric surgery. 38.5% of bariatric surgery postoperative patients experience hypoglycemia; 2.6%-3.6% experience severe symptoms. Alert your primary care doctor or our office if you experience hypoglycemia at any time after your bariatric procedure. Your bariatric surgeon will probably send you to your bariatric dietitian.

### Symptoms of Hypoglycemia:

- Tremor, palpitation, anxiety, sweating, hunger, paresthesia (burning, itching or tingling sensation in the skin), weakness, difficulty concentrating/thinking, drowsiness, nightmares, morning headache, seizure, and coma



[HyperHypo \(diabetesed.net\)](http://diabetesed.net)

## Treatment of Acute Hypoglycemia:

- If blood glucose is less than 70 mg/dl, treat with glucose gel/tablets
  - If glucose gel/tablets are unavailable, you may drink 1/8 cup of sugar dissolved in water, 4 ounces (1/2 cup) of juice, or 8 ounces (1 cup) skim milk or eat 6 pieces of chewable hard candy
    - Please keep the limited amount of food/drink you can consume at one time in mind when treating your hypoglycemia
- Treat with 15 gm (grams) of glucose and wait 15 minutes
  - You may need 30 gm glucose if blood glucose less than 50 mg/dl
- Recheck blood glucose and repeat as needed until blood glucose is greater than or equal to 80 mg/dl
- Once hypoglycemia resolves, eat a low glycemic snack to prevent repeat hypoglycemia
- Your family may give you glucagon if you are unconscious or unable to consume glucose gel/tablets
  - Please see “Glucose Gel and Tablets” in the Additional Tools section of your toolkit
  - **Your family should call 911 if you are unconscious and cannot get glucagon**

## About Glucagon

- Glucagon is an injection/nasal spray that can increase blood glucose if you cannot consume glucose gel/tablets.
- The American Diabetes Standards of Care recommend glucagon for anyone at risk of moderate/severe hypoglycemia (blood glucose less than 54 mg/dl).
- Glucagon requires a prescription from your doctor
- Glucagon is recommended when:



Patient has tried correcting hypoglycemia sugar (or drinks that are high in sugar) and has not improved



Patient is unable to safely swallow sugar or sugar-sweetened products to correct hypoglycemia



Patient feels like they might pass out



Patient experiences loss of consciousness or a seizure

[Patient Guidelines for Using Glucagon | Qvoke® \(glucagon injection\) \(qvokeglucagon.com\)](https://www.qvokeglucagon.com)

- You should eat as soon as you are awake and able to swallow
  - Please see “Instructions for Treatment of Acute Hypoglycemia”
- You should call your doctor after glucagon is administered
  - Your family should call an ambulance if glucagon fails to wake you

## Gallstones

Gallstones are typically cholesterol-based stones that form in the gallbladder. If you have severe gallstones, you may need your gallbladder removed. About 10% of patients who have bariatric surgery will eventually need their gallbladder removed because of gallstones. The rapid weight loss and changes in bile acid circulation can lead to gallstones. This usually happens within the first 2 years after bariatric surgery. Watching your diet and taking certain medications (ursodeoxycholic acid) can minimize your risk of developing gallstones. If you develop symptoms of gallstones, please call our office.

### Dietary Changes to Decrease the Risk of Developing Gallstones:

- Limit the amount of fat in your diet
- Replace some animal fats with fish and vegetable fats
- Consume more high-fiber foods (wholegrains, veggies, and fruit)
- Eat lecithin-rich foods (egg yolk, seafood, and wholegrains)
- Many plants increase bile acid solubility (milk thistle extract, dandelion, artichoke, and turmeric)
- Sapon-rich foods (beans and soy) may increase the saturation of bile with cholesterol
- Eat regularly; don't skip meals

### Symptoms of Gallstones:

- Sudden and intense pain of the upper right abdomen or center abdomen (just below your breastbone)
- Back pain (between the shoulder blades) or pain in the right shoulder
- Nausea/vomiting



## Gastroesophageal Reflux Disease

Gastroesophageal reflux disease (GERD) is caused when acidic stomach contents flow back into the esophagus. While some bariatric procedures (Roux-en-Y gastric bypass) may be used to treat reflux, others (sleeve gastrectomy) may cause or worsen reflux. It is important to be able to identify the symptoms of GERD to prevent complications and know when to seek treatment. There are several dietary and lifestyle changes, medications, or surgical options that may help relieve GERD. If you experience frequent and persistent symptoms that are not alleviated by dietary and lifestyle changes, please call our office.

### Symptoms of GERD:

- Heartburn, especially after eating or lying down
- Spitting up/regurgitating food
- Chest or upper abdominal pain
- Dysphagia (trouble swallowing)
- Feeling like something is stuck in your throat
- Ongoing, dry cough
- Hoarse voice

### Complications of GERD:

- Esophagitis (inflammation/bleeding/ulcers of the esophagus)
- Esophageal stricture (esophagus narrows, making swallowing difficult)
- Barrett's esophagus (precancerous changes to the esophagus)
- Erosion of tooth enamel





## Possible Treatments for GERD:

- Dietary
  - Eat a low fat, higher fiber diet
  - Limit fried food, fast food, pizza, and potato chips
  - Limit spices (chili powder and peppers)
  - Limit acidic foods (tomato-based products and citrus)
  - Limit chocolate, peppermint, and carbonated beverages
  - Try more alkaline foods (banana, melons, cauliflower, fennel, and nuts)
  - Eat more watery foods (celery, cucumber, lettuce, watermelon, broth, and herbal tea)
  - Try drinking low-fat milk or yogurt
- Lifestyle
  - Continue to lose weight and prevent weight regain
  - Raise the head of the head or use extra pillows when you lie down
  - Stop eating at least 3 hours before you lie down
  - Don't smoke
- Medications
  - Antacids (neutralize the acid in your stomach)
    - Mylanta, Roloids, and Tums
  - Proton pump inhibitors (PPI) (block stomach acid production and heal the stomach)
    - lansoprazole (Prevacid), Omeprazole (Prilosec), and Esomeprazole (Nexium)
  - H2 blockers (decrease acid production in your stomach)
    - Cimetidine (Tagamet), Famotidine (Pepcid), and Nizatidine (Axid)
  - Prokinetic agents (strengthen the contractions of the muscles in your digestive tract, moving food through faster)
    - Metoclopramide (Reglan)
- Surgery
  - Revision or conversion of your bariatric procedure
  - Fundoplication (sewing your upper stomach around the bottom of your esophagus to help limit reflux)
  - LINX surgery (a ring with metal beads connected by a magnet is surgically placed around your lower esophagus to limit reflux)

## Diarrhea

Diarrhea (loose, watery, and more frequent stools) may occur at any time after bariatric surgery. There are many causes of diarrhea. These causes include dumping syndrome, food intolerances, high fat/sugar intake, medications, viruses, bacteria, and malabsorption. One of the biggest complications of diarrhea is dehydration. Please see the “Hydration After Bariatric Surgery” section of your toolkit. If symptoms persist more than a few days or are severe, please call our office.

## Constipation

Constipation (infrequent bowel movements) can be common after surgery. It usually resolves within 6 months of surgery. It can be caused by inadequate fluid intake, lack of exercise, a high-protein diet, lack of fiber, medications (especially narcotic pain medications), and supplement use (iron and calcium). If you are concerned about constipation, please call our office or speak with your bariatric dietitian.



## Gas/Flatulence

Gas is common after bariatric surgery. If you find the symptoms bothersome, there are some dietary changes that you can make to minimize gas. If gas persists and is problematic, please call our office or speak with your bariatric dietitian.

### Gas symptoms:

- Burping/belching
- Bloating
- Flatulence (passing gas)

### Dietary Changes to Minimize Gas:

- Limit your intake of gas-causing foods (beans, broccoli, Brussels sprouts, cabbage, cauliflower, onions, radish, apples, raisins, wheat bran, chicory root, and inulin)
- Add fiber-rich foods
- Watch for food intolerances (dairy and sugar alcohol)
- Limit fatty foods
- Try not to swallow excess air
- Eat slowly and chew food well
- Drink fluids between meals
- Avoid carbonated liquids
- Don't chew gum
- Don't drink with a straw

## Halitosis

Halitosis (bad breath) can happen after bariatric surgery. When you are losing weight rapidly, your body may use ketones for energy, putting you in a state of ketosis. Ketones can affect how your breath smells. This should get better as you are gradually able to eat more and your weight loss stabilizes. If this is problematic, you can use dissolvable breath mints, strips, mouthwash, or mouth spray. Do not chew gum; it will cause you to swallow excess air.

## Mental Health Complications After Bariatric Surgery

Not only can medical and nutritional complications happen after bariatric surgery, so can mental health complications. If you have any mental health concerns after your bariatric surgery, please call our office or speak with your bariatric psychologist.

### Potential Mental Health Complications:

- Emotional changes
- Body dysmorphic disorder
- Disordered eating patterns
- Addiction transfer



## Emotional Changes

Bariatric surgery can take an emotional toll. There are many changes that occur after surgery that can influence your mood, sleep, memory, and feelings of wellbeing. After surgery, you are no longer able to utilize food as a means of coping with stress. Therefore, you are likely to feel like you are on an emotional rollercoaster until you establish new coping mechanisms. It is recommended that you get support during this time and be on the lookout for signs of depression. If you find that your emotions are affecting your life, please reach out to your bariatric psychologist or our office.

### Common Causes for Post-Bariatric Surgery Emotional Changes:

- Social pressure
- Depletion in serotonin
  - Serotonin is a neurotransmitter that helps you be more happy and less anxious
- Your previous medications for mood may not be absorbed as well
- Unrealistic expectations and internal pressure
- Loss of food as a coping mechanism

### Signs of Depression:

- Constant fatigue
- Loss of interest in daily activities
- Feeling hopeless
- Unable to make decisions
- Irregular sleep patterns
- Restlessness
- Anxiety
- Irritability/aggression
- Thoughts of harm to self or others

### Recommendations to Help Manage Emotional Changes:

- Attend a support group meeting
- Talk with other patients
- Meet with your bariatric psychologist

## Body Dysmorphic Disorder (BDD)

Body dysmorphic disorder (BDD) is an excessive preoccupation with real or imagined defects in your physical appearance. BDD can manifest in different ways for patients after bariatric surgery, negatively impacting mental health and quality of life. BDD can be managed; treatment involves a combined approach of medications and cognitive/behavioral therapy. If you are concerned that you may have BDD, please reach out to your bariatric psychologist.

### Ways that BDD Can Manifest After Bariatric Surgery:

- Dissatisfaction with your weight loss progress
- Preoccupation with flaws such as excess skin or residual fat deposits

### Effects of BDD:

- Social isolation
- Decreased self-esteem
- Depression/anxiety
- Disordered eating

### Ways to Manage BDD:

- Seek support from a mental health professional specialized in BDD
- Focus on health and wellbeing, not just weight
- Set realistic expectations for the outcomes of bariatric surgery

## Disordered Eating

Clinical eating disorders after bariatric surgery are uncommon, but disordered eating patterns are common. There are several disordered eating patterns that can develop before and after bariatric surgery. If you suspect that you may have disordered eating patterns, please reach out to your bariatric psychologist or our office.

### Disordered Eating Patterns After Bariatric Surgery:

- Binge eating
- Night eating syndrome
- Chew and spit disorder (CHSP)
- Post-surgical eating avoidance disorder (PSEAD)

Disorder	Characteristics	Prevalence	Consequences	Notes
Binge eating	Frequent consumption of large amounts of food with uncontrolled eating and negative emotions around eating	- 2-49% in pre-bariatric surgery candidates - Rates are less prevalent after surgery, but increase over time	Associated with decreased weight loss or weight regain	-
Night eating syndrome	Makes people wake up at night to eat	- 2-20% in pre-bariatric surgery candidates - Rates decrease after weight loss surgery	Does not usually affect postoperative weight loss	-
Chew and spit disorder (CHSP)	Chewing food and spitting it out before swallowing	-	-	Documented, but not well studied
Post-surgical eating avoidance disorder (PSEAD)	Anxiety and disturbed eating (purging, restriction, rapid weight loss, and body image dissatisfaction) after bariatric surgery	-	Excessive weight loss	Many have experienced postoperative complications that make them afraid to eat

## Addiction Transfer

Food can be addictive. Studies have shown that 7-19% of post-bariatric surgery patients develop high-risk drinking behaviors after surgery. If you binge eat before surgery, you are more likely to abuse alcohol after bariatric surgery, even if you never drank before surgery. This phenomenon is attributed to addiction transfer, which is the process of exchanging one compulsive behavior for another. In the case of bariatric surgery, it is replacing a food addiction with shopping, gambling, smoking, drinking, or promiscuity. Treatment involves psychotherapy to address the issues behind the behaviors and to develop coping mechanisms for stress and emotions. If you are concerned about any addictive behaviors, please seek help by talking with your bariatric psychologist or by joining an addiction group (e.g., Overeaters Anonymous, Alcoholics Anonymous, Gamblers Anonymous, etc.)





## When to Call Our Office

It is important to be aware of possible complications after bariatric surgery and know when to call your bariatric surgeon’s office if you have a concern. While some postoperative symptoms are to be expected because of the surgery and rapid weight loss, others may indicate a complication such as a leak, infection, or nutrient deficiency. We recommend you have a support person to help you in the immediate postoperative period. To minimize your risk of complications, please follow all post-operative instructions. If you have any concerns, please call our office; if you believe that you are having a medical emergency, please call 911 or go to the Emergency Department. We recommend you come St. Mary’s Emergency Department, if able, and let the ER doctor know about your bariatric surgery history.

### When to Call Our Office: Newly Post-Bariatric Surgery

<ul style="list-style-type: none"> <li>• Mild pain</li> <li>• Lack of energy</li> <li>• Lightheadedness</li> <li>• Hair loss</li> <li>• Constipation</li> <li>• Flatulence</li> <li>• Gas</li> <li>• Bad breath</li> <li>• Temperature swings</li> <li>• Emotional changes</li> </ul>
<ul style="list-style-type: none"> <li>• Nausea/vomiting</li> <li>• Diarrhea</li> <li>• Depression</li> </ul>
<ul style="list-style-type: none"> <li>• Temperature &gt; 101°F</li> <li>• Increased breathing/trouble breathing</li> <li>• Increased heart rate (&gt; 120 beats per minute)</li> <li>• Pain not controlled by medication</li> <li>• Whites of your eyes turn yellow</li> <li>• Pus, thick, or bad smelling drainage from your incision</li> <li>• Redness, pain, swelling in arms or legs</li> <li>• Prolonged nausea/vomiting with signs of dehydration</li> <li>• Prolonged diarrhea with signs of dehydration</li> <li>• Unable to tolerate any food</li> <li>• Left shoulder pain</li> <li>• Suicidal thoughts</li> <li>• Extreme weight loss</li> </ul>

<p><b>Green</b> Typical symptoms. Less concerning.</p> <p><b>Yellow</b> Symptoms to keep an eye on.</p> <p><b>Red</b> Call our office or go to the Emergency Department.</p>
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## When to Call Our Office: Long-Term Post-Bariatric Surgery

<ul style="list-style-type: none"><li>• Emotional changes</li></ul>
<ul style="list-style-type: none"><li>• Nausea/vomiting</li><li>• Diarrhea</li><li>• Weight regain</li></ul>
<ul style="list-style-type: none"><li>• Vomiting regularly after eating</li><li>• Diarrhea that is not improving</li><li>• Profound fatigue</li><li>• Dizziness</li><li>• Paresthesia (loss of feeling in hands or feet)</li><li>• Chest pain/severe heartburn</li><li>• Severe abdominal pain</li><li>• Abdominal distention (especially with no bowel movement or gas)</li><li>• Depression/suicidal thoughts</li><li>• Extreme weight loss</li></ul>

<p><b>Green</b> Typical symptoms. Less concerning.</p> <p><b>Yellow</b> Symptoms to keep an eye on.</p> <p><b>Red</b> Call our office or go to the Emergency Department.</p>
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## Fertility, Contraception and Pregnancy After Bariatric Surgery

Infertility is one of the indications for bariatric surgery. Bariatric surgery can improve fertility, for both men and women, more quickly than gradual weight loss. For women, it is recommended to wait 12-24 months after bariatric surgery to become pregnant. To prevent pregnancy, it is essential to plan for contraception before bariatric surgery. You cannot have bariatric surgery if you are pregnant. Once you become pregnant, it improves pregnancy outcomes for both mom and baby. However, pregnancy after bariatric surgery is still considered high-risk, so you will need to work closely with your OB/GYN and bariatric team.

### Ways that Bariatric Surgery Improves Fertility:

- In males, it increases testosterone, decreases estradiol, increases sperm count, and improves sexual quality of life
- In females, it decreases testosterone, increases estradiol, resolves hirsutism (excessive hair growth on unexpected areas), improves regularity and length of the menstrual cycle, improves PCOS, increases chance of conception, and improves sexual function

### Why You Should Wait 12-24 Months After Bariatric Surgery to Become Pregnant:

- Most of the weight will be lost within the first year after bariatric surgery
- Allows the body's vitamin and mineral levels to stabilize
  - Several nutrients needed for baby's development can be deficient after bariatric surgery
    - Folate, iron, vitamin B12, thiamin, calcium, vitamin D, and vitamin K

### Contraception Recommendations Before and After Bariatric Surgery:

- Hormonal contraception or hormone replacement therapy can increase the risk for a blood clot after bariatric surgery
  - Oral contraception should be held for 1-cycle prior to bariatric surgery
  - Hormone replacement therapy should be held for 3-weeks prior to bariatric surgery
- Oral contraception is not recommended after a Roux-en-Y gastric bypass because it is not absorbed as well
  - Norplant or IUD are the recommended alternatives
  - Non-hormonal barriers may be used
    - Diaphragms need size adjustments per each 3 kg of weight change

## Ways that Bariatric Surgery Improves Pregnancy Outcomes:

- Ultrasound will be more accurate
- Decreases risk for gestational diabetes, pregnancy-induced hypertension, preterm birth, having a baby that is too big, and stillbirth
- Shortens delivery time, decreases the need for vacuum delivery or C-section, and decreases risk of postpartum complications (bleeding and infection)



## Pregnancy After Bariatric Surgery

Pregnancy after bariatric surgery is considered high-risk. There are several complications that can develop because of your bariatric surgery history. If you become pregnant, you will need to work closely with your OB/GYN and bariatric team, especially your bariatric dietitian. Mom's diet is an important part of baby's healthy growth and development.

### Bariatric Surgery-Related Pregnancy Complications:

- Internal herniation following Roux-en-Y Gastric Bypass is a common complication
  - Symptoms include upper abdominal pain, nausea, and vomiting
  - If internal herniation is suspected, the bariatric surgeon should be consulted immediately
    - There is increased risk of death for mom and baby after 48 hours of symptom onset
- Maternal anemia is the most common deficiency
  - Symptoms include pale skin, feeling tired, dizziness, trouble concentrating, fast heart rate, and trouble breathing
  - Other deficiencies include folate, vitamin B12, thiamin, calcium, vitamin D, vitamin K
- Maternal and fetal hypoglycemia are more common after bariatric surgery
  - Results in fetal growth restriction and small size
  - Oral glucose tolerance test is an unacceptable method to screen for gestational diabetes with a history of bariatric surgery
    - Capillary blood glucose should be monitored between the 24<sup>th</sup> and 28<sup>th</sup> weeks of gestation
- Intrauterine growth restriction and small for gestational age are the most common complications for the baby

### Nutritional Recommendations During Pregnancy:

- Multivitamin and mineral supplementation and adequate diet should be a priority throughout the pregnancy
- Minimum protein of 60 grams per day
- Simple carbohydrates should be avoided due to the risk of early and late postprandial syndrome (low blood sugar after eating)
- Avoid caffeine and alcohol
- Eat frequent, smaller meals



## ✓ Healthy pregnancies after bariatric surgery



### Contraception

- Postpone pregnancy until weight has stabilised
- Avoid oral contraception and encourage long-acting reversible contraceptive methods such as IUD



### Diet

- Reduce quick-absorbing carbohydrates and opt for protein and low glycaemic index alternatives
- Avoid caffeine and alcohol
- Frequent, smaller meals



### Surgical issues

- Inflate and deflate LAGB according to hyperemesis, GWG, and fetal growth
- Assess for internal herniation when abdominal pain is reported and treat promptly



### Diabetes

- Avoid OGTT due to risk of dumping syndrome
- Monitor HbA1c every trimester if personal history of diabetes or risk factors
- CGM or seven point CBG between 24 and 28 weeks



### Supplements

- Vit D >40mcg
- Vit E 15mg
- Vit K 90-120µg
- Thiamine >12mg
- Zinc 8-15mg per 1mg copper
- Calcium 1200-1500mg
- Vit A 5000IU (B-carotene)
- Folic acid 0.4mg, 4-5mg for GDM/obesity
- Iron 45-60mg
- Copper 2mg
- Selenium 50µg



### Mental health

- Screen for substance abuse, anxiety, or other mental health disorders
- Offer follow up during and after pregnancy



### Fetal monitoring

- Monitor fetal growth every trimester
- Assess for congenital anomalies or developmental problems such as intracranial bleeds



### Gestational weight gain

- Monitor GWG according to IOM guidelines and screen for associated complications if necessary



### Nutrient levels

- Check serum indices (micronutrients, protein and albumin, FBC, INR) after surgery, preconception, and every trimester in pregnancy and supplement as necessary

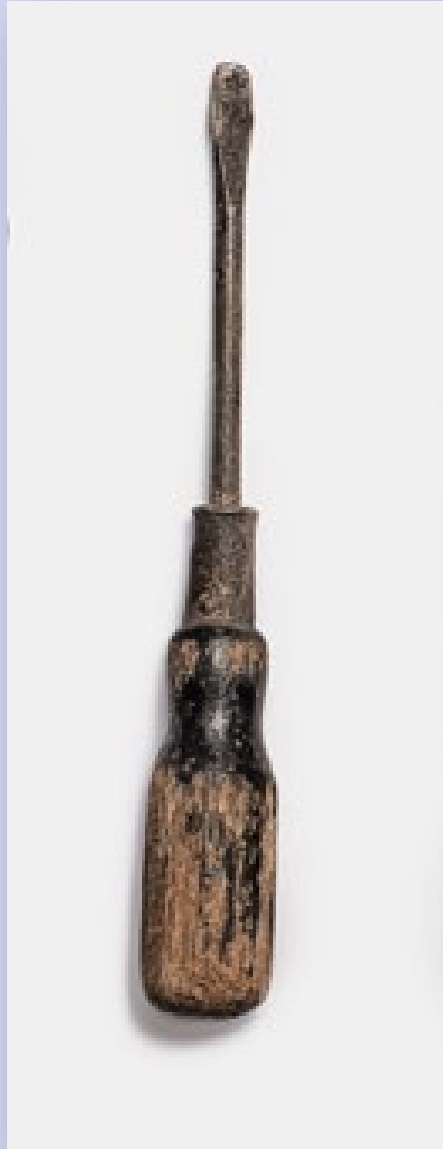


### Breastfeeding

- Breast milk is not compromised after surgery and breastfeeding is recommended
- Monitor maternal micronutrients during lactation

**Pregnancy after bariatric surgery: consensus recommendations for periconception, antenatal and postnatal care (2019)**  
 Shawe J, Ceulemans D, Akhter Z, Neff K, Hart K, Heslehurst N, Stoll I, Agrawal S, Steegers-Theunissen R, Taheri S, Greenslade BV, Rankin J, Huda MSB, Douek IF, Galjaard S, Blumenfeld O, Robinson A, Whyte MB, Mathews E, Devlieger R.

# Nutrition







## General Nutrition

It is important that you have a basic understanding of nutrition before you have bariatric surgery. What you eat will affect your weight loss and risk for complications. The food that you eat is made up of macronutrient (protein, carbohydrates and fat) and micronutrients (vitamins and minerals), each needed for a specific function. You can determine what is in your food by reading a food label or by using a nutrient database. You may need more or less of each nutrient after surgery.



## Macronutrients

Macronutrients are nutrients that your body needs in large amounts to stay healthy. There are three essential macronutrients that your body needs: protein, carbohydrates and fat. These are essential because you cannot live without eating them. Macronutrients perform specific functions in your body and provide your body with energy, also called calories (kcal).

### Sources and Functions of Macronutrients

	<b>Protein</b>	<b>Carbohydrate</b>	<b>Fat</b>
Food Sources	<ul style="list-style-type: none"> <li>-Poultry (chicken and turkey)</li> <li>-Red meat (beef, lamb and pork)</li> <li>-Seafood (fish and shellfish)</li> <li>-Eggs (especially egg whites)</li> <li>-Dairy products (milk, yogurt, cheese, and whey protein)</li> <li>-Beans and legumes (black beans, lentils, and chickpeas)</li> <li>-Nuts and seeds</li> <li>-Soy products (tofu, edamame, and tempeh)</li> </ul>	<ul style="list-style-type: none"> <li>-Grains (rice, pasta, oats, and barley)</li> <li>-Starchy vegetables (peas, potatoes, winter squash, and corn)</li> <li>-Beans and legumes (black beans, lentils, and chickpeas)</li> <li>-Dairy products (milk, yogurt, and ice cream)</li> <li>-Sugar (dessert, soda, and sweet tea)</li> </ul>	<ul style="list-style-type: none"> <li>-Extra virgin olive oil</li> <li>-Coconut</li> <li>-Avocados</li> <li>-Nuts and seeds</li> <li>-Fatty fish</li> <li>-Dairy products (full fat yogurt and cheese)</li> </ul>
Calories (kcal/gram)	4 kcal/gram	4 kcal/gram	9 kcal/gram
Function	<ul style="list-style-type: none"> <li>-Building and repairing tissue and muscle</li> <li>-Provides structure to cell membranes, organs, hair, nails, and skin</li> <li>-Helps your body maintain pH balance</li> <li>-Makes enzymes and hormones</li> </ul>	<ul style="list-style-type: none"> <li>-Provides energy as glucose</li> <li>-Stores energy as glycogen</li> <li>-Fiber promotes regular bowel habits</li> <li>-Fiber helps keep you full</li> </ul>	<ul style="list-style-type: none"> <li>-Makes up cell membranes</li> <li>-Stores energy as fat</li> <li>-Transport and absorbs fat-soluble vitamins (A, D, E, and K)</li> <li>-Insulates organs, keeping them safe</li> </ul>

## Protein

Protein is an important macronutrient after bariatric surgery. After you eat protein, it is digested into amino acids. There are 20 amino acids, nine of which you must get from food (essential amino acids). There are 6 conditionally essential amino acids, meaning you will need more of them if you are sick or stressed. Animal protein and soy are complete proteins, but most plant proteins are not complete. If you are eating plant-based proteins, eat a variety to make sure you are getting all the essential amino acids.

### Three methods to assess protein quality

There are three methods to assess protein quality: biological value, protein digestibility-corrected amino acid score (PDCAAS), and digestible indispensable amino acid score (DIAAS).














- Biological value measures how well your body uses a food’s protein. A protein is of high biological value if it has all the essential amino acids in the right amounts.
- PDCAAS measures nitrogen digestibility. A lower PDCAAS means a protein is of lower quality.
- DIAAS: Because PDCAAS does not measure the bioavailability of amino acids, DIAAS was created to measure the amount of amino acid absorbed during digestion.

A food with a DIAAS greater than 100 is a high-quality protein. Animal proteins usually have a higher quality than plant proteins. Most adults need 0.8-1.2 grams of protein per kg bodyweight. You will need at least 60-80 grams per day after bariatric surgery.

### Essential, Nonessential, and Conditionally Essential Amino Acids

Essential Amino Acids	Nonessential Amino Acids	Conditionally Essential Amino Acids
Histidine	Alanine	Arginine
Isoleucine	Aspartic acid	Cysteine
Leucine	Asparagine	Glutamine
Lysine	Arginine	Glycine
Methionine	Cysteine	Proline
Phenylalanine	Glutamic acid	Tyrosine
Threonine	Glutamine	
Tryptophan	Glycine	
Valine	Proline	
	Serine	
	Tyrosine	

## Comparison of Animal and Plant Protein Source

	 Beef lean	 Chicken boneless, skinless	 Turkey boneless, skinless	 Pork boneless loin	 Fish wild salmon	 Dairy milk 2%	 Eggs	 Beans black beans, cooked	 Lentils cooked	 Tofu extra firm	 Tempeh	 Hemp seeds	 Almonds
Nutrition facts													
Serving size	3 oz	3 oz	3 oz	3 oz	3 oz	1 cup 240 mL	1 whole	1 cup	1 cup	3 oz	3 oz	1 oz	1 oz
Calories (kcal)	196	150	125	147	155	122	72	218	226	90	160	166	164
Carbohydrates (g)	0	0	0	0	0	12	0.6	40	39	1	12	2.6	6
Protein (g)	24	25	26	23	22	8	6.2	14	18	9	18	9.5	6
Total fat (g)	10	5	2	5	7	4.5	5	0.7	0.8	5	4.5	14.6	14
Saturated fat (g)	4	1	0.5	2	1	2.7	1.6	0.2	0.1	1	0.5	1.4	1
Unsaturated fat (g)	4.7	3	1	2.5	5	1.5	2.7	0.4	0.5	3.5	4	13	12.5
Cholesterol (mg)	76	82	68	67	60	20	207	0	0	0	0	0	0
Digestibility													
Digestible indispensable amino acid score % (DIAAS)**	97	111	108	117	>100	114	101	49	58	91	91	54	40

\*This table includes nutrition facts information for common animal protein sources and some plant-based protein foods. This table is not intended to be a comprehensive list of all protein sources.

\*\*Excellent digestibility: >100

Moderate digestibility: 75-99

Low digestibility <75

[comparison-of-common-meat-and-plant-protein.png \(fs-marketing-files.s3.amazonaws.com\)](https://fs-marketing-files.s3.amazonaws.com/comparison-of-common-meat-and-plant-protein.png)

## Common Amounts of Protein in Food

Food	Serving Size	Calories	Carbs (g)	Fiber (g)	Protein (g)
<b>Lean (Approximately 0-4 grams of fat per serving)</b>					
Beef, ground, 90% lean meat/ 10% fat, cooked, pan-browned	1 oz	65	0	0	8
Beef, liver, raw	1 oz	38	1	0	6
Buffalo, cooked, roasted	1 oz	37	0	0	8
Cheese, nonfat or fat-free	About 1 oz	24	2	0	4
Chicken, liver, raw	1½ oz	52	0	0	7
Chicken, roasted	¼ cup	66	0	0	10
Chicken, ground, cooked, pan-browned	1 oz	54	0	0	7
Cornish hen, cooked	1 oz	38	0	0	7
Crab, raw	1 oz	24	0	0	5
Domestic duck, cooked	¼ cup (1 oz)	70	0	0	8
Egg whites	2	34	0	0	7
Fish, whiting, cooked	1 oz	33	0	0	7
Lamb, kidneys, raw	1 oz	27	0	0	4
Lobster, raw	1 oz	22	0	0	5
Oysters, fresh	6 medium	43	2	0	5
Pork, Canadian bacon, uncooked	1 oz	31	0	0	6
Pork, cured, lean, ham	1 oz	45	1	0	5
Pork, loin, cooked	1 oz	42	0	0	7
Processed sandwich meats with 3 grams of fat or less per oz: turkey ham, sliced, extra lean	About 1 oz (¼ cup pieces)	43	1	0	7

Food	Serving Size	Calories	Carbs (g)	Fiber (g)	Protein (g)
<b>Lean (Approximately 0-4 grams of fat per serving)</b>					
Food	Serving Size	Calories	Carbs (g)	Fiber (g)	Protein (g)
Rabbit, cooked	1 oz	56	0	0	8
Ricotta with part-skim milk	¼ cup (approx 2 oz)	86	3	0	7
Roast beef, deli style	1 slice (½ oz)	16	0	0	3
Shrimp, raw	1 oz	20	0	0	4
Smoked salmon (lox)	1 oz	33	0	0	5
Tilapia, raw	1 oz	28	0	0	6
Trout, raw	1 oz	42	0	0	6
Turkey, ground, cooked, pan-browned	1 oz	43	0	0	9
Turkey, pork, and beef sausage, low-fat	1 oz	29	3	0	2
Veal cutlet, boneless	1 oz	30	0	0	6
Venison, deer, lean, cooked	1 oz	40	0	0	8



Food	Serving Size	Calories	Carbs (g)	Fiber (g)	Protein (g)
<b>Medium Fat (Approximately 4-6 grams of fat per serving)</b>					
Bacon, turkey	3 slices (1 oz each before cooking)	66	1	0	5
Beef, ground, 85% lean/15% fat, cooked	1 oz	71	0	0	7
Beef, tongue	1 oz	69	0	0	5
Chicken with skin	1 oz	84	0	0	10
Corned beef	1 oz	71	0	0	8
Egg	1 large	72	0	0	6
Fish fillet, battered or breaded, and fried	About 1 oz	53	4	0	3
Lamb: chop, leg, or roast, cooked	1 oz	67	0	0	7
Lamb, ground, cooked, broiled	1 oz	80	0	0	7
Pork, ground	1 oz	84	0	0	7
Salmon, Atlantic, cooked	1 oz	58	0	0	6
Turkey, with skin, cooked	1 oz	85	0	0	9

Food	Serving Size	Calories	Carbs (g)	Fiber (g)	Protein (g)
<b>High Fat (Approximately 7 or more grams of fat per serving)</b>					
Bacon, pork	2 slices (1 oz each before cooking)	234	1	0	7
Cheese, regular, cheddar	1 oz	115	0	0	7
Cheese, regular, Swiss	1 oz	108	2	0	8
Pork: spareribs, lean, cooked	1 oz	112	0	0	8
Processed sandwich meats with 8 grams of fat or more per oz: hard salami	1 oz	119	0	0	6
Sausage with 8 grams fat or more per oz: chorizo, pork and beef	1 oz	129	1	0	7

Food	Serving Size	Calories	Carbs (g)	Fiber (g)	Protein (g)
<b>Plant-Based Proteins</b>					
Beans: black, cooked or canned, drained and rinsed	½ cup	114	20	8	8
Beans: garbanzo, cooked or canned, drained and rinsed	½ cup	134	22	6	7
Beans: kidney, cooked or canned, drained and rinsed	½ cup	108	19	6	7
Beans: navy, cooked or canned, drained and rinsed	½ cup	127	24	10	7
Edamame, frozen	½ cup	65	5	3	6
Falafel	3 patties (about 2¼ inches across)	170	16	2	7
Hummus	⅓ cup	136	12	5	6
Lentils, cooked	½ cup	115	20	8	9
Meatless bacon	2 strips (approx ½ oz)	31	1	0	1
Meatless burger, vegan	1 patty (about 2½ oz)	94	6	4	12
Meatless chicken	⅓ cup	125	2	2	13
Meatless frankfurter	1 (2½ oz)	163	5	3	14
Meatless luncheon slices	1 slice (½ oz)	26	1	0	2
Meatless sausage	1 link (1 oz)	72	3	1	5
Split peas cooked	½ cup	116	21	8	8
Tofu, firm	1 slice	52	2	0	6

Food	Serving Size	Calories	Carbs (g)	Fiber (g)	Protein (g)
<b>Dairy - Milk</b>					
Milk, low-fat (1%)	1 cup	105	12	0	9
Milk, reduced-fat (2%)	1 cup	125	12	0	9
Milk, whole	1 cup	149	12	0	8
<b>Dairy - Yogurt</b>					
Yogurt, Greek, plain, nonfat	6 oz	100	6	0	17
Yogurt, plain, low-fat	8 oz	143	16	0	12
<b>Non-dairy</b>					
Almond milk	1 cup	60	8	1	1
Coconut milk	¼ cup	138	3	1	1
Soy milk, plain	1 cup	100	8	1	7

[meal-planning-and-carb-counting.pdf \(novomedlink.com\)](https://www.novomedlink.com/meal-planning-and-carb-counting.pdf)



## Carbohydrates/Fiber

Carbohydrates are an important macronutrient for blood sugar control both before and after bariatric surgery. Most carbohydrate are broken down into glucose. However, some carbohydrates do not break down and are called fiber. Fiber has many health benefits. It is important to eat enough fiber. Most adults need 25-38 grams of fiber (14 grams of fiber per 1,000 kcal) per day; however, you may need less after bariatric surgery due to eating fewer calories.

### Sources and Functions of Fiber

	<b>Soluble Fiber</b>	<b>Insoluble Fiber</b>
Definition	Dissolves in water	Does not dissolve in water
Source	Oats, peas, beans, apples, citrus fruit, carrots, barley, and psyllium	Whole-wheat flour, wheat bran, nuts, beans, and vegetables (cauliflower, green beans, and potatoes)
Function	-Lowers cholesterol -Lowers blood glucose levels	-Helps increase stool bulk, helping with bowel regularity -Feeds gut bacteria

### Daily Fiber Recommendation for Adults

	<b>Age ≤ 50 Years</b>	<b>Age &gt; 50 Years</b>
Men	38 grams	30 grams
Women	25 grams	21 grams

*\*14 grams of fiber for each 1,000 calories consumed*

### Tips for Increasing Fiber Intake

1. Eat more whole grains
  - a. Half of your grains should be whole grains
  - b. Try high-fiber breakfast cereal, whole-grain flour, whole-wheat bread/pasta, brown rice, or popcorn
2. Eat more legumes (beans, peas, and lentils)
  - a. Add beans to soups, pasta, or Mexican food
3. Eat more fruits and veggies
  - a. Have 5 or more servings per day
  - b. Eat fruit or veggies as a snack or add to your meal

## Fats

Fats are also called lipids. There are two main types of fats: saturated and unsaturated fat. Saturated fat is usually solid at room temperature; unsaturated fat is usually liquid at room temperature. There are two types of unsaturated fat, monounsaturated and polyunsaturated fats. Polyunsaturated fat can further be broken down into omega-6 and omega-3 fatty acids. Trans fats are usually plant oils that have been modified to be a solid fat. The FDA now says that lab-created trans fats are “no longer considered as safe” in food and should be avoided.

Eating different types of fat can positively or negatively impact your health. They predominantly affect cholesterol and triglyceride levels, which impact your heart health. It is important to eat more healthy fats (unsaturated fats) and limit unhealthy fats (saturated and trans fats).

### Sources and Health Benefits/Risks of Each Type of Fat

Type of Fat	Sources	Health Benefits/Risks
Unsaturated Fat: Monounsaturated Fat	-Olive, peanut, canola, safflower, and sunflower oil -Avocados -Pumpkin and sesame seeds -Almonds, cashews, peanuts, and pecans	-Lowers LDL (bad cholesterol) -Raises HDL (good cholesterol) -Lowers triglycerides -May improve blood sugar control
Unsaturated Fat: Polyunsaturated Fat (Omega-6)	-Corn, cotton seed, peanut, soybean, and sunflower oil	-Lowers LDL (bad cholesterol) -Raises HDL (good cholesterol) -Lowers triglycerides -Improves blood sugar control
Unsaturated Fat: Polyunsaturated Fat (Omega-3)	-Fatty fish (salmon, anchovies, mackerel, herring, sardines, and tuna) -Canola, soybean, walnut, and flaxseed oil -Chia and flaxseed -Walnuts -Soybeans	-Lowers triglyceride levels -Lowers heart disease risk
Saturated Fat	-Baked/fried foods -Meats (especially skins) -Lard -High-fat dairy products (butter, cream, 2% or whole milk, and cheese) -Coconut and palm oils	-Raises LDL (bad cholesterol) -Raises HDL (good cholesterol) -May increase Alzheimer’s risk
Trans Fat	-Naturally occurring in meat and dairy from grazing animals (cows, sheep, and goats)	-Raises LDL (bad cholesterol) -Lowers HDL (good cholesterol)

## Tips for Eating Healthier Fats

- Use plant oils instead of butter or lard
- Eat more plant-based foods
- Eat more fatty fish
- Choose lean meat
- Choose skinless poultry
- Consume low-fat dairy foods and drinks
- Eat less processed food
- Read food labels



## Micronutrients

Micronutrients are nutrients that your body needs in small amounts to stay healthy. Vitamins and minerals are examples of micronutrients. There are several vitamins and minerals that are important for those considering bariatric surgery. Many of these micronutrients may be deficient prior to surgery and then surgery places you at increased risk for deficiency later. Your bariatric surgeon will test for common deficiencies both before and after surgery, so it is important that you follow-up with your surgeon as directed. Deficiencies in these nutrients can cause a variety of complication. It is important to eat a variety of foods, take supplements as directed, and continue to get routine monitoring to prevent deficiencies and treat them quickly if they develop.

### Percentage of Bariatric Surgery Patients Who Experience Deficiencies

Nutrient	Pre-Surgery	Post-Surgery			
		Adjustable Gastric Banding (AGB)	Sleeve Gastrectomy (SG)	Roux-en-Y Gastric Bypass (RYGB)	Biliopancreatic Diversion (BPD)
Thiamin (B1)	1.8-38%	57%	9-17%	5-12%	-
Cobalamin (B12)	2.3-18.1%	19%	3-18%	3-42.1%	3.9-7%
Folic acid (folate)	3.4-18%	10%	2.2-22%	4-18.4%	10.9%
Iron (Fe)	3-43%	14%	5-43%	6-36.4%	11-47.1%
Calcium	0.5-3.3%	-	2%	-	15-40%
Vitamin D	14-92.9%	5%	32-68%	10-52%	22-70.6%
Vitamin A	1.7-23%	10%	-	4-17%	28-55.5%
Vitamin E	5.2-27%	-	-	-	3.9-11%
Vitamin K	-	-	-	-	44.7-60%
Zinc (Zn)	2.9-24.6%	-	5-34%	36-37%	10.5-38%
Copper (Cu)	-	-	-	9.6%	-

## Micronutrient Recommendations for the General Public (Preoperative) and Post-Bariatric Surgery

Micronutrient	Preoperative Recommendations	Post-Bariatric Recommendations
Thiamin (B1)	-19+ years male: 1.2 mg -19+ years female: 1.1 mg	12-50 mg
Cobalamin (B12)	-19+ years: 2.4 mcg	250-500 mcg
Folic acid (folate)	-19+ years: 400 mcg	400-800 mcg
Iron (Fe)	- 19-50 years male: 8 mg -19-50 years female: 18 mg -51+: 8 mg	45-60 mg
Calcium	-19-50 years: 1,000 mg -51-70 years male: 1,000 mg -51-70 years female: 1,200 mg -71+ years: 1,200 mg	1,200-1,500 mg
Vitamin D	-19-70 years male: 600 IU -19-70 years female: 600 IU -71+ years: 800 IU	3,000 IU
Vitamin A	-19+ years male: 3,000 IU -19+ years female: 2,333 IU	5,000-10,000 IU
Vitamin E	-14+ years male: 15 mg -14+ years female: 15 mg	15 mg
Vitamin K	-19+ years male: 120 mcg -19+ years female: 90 mcg	90-120 mcg
Zinc (Zn)	-19+ years mal: 11 mg -19+ years females: 8 mg	8-22 mg
Copper (Cu)	-19+ years: 900 mcg	1-2 mg

## Sources, Function, and Signs/Symptoms of Deficiency for Micronutrients Concerning for the Bariatric Patient

Nutrient	Food Sources	Function	Signs and Symptoms of Deficiency
Thiamin (B1)	Grains, meat, fish, and fortified products (bread and cereal)	<ul style="list-style-type: none"> <li>-Helps change carbohydrate to energy</li> <li>-Plays role in muscle contraction and nerve signal conduction</li> </ul>	<ul style="list-style-type: none"> <li>-Early: dry beriberi (brisk tendon reflexes, tingling, nerve pain, muscle weakness/pain, difficulty walking, and seizures), wet beriberi (heart failure, swelling, fast/slow heart rate, lactic acidosis, difficulty breathing, heart enlargement/dilation, and respiratory distress), and other/GI symptoms (slow gastric emptying, nausea, vomiting, megacolon, and constipation)</li> <li>-Advanced: Wernicke's encephalopathy (nerve pain, difficulty walking, blurred/double vision, uncontrolled eye movement, confusion, and short-term memory loss) and Korsakoff psychosis/Wernicke-Korsakoff syndrome (psychosis and hallucination)</li> </ul>
Cobalamin (B12)	Fish, meat, poultry, eggs, and dairy	<ul style="list-style-type: none"> <li>-Development and function of brain and nerves</li> <li>-Formation of red blood cells</li> <li>-Cell metabolism</li> <li>-Production of DNA</li> </ul>	<ul style="list-style-type: none"> <li>-Early: pernicious/megaloblastic anemia, pale, yellowing of skin/eyes, swelling/pain of tongue, fatigue, anorexia, diarrhea, tingling, difficulty walking, changes in reflexes, demyelination/axonal degeneration, vertigo, shortness of breath, ringing in your ears, and palpitations</li> <li>-Advanced: chest pain, heart failure symptoms (swelling, shortness of breath, fatigue/weakness, irregular heart rate, and cough), altered mental status, dementia, and psychosis</li> </ul>
Folic acid (folate)	Green leafy vegetables, beans, peas, nuts, some fruit (oranges, lemons, banana, melons, and strawberry), and fortified food (cereal and pasta)	<ul style="list-style-type: none"> <li>-Red blood cell formation</li> <li>-Healthy cell growth and function</li> <li>-Reduces risk of brain/spine birth defects (neural tube defects)</li> </ul>	Changes in coloring/ulceration of skin, nails, or mouth

Nutrient	Food Sources	Function	Signs and Symptoms of Deficiency
Iron (Fe)	Meat, seafood, poultry, iron fortified foods (cereal and bread), beans, peas, spinach, nuts, and some dried fruit (raisins)	<ul style="list-style-type: none"> <li>-Used to make hemoglobin (a protein that carries oxygen from lungs to body) and myoglobin (a protein that carries oxygen to the muscles)</li> <li>-Used to make some hormones</li> </ul>	Fatigue, decreased performance, difficulty learning, microcytic anemia, decreased immune function, intestinal issues, swollen/painful tongue, difficulty swallowing, indented/spoon-shaped nails, vertical ridges on nails, and palpitations
Calcium	Milk, yogurt, cheese, fish with bones, and some vegetables (kale, broccoli, and bok choy)	<ul style="list-style-type: none"> <li>-Bone and teeth structure and function</li> <li>-Cell signaling</li> <li>-Blood clotting</li> <li>-Muscle contraction and nerve functioning</li> </ul>	Leg cramping/spasms, muscle contractions, muscle weakness, and osteoporosis
Vitamin D	Fatty fish (trout, salmon, tuna, and mackerel), fish liver oils, beef liver, egg yolks, cheese, mushrooms, fortified dairy production, and sunlight	<ul style="list-style-type: none"> <li>-Bone and teeth structure and function</li> <li>-Supports immune health</li> <li>-Supports muscle function and protects brain cells</li> </ul>	Low blood calcium, muscle spasms/cramping, tingling, and metabolic bone disease
Vitamin A	Liver, fish, eggs, dairy products, leafy green vegetables, orange/yellow vegetables, tomatoes, fruit, some vegetable oils, and fortified foods (milk, margarine, and some cereal)	<ul style="list-style-type: none"> <li>-Essential for good vision</li> <li>-Supports cell growth (especially eyes, heart, and lung)</li> <li>-Immune function</li> <li>-Cell communication</li> <li>-Reproduction</li> </ul>	<ul style="list-style-type: none"> <li>-Early: night blindness, Bitot's spots (white spots on eyes), eye inflammation, poor wound healing, thickening of skin, and loss of taste</li> <li>-Advanced: corneal damage, dry skin, cloudy cornea, perforation, and blindness</li> </ul>



<b>Nutrient</b>	<b>Food Sources</b>	<b>Function</b>	<b>Signs and Symptoms of Deficiency</b>
Vitamin E	Seeds, vegetable oils, green leafy vegetables, and fortified cereals	-Antioxidant (protects cells from free radicals) -Immune function -Important for vision, reproduction, blood, and nerves	Poor reflexes, walking difficulty, nerve damage, muscle weakness, decreased body position awareness, vibrations, blurred vision, uncontrolled eye movements, night blindness, and red blood cell hemolysis/hemolytic anemia
Vitamin K	Green leafy vegetables, vegetable oils, some fruit, meat, dairy, eggs, and fermented foods	-Blood clotting -Strengthens bone	-Early: bleeding, easy bruising, bleeding gums, delayed blood clotting, and heavy menstrual/nose bleeds -Advanced: osteoporosis
Zinc (Zn)	Meat, fish, seafood, eggs, dairy products, beans, nuts, whole grains, and fortified breakfast cereal	-Cellular metabolism -Immune function -Protein and DNA synthesis -Wound healing -Cell signaling and division	-Early: rash, acne, loss of taste, poor immune function, increased infections, infertility, slowed growth, and delayed sexual maturation -Advanced: hypogonadism, hair loss, skin lesions/rash, diarrhea, impaired appetite/anorexia, night blindness, and recurrent infections/delayed wound healing
Copper (Cu)	Shellfish, seeds, nuts, organ meat, whole-grain products, and chocolate	-Cofactor for several enzymes -Energy production -Iron metabolism -Making connective tissue -Making neurotransmitters -Regulates gene expression -Brain development -Pigmentation -Immune function	-Early: hypochromic anemia, neutropenia, pancytopenia, hypopigmentation, high cholesterol, and impaired biomarkers of bone metabolism -Advanced: walking difficulty



## Label Reading

Label reading is an important skill before and after bariatric surgery. Label reading helps you determine how many calories and what macro- and micronutrients are in your food. There are two types of labels: single column and dual column. Label reading can also help you interpret the manufacture’s nutrient content claims. The label also lists ingredients.

Single Column Nutritional Label

<b>Nutrition Facts</b>	
16 servings per container	
<b>Serving size</b>	<b>1 Tbsp. (21g)</b>
<b>Amount per serving</b>	
<b>Calories</b>	<b>60</b>
<b>% Daily Value*</b>	
<b>Total Fat</b> 0g	<b>0%</b>
Saturated Fat 0g	<b>0%</b>
Trans Fat 0g	
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 0mg	<b>0%</b>
<b>Total Carbohydrate</b> 17g	<b>6%</b>
Dietary Fiber 0g	<b>0%</b>
Total Sugars 17g	
	<b>34%†</b>
<b>Protein</b> 0g	
Vitamin D 0mcg	<b>0%</b>
Calcium 0mg	<b>0%</b>
Iron 0mg	<b>0%</b>
Potassium 0mg	<b>0%</b>

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.  
 † One serving adds 17g of sugar to your diet and represents 34% of the Daily Value for Added Sugars.

Dual Column Nutritional Label

<b>Nutrition Facts</b>			
3 servings per container			
<b>Serving size</b>		<b>3 pretzels (28g)</b>	
	<b>Per serving</b>	<b>Per container</b>	
<b>Calories</b>	<b>110</b>	<b>330</b>	
	<b>% DV*</b>	<b>% DV*</b>	
<b>Total Fat</b>	0.5g	<b>1%</b>	1.5g <b>3%</b>
Saturated Fat	0g	<b>0%</b>	0g <b>0%</b>
Trans Fat	0g		0g
<b>Cholesterol</b>	0mg	<b>0%</b>	0mg <b>0%</b>
<b>Sodium</b>	400mg	<b>17%</b>	1200mg <b>52%</b>
<b>Total Carb.</b>	23g	<b>8%</b>	69g <b>24%</b>
Dietary Fiber	2g	<b>7%</b>	6g <b>21%</b>
Total Sugars	<1g		3g
Incl. Added Sugars	0g	<b>0%</b>	0g <b>0%</b>
<b>Protein</b>	3g		9g
Vitamin D	0mcg	0%	0mcg 0%
Calcium	10mg	0%	30mg 2%
Iron	1.2mg	6%	3.6mg 18%
Potassium	90mg	0%	270mg 5%

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

[How to Understand and Use the Nutrition Facts Label | FDA](#)

## Steps to Reading a Nutritional Label

**1.** Serving Information →

**2.** Calories →

**3.** Nutrients →

**4.** Quick Guide to percent Daily Value (%DV) ←

- 5% or less is **low**
- 20% or more is **high**

<b>Nutrition Facts</b>	
4 servings per container	
<b>Serving size</b>	<b>1 cup (227g)</b>
<b>Amount per serving</b>	
<b>Calories</b>	<b>280</b>
	<b>% Daily Value*</b>
<b>Total Fat</b> 9g	<b>12%</b>
Saturated Fat 4.5g	<b>23%</b>
<i>Trans</i> Fat 0g	
<b>Cholesterol</b> 35mg	<b>12%</b>
<b>Sodium</b> 850mg	<b>37%</b>
<b>Total Carbohydrate</b> 34g	<b>12%</b>
Dietary Fiber 4g	<b>14%</b>
Total Sugars 6g	
Includes 0g Added Sugars	<b>0%</b>
<b>Protein</b> 15g	
Vitamin D 0mcg	0%
Calcium 320mg	25%
Iron 1.6mg	8%
Potassium 510mg	10%

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

[How to Understand and Use the Nutrition Facts Label | FDA](#)

### 1. Serving Information

- Servings per container - Number of servings in the package
- Serving size - Amount people typically eat or drink (not recommendations of how much you should eat)
  - What the nutritional analysis is based on
    - Pay attention to how much you are actually eating (try estimating serving size with your hands)

### 2. Calories

- Calories - A measure of how much energy you get from the food
  - Extra calories are stored as fat and can lead to weight gain

### 3. Nutrients

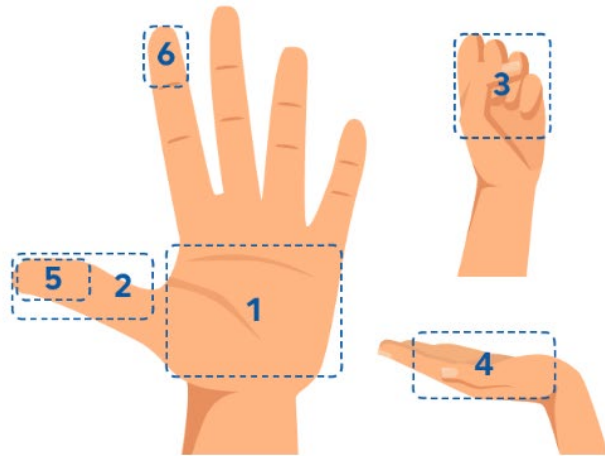
- a. Look for foods that contain more of what you need (protein, fiber, iron, vitamin D, and calcium) and less of nutrients that you want to limit (saturated fat, sodium, and added sugars)
  - i. Not all nutrients are going to be listed on a food label

### 4. Percent Daily Value (%DV)

- a. %DV - Shows how much a nutrient in a serving of food contributes to the total daily diet by providing a reference amount of nutrient to consume or not exceed each day
  - i. %DV is based on a 2,000 calorie diet
- b. Interpreting %DV
  - i. 5% DV or less - Low in a nutrient
    - 1. Choose foods lower in saturated fat, sodium, and added sugar
  - ii. 20% DV or more - High in a nutrient
    - 1. Choose foods higher in fiber, iron, vitamin D, and calcium
- c. Use %DV to compare foods
  - i. Make sure serving sizes are the same
  - ii. Choose products that are higher in nutrients you want and lower in those you don't
- d. Use %DV to help interpret nutrient content claims for foods and supplements
  - i. Nutrient content claim - A claim regarding the level of a nutrient in a food

## Estimating Serving Size with Your Hands

1. **3 ounces of meat, fish, or poultry**  
Palm of hand (no fingers)
2. **1 ounce of meat or cheese**  
Thumb (tip to base)
3. **1 cup or 1 medium fruit**  
Fist
4. **1–2 ounces of nuts or pretzels**  
Cupped hand
5. **1 tablespoon**  
Thumb tip (tip to 1<sup>st</sup> joint)
6. **1 teaspoon**  
Fingertip (tip to 1<sup>st</sup> joint)



### Diabetes Meal Planning | CDC

<p><b>1 Serving Looks Like . . .</b></p> <p><b>GRAIN PRODUCTS</b></p> <p>1 cup of cereal flakes = fist</p> <p>1 pancake = compact disc</p> <p>½ cup of cooked rice, pasta, or potato = ½ baseball</p> <p>1 slice of bread = cassette tape</p> <p>1 piece of cornbread = bar of soap</p>	<p><b>1 Serving Looks Like . . .</b></p> <p><b>VEGETABLES AND FRUIT</b></p> <p>1 cup of salad greens = baseball</p> <p>1 baked potato = fist</p> <p>1 med. fruit = baseball</p> <p>½ cup of fresh fruit = ½ baseball</p> <p>¼ cup of raisins = large egg</p>
<p><b>1 Serving Looks Like . . .</b></p> <p><b>DAIRY AND CHEESE</b></p> <p>1½ oz. cheese = 4 stacked dice or 2 cheese slices</p> <p>½ cup of ice cream = ½ baseball</p> <p><b>FATS</b></p> <p>1 tsp. margarine or spreads = 1 dice</p>	<p><b>1 Serving Looks Like . . .</b></p> <p><b>MEAT AND ALTERNATIVES</b></p> <p>3 oz. meat, fish, and poultry = deck of cards</p> <p>3 oz. grilled/baked fish = checkbook</p> <p>2 Tbsp. peanut butter = ping pong ball</p>

[servingcard.qxd \(nih.gov\)](#)

# Nutritional Databases

You may also use the internet or your smartphone to determine the nutritional makeup of the food that you are eating. Below are several websites and apps that will help you analyze and log your nutrition to better understand what you are eating.

## Websites:

- My Food Data: <https://tools.myfooddata.com/recipe-nutrition-calculator>

Number of Servings:

Totals Comparison Amino Acids

Nutrition Facts	
Serving Size	
Whole Recipe (182g)	
Calories	95
% Daily Value *	
Total Fat 0.3g	0%
Saturated Fat 0.1g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 1.8mg	0%
Total Carbohydrate 25.1g	8%
Dietary Fiber 4.4g	16%
Total Sugars 18.9g	38%
Includes ~ g Added Sugars	~ %
Protein 0.5g	1%
Vitamin C 8.4mg	9%
Vitamin D 0mcg	0%
Iron 0.2mg	1%
Calcium 10.9mg	1%
Potassium 194.7mg	4%
Phosphorus 20mg	2%

\*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

- My Food Diary: <https://www.myfooddiary.com>

Apple

Nutrition Facts	
Serving Size	
1 medium apple	1 medium apple (152g)
Amount Per Serving	
Calories	95
% Daily Value*	
Total Fat 0.3g	0%
Saturated Fat 0.1g	1%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 2mg	0%
Total Carbohydrate 25.1g	8%
Dietary Fiber 4.4g	16%
Total Sugars 18.9g	
Includes 0g Added Sugars	0%
Protein 0.5g	
Vitamin D 0mcg	0%
Calcium 10mg	1%
Iron 0.2mg	1%
Potassium 195mg	4%
Vitamin A 6mcg	1%
Vitamin C 8mg	9%

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

20.7 Net Carbs Per Serving

Add to Food Diary

- Nourish by WebMD: <https://www.webmd.com/diet/healthtool-food-calorie-counter>

Search Food

apple

TIP: Add a brand or restaurant name to get better results.

Your Food: Apple, Fresh, Medium, 3", Usda 95 calories | Serving Size: 1 Each

Amount: 1 Serving(s)


You've Consumed

CALORIES	FAT	CARBS
95	0 <sub>G</sub>	25 <sub>G</sub>

[View Nutrition Facts](#)

- Nutrition Value: <https://www.nutritionalvalue.org>

Add to diary Add to favorites

 **Apple, raw**



Select portion size: 1 medium = 200 g

Share by URL   
 Add to comparison   
 Add to recipe   
 Download spreadsheet (CSV)   
 Print page

Nutrition Facts	
Portion Size	200 g
Amount Per Portion	<b>104</b>
% Daily Value *	
<b>Total Fat</b> 0.3g	0 %
Saturated Fat 0.1g	0 %
<b>Sodium</b> 2mg	0 %
<b>Total Carbohydrate</b> 28g	10 %
Dietary Fiber 4.8g	17 %
Sugar 21g	
<b>Protein</b> 0.5g	1 %
Vitamin D 0mcg	0 %
Calcium 12mg	1 %
Iron 0.2mg	1 %
Potassium 214mg	5 %

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contribute to a daily diet. 2000 calories a day is used for general nutrition advice.

Calories by source

Badges: low fat

- USDA FoodData Central: <https://fdc.nal.usda.gov>

## Apples, fuji, with skin, raw

Data Type: Foundation Food Category: Fruits and Fruit Juices FDC ID: 1750340 NDB Number: 9504  
 FDC Published: 10/30/2020

**Components** Individual Samples Other Information

Portion:

Name	Average Amount	Unit	Deriv. By	n	Samples	Min	Max	Median	Footnote	Initial Year Acquired
<b>Proximates:</b>										
Water	83.6	g	Analytical	8	<a href="#">Samples</a>	82	84.7	83.8		2020
Energy (Atwater General Factors)	65	kcal	<a href="#">Calculated</a>							
Energy (Atwater Specific Factors)	58	kcal	<a href="#">Calculated</a>							
Nitrogen	0.02	g	Analytical	8	<a href="#">Samples</a>	0	0.04	0.02		2020
Protein	0.15	g	<a href="#">Calculated</a>							
Total lipid (fat)	0.16	g	Analytical	8	<a href="#">Samples</a>	0	0.3	0.2		2020
Ash	0.43	g	Analytical	8	<a href="#">Samples</a>	0	1.49	0.26		2020
<b>Carbohydrates:</b>										
Carbohydrate, by difference	15.6	g	Calculated							
Carbohydrate, by summation	15.4	g	Summed							
Fiber, total dietary	2.1	g	Analytical	8	<a href="#">Samples</a>	1.9	2.3	2.1		2020
Sugars, Total	13.3	g	Summed							
Sugars, total including NLEA	13.3	g	Analytical	8	<a href="#">Samples</a>	11.6	15.3	13.4		2020

## Food Journaling

Writing down – journaling – the food you eat is an important tool to help you better understand what you are eating and how it affects your weight and health. Food journaling can help you build healthy habits, control your weight, and identify any food sensitivities. The more accurate and detailed the log, the better the results. These journals are great tools for you and can be used by your doctor or dietitian to better understand how to help you achieve your goals. They may also be used to help achieve insurance approval for bariatric surgery. You may either journal by hand or utilize an app.

### Tips for Better Food Journaling

1. Log as you go
  - a. Update your food journal throughout the day for better accuracy
2. Track everything
  - a. Write down every meal or snack
  - b. It can be helpful to include things like where you ate, when you ate, who you ate with, and how you were feeling when you ate
3. Be specific
  - a. Be specific regarding ingredients, seasonings, and portion size
4. Consider using an app



## Food Journaling/Nutrition Apps

- Baritastic
  - Free to use
  - Track food, BMI, inches lost, hunger etc.
  - Works with wearable devices to track activity
  - Set reminders for water, protein shakes, and supplements
  - Bite timer
  - Recipes
- Fitbit: Health and Fitness
  - Free or may upgrade to premium
  - Daily food diary
  - Tracks exercise and steps
  - Tracks sleep quality
  - Has exercise plans and mindfulness content
- Fooducate: Nutrition Coach
  - Free or may upgrade to pro
  - Daily food diary
  - Grades quality of foods eaten
  - Ability to scan and add foods
  - Support community
- Lose It!
  - Set goals
  - Tracks food, water, and macros
  - Works with wearable devices
  - Progress report and statistics
  - Ability to scan or take a picture to add foods
- MyPlate Calorie Counter
  - Free or paid membership
  - Daily food and macro tracker
  - Progress report and statistics
  - Recipes
  - Home workouts
  - Support community



- My Diet Coach - Weight Loss
  - Daily food diary and macro tracker
  - Recipes
  - Integrates with Health App



- My Fitness Pal
  - Free or may upgrade to premium with a subscription
  - Food and exercise tracker
  - Support community
  - Ability to scan foods and add recipes
  - Integrates with other apps



- My NetDiary
  - Free
  - Food diary and meal planning
  - Track hydration and supplement use
  - Set reminders
  - Progress report and statistics



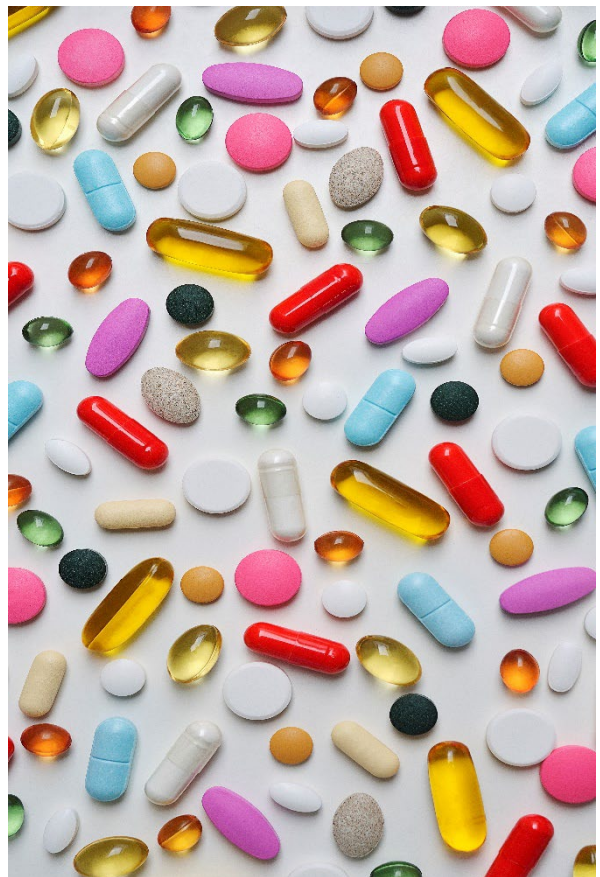
## Daily Food Log

Date/ Exercise	Meal	Time	Foods Eaten	Calories (kcal)	Protein (grams)	Fruit/ Veggie Servings	Liquid Intake (oz)	Multivitamins	Notes (feelings, location, companions, etc.)
Date:	Breakfast								
Exercise:	Snack								
	Lunch								
	Snack								
	Dinner								
	Snack								
	Water								

\*Please complete and return to your bariatric surgeon or your bariatric dietitian

## Diet and Micronutrient Supplementation After Bariatric Surgery

You will have a special bariatric diet and multivitamin regimen to follow after your bariatric surgery. These dietary recommendations and supplement regimen will need to be followed for the rest of your life. Failure to follow these recommendations may result in poor outcomes and complications.



## Diet Stages After Bariatric Surgery

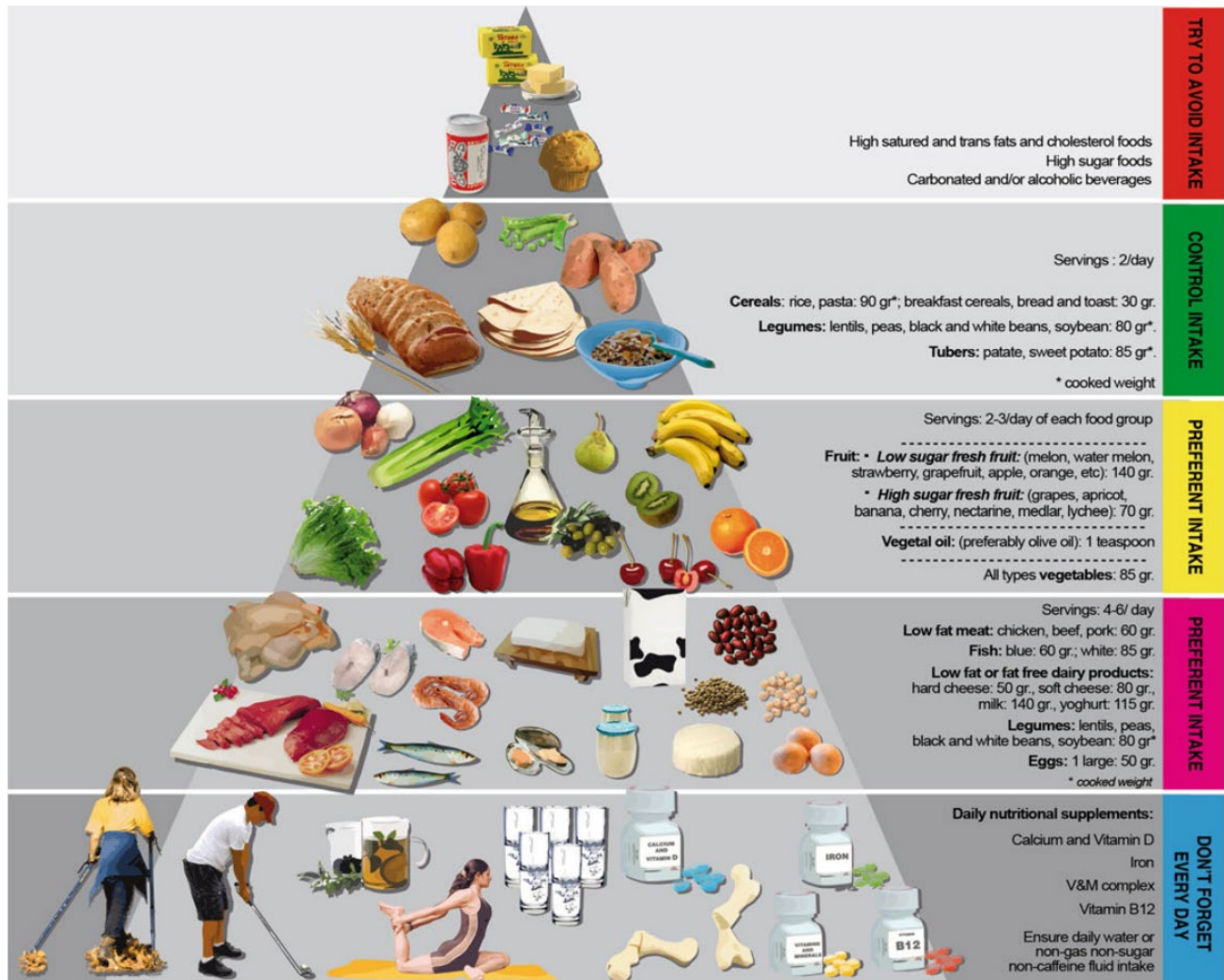
### Typical Diet Advancement Plan

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
<b>Week 1</b>	Bariatric Clear Liquid diet	Bariatric Full Liquid diet (after hospital discharge) *Start protein supplements					
<b>Week 2</b>							
<b>Week 3</b>	Bariatric Pureed diet *Start liquid or chewable multivitamins						
<b>Week 4</b>							
<b>Week 5</b>	Bariatric Soft diet						
<b>Week 6</b>							
<b>Week 7+</b>	Regular Bariatric diet *May start pill or capsule multivitamins						

## Food Priorities (Once the Diet is Advanced to at Least Bariatric Pureed)



## Bariatric Food Pyramid



[2010 Moize Nutritional Pyramid for post gastric Bypass Patients.pdf](http://2010_Moize_Nutritional_Pyramid_for_post_gastric_Bypass_Patients.pdf) (renacare.com)

## Stage 1: Bariatric Clear Liquid Diet

### (Diet while in the Hospital)

While you are in the hospital, you will be on a Bariatric Clear Liquid diet. It is important for you to be able to tolerate liquids and stay hydrated right after surgery. Initially, you may feel nauseous or fill up earlier due to your smaller stomach size. To help, consume fluids in small amounts (1 ounce/30 ml) every 15 minutes. Due to your smaller stomach size, you will not be able to easily catch-up if your fluid intake is too low and can become dehydrated. Sugar-free, non-carbonated, and caffeine-free clear liquids will be the easiest to tolerate right after surgery.

#### Nutritional Goals:

- Sip 1 ounce (30 ml) every 15 minutes

#### Foods Allowed:

- Ice chips
- Water
- Broth
- Sugar-free gelatin and popsicles
- Sugar-free, non-carbonated, and caffeine-free beverages (e.g., Crystal Light®, Diet V-8 Splash®, Sugar-Free Kool-Aid®, and Zero-Sugar Vitamin Water®)
- Sugar-free sports drinks

#### Tips:

- Avoid straws and chewing gum
- Record your fluid intake to make sure that you are drinking enough
- Monitor your urine frequency and color
  - Urine should be pale yellow if you are drinking enough



## Stage 2: Bariatric Full Liquid Diet

### (Diet for First 2 Weeks After Bariatric Surgery)

While you are in the hospital you will be given fluids intravenously (through an I.V.). When you go home, you may easily become dehydrated. The Bariatric Full Liquid diet will help you stay hydrated, provide enough nutrition for healing, and still promote weight loss. Just like with the Bariatric Clear Liquid diet, you will need to consume fluids in small amounts (1 ounce/30 ml) every 15 minutes. Sugar-free, low-fat, non-carbonated, and caffeine-free full liquids will be the easiest to tolerate. You should also focus on protein and start incorporating protein shakes at this stage. Half of your fluids should be protein shakes and the other half sugar-free, low-fat, non-carbonated, and caffeine-free liquids. You should aim for **48-64 ounces of fluid and 60-80 grams of protein daily**.

#### Nutritional Goals:

- Consume 48-64 ounces, about 1500-2000 ml, of fluid per day
  - Sip 1 ounce (30 ml) every 15 minutes and slowly increase as tolerated
- Consume at least 60-80 grams of protein per day

#### Foods Allowed:

- Bariatric Clear liquids
- Protein drinks (please see the “Protein Supplements” section of your toolkit)
- Fat-free or low-fat milk or unflavored milk-alternative
  - You may not tolerate lactose (milk sugar) and may need lactose-free milk
- Reduced-fat cream soups (no tomato)
- Low fat and low-carbohydrate yogurt (smooth with no chunks of fruit or nuts)
- Sugar-free pudding
- Pureed or blended bean soups

#### Tips:

- Avoid straws and chewing gum
- Record your fluid intake to make sure that you are drinking enough
- Monitor your urine frequency and color
  - Urine should be pale yellow if you are drinking enough
- All liquids should be thinner than a milkshake
- Add dry milk protein, powdered egg whites, or unflavored protein powder to the full liquids for extra protein
- All medication should be liquid, crushable, or chewable



## Recommended and Not Recommended Foods

### Stage 1: Bariatric Clear Liquid Diet

Food Group	Recommended Foods	Not Recommended Foods
Fruit	-Light fruit juice	You should avoid any food not listed under Recommended Foods
Other	-Sugar-free gelatin -Broth -Sugar-free popsicles	
Beverages	-Water (sugar-free flavor packet may be added) -Ice chips -Decaffeinated tea/coffee -Sugar-free sports drinks	

\*Sip 1 ounce (30 ml) every 15 minutes

### Stage 2: Bariatric Full Liquid Diet

Food Group	Recommended Foods	Not Recommended Foods
Protein	-Dry milk powder -Powdered egg whites -Protein powder	You should avoid any food not listed under Recommended Foods
Dairy	-Skim or 1% milk (may need to be lactose-free) -Low-fat and unsweetened non-dairy milk (higher protein sources are preferable) -Sugar-free pudding -Light and low-carbohydrate yogurt (no chunks of fruit or nuts)	
Fruit	-Light fruit juice	
Other	-Sugar-free gelatin -Broth -Strained, low-fat cream soups -Sugar-free popsicles	
Beverages	-Water (sugar-free flavor packet may be added) -Ice chips -Decaffeinated tea/coffee -Low carbohydrate protein shakes	

\*Sip 1 ounce (30 ml) every 15 minutes

## Sample Meal Plan

### Stage 2: Bariatric Full Liquid Diet

Meal	Food	Protein (grams)	Calories (kcal)	Fluid (ounces)
Breakfast	8-ounces protein drink (over 2 hours)	25 grams	110 kcal	8 oz
AM Snack	8-ounces of water (2 hours)	0 grams	0 kcal	8 oz
	2-ounces sugar-free gelatin (30 minutes)	0 grams	5 kcal	2 oz
Lunch	4-ounces of sports drink (1 hour)	0 grams	0 kcal	4 oz
	4-ounces blended split pea soup	5 grams	65 kcal	4 oz
Afternoon Snack	4-ounces protein drink (1 hour)	12.5 grams	55 kcal	4 oz
	8-ounces water (2 hours)	0 grams	0 kcal	8 oz
Dinner	8-ounces protein drink (2 hours)	25 grams	110 kcal	8 oz
	1 sugar-free popsicle (15-30 minutes)	0 grams	15 kcal	1.5 oz
PM Snack	4-ounces protein drink (1 hour)	12.5 grams	55 kcal	4 oz
	4-ounces sports drink (1 hour)	0 grams	0 kcal	4 oz
<b>Total</b>		<b>80 grams</b>	<b>415 kcal</b>	<b>56 ml</b>

\*Remember to sip 1-oz every 15 minutes



## Stage 3: Bariatric Pureed Diet

### (Diet for Weeks 3-4 After Bariatric Surgery)

You are now able to tolerate slightly larger portions and are ready to start eating! Your food will need to be blended/pureed (from milkshake to pudding or mashed potato consistency) to help with tolerance. Each food should be introduced one at a time. Start with  $\frac{1}{8}$  to  $\frac{1}{4}$  cup portions. Aim for 3-4 meals per day with liquids in between. You should not drink anything for 20-30 minutes before and after eating. Go slow, it should take you 30-45 minutes to complete a meal. As always, the focus should still be on protein. You should aim for **48-64 ounces of fluid and 60-80 grams of protein daily**.

#### Nutritional Goals:

- Consume 48-64 ounces, about 1500-2000 ml, of fluid per day
  - No liquid for 20-30 minutes before and after food
- Consume at least 60-80 grams of protein per day

#### Foods Allowed:

- All foods from stage 1-2
- Small, curd-free, low-fat cottage cheese
- Pureed beef, chicken, turkey, and pork
- Canned fish (tuna or salmon)
- Scrambled eggs
- Tofu
- Pureed lentils and beans (hummus)
- Ricotta cheese
- Smooth nut butters (preferably natural)
- Mashed potatoes
- Pureed unsweetened fruit and vegetables

#### Tips:

- Baby food may be used for convenience
- Avoid straws and chewing gum
- You may now take whole pills or multivitamins
  - You can continue liquid or chewable vitamins if you prefer
- Eat protein foods, then fruits/veggies, and then grains/starches
- Do not eat while distracted
- Stop eating when you are full

## Recommended and Not Recommended Foods

### Stage 3: Bariatric Pureed Diet

Food Group	Recommended Foods	Not Recommended Foods
Protein	<ul style="list-style-type: none"> <li>-Pureed beef, chicken, turkey, and pork</li> <li>-Canned fish (tuna and salmon)</li> <li>-Scrambles eggs</li> <li>-Tofu</li> <li>-Pureed lentils and beans (hummus)</li> <li>-Protein powder</li> </ul>	<ul style="list-style-type: none"> <li>-Whole pieces of cooked meat</li> <li>-Tough or stringy meat</li> <li>-High-fat meat</li> <li>-Hard cooked eggs</li> <li>-Nuts and nut butters</li> <li>-Seeds</li> </ul>
Dairy	<ul style="list-style-type: none"> <li>-Skim or 1% milk (may need to be lactose-free)</li> <li>-Low-fat and unsweetened non-dairy milk (higher protein sources are preferable)</li> <li>-Sugar-free pudding</li> <li>-Light and low-carbohydrate yogurt (no chunks of fruit or nuts)</li> <li>-Small, curd-free, low fat cottage cheese</li> <li>-Ricotta cheese</li> </ul>	<ul style="list-style-type: none"> <li>-High-fat milk, yogurt, or cheese</li> <li>-Frozen desserts (i.e., ice cream, sherbet, and frozen yogurt) unless approved by clinician</li> </ul>
Fruits	<ul style="list-style-type: none"> <li>-Light fruit juice</li> <li>-Applesauce</li> <li>-Pureed canned fruit without syrup</li> <li>-Mashed banana</li> </ul>	<ul style="list-style-type: none"> <li>-Whole pieces of fruit</li> <li>-Stringy, high pulp fruit</li> <li>-Uncooked dried fruit</li> <li>-Gummy fruit snacks</li> <li>-Fruit canned in syrup</li> </ul>
Vegetables	<ul style="list-style-type: none"> <li>-Pureed cooked tender vegetables</li> <li>-Mashed potatoes (no skin)</li> </ul>	<ul style="list-style-type: none"> <li>-Tough stringy vegetables</li> </ul>
Grains	<ul style="list-style-type: none"> <li>-Grits</li> <li>-Cream of wheat</li> <li>-Farina</li> </ul>	<ul style="list-style-type: none"> <li>-Oatmeal</li> <li>-Ready-to-eat cereal</li> </ul>

## Sample Meal Plan

### Stage 3: Bariatric Pureed Diet

Meal	Food	Protein (grams)	Calories (kcal)	Fluid (ounces)
Breakfast	2 tablespoons of scrambled eggs	4 grams	68 kcal	0 oz
	2 tablespoons of cream of wheat	0.4 grams	15 kcal	0 oz
AM Snack	8 ounces protein drink	25 grams	110 kcal	8 oz
	16 ounces water	0 grams	0 kcal	16 oz
Lunch	3 tablespoons cottage cheese	5.3 grams	30.5 kcal	0 oz
	1 tablespoon pureed peaches	0.1 grams	6.5 kcal	0 oz
Afternoon Snack	8 ounces protein drink	25 grams	110 kcal	8 oz
	16 ounces water	0 grams	0 kcal	16 oz
Dinner	2 tablespoons pureed chicken breast	6.4 grams	34 kcal	0 oz
	2 tablespoons pureed carrots	0.1 grams	6.8 kcal	0 oz
PM Snack	8 ounces of water	0 grams	0 kcal	8 oz
<b>Total</b>		<b>66 grams</b>	<b>381 kcal</b>	<b>56 oz</b>

\*You should sip 1-2 ounces every 15 minutes

\*\* You should not drink anything for 20-30 minutes before and after eating

\*\*\*It should take you 30-45 minutes to complete a meal



## Stage 4: Bariatric Soft Diet

### (Diet for Weeks 5-6 After Bariatric Surgery)

Now that you are tolerating food, you can continue to advance the textures. The Bariatric Soft diet has softer foods that have been chopped, ground, mashed, flaked, or pureed. The softer foods should require less chewing and pass more easily through your smaller gastric pouch. Aim for ¼ to ½ cup portions at each meal. Aim for 3-4 meals per day with liquids in between. You should not drink anything for 20-30 minutes before and after eating. Go slow, it should take you 30-45 minutes to complete a meal. Chew food well, at least 20 times, before swallowing. You should continue to avoid high fat or sugar-sweetened foods. As always, the focus should still be on protein. You should aim for **48-64 ounces of fluid and 60-80 grams of protein daily.**

#### Nutritional Goals:

- Consume 48-64 ounces, about 1500-2000 ml, of fluid per day
  - No liquid for 20-30 minutes before and after food
- Consume at least 60-80 grams of protein per day

#### Foods Allowed:

- All foods from stage 1-3
- Finely chopped, moist, and soft foods (no larger than an eraser head)
- Lean ground meat
- Beans and lentils
- Low-fat cheese
- Boiled, poached, or scrambled eggs
- Hot cereal
- Well cooked vegetables
- Boiled potatoes without skin
- Canned fruit in light-syrup or its own juices
- Soft fruit without skin (banana or ripe peaches)
- Pasta and rice

#### Tips:

- Avoid straws and chewing gum
- Eat protein foods, then fruits/veggies, and then grains/starches
- Do not eat while distracted
- Stop eating when you are full

## Recommended and Not Recommended Foods

### Stage 4: Bariatric Soft Diet

Food Group	Recommended Foods	Not Recommended Foods
Protein	<ul style="list-style-type: none"> <li>-Chopped, moist, and soft beef, chicken, turkey, and pork (no larger than an eraser head)</li> <li>-Lean ground beef, chicken, turkey, and pork</li> <li>-Fish</li> <li>-Boiled, poaches, and scrambles eggs</li> <li>-Tofu</li> <li>-Beans and lentils</li> <li>-Creamy nut butters</li> <li>-Protein powder</li> </ul>	<ul style="list-style-type: none"> <li>-Whole pieces of cooked meat</li> <li>-Tough or stringy meat</li> <li>-High-fat meat</li> <li>-Fish with bones</li> <li>-Nuts</li> <li>-Seeds</li> </ul>
Dairy	<ul style="list-style-type: none"> <li>-Skim or 1% milk (may need to be lactose-free)</li> <li>-Low-fat and unsweetened non-dairy milk (higher protein sources are preferable)</li> <li>-Sugar-free pudding</li> <li>-Light and low-carbohydrate yogurt (no chunks of fruit or nuts)</li> <li>-Low-fat cheese</li> </ul>	<ul style="list-style-type: none"> <li>-High-fat milk, yogurt, or cheese</li> <li>-Frozen desserts (i.e., ice cream, sherbet, and frozen yogurt) unless approved by clinician</li> </ul>
Fruits	<ul style="list-style-type: none"> <li>-Light fruit juice</li> <li>-Pureed fruit</li> <li>-Canned fruit in light syrup or its own juices</li> <li>-Soft fruit without skin</li> </ul>	<ul style="list-style-type: none"> <li>-Whole pieces of fruit</li> <li>-Stringy, high pulp fruit</li> <li>-Uncooked dried fruit</li> <li>-Gummy fruit snacks</li> <li>-Fruit canned in syrup</li> </ul>
Vegetables	<ul style="list-style-type: none"> <li>-Soft, cooked, and tender vegetables</li> <li>-Mashed or boiled potatoes (no skin)</li> <li>-Shredded iceberg lettuce</li> </ul>	<ul style="list-style-type: none"> <li>-Tough stringy vegetables</li> <li>-Cooked corn</li> <li>-Raw veggies (except iceberg lettuce)</li> </ul>
Grains	<ul style="list-style-type: none"> <li>-Hot cereals</li> <li>-Pasta</li> <li>-Rice</li> <li>-Crackers</li> </ul>	<ul style="list-style-type: none"> <li>-Ready-to-eat cereal</li> <li>-High-sugar desserts</li> <li>-Bread</li> </ul>



## Sample Meal Plan

### Stage 4: Bariatric Soft Diet

Meal	Food	Protein (grams)	Calories (kcal)	Fluid (ounces)
Breakfast	8 oz skim milk + 1 scoop protein powder	33.3 grams	193.3 kcal	8 oz
AM Snack	2 whole grain crackers	0.2 grams	12.6 kcal	0 oz
	1 ounce low-fat cheese	7.2 grams	46.8 kcal	0 oz
	16 ounces water (wait 20-30 minutes)	0 grams	0 kcal	16 oz
Lunch	2 ounces chopped chicken	12.8 grams	68 kcal	0 oz
	2 tablespoons green beans	0.3 grams	5.5 kcal	0 oz
Afternoon Snack	8 ounces skim milk	8.3 grams	83.3 kcal	8 oz
	16 ounces water	0 grams	0 kcal	16 oz
Dinner	½ cup refried beans	6.2 grams	91.2 kcal	0 oz
	1 oz melted cheese	6.1 grams	106 kcal	0 oz
	1/4 medium banana	0.3 grams	26.3 kcal	0 oz
PM Snack	8 ounces water	0 grams	0 grams	8 oz
<b>Total</b>		<b>74.7 grams</b>	<b>633 kcal</b>	<b>56 oz</b>

\* You should not drink anything for 20-30 minutes before and after eating

\*\*It should take you 30-45 minutes to complete a meal

\*\*\*Chew all food at least 20 times





## Stage 5: Regular Bariatric Diet

### (Diet for Week 7 through the Rest of Your Life)

You are now able to eat regular textures and slowly reintroduce a greater variety of food into your diet. This will be the diet that you follow for the rest of your life. Aim for 3 meals and 2 snacks per day with liquids in between. You should not drink anything for 20-30 minutes before and after eating. Eat slowly and chew food well. You should continue to avoid high fat or sugar-sweetened foods. As always, the focus should still be on protein. You should aim for **48-64 ounces of fluid and 60-80 grams of protein daily**.

#### Nutritional Goals:

- Consume 48-64 ounces, about 1500-2000 ml, of fluid per day
  - No liquid for 20-30 minutes before and after food
- Consume at least 60-80 grams of protein per day

#### Foods Allowed:

- All foods from stage 1-4
- Lean, cooked meat (cooked in low-fat sauces or gravy for better tolerance)
- Cheese (limit to 1 ounce per day)
- Fruits (introduce crisp, fresh fruit last)
- Vegetables (introduce raw veggies last)
- Hot or cold cereal (avoid sugar-sweetened cereals)
- Whole grain carbohydrates (crackers, rice, bread, and pasta)
- Healthy low-fats (e.g. fat-free salad dressing and low-fat sour cream)

#### Tips:

- Avoid straws and chewing gum
- You may now take whole pills or multivitamins
  - You can continue liquid or chewable vitamins if you prefer
- Eat protein foods, then fruits/veggies, and then grains/starches
- Do not eat while distracted
- Stop eating when you are full

## Recommended and Not Recommended Foods

### Stage 5: Regular Bariatric Diet

Food Group	Recommended Foods	Not Recommended Foods
Protein	<ul style="list-style-type: none"> <li>-Lean cooked meats in low-fat sauces or gravy</li> <li>-Fish</li> <li>-Eggs</li> <li>-Tofu</li> <li>-Beans and lentils</li> <li>-Nuts and seeds</li> </ul>	<ul style="list-style-type: none"> <li>-Roasted or BBQ meats with crisp edges</li> <li>-Limit teriyaki or BBQ sauce that contain sugar</li> </ul>
Dairy	<ul style="list-style-type: none"> <li>-Skim or 1% milk (may need to be lactose-free)</li> <li>-Low-fat and unsweetened non-dairy milk (higher protein sources are preferable)</li> <li>-Sugar-free pudding</li> <li>-Light and low-carbohydrate yogurt (no chunks of fruit or nuts)</li> <li>-Low-fat cheese (limit to 1 ounce per day)</li> </ul>	<ul style="list-style-type: none"> <li>-High-fat milk, yogurt, or cheese</li> <li>-Frozen desserts (e.g., ice cream, sherbet, and frozen yogurt) unless approved by clinician</li> </ul>
Fruits	<ul style="list-style-type: none"> <li>-Light fruit juice</li> <li>-Pureed fruit</li> <li>-Canned fruit in light syrup or its own juices</li> <li>-Soft fruit without skin</li> <li>-Crisp, fresh fruit (introduce last)</li> </ul>	<ul style="list-style-type: none"> <li>-Uncooked dried fruit</li> <li>-Gummy fruit snacks</li> <li>-Fruit canned in syrup</li> </ul>
Vegetables	<ul style="list-style-type: none"> <li>-Soft, cooked, and tender vegetables</li> <li>-Potatoes</li> <li>-Chopped lettuce</li> <li>-Raw, crisp vegetables (introduce last)</li> </ul>	
Grains	<ul style="list-style-type: none"> <li>-Hot cereals</li> <li>-Toast and crackers</li> <li>-Pasta and rice</li> <li>-Cold ready-to-eat cereal</li> </ul>	<ul style="list-style-type: none"> <li>-Ready-to-eat cereal with added sugar</li> <li>-High-sugar desserts</li> </ul>

## Sample Meal Plan

### Stage 5: Regular Bariatric Diet

Meal	Food	Protein (grams)	Calories (kcal)	Fluid (ounces)
Breakfast	½ cup oatmeal + 1 scoop protein powder 8 ounces skim milk	27.5 grams	180 kcal	0 oz
		8.3 grams	83.3 kcal	8 oz
AM Snack	1 small apple 2 slices turkey 16 ounces water (wait 20-30 minutes)	0.5 grams	94.6 kcal	0 oz
		8.5 grams	52 kcal	0 oz
		0 grams	0 kcal	16 oz
Lunch	2 ounces chicken 1 cup raw spinach 2 slices tomato 1 ounce low fat cheese 2 tablespoons low-fat salad dressing	12.8 grams	68 kcal	0 oz
		0.9 grams	6.9 kcal	0 oz
		0.4 grams	7.2 kcal	0 oz
		6.9 grams	49 kcal	0 oz
		0.1 grams	30.6 kcal	0 oz
Afternoon Snack	4 whole wheat crackers 1 mozzarella stick 16 ounces water (wait 20-30 minutes)	0.9 grams	55.6 kcal	0 oz
		6 grams	80 kcal	0 oz
		0 grams	0 kcal	16 oz
Dinner	2 ounces port tenderloin 2 tablespoons low-fat gravy ½ cup brown rice ½ cup cooked green beans	14.8 grams	83.3 kcal	0 oz
		0.5 grams	12.4 kcal	0 oz
		2.5 grams	108.2 kcal	0 oz
		1.2 grams	21.9 kcal	0 oz
PM Snack	16 ounces water	0 grams	0 grams	16 oz
<b>Total</b>		<b>92 grams</b>	<b>933 kcal</b>	<b>56 oz</b>

\* You should not drink anything for 20-30 minutes before and after eating



## Hydration After Bariatric Surgery

It is very important, especially for the first few weeks after bariatric surgery, to focus on hydration. You may have nausea and vomiting after surgery and your bariatric surgery will make it harder to get enough fluids, recognize that you are thirsty, and catch-up on your hydration. You really need to focus on staying hydrated to prevent dehydration and avoid an ER visit or hospital readmission. You need 48-64 ounces of fluid each day; your fluid should be equally divided between protein shakes and sugar-free, caffeine-free, and carbonation-free liquids. Your non-protein liquids should be further divided into water (with or without sugar-free flavoring) and low-sugar sports drinks/oral rehydration solutions. Oral rehydration solutions are important because they provide electrolytes (sodium and potassium) and help prevent/treat dehydration by maximizing fluid absorption. Electrolytes help balance your body's fluid, control your pH, and help your nerves/muscles/heart function correctly. If you think that you are getting dehydrated, switch from a sports drink to an oral rehydration solution with more sodium and potassium. If you are having difficulty tolerating fluids, please call our office.

### Signs and Symptoms of Dehydration:

- Decreased or dark urine
- Dizziness
- Headache
- Dry mouth or skin
- Nausea
- Lack of energy
- Excess thirst
- Rapid breathing or heart rate
- Low blood pressure
- Sunken eye

### Fluid Goals:

48-64 ounces (about 1500-2000 ml) of fluids

- 24-32 ounces of full liquids and protein shakes
- 24-32 ounces of sugar-free, caffeine-free, and carbonation-free liquids
  - 12-16 ounces of water (with or without sugar-free flavoring)
  - 12-16 ounces of low- sugar sports drinks/oral rehydration solutions
    - Please see “Examples of Low-Sugar Sport Drinks/Oral Rehydration Solutions” and “Recipes for Homemade Oral Rehydration Solutions” in the Additional Tools section of your toolkit

### Tips to Help Reach Fluid Goals:

- Always keep fluids easily available
- Sip fluids slowly throughout the day
  - Initially, sip 1 ounce (30 ml) every 15 minutes and slowly increase as tolerated
  - Eventually, you should be able to drink 8 ounces (240 ml) in 5-15 minutes
- Make a plan and set goals
  - E.g., 8 oz fluid by 10 AM, 16 oz by noon, etc.
- Set alarms as reminders
  - Many bariatric apps have timers
- Track your intake (paper log or smart phone app)

### Some Water Reminder/Tracking Apps:

- Daily Water Tracker Reminder
  - Set goal and drink reminder
  - Water tracker
- Gulps
  - Drink reminder
  - Water tracker
- Hydro Coach: Water Tracker
  - Drink reminder
  - Water tracker
- My Water: Daily Drink Timer
  - Water requirement calculator
  - Drink reminder
  - Water tracker and graph
  - Motivational rewards
- Water Alert Pro
  - Drink reminder
  - Water tracker
- Waterlogged-Drink More Water
  - Drink reminder (requires premium membership)
  - Water tracker and graph



## Protein Supplements

Protein supplements are an important part of your bariatric diet. Starting 1 week before surgery, restarting postoperatively with the stage 2: Bariatric Full Liquid diet, and continuing until you can eat enough protein with diet alone, protein supplements will help you reach your protein goals. Protein is important for healing and helping you keep as much muscle as possible while losing weight. Convenience, taste, texture, mixability, and price are important considerations when buying protein supplements, but the product’s amino acid profile should be the most important consideration. There are four categories of protein supplements. A high biological value complete protein is the best choice for protein supplements. These supplements are made of whey protein. Whey protein contains lactose (milk sugar); whey protein isolates are lactose-free. Look for protein shakes with at least 15 grams of protein and no more than 15 grams of sugar per 8 ounces. Please see examples of protein supplements in the Additional Tools section of the toolkit. If you have difficulty tolerating your protein supplements, please reach out to your bariatric surgeon or bariatric dietitian.

### Categories of Protein Supplements

Protein Category	Derived From	Complete	Intended Use
Complete protein concentrates	Egg white, soy, or milk (casein/whey fraction)	Yes	Provides all essential amino acids in dietary protein
Collagen-based concentrates	Hydrolyzed collagen (some are combined with casein or other complete proteins)	No (lacks tryptophan)	Contains high proportion of nitrogen in a small volume
Amino acid dose	Large doses of conditionally essential amino acids (e.g., arginine and glutamine) or amino acid precursors	No	Provides conditionally essential amino acids (often for wound healing)
Hybrids of protein plus amino acid dose	Complete protein concentrates or collagen base plus conditionally essential amino acid(s)	Varies	Meets protein needs and provides conditionally essential amino acids

## Protein Content per Type of Milk

Type of Milk	Protein grams per 8 ounce Serving	Carbohydrate grams per 8 ounce Serving
Skim or 1% milk	8 grams	12 grams
Soy milk	6 grams	12 grams
Almond milk	1 gram	3 grams
Lactose-free milk	8 grams	12 grams
Coconut milk	0 grams	7 grams
Oat milk	3 grams	16 grams
Pea milk	8 grams	19 grams
Rice milk	0 grams	22 grams
Hemp milk	2 grams	6 grams
Goat milk	8 grams	11 grams
Cashew milk	0 grams	20 grams
Banana milk	1 gram	4 grams
FairLife® milk	13 grams	6 grams

\*Buttermilk, 2%, whole, condensed milks are not recommended because of their fat or sugar content

\*\*Nutritional analyses may vary slightly depending on manufacturer and flavor



## Post-Bariatric Surgery Micronutrient Supplementation Recommendations

Bariatric surgery puts you at increased risk for several micronutrient deficiencies. You will need to take supplements and be monitored for possible nutrient deficiencies for the rest of your life. You will start by taking chewable or liquid multivitamins on week 3 with the Bariatric Pureed diet. You may advance to pill/capsule multivitamins when you are tolerating the Regular Bariatric diet. There are a variety of supplement options available. It is important to choose the supplements that are right for you. The following pages review micronutrient supplementation after bariatric surgery and provide some supplementation options. Please see specific micronutrient options in the Additional Tools section of your toolkit. This is not an exhaustive list and nutrient content varies among supplements, all supplements should be discussed with your bariatric surgeon and your bariatric dietitian.

### Diet and Supplement Advancement After Bariatric Surgery

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
<b>Week 1</b>	Bariatric Clear Liquid diet	Bariatric Full Liquid diet (after hospital discharge) *Start protein supplements					
<b>Week 2</b>							
<b>Week 3</b>	Bariatric Pureed diet						
<b>Week 4</b>	*Start liquid or chewable multivitamins						
<b>Week 5</b>	Bariatric Soft diet						
<b>Week 6</b>							
<b>Week 7+</b>	Regular Bariatric diet *May start pill or capsule multivitamins						

### Sample Supplement Schedule

Meal/Snack	Supplement
Breakfast	Sublingual B12 and multivitamin (if more than 1 serving is needed)
Snack	Calcium (500 mg)/ (600 mg)
Lunch	Calcium (500 mg)
Snack	Calcium (500 mg)/ (600 mg)
Dinner	Multivitamin and additional B vitamins if needed
Snack	Additional iron if needed



## How to Choose Supplements and Assess Safety and Effectiveness of Supplements

Supplements are not regulated by the FDA like food. The FDA does not review these products before they hit the market, so you need to be extra careful when buying supplements. Never buy supplements or medications from outside the United States, they are not regulated at all and may be harmful. Just remember, any supplement that sounds too good to be true probably is!

### Considerations when Choosing the Supplement that is Right for You:

- Safety and effectiveness of the supplement
- Does it meet recommendations?
- How many do you need to take; which other supplements do you need to meet your recommendations?
- Does it have a taste/texture that you can tolerate?
- Price and availability

### Tips for Ensuring Supplement Usefulness and Safety:

- Do your research: How well does the product work?
  - Look for scientific studies from credible publications
    - National Institute of Health (NIH) PubMed database  
<https://pubmed.ncbi.nlm.nih.gov>
    - National Institute of Health-Office of Dietary Supplements  
<https://ods.od.nih.gov>
  - Choose brands that have been verified for the purity of ingredients and safety
    - NSF International



- US Pharmacopeia



- Underwriters Laboratory



- Consumer Lab seal



## Micronutrient Recommendations for the General Public (Preoperative) and Post-Bariatric Surgery Patient

Micronutrient	Preoperative Recommendations	Post-Bariatric Recommendations
Thiamin (B1)	-19+ years male: 1.2 mg -19+ years female: 1.1 mg	12-50 mg
Cobalamin (B12)	-19+ years: 2.4 mcg	250-500 mcg
Folic acid (folate)	-19+ years: 400 mcg	400-800 mcg
Iron (Fe)	- 19-50 years male: 8 mg -19-50 years female: 18 mg -51+: 8 mg	45-60 mg
Calcium	-19-50 years: 1,000 mg -51-70 years male: 1,000 mg -51-70 years female: 1,200 mg -71+ years: 1,200 mg	1,200-1,500 mg
Vitamin D	-19-70 years male: 600 IU -19-70 years female: 600 IU -71+ years: 800 IU	3,000 IU
Vitamin A	-19+ years male: 3,000 IU -19+ years female: 2,333 IU	5,000-10,000 IU
Vitamin E	-14+ years male: 15 mg -14+ years female: 15 mg	15 mg
Vitamin K	-19+ years male: 120 mcg -19+ years female: 90 mcg	90-120 mcg
Zinc (Zn)	-19+ years mal: 11 mg -19+ years females: 8 mg	8-22 mg
Copper (Cu)	-19+ years: 900 mcg	1-2 mg

### **Multivitamin Recommendations:**

- Choose a complete multivitamin, containing both iron and trace minerals
  - 100% DV for zinc and copper
  - 200% DV for iron, folic acid, and thiamin
    - Choose the amount of iron that is right for you
- Choosing a bariatric multivitamin may limit the need for additional supplements
- Avoid enterically coated or time-released supplements
- Avoid children's formulas that are incomplete
- Avoid gummy vitamins, they are full of sugar and will not meet your needs

### **Calcium and Vitamin D Recommendations:**

- Calcium
  - Calcium carbonate should be taken with food; calcium citrate can be taken without food
    - Calcium citrate is preferred
  - It is recommended that doses be divided between 500-600 mg calcium 2-3 times daily (your body cannot absorb more)
  - Wait at least 2 hours before or after taking iron to maximize absorption
  - Vitamin D increases calcium absorption
- Vitamin D
  - Liquid and soft gel vitamin D should be taken with food; chewable and quick melt vitamin D can be taken without food
    - Vitamin D3 is preferred
  - Extra vitamin D isn't needed if it is included in the bariatric multivitamin

### **Iron Recommendations:**

- Iron supplement should not be enterically coated
- Taking vitamin C with iron increases absorption
- Take separately from calcium supplements, antacids, high phytate/polyphenol foods (grains, beans, nuts, potatoes, berries, apples, and onions), and high tannin foods (tea) for better absorption
- Take with food in divided doses if it causes GI upset
- Deficiency can occur with adequate supplementation
  - Menstruating women or patients with iron-deficiency anemia may need more iron
  - Work with your doctor and bariatric dietitian to determine the right amount of iron for you
- Animal sources of iron (heme-iron) are better absorbed than plant sources (non-heme iron)

### **Additional B Vitamin Recommendations:**

- Thiamin
  - Sometimes called thiamine
  - Alcohol dependence, vomiting, and diuretic use increase the risk for thiamin deficiency
  - Supplemental thiamin is recommended if you require IV fluids with dextrose, enteral nutrition (tube feeds), or parenteral nutrition (TPN)
- Vitamin B12
  - Vitamin B12 supplements can also include under the tongue tablets, liquid drops, mouth spray, nasal spray, or injections
  - Several medications increase risk for B12 deficiency: nitrous oxide, neomycin, metformin, colchicine, proton pump inhibitors, and seizure medications
  - Nerve damage from B12 deficiency may be irreversible
- Folic Acid
  - Folate supplementation greater than 1 mg per day is not recommended because it can mask B12 deficiency
  - Folic acid is important for preventing neural tube defects

### **Other Fat-Soluble Vitamins (Vitamin A, E, and K) Recommendations:**

- You are at increased risk for deficiency after a BPD/DS, so detailed recommendations are not included
- Vitamin K requirement varies because your colonic bacteria can make vitamin K
- You should be cautious with vitamin K supplementation because it can interact with coagulation medication

### **Zinc and Copper Recommendations:**

- Zinc and copper compete for absorption
  - You need 8-15 mg of zinc per 1 mg copper
- Copper gluconate or copper sulfate is the preferred
- Zinc and copper needs should be met through your daily multivitamin supplement

# Physical Activity



A Member of Trinity Health



## Physical Activity

Physical activity is an important and often underused tool to help you control your weight and be healthy. Physical activity is one of the best activities that you can do both before and after surgery to improve your health, meet your weight loss goals, and maintain your weight loss long-term. The better your physical condition before surgery, the more quickly you will recover. It is one of the best predictors of weight maintenance after bariatric surgery. There are 4 main types of physical activity/exercise (cardiorespiratory, strength training, flexibility, and balance). It is important to do physical activity with enough intensity to see benefits, but not risk overdoing it (causing soreness, injury, or burnout). It is important to stay safe when doing physical activity. Be sure to check with your doctor before starting any physical activity program. You need to wait until you are cleared by your bariatric surgeon at your 6-week postoperative appointment before starting a physical activity program. Please see examples of chair exercises in the Additional Tools section of your toolkit. Please see an exercise physiologist or personal trainer for more specific physical activity recommendations and plans focused on you.

### Benefits of Physical Activity:

- Reduces your risk of dying early
- Helps with weight loss/weight maintenance
- Reduces your health risk
  - Lowers blood pressure
  - Improves cholesterol levels
  - Improves blood sugar control
  - Decreases cancer risk (bladder, breast, colon, endometrium, kidney, lung, and stomach)
  - Reduces pain and improves function with arthritis
- Strengthens bone and muscle
  - Improves physical function
  - Decreases risk for falls
- Decreases anxiety and depression
- Helps you sleep better



<https://www.acefitness.org/>

## General Tips for Increasing Physical Activity:

- Set goals
- Find activities you enjoy and spread physical activity throughout the day
- Vary your activities so you don't get bored
- Exercise with a friend
- Listen to music while you exercise
- Incorporate more movement in your day
  - Take the stairs instead of the elevator
  - Park further away
  - Walk instead of driving
  - Dance around your house
  - Play with your pet, kids, or grandkids
  - Stretch, do sitting exercise, or lift weights while watching TV
  - Do housework or yardwork
  - Track your steps
- Schedule your workouts
  - If the weather is bad, have a backup plan
  - Bring a change of clothes and exercise before or after work
- Reward yourself for achieving your goals
  - Buy yourself new sport equipment
  - Ask your spouse to take the kids for an hour
  - Spend more time on your favorite hobby
  - Buy yourself flowers or a plant
  - Enjoy a long bath
  - Get your nails done



#### 4 Main Types of Exercise: Definitions, Benefits, Examples, and Recommendations

Type of Exercise	Definition	Benefits	Examples	Recommendation	Notes
Cardiorespiratory (aerobic) training	Increases your heart rate and breathing to help with endurance	Lowers blood pressure, burns fat, lowers blood sugar levels, raises good cholesterol, reduces inflammation, and improves mood	Brisk walking, swimming, jogging, biking, and dancing	150 minutes of moderate intensity aerobic activity or 75 minutes of vigorous aerobic activity per week	-Spread out your exercise throughout the week -Increased benefits with 300 minutes per week -Being active for small periods throughout the day can be helpful
Resistance (strength) training	Helps you build muscle and strength	Improves strength, gives you stronger bones, lowers blood sugar, helps control weight, improves balance, improves posture, decreases stress, and helps with joint pain	Squats, push-ups, lunges, and weightlifting	Exercise all major muscle groups at least 2 times per week	
Flexibility	Stretching your muscles to increase your range of motion	Keeps you safer by decreasing your risk for muscle pain, muscle damage/strains, joint pain, and falls and makes it easier to get through daily activities	Stretching, yoga, and Pilates	At least 3-4 days per week	
Balance	Helps you become steadier on your feet	Prevents falls	Yoga, tai chi, standing on one foot, and walking heel to toe	Ideally at least 3 days per week	-Important to add if age 65 years or older

## Exercise Intensity

Exercise intensity is how hard you work out. Exercise intensity varies from person to person based on your personal fitness level. It is important to work out with enough intensity to lose weight and improve function, but not too hard that you overdo it and increase your risk for soreness, injury, or burnout. There are 2 ways to measure exercise intensity for cardiorespiratory exercise: how you feel and your heart rate. Researchers measure exercise intensity in METs (metabolic equivalents); 1 MET is defined as the energy it takes to sit quietly. Moderate intensity exercise requires 3-6 METS and vigorous intensity exercise requires > 6 METS. Resistance training intensity is measured by perceived difficulty and RM (repetition maximum). RM is the absolute maximum amount of weight that can be lifted for a certain number of repetitions (reps). Finding the right intensity for you is the key to success!



## 2 Ways to Measure Cardiorespiratory Exercise Intensity:

1. How you feel (perceived exertion)
  - a. How hard does the activity feel when you are doing it?
    - i. Moderate intensity feels somewhat hard
      1. Breathing is faster, but you are not out of breath
      2. You developed a light sweat after 10 minutes
      3. You can talk, but cannot sing
    - ii. Vigorous activity feeling challenging
      1. You breathe deeply and quickly
      2. Sweat after only a few minutes
      3. You can only say a few words
2. Your heart rate
  - a. Determine your maximum heart rate (average maximum number of times your heart can beat per minute during exercise)
    - i. Maximum heart rate =  $220 - \text{age in years}$
  - b. Calculate your desired heart rate zone (level at which your heart is being exercised but not overworked)
    - i. Moderate intensity: 50%-70% of your maximum heart rate
      1. Maximum heart rate  $\times 0.5 -$  maximum heart rate  $\times 0.7$
    - ii. Vigorous intensity: 70%-85% of your maximum heart rate
      1. Maximum heart rate  $\times 0.7 -$  maximum heart rate  $\times 0.85$
    - iii. Aim for the lower end of the range if you are just starting out, then gradually build up your intensity
  - c. Steps to check your heart rate during exercise:
    - i. Stop exercising
    - ii. Take your pulse for 15 seconds (please see "Instructions for Checking Your Pulse" below)
    - iii. Multiply that number by 4 to calculate beats per minute
  - d. Consider using a fitness tracker to measure your heart rate
  - e. Please note that this is just a guide and maximum heart rate can vary as much as 15-20 beats per minute
    - i. Some medication can lower your maximum heart rate (please see "Exercise Response to Cardiac Medications" below)
    - ii. Please speak with an exercise physiologist or personal trainer for a more specific range

# Instructions for Checking Your Pulse



**How to Check Your Own Pulse**

1. Find area of palm near thumb
2. Raise index and middle fingers together
3. Place both fingers on middle wrist
4. Feel around for throbbing
5. Count number of beats for 15 seconds and multiply by 4

**verywell**

[How to Check Your Own Heart Rate \(verywellfit.com\)](https://www.verywellfit.com)

## Exercise Response to Cardiac Medications

Medications	Heart Rate (HR)	Blood Pressure (BP)	Clinical relevance when exercising
β-Blockers	↓ at rest and with exercise	↓ at rest and with exercise	<ul style="list-style-type: none"> <li>• Monitor for symptoms of hypotension or bradycardia*</li> <li>• Intensity monitoring reliant on HR should be avoided</li> </ul>
Nitrates	↑ at rest ↑ or no change with exercise	↓ at rest ↓ or no change with exercise	<ul style="list-style-type: none"> <li>• For acute use, hypotension and reflex tachycardia are common. Monitor HR and BP. Exercise should be ceased.</li> <li>• Monitor symptoms of hypotension, tachycardia and angina</li> </ul>
Calcium channel blockers	No change at rest or with exercise (Dihydropyridines) or ↓ at rest and with exercise (Verapamil and Diltiazem)	↓ at rest and with exercise	<ul style="list-style-type: none"> <li>• Monitor for symptoms of hypotension (+/- bradycardia)</li> <li>• Dihydropyridines (e.g. amlodipine, felodipine, lercanidipine, nifedipine) have greatest effect peripherally and therefore work to lower BP. Tachycardia may occur as an infrequent adverse effect</li> <li>• Verapamil and diltiazem depress sinoatrial and atrioventricular node conduction as well as causing peripheral vasodilation and therefore affect both HR and BP</li> <li>• Intensity monitoring reliant on HR should be avoided</li> </ul>
Digoxin	↓ in patients with AF and possibly CHF	no change at rest or with exercise	<ul style="list-style-type: none"> <li>• Monitor for signs of bradycardia</li> </ul>
Diuretics	No change at rest or with exercise	No change or ↓ at rest or with exercise	<ul style="list-style-type: none"> <li>• Monitor for symptoms of hypotension and unexpected rapid weight changes</li> <li>• Over diuresis or fluid loss through vomiting or diarrhoea in the presence of diuretics, may exacerbate hypotension</li> </ul>
ACE inhibitor and ARB	No change at rest or with exercise	↓ at rest and exercise	Monitor for symptoms of hypotension

\*-Blockers with mixed beta and alpha blocking activity (e.g. carvedilol) influence peripheral arterioles as well as reducing HR. Hypotension may be more significant than when using other -Blockers which primarily affect HR alone. -Blockers with intrinsic sympathomimetic activity (pindolol, oxprenolol) lower resting heart rate only slightly, and are not often used in the management of heart failure

Adapted from American College of Sports Medicine (2013). ACSM's Guidelines for Exercise Testing and Prescription, Ninth Edition. Lippincott, Williams & Wilkins and Australian Medicines Handbook 2014 (online). Adelaide: Australian Medicines Handbook Pty Ltd

[Exercise response to cardiac medications.pdf \(heartonline.org.au\)](http://heartonline.org.au)



## Examples of Light, Moderate, and Vigorous Activity by METs

Light <3.0 METs	Moderate 3.0-6.0 METs	Vigorous >6.0 METS
<ul style="list-style-type: none"> <li>• Walking slowly</li> <li>• Sitting using computer</li> <li>• Standing light work (cooking, washing dishes)</li> <li>• Fishing sitting</li> <li>• Playing most instruments</li> </ul>	<ul style="list-style-type: none"> <li>• Walking very brisk (4 mph)</li> <li>• Cleaning heavy (washing windows, vacuuming, mopping)</li> <li>• Mowing lawn (power mower)</li> <li>• Bicycling light effort (10-12 mph)</li> <li>• Bad minton recreational</li> <li>• Tennis doubles</li> </ul>	<ul style="list-style-type: none"> <li>• Hiking</li> <li>• Jogging at 6 mph</li> <li>• Shoveling</li> <li>• Carrying heavy loads</li> <li>• Bicycling fast (14-16 mph)</li> <li>• Basketball game</li> <li>• Soccer game</li> <li>• Tennis singles</li> </ul>

[Examples of Moderate and Vigorous Physical Activity | Obesity Prevention Source | Harvard T.H. Chan School of Public Health](#)

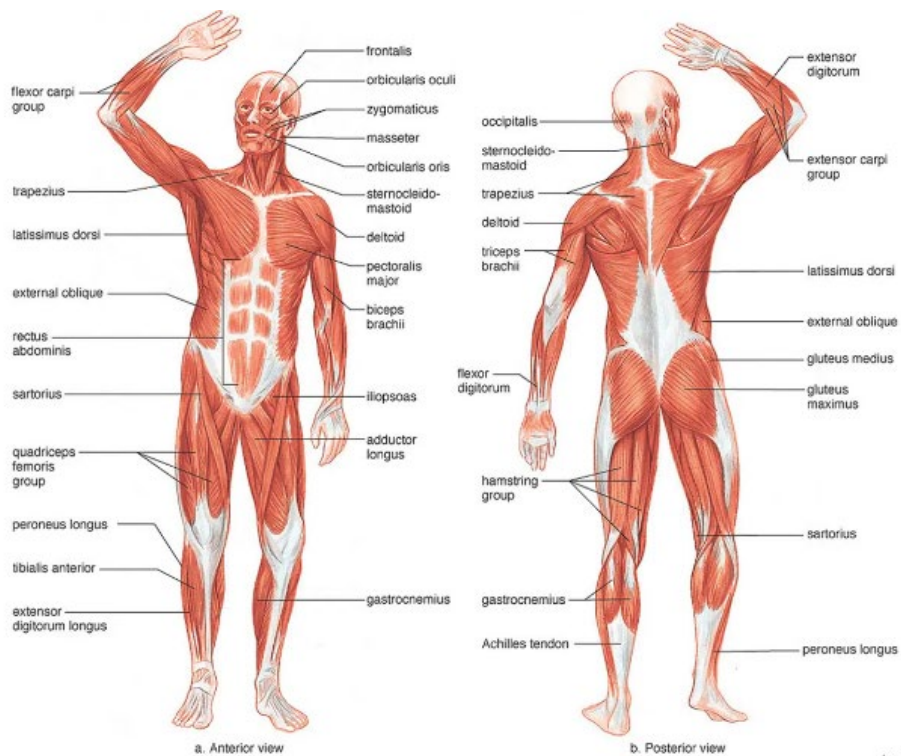
## Basic Resistance Training Recommendations:

- You may use free weights, machines, resistance bands, or your own bodyweight
- Strength train 2-3 days per week if novice/intermediate and 4-5 days per week if advanced
- Perform 8-10 multi-joint exercises that stress the major muscle groups
  - Work out large muscle groups before small muscle groups
  - Multi-joint exercises before single-joint exercise
  - Higher intensity before lower intensity exercise
- Weight and reps
  - Strength training
    - Perform 8-12 reps (RM) with good form
  - Muscle endurance
    - Light or moderate load (40-60% of 1 RM)
    - > 15 reps
- Lift and lower the weight in a controlled manner
  - 2 seconds each up and down
- Perform 2-3 sets
- Progress weight over time
  - It should feel like an 8 out of 10 difficulty
  - The last rep should feel hard



## 6 Muscle Groups:

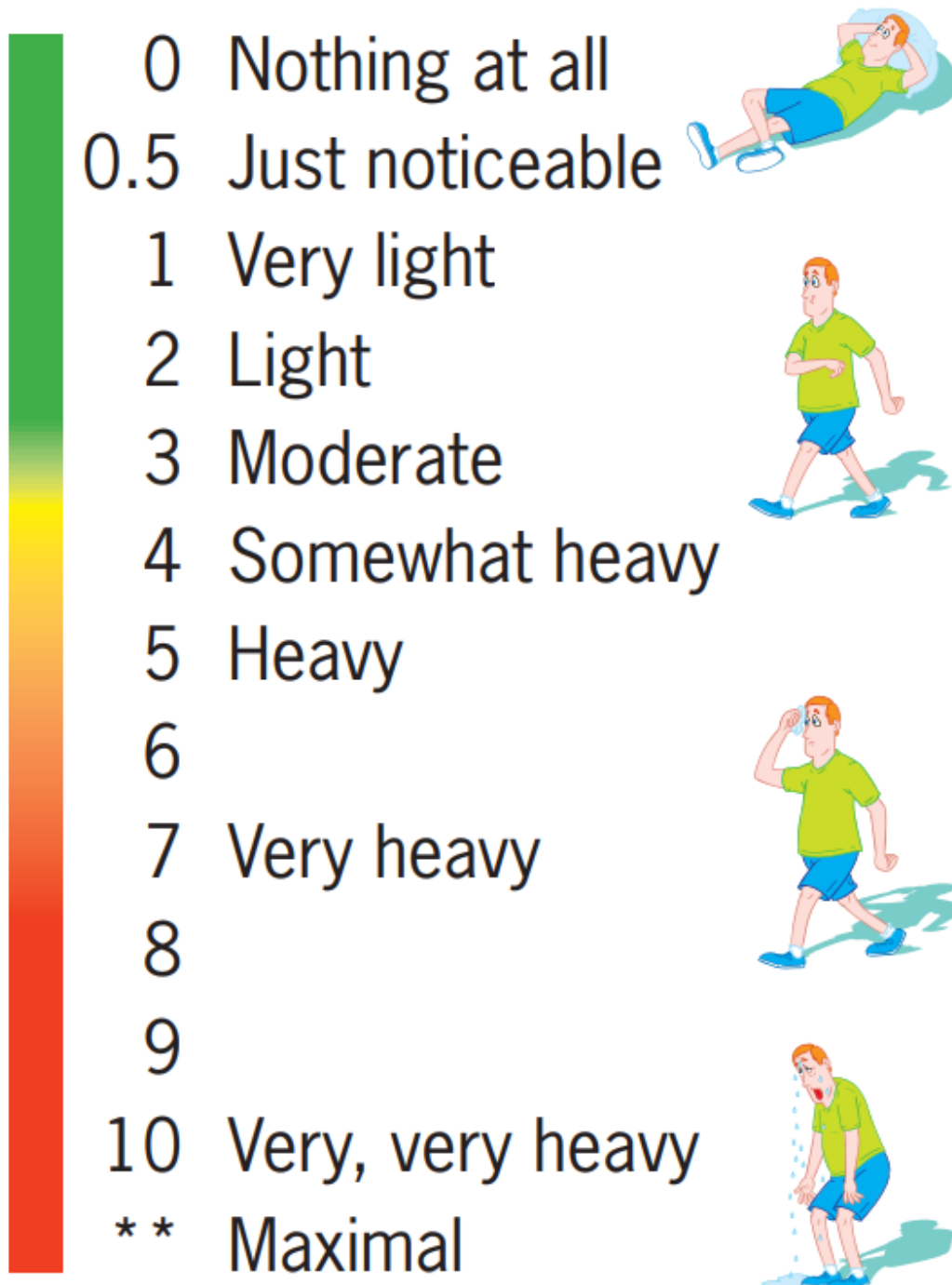
- Chest
  - Pectoralis major/pecs (under breast tissue)
- Back
  - Latissimus dorsi/lats (under the armpit)
- Arms
  - Biceps (front of upper arms)
  - Triceps (back of upper arms)
  - Forearms (lower arms)
- Abdominals
  - Rectus abdominus (6-pack)
  - Obliques (sides)
- Legs
  - Calves (lower leg)
  - Hamstrings (back of upper leg)
  - Quadriceps/quads (thighs)
  - Glutes (butt and hips)
- Shoulders
  - Deltoids
  - Trapezius/traps (top of shoulder)



[Muscular System Anatomy and Physiology - Nurseslabs](#)



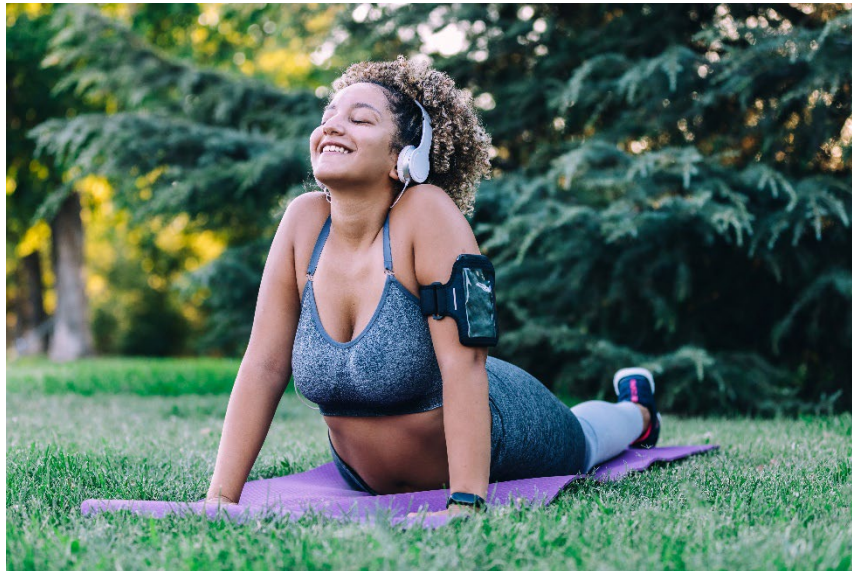
# HOW HARD IS THE ACTIVITY?



[hard activity chart \(clevelandclinic.org\)](http://clevelandclinic.org)

## Tips for Stretching:

- Relax while stretching
- Control your breathing
  - Stretch while breathing out slowly
  - Breathe normally during a stretch
- Hold a stretch for 10 slow counts or 10-30 seconds
- Repeat each stretch 3-5 times
- As you become more flexible, reach further each time
- Stretch safely
  - Your stretch should be smooth and slow, never jerky or bouncy
  - Keep your joints slightly bent
    - Never “lock” a joint in a straight position
- Listen to your body, stop if you hurt
  - A mild pulling feeling is normal
  - Sharp/stabbing or joint pain is not normal



## Physical Activity Safety Tips:

- Make sure you are cleared by your doctor for exercise
- Find a workout buddy
- Wear proper clothes and shoes for your activity
  - Replace your shoes every 6 months as the cushioning wears out
- Dress for the weather and adjust your workout as needed
  - For hotter, more humid weather:
    - Slow your pace at 70+°F
    - Workout in the air conditioning or cooler morning/evening hours at 80+°F
    - Watch out for possible overheating (headache, dizziness, nausea, fainting, cramps, and irregular heart rate)
  - For colder weather:
    - Wear layers and dress warmly
- Make sure you warm up and cool down properly
- Start slowly and gradually increase your physical activity frequency and intensity
- Use proper form
  - Consider hiring a personal trainer to help teach you proper form
- Never exercise at a level that is too hard for you
- Listen to your body, stop if you hurt
  - Delayed muscle soreness, which starts 12-24 hours after a workout and gets better gradually, is normal
  - Persistent (> 1-2 weeks) or intense pain that starts during or right after a workout is not normal
    - Call your doctor regarding any concerning pain
- Stay hydrated
- If you have diabetes:
  - Check your blood sugar before you exercise
    - < 100 mg/dl: Too low to exercise. Have a snack with 15-30 grams of carbohydrate before exercising
    - 100-250 mg/dl: Good for exercise
    - > 250 mg/dl: Your blood sugar may be too high to exercise, putting you at risk for ketoacidosis. Treat your high blood sugar and exercise when you have no ketones in your urine or blood glucose is in range
  - Watch for symptoms of low blood sugar (shaky, weak, or confused) or blood glucose < 70 mg/dl during exercise. Treat with 15 grams of carbohydrate if glucose becomes too low
  - Watch for symptoms, test, and treat low blood sugar for the next few hours after exercise
- If you have high blood pressure
  - Take your blood pressure before exercise
    - If your systolic (top) reading is > 140 and/or your diastolic (bottom) reading is 100 or greater, avoid weight training

## In-Person Exercise Resources in the Athens Area:

- St. Mary's Wellness Center
  - <https://www.st.maryshealthcaresystem.org/locations/st-mary-s-wellness-center>
  - 2470 Daniells Bridge Rd, Building #300, 2<sup>nd</sup> floor, Athens
  - Region's only medical fitness center
  - Receive an exercise prescription
  - Body composition testing and circumference measuring
  - Gym, group classes, personal training, and message therapy
  - Cost: \$39 per month\*
- Center for Active Living
  - <https://www.accaging.org/services/health-wellness/center-for-active-living/>
  - 135 Hoyt Street, Athens
  - Adults age 50+
  - Exercise classes, seminars, and travel
  - Cost: \$50 per year for Athens residents and \$60 per year for non-Athens residents\*
- YMCA of Athens
  - <https://athensymca.org>
  - 915 Hawthorne Ave, Athens
  - Gym, group classes, and personal training
  - Pool
  - Cost: \$34-45 per month\*

**There are also many other gyms and fitness studios in Athens and the surrounding area. Please find the one where you feel safe, supported, and enjoy your workouts!**



\*Rates current as of publication date but are subject to change.

## Online Exercise Resource:

- Cardio, strength training, and yoga videos
  - ACE Fitness: <https://www.acefitness.org/acefit/ACEfit-workouts>
    - American Council on Exercise
    - Free
    - Provides instruction on specific exercises, not a programs
  - Bodi (formerly Beachbody): <https://www.beachbodyondemand.com/bodi>
    - Made to be more inclusive
    - Access to Beachbody programs
    - 3 weeks on, 1 week off
    - Incorporates fitness, nutrition, and mindfulness
    - \$189 per year
  - Daily Burn: <https://www.lp.dailyburn.com>
    - Exercise and workout plan tailored to you
    - 30-day free trial and then \$19.95 per month
  - Fitness Blender: <https://www.fitnessblender.com>
    - Free or paid membership with FB Plus (\$8.99 per month or \$79.99 per year)
    - Exercise programs, recipes, and support community
  - HASFit: <https://hasfit.com>
    - Free with ads
    - Exercise videos and programs
- Chair Exercises
  - Chair Dancing: <https://www.chairdancing.com>
    - \$19.95 per video
  - Sit and Be Fit: <https://www.sitandbefit.com>
    - \$7.99 per month streaming
    - \$48.95 per video
    - \$25.00 for exercise book
- Yoga/Meditation
  - DoYogaWithMe: <https://www.doyogawithme.com>
    - Yoga and mediation classes
    - Free or paid membership (\$13.99 per month or and108.99 per year)
  - Glo: <https://www.glo.com>
    - Yoga, meditation, and pilates
    - Programs and virtual live classes
    - 7-day free trial and then \$30 per month or \$245 per year

\*Many of these online resources have corresponding apps

\*\*YouTube is a great resource for free exercise videos, but please be careful and try to watch videos from accredited and trained professionals



# Emotional Wellbeing



A Member of Trinity Health





## Smoking and Bariatric Surgery

Cigarette smoking is the leading cause of death, preventable disease, and disability in the United States. 12.5% of adults in the United States smoke cigarettes; as many as 40% of pre-bariatric surgery patients smoke. Smoking will lessen the health benefits of bariatric surgery. Smoking places you at a higher risk of death and complications after bariatric surgery. You shouldn't smoke for at least 6 weeks prior to bariatric surgery; one year tobacco-free is preferred. Of those patients who quit smoking prior to bariatric surgery, 10% or more will start smoking again after surgery. The percentage of smokers increases steadily each year after surgery. Avoid all products that contain nicotine, not just cigarettes, to avoid complications!

### **Bariatric Surgery Health Benefits Lessened by Smoking:**

- Smokers usually live 10-12 years less than non-smokers
- Smoking increases the risk for many comorbidities that are improved by bariatric surgery
  - Heart disease, stroke, certain cancers, infertility, and diabetes

### **Bariatric Surgery Complications Caused by Smoking:**

- Immediately after surgery, you are at increased risk for poor wound healing, infections, breathing issues (unplanned reintubation and pneumonia), and blood clots
- Long-term complications include marginal ulcers and bone fractures



## Smoking Cessation Resources:

- Freedom From Smoking Class at St. Mary's Hospital
  - Call Todd Drake, 706-389-2915
  - American Lung Association's Freedom from Smoking Program
    - Ranked as the most successful smoking cessation program
  - 8 Sessions, offered twice a year
  - \$60.00
- Freedom From Smoking Plus
  - [www.freedomfromsmoking.org](http://www.freedomfromsmoking.org)
  - American Lung Association's Freedom from Smoking Program
  - Online, interactive program
  - \$99.95
- Georgia Tobacco Quit Line
  - 1-877-270-STOP
  - Toll-free, telephone-based program
  - Provides personalized counseling
  - Provides free nicotine patches and gum, regardless of health insurance
- SmokeFree.gov
  - Build your quit plan
  - Join a smoke-free texting program
  - Provides additional smoking cessation resources and tools
  - QuitGuide and QuitSTART Apps
- World Health Organization's QuitTobacco App
  - Targets all forms of tobacco abuse
  - Helps identify triggers, sets targets, manage cravings, and quit tobacco

**For additional resources, please visit [QuitAssist.com](http://QuitAssist.com)**

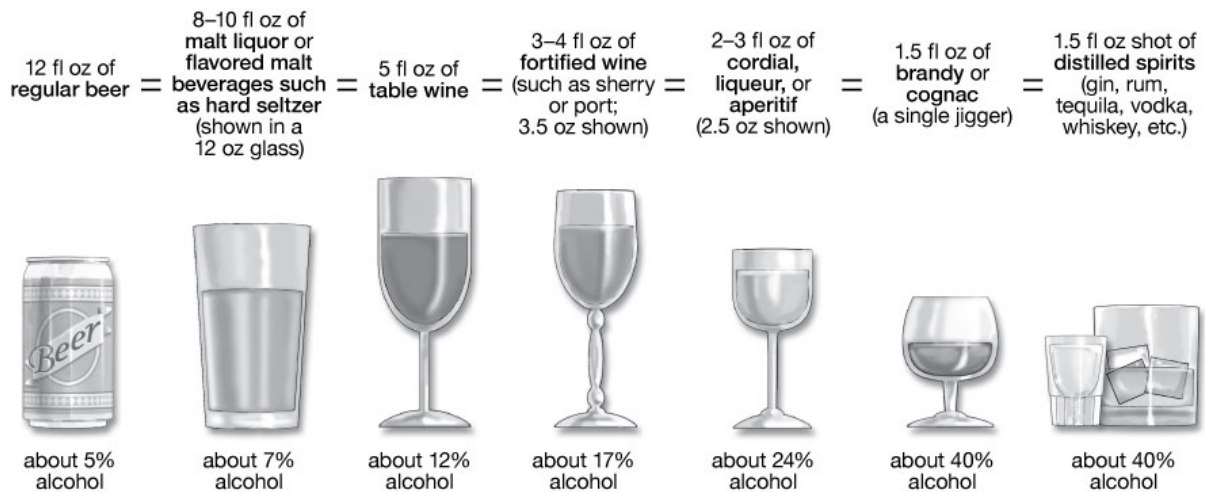
## Alcohol and Bariatric Surgery

Alcohol abuse is the second most common form of substance abuse in the United States (tobacco is the most common). Drinking can damage the liver, stomach, heart, and brain. It increases your cancer risk (mouth, throat, voice box, and esophagus). It also increases your risk for nutrient deficiencies, especially thiamin. Alcohol abuse is an absolute contraindication for surgery. Alcohol is not recommended after bariatric surgery because it can cause dumping syndrome, ulcers, and weight regain. If you had a Roux-en-Y gastric bypass, you metabolize alcohol differently and can become intoxicated more quickly. It is recommended that you wait 6 months after surgery to have an alcoholic beverage, and then limit it to one beverage per month. Bariatric surgery patients are at increased risk for abusing alcohol after surgery, even if they did not abuse it before surgery. If you are concerned about your drinking, please call our office or speak with your bariatric psychologist.

### Changes to Alcohol Metabolism after a Roux-en-Y Gastric Bypass:

- Alcohol is absorbed quicker
- Higher blood alcohol levels
- Alcohol stays in your system longer

### What is Considered a Serving of Alcohol



Each drink shown above represents one U.S. standard drink and has an equivalent amount (0.6 fluid ounces) of "pure" ethanol.

[What is A Standard Drink? | National Institute on Alcohol Abuse and Alcoholism \(NIAAA\) \(nih.gov\)](https://www.niaaa.nih.gov/what-is-a-standard-drink)

## Free Alcohol Sobriety Resources:

- Al-Anon Family Groups
  - Support group for those affected by someone else's drinking
  - <https://al-anon.org>
- Alcoholics Anonymous
  - 12-Step program and local meetings
  - 1-800-839-1686
  - <https://www.aa.org>
- Celebrate Recovery
  - 12-Step, faith-based addiction recovery program
  - <https://www.celebraterecovery.com>
- Georgia Crisis and Access Line
  - 1-800-715-4225
  - <https://www.mygacal.com>
- Phoenix
  - Free, sober active community
  - <https://thephoenix.org>
- SAMHSA's National Helpline
  - Referral and information service regarding mental health/substance use disorders
  - 1-800-662-HELP (4357)
- SMART Recovery
  - Tools, meetings, and resources for any addiction
  - <https://www.smartrecovery.org>
  - Has 2 available apps: SMART Recovery App and The Checkup and Choices App
- **For additional resources please see Georgia Council for Recovery**
  - <https://gasubstanceabuse.org/resources/>

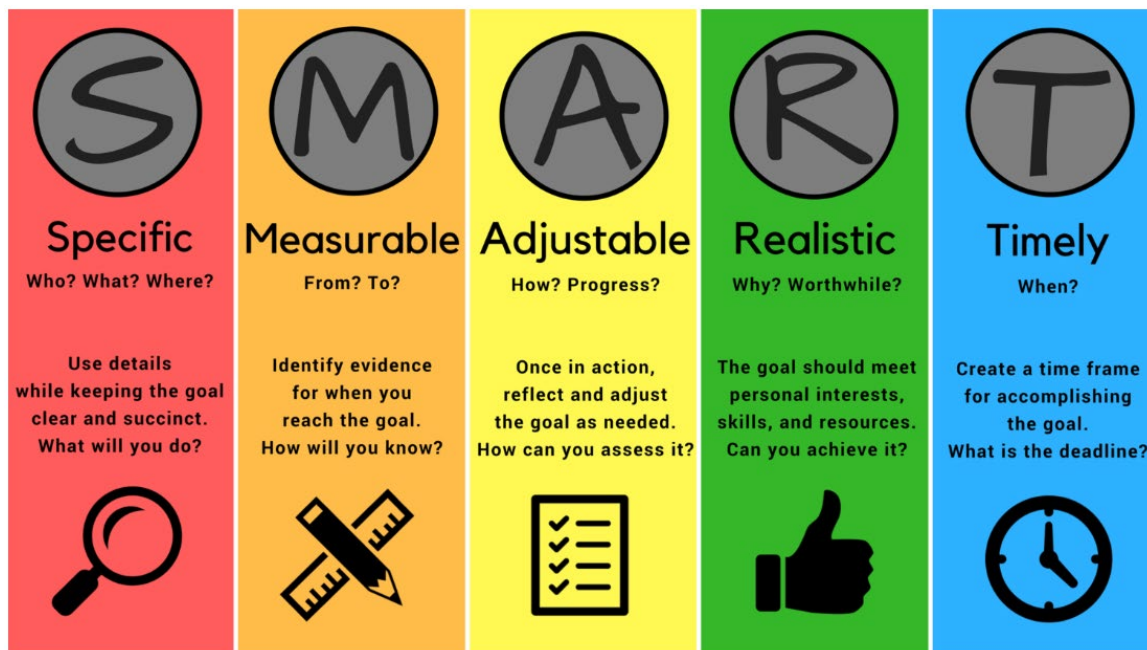
## Goal Setting

Goal setting is an important skill to master along your weight loss journey because it helps you make changes in your life. Goal setting requires you to visualize and define your future. It helps to keep you focused, productive and going when times get hard. There are two type of goals, process and product goals. SMART goals help you clarify your goals to build a solid, measurable plan for achieving them. You should always be aware of what you are working toward and update your goals regularly. Don't forget to celebrate your victories when you achieve your goals!

### Two Types of Goals:

1. Process goals (something you do)
  - a. Examples:
    - i. Meeting your fluid goals for the entire week
    - ii. Completing a certain number of workouts per week
    - iii. Attending all monthly support groups for an entire year
2. Product goals (something you achieve)
  - a. Examples:
    - i. Losing 10 pounds
    - ii. Improving blood pressure

### SMART Goals



[Wellness Plan — Life Is The Future](#)

## SMART Goal Worksheet

<b>INITIAL GOAL</b>	Write the goal you have in mind
<b>S SPECIFIC</b>	What do you want to accomplish? Who needs to be included? When do you want to do this? Why is this a goal?
<b>M MEASURABLE</b>	How can you measure progress and know if you've successfully met your goal?
<b>A ACHIEVABLE</b>	Do you have the skills required to achieve the goal? If not, can you obtain them? What is the motivation for this goal? Is the amount of effort required on par with what the goal will achieve?
<b>R RELEVANT</b>	Why am I setting this goal now? Is it aligned with overall objectives?
<b>T TIME-BOUND</b>	What's the deadline and is it realistic?
<b>SMART GOAL</b>	Review what you have written, and craft a new goal statement based on what the answers to the questions above have revealed

[How to Write SMART Goals | Smartsheet](#)

### Examples of Vague Goals vs. SMART Goals:

- Vague goal: I will eat more protein
  - SMART goal: For the next 2 weeks, I will include at least 20 grams of protein with all meals (breakfast, lunch, and dinner)
- Vague goal: I will work out more
  - SMART goal: I am going to exercise for at least 30 minutes, 5 days a week for 4 weeks
- Vague goal: I will lose weight
  - SMART goal: I will lose 5 pounds in one month

## Readiness to Change

Successful weight loss requires making changes to your diet, exercise, and lifestyle. Are you ready to make changes? Research has shown that most people do not make changes all at once; instead, they tend to go through a series of changes. The Transtheoretical Model of Change/Stages of Change Model can help you gauge where you are in your journey toward change. You can be at different stages for different behaviors. There are 10 processes that have been identified to help you move through various stages of change. Where are you?

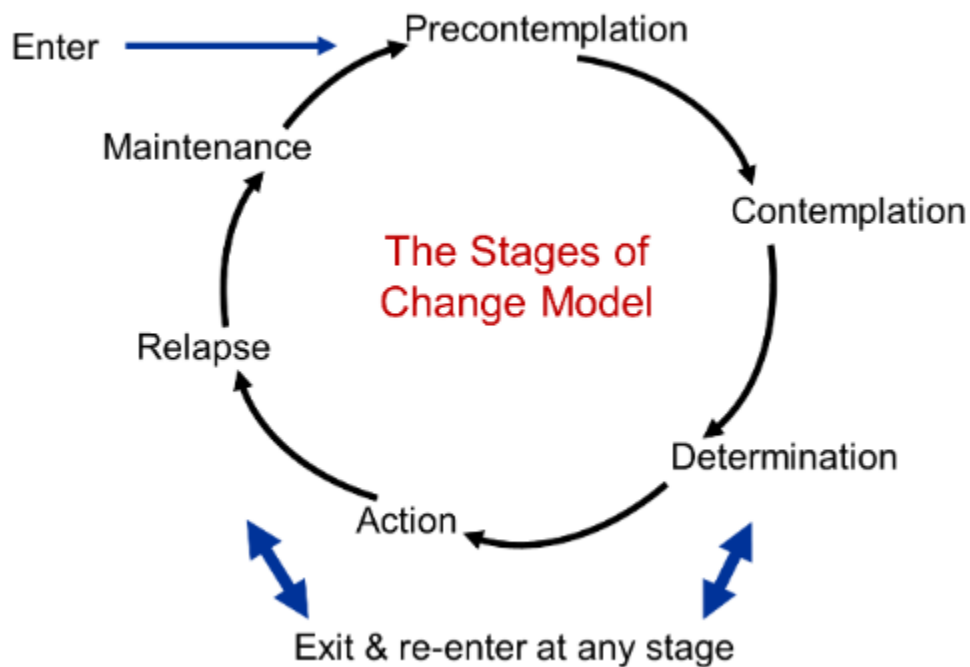
### Readiness to Change Questionnaire

	YES	NO
Are you looking to change a specific behavior?	<input type="checkbox"/>	<input type="checkbox"/>
Are you willing to make this behavioral change a top priority?	<input type="checkbox"/>	<input type="checkbox"/>
Have you tried to change this behavior before?	<input type="checkbox"/>	<input type="checkbox"/>
Do you believe there are inherent risks/dangers associated with not making this behavioral change?	<input type="checkbox"/>	<input type="checkbox"/>
Are you committed to making this change, even though it may prove challenging?	<input type="checkbox"/>	<input type="checkbox"/>
Do you have support for making this change from friends, family, and loved ones?	<input type="checkbox"/>	<input type="checkbox"/>
Besides health reasons, do you have other reasons for wanting to change this behavior?	<input type="checkbox"/>	<input type="checkbox"/>
Are you prepared to be patient with yourself if you encounter obstacles, barriers, and/or setbacks?	<input type="checkbox"/>	<input type="checkbox"/>

<https://www.ACEfitness.org/PTResources>

## The 6 Stages of Change in the Stages of Change Model:

1. Precontemplation - You do not plan to take any action in the next 6 months
  - a. You are unaware that the behavior is a problem
2. Contemplation - You intend to make a change to your behavior in the next 6 months
  - a. You recognize that your behavior is a problem but may still have mixed feelings about fixing it
3. Preparation (determination) - You are ready to act within the next 30 days and start making steps toward change
4. Action - You recently acted and plan to keep moving forward
5. Maintenance - You have sustained your behavior for at least the last 6 months and plan to continue the change moving forward
6. Termination - You have no desire to restart your unhealthy behavior
  - a. Rare, most people stay in the maintenance phase



[The Transtheoretical Model \(Stages of Change\) \(bu.edu\)](#)



## Strategies for Each Stage

### Pre-contemplation

While you might not be sure you are ready to make changes now, you've taken a positive step by beginning to consider setting goals.

**Try now:** Become more informed—learn what you can about your desired change. When you're ready to take steps toward your goal, you can start.

### Contemplation

Chances are, you feel stuck right now—caught between understanding you have a problem and knowing how to solve it.

**Try now:** transform your vague ideas for change into concrete, achievable steps. You may still be far from committing to action, and this is okay. Try to focus more on the solution ("I want to add one healthy food to my diet") than the problem ("I eat horribly").

### Preparation

This is exciting—you're almost ready to make some changes!

**Try now:** Go public. Tell a few trusted friends or family members about your intention to make a change. This will help you avoid any last-minute ambivalence about your plans and help you establish a network of support.

### Action

This is a busy time of trying out new routines and discarding old habits. Other people may even be noticing your progress.

**Try now:** Your aim now is to stay on track and keep focused on the positive results you've seen so far.

### Maintenance

You've already achieved your goal, but you want to stay on track to make sure you don't have relapses or fall into old habits.

**Try now:** Keep on going: continuing to set goals and check-ins will keep you moving forward—and help you resist old behaviors.

### Termination

You have likely made the behavior an integrated part of your life, perhaps a habit you don't have to think about.

**Try now:** take a moment occasionally to appreciate the change you have made. And watch to see if this behavior holds steady in times of stress or if you need to take steps to support it.

[Readiness for Change | Taking Charge of Your Health and Wellbeing \(umn.edu\)](http://www.umn.edu)

## 10 Processes of Change to Help You Progress through the Stages of Change:

1. Consciousness Raising
  - a. Increasing awareness
  - b. Intentional or unintentional exposure to information about yourself or your behavior
    - i. Lectures, discussion groups, reading, advertisements, films, and life events
2. Dramatic Relief
  - a. Emotional awareness, paying attention to your feelings
  - b. Experiencing negative emotions (fear, anxiety, worry, etc.) that go along with unhealthy behaviors
3. Self-Reevaluation
  - a. Creating a new positive self-image
  - b. You realize that the new behavior is an important part of who you want to be
  - c. Helps you clarify your values
4. Environmental Reevaluation
  - a. You notice how your behavior impacts others
  - b. You build empathy
5. Social Liberation
  - a. You realize that society supports your new behavior
  - b. You appreciate that new, healthy alternatives are available
6. Self-Liberation
  - a. You make choices and commit to them
7. Counterconditioning
  - a. Substitute new, healthy behaviors for older behaviors
  - b. Use emotion regulating practices or coping strategies
8. Stimulus Control
  - a. Use reminders and cues to help manage your healthy behavior
  - b. Learn how to recognize and avoid triggers
9. Helping Relationships
  - a. You get/accept help and support from others
    - i. Family, friends, support groups, counseling, etc.
10. Reinforcement Management
  - a. Reward yourself for making positive changes

## Processes Matched to Stages of Change

Stages of Change	Precontemplation	Contemplation	Preparation	Action	Maintenance
Processes of Change	Consciousness-Raising				
	Dramatic Relief				
	Self-Reevaluation				
	Environmental Reevaluation				
		Social Liberalization			
			Self-Liberalization		
			Counterconditioning		
			Stimulus Control		
			Helping Relationships		
				Reinforcement Management	

## Rewards

Rewards or incentives are a great tool to help you change your behavior. There are several ways that rewards can motivate you. Prior to bariatric surgery, food is often used as a reward; after bariatric surgery, food should no longer be a reward. Pick a reward that works within your budget and inspires you.

### Ways that Rewards Can Change Behavior:

- Help you create habits
- Help you break habits
- Provide an upfront incentive
- Help remove barriers

### Some Non-Food Rewards:

- Take a nap
- Listen to music, read a book, or listen to an audiobook
- Have a spa afternoon, massage, mani/pedi etc.
- Plan a night out with friends
- Buy a new outfit, lottery ticket, or something else you have been eying for awhile
- Buy yourself a plant or flowers
- Purchase some new workout or kitchen equipment
- Get your house cleaned

## How Our Emotions Influence Eating

How we feel can affect how and what we eat. Emotions such as anger, sadness, worry, boredom, guilt, shame, nervousness, and stress can cause some people to eat, even when they are not hungry. Emotional hunger is different than physical hunger. This type of eating is usually unplanned and uncontrolled. It is something that many people have learned over time as a coping strategy. Many people feel frustrated and can give up on more healthy behaviors when this happens. However, you can break the cycle by learning better coping strategies.

### The Emotional Eating Cycle



[Emotional Eating and How to Stop It - HelpGuide.org](https://www.helpguide.org/emotional-eating)

## Differences Between Emotional and Physical Hunger

Emotional Hunger	Physical Hunger
Comes on suddenly	Comes on gradually
Needs to be satisfied instantly	Can wait
Craves specific comfort food	Open to options
Isn't satisfied when your stomach is full	Stops when you are full
Triggers feelings of Guilt, powerlessness, and shame	You feel satisfied

\*Adapted from [Emotional Eating and How to Stop It - HelpGuide.org](https://www.helpguide.org/articles/eating-disorders/emotional-eating-and-how-to-stop-it.htm)

### Signs you are an Emotional Eater:

- You eat more when you feel stressed
- You eat even if you are full
- You often eat past the point of fullness
- You eat to calm yourself when you are sad, mad, bored, etc.
- You reward yourself with food
- Food makes you feel safe
- You feel out of control around food

### Steps to Avoid Emotional Eating:

- Avoid the trigger
  - Identify the trigger (person or event) that causes you to overeat
  - Avoid/change the situation
- Keep your thinking positive and action oriented
  - Analyze your thoughts and change the conversation in your head
    - Talk positively to yourself
  - Focus on the solution, not the problem
- Give yourself and your emotions time
  - Wait at least 5 minutes before you give in to the craving
    - Do relaxation exercises (deep breathing, walking, stretching, meditation, or yoga) or activities (shower, bath, etc.)
    - Do vigorous exercise
  - Laugh and use a sense of humor
- Substitute another behavior for eating
  - Read, listen to music, go to the movies, clean/organize, call a friend, do a hobby, or indulge in selfcare
- Savor your food
  - Practice mindful eating

## Mindful Eating

Mindful eating involves paying closer attention to what you eat and how it makes you feel, which helps you tell the difference between emotional and physical hunger. It has been shown to help with weight loss, decrease disordered eating behaviors, and even reduce stress. There are several steps that you can take to help you become a more mindful eater.

### Practices of Mindful Eating and Tips to Incorporate Them

Practices of Mindful Eating	Tips for Practicing More Mindful Eating
Honor the food	<ul style="list-style-type: none"> <li>-Appreciate where the food came from and who made it</li> <li>-Get rid of distractions while you eat (e.g. TV and phone)</li> <li>-Focus on the food, how it tastes and how it makes you feel</li> </ul>
Engage all senses	<ul style="list-style-type: none"> <li>-Pause to appreciate color, smell, sounds, textures, and flavor of your food</li> </ul>
Serve modest portions	<ul style="list-style-type: none"> <li>-Use a dinner plate no bigger than 9 inches</li> <li>-Only fill your plate up once</li> </ul>
Eat slowly, avoid overeating	<ul style="list-style-type: none"> <li>-Chew food well</li> <li>-Eat slowly</li> <li>-Listen to your body, eat only when you are hungry and stop eating when you are full</li> </ul>
Don't skip meals	<ul style="list-style-type: none"> <li>-Eat to maintain your health and wellbeing</li> </ul>
Appreciate how emotions affect your eating	<ul style="list-style-type: none"> <li>-Question yourself               <ul style="list-style-type: none"> <li>-Why are you eating?</li> <li>-Why did you choose this food?</li> </ul> </li> <li>-Know your emotional eating triggers</li> <li>-Learn to cope with any negative emotions around eating</li> <li>-Notice how food affects your body and mood</li> </ul>
Eat for a healthier planet	<ul style="list-style-type: none"> <li>-Try eating a more plant-based diet</li> </ul>

## Self-Care

Self-care means that you are taking the time to do things because they bring you joy and make you a healthier, happier person. It is an important tool to help you improve both your physical and mental health. By having bariatric surgery, you have already taken a huge step toward self-care. Continue to make your health a priority. Know that self-care looks different for everyone, so find what works for you. Make a plan and incorporate different self-care pillars. Remember that even small acts of self-care can have a huge impact!

### Benefits of Self-Care:

- Manages stress
- Improves immunity
- Increases energy
- Builds resilience (the ability to bounce back from difficulties)
- Decreases rates of anxiety and depression
- Makes you happier
- Reduces burnout
- Improves relationships

### Steps to Developing a Self-Care Plan:

1. Assess your needs
2. Consider your stressors
3. Choose your selfcare method
4. Schedule your selfcare time
5. Plan for challenges
6. Take it one step at a time





[The Seven Pillars of Self-Care - ISF \(isfglobal.org\)](http://isfglobal.org)

### Ways to Engage in Self-Care:

- Get regular exercise
- Eat well and stay hydrated
- Don't smoke or drink
- Get enough sleep
  - 8 hours of sleep is recommended
- Relax
  - Meditation, muscle relaxation, breathing exercises, journaling, take a bubble bath, message, etc.
- Say NO
  - Set goals and priorities
- Be grateful
  - Keep a gratitude journal
- Be positive
  - Identify and challenge negative thoughts
- Be social
  - Connect with supportive friends and family
  - Attend a support group
- Play with your pet
- Spend time outside
- Engage in a hobby
  - Listen to music, read a book, etc.



# Additional Tools





## Additional Resources

### Cookbooks:

- **Before and After: Living and Eating Well After Weight Loss Surgery 2<sup>nd</sup> Edition**  
Susan Maria Leach. William Morrow 2012. ISBN 9780062239990
- **Eating Well After Weight Loss Surgery: Over 140 Delicious Low-Fat, High-Protein Recipes to Enjoy in the Weeks, Months, and Years after Surgery**  
Pat Levine, Michele Bontempo-Saray. Pub Group West. 2004. ISBN 1569244537
- **The Complete Cooking Light Cookbook**  
Cathy Wesler, Editor. Oxmoor House. 2001. ISBN 084871945X
- **The Eating Well Healthy in a Hurry Cookbook**  
Jim Romanoff. Countryman. 2006. ISBN 0881506877
- **Weight Watchers New Complete Cookbook: Over 500 Recipes for the Healthy Cook's Kitchen**  
Harvest, 2016 ISBN 054494075X

### Books:

- **The Calorie King's Calorie, Fat, and Carbohydrate Counter**  
Alan Borushek. Family Health Publications. 2022. ISBN 193044805
- **The Feeling Good Handbook**  
David D. Burns. Plume, revised edition 1999. ISBN 9780452281325
- **Thin for Life: 10 Keys to Success from People Who Have Lost Weight and Kept It Off**  
Anne Fletcher. Rux Martin/Houghton Mifflin, revised and updated edition. 2003. ISBN 0618340556

### Podcasts:

- Bariatric Eating
- Bariatric Stories
- BariDiaries
- No Guts No Glory: Real Talk about Bariatric Surgery
- My So-Called Bariatric Life
- Weigh in Radio
- Weight Loss Surgery Podcast
- Winning through Losing/A Weight Loss Surgery Podcast

### Support Websites:

- Bariatric Support Centers: <https://bsciresourcecenter.com>
- Food Addicts in Recovery Anonymous: <https://www.foodaddicts.org>
- Obesity Help: <https://www.obesityhelp.com>
- Overeaters Anonymous: <https://oa.org>
- Take Off Pounds Sensibly (TOPS): <https://www.tops.org>
- Unjury Cares: <https://unjury.com/resources/weight-loss-surgery-unjury-cares/>
- Weight Watchers: <https://www.weightwatchers.com>

### Patient Education and Guidance Websites:





- American Society for Metabolic and Bariatric Surgery: <https://asmbs.org/patients>
- Bariatric Advantage: <https://www.blog.bariatricadvantage.com>
- Bariatric Fusion: <https://www.bariatricfusion.com/blogs/blog>
- Mayo Clinic: <https://eee.mayoclinic.org/tests-procedures/bariatric-surgery/about/pac-20394258>
- The Obesity Society: <https://www.obesity.org>
- Unjury: <https://unjury.com/resources>

## Body Mass Index Table

	Normal						Overweight					Obese					Extreme Obesity																			
BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Height (Inches)	Body Weight (pounds)																																			
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167	172	177	181	186	191	196	201	206	210	215	220	224	229	234	239	244	248	253	258
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208	212	217	222	227	232	237	242	247	252	257	262	267
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179	184	189	194	199	204	209	215	220	225	230	235	240	245	250	255	261	266	271	276
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185	190	195	201	206	211	217	222	227	232	238	243	248	254	259	264	269	275	280	285
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191	196	202	207	213	218	224	229	235	240	246	251	256	262	267	273	278	284	289	295
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197	203	208	214	220	225	231	237	242	248	254	259	265	270	278	282	287	293	299	304
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204	209	215	221	227	232	238	244	250	256	262	267	273	279	285	291	296	302	308	314
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210	216	222	228	234	240	246	252	258	264	270	276	282	288	294	300	306	312	318	324
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216	223	229	235	241	247	253	260	266	272	278	284	291	297	303	309	315	322	328	334
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223	230	236	242	249	255	261	268	274	280	287	293	299	306	312	319	325	331	338	344
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230	236	243	249	256	262	269	276	282	289	295	302	308	315	322	328	335	341	348	354
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236	243	250	257	263	270	277	284	291	297	304	311	318	324	331	338	345	351	358	365
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243	250	257	264	271	278	285	292	299	306	313	320	327	334	341	348	355	362	369	376
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250	257	265	272	279	286	293	301	308	315	322	329	338	343	351	358	365	372	379	386
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258	265	272	279	287	294	302	309	316	324	331	338	345	353	361	368	375	383	390	397
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265	272	280	288	295	302	310	318	325	333	340	348	355	363	371	378	386	393	401	408
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272	280	287	295	303	311	319	326	334	342	350	358	365	373	381	389	396	404	412	420
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279	287	295	303	311	319	327	335	343	351	359	367	375	383	391	399	407	415	423	431
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287	295	304	312	320	328	336	344	353	361	369	377	385	394	402	410	418	426	435	443

Source: Adapted from Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report.

## Glucose Gel and Tablets

Product	Dosing per Grams Carbohydrate	Flavors	Where to Buy	
TRUEplus Glucose Tablets		4 Tablets = 15 grams	Strawberry, tropical, raspberry, grape, and orange	Amazon and Walmart
TRUEplus Soft Tabs		4 Tablets = 19 grams	Chocolate-marshmallow, cheery pop, kiwi-strawberry, and root beer float	Amazon
TRUEplus Glucose Gel		1 packet (32 ml) = 20 grams	Fruit punch	Amazon
Dex4 Glucose Tabs		4 Tablets = 16 grams	Orange, tropical fruit, strawberry, raspberry, citrus punch, grape, assorted fruit, chocolate-marshmallow, and watermelon	Amazon



Product	Dosing per Grams Carbohydrate	Flavors	Where to Buy
Dex4 Glucose Gel 	1 packet (32 ml) = 15 grams	Fruit punch	Amazon
ReliOn Glucose Tablets 	4 Tablets = 16 grams	Raspberry, orange, fruit punch, grape, and tropical fruit	Walmart
ReliOn Glucose Gummies 	5 Gummies = 15 grams	Assorted raspberry/strawberry/blueberry	Walmart
Walgreens Glucose Tablets 	4 Tablets = 16 grams	Raspberry, orange, fruit, grape, and tropical fruit	Walgreens




Product		Dosing per Grams Carbohydrate	Flavors	Where to Buy
Walgreens Glucose Gummies		5 Gummies = 16 grams	Assorted raspberry/ strawberry/ blueberry	Walgreens
Walgreens Glucose Gel		1 packet (32 ml) = 15 grams	Fruit punch	Walgreens
Glucose15		1 packet (38 ml) = 15 grams	Lemon and grape	Amazon
Transcend Glucose Gel		1 packet (32 ml) = 15 grams	Strawberry and orange	<a href="https://transcendfoods.com">https://transcendfoods.com</a> and Amazon

*\*Glucose liquids are available, but are 60 ml per 15 grams of carbohydrate and volume may be an issue with hypoglycemia that is resistant to treatment*








*\*\*This is not an all-inclusive list of glucose gels and tablets; flavors and availability are subject to change*



## Types of Glucagon

	Product	Dosing	Notes
Glucagon Emergency Kit	 An orange plastic carrying case for a Glucagon Emergency Kit. The top lid is open, showing four numbered steps (1-4) with illustrations of how to use the kit. Below the lid, the kit's contents are visible: a vial of glucagon powder, a vial of sterile water, and a syringe.	1 mg per vial	-No refrigeration needed -Must be reconstituted
Gvoke HypoPen	 A box and two auto-injectors for Gvoke HypoPen (glucagon injection). The box is white and blue, labeled 'Gvoke HypoPen (glucagon injection) 1 mg per 0.2 ml Single-Dose Auto-Injector'. It also states 'FOR LOW BLOOD SUGAR EMERGENCY' and 'Contains 2 single-dose auto-injectors'. The auto-injectors are white with red caps and blue accents.	1 mg per 0.2 ml	-No refrigeration needed -Good for up to 30 months from date of manufacture
BAQSIMI	 A white nasal spray bottle and a yellow cylindrical container for BAQSIMI (glucagon nasal powder). The white bottle has a white nozzle and a label that says 'baqsimi 3 mg For Nasal Use Only'. The yellow container is open, showing the powder inside, and has a label that says 'baqsimi 3 mg For Treatment of Low Blood Sugar For Nasal Use Only'.	3 mg dose	-Dry nasal spray

## Examples of Low-Sugar Sport Drinks/Oral Rehydration Solutions

Drink		Sodium (mg)	Potassium (mg)	Carbohydrates (grams)
Body Armor Lyte		40 mg	700 mg	18 grams
Gatorade Zero		260 mg	80 mg	2 grams
Liquid IV Hydration Multiplier		500 mg	370 mg	4-11 grams
Nectar Hydration Packets		100 mg	250 mg	0 grams
Nuun Sport: Electrolyte Drink Tablets		300 mg	150 mg	4 grams
Pedialyte		370 mg	280 mg	10 grams
Powerade Zero Sugar		250 mg	60 mg	0 grams
Propel		230 mg	70 mg	0 grams




\*This is not a comprehensive list, please discuss sports drinks/oral rehydration solutions with your bariatric surgeon or your bariatric dietitian



## Recipes for Homemade Oral Rehydration Solutions




Base Beverage	Recipe		
Water	<ul style="list-style-type: none"> <li>• 1 quart water</li> <li>• ¾ teaspoon table salt</li> <li>• 2 Tablespoons sugar</li> <li>• Optional: Crystal Light® to taste (especially lemonade or orange-pineapple flavors)</li> </ul>		
Gatorade® G2	<ul style="list-style-type: none"> <li>• 4 cups Gatorade® G2 (or one, 32 ounce bottle)</li> <li>• ¾ teaspoon table salt; if your patient will not drink this because it is too salty for them, try ½ teaspoon of salt per 32 oz, as it is better not drinking it at all.</li> </ul>		
Chicken Broth	<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>• 4 cups water</li> <li>• 1 dry chicken broth cube</li> <li>• ¼ teaspoon table salt</li> <li>• 2 tablespoons sugar</li> </ul> </td> <td style="vertical-align: top; padding-left: 10px;"> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• 2 cups liquid broth (not low sodium!)</li> <li>• 2 cups water</li> <li>• 2 tablespoons sugar</li> </ul> </td> </tr> </table>	<ul style="list-style-type: none"> <li>• 4 cups water</li> <li>• 1 dry chicken broth cube</li> <li>• ¼ teaspoon table salt</li> <li>• 2 tablespoons sugar</li> </ul>	<p><b>OR</b></p> <ul style="list-style-type: none"> <li>• 2 cups liquid broth (not low sodium!)</li> <li>• 2 cups water</li> <li>• 2 tablespoons sugar</li> </ul>
<ul style="list-style-type: none"> <li>• 4 cups water</li> <li>• 1 dry chicken broth cube</li> <li>• ¼ teaspoon table salt</li> <li>• 2 tablespoons sugar</li> </ul>	<p><b>OR</b></p> <ul style="list-style-type: none"> <li>• 2 cups liquid broth (not low sodium!)</li> <li>• 2 cups water</li> <li>• 2 tablespoons sugar</li> </ul>		




[Homemade-Oral-Rehydration-Solutions-9-2018-1.pdf \(virginia.edu\)](#)




## Examples of Protein Powders

Brand	Protein Content in grams per Scoop/ Container	Carb Content in grams per Scoop/ Container	Total Calories in kcal per Scoop/ Container	Protein Source	Flavors	Website	
BariatricPal Clean Whey Protein with Probiotics		25 grams	1 gram	110 kcal	Whey protein isolate	Chocolate, vanilla, and strawberry	<a href="https://store.bariatricpal.com">https://store.bariatricpal.com</a>
Bariatric Advantage High Protein Meal Replacement (HPMR)		14 grams	6 grams	70-80 kcal	Whey protein isolate	Chocolate, crème, vanilla, banana, cookies and cream, iced latte, orange cream, strawberry, and chicken	<a href="http://www.bariatricadvantage.com">http://www.bariatricadvantage.com</a>
Bariatric Advantage High Protein Supplement Mix		10 grams	2 grams	50 kcal	Whey protein isolate	Chocolate and vanilla	<a href="http://www.bariatricadvantage.com">http://www.bariatricadvantage.com</a>




Brand	Protein Content in grams per Scoop/ Container	Carb Content in grams per Scoop/ Container	Total Calories in kcal per Scoop/ Container	Protein Source	Flavors	Website	
Bariatric Fusion High Protein Meal Replacement (scoop or packet)		14 gm	4-5 gm	70-75 kcal	Whey protein isolate	Caramel, chocolate, vanilla, strawberry banana, strawberry, chocolate peanut butter, orange cream, cappuccino, chicken soup, and unflavored	<a href="https://www.bariatricfusion.com">https://www.bariatricfusion.com</a>
Celebrate High Protein Meal Replacement Protein Powder		14 grams	5 grams	85 kcal	Whey protein isolate and soy protein isolate	Deep chocolate, vanilla bean, bananaberry, caramel latte, Bahama breeze, and chicken soup	<a href="https://celebratevitamins.com">https://celebratevitamins.com</a>





Brand		Protein Content in grams per Scoop/ Container	Carb Content in grams per Scoop/ Container	Total Calories in kcal per Scoop/ Container	Protein Source	Flavors	Website
Celebrate Rebuild Protein Plus Probiotic		10 grams	4 grams	60 kcal	Whey protein isolate	Chocolate, peanut butter cookie, berry burst, cookies and cream, iced decaf coffee, and unflavored	<a href="https://celebratevitamins.com">https://celebratevitamins.com</a>
Ghost Whey Protein		25-26 grams	2-8 grams	120-160 kcal	Whey protein isolate and whey protein concentrate, hydrolyzed whey protein isolate	Cinnabon®, Chips Ahoy®, Nutter Butter®, Oreo®, cereal milk, peanut butter cereal milk, coffee ice cream, fruity cereal milk, marshmallow cereal milk, chocolate milk,	<a href="https://www.ghostlifestyle.com">https://www.ghostlifestyle.com</a>
IsoPure Infusions		20 grams	2 grams	90 kcal	Whey protein isolate	Citrus lemonade, mango lime, mixed berry, pineapple orange banana, tropical punch, and watermelon lime	<a href="https://www.theisopurecompany.com">https://www.theisopurecompany.com</a>



Brand		Protein Content in grams per Scoop/ Container	Carb Content in grams per Scoop/ Container	Total Calories in kcal per Scoop/ Container	Protein Source	Flavors	Website
IsoPure Low Carb Protein-Naturally Sweetened		25 grams	2 grams	110 kcal	Whey protein isolate	Dark chocolate, strawberry, and Tahitian vanilla	<a href="https://www.theisopurecompany.com">https://www.theisopurecompany.com</a>
IsoPure Natural Flavor		25 grams	4 grams	120 kcal	Whey protein isolate	Chocolate and vanilla	<a href="https://www.theisopurecompany.com">https://www.theisopurecompany.com</a>
IsoPure Whey Protein Isolate		25 grams	0 grams	100 kcal	Whey protein isolate	Unflavored	<a href="https://www.theisopurecompany.com">https://www.theisopurecompany.com</a>

Brand		Protein Content in grams per Scoop/ Container	Carb Content in grams per Scoop/ Container	Total Calories in kcal per Scoop/ Container	Protein Source	Flavors	Website
IsoPure Zero/Low Carb		25 grams	0 grams	100 kcal	Whey protein isolate	Banana cream, chocolate peanut butter, cookies and cream, creamy vanilla, Dutch chocolate, strawberries and cream, toasted coconut, and vanilla salted caramel	<a href="https://www.theisopurecompany.com">https://www.theisopurecompany.com</a>
Medtrition Plus Liquid Protein		15 grams	11 grams	100 kcal	Hydrolyzed collagen and whey protein isolate	Berry punch, orange crème, and unflavored	<a href="https://www.medtrition.com/products/">https://www.medtrition.com/products/</a>
Medtrition ProSource NoCarb Liquid Protein		15 grams	0 grams	60 kcals	Hydrolyzed collagen and whey protein isolate	Berry punch, orange crème, and unflavored	<a href="https://www.medtrition.com/products/">https://www.medtrition.com/products/</a>



Brand		Protein Content in grams per Scoop/ Container	Carb Content in grams per Scoop/ Container	Total Calories in kcal per Scoop/ Container	Protein Source	Flavors	Website
Medtrition ProSource Protein Powder		6 grams	1 gram	30 kcal	Whey protein concentrate	Unflavored	<a href="https://www.medtrition.com/products/">https://www.medtrition.com/products/</a>
Muscle Milk 100% Whey Protein Powder		25 grams	3 grams	130 kcal	Whey protein isolate and whey protein concentrate	Chocolate, vanilla, and unflavored	<a href="https://www.musclemilk.com">https://www.musclemilk.com</a>
Muscle Milk Genuine Protein Powder		16 grams	10 grams	140 kcal	Whey protein concentrate, whey protein isolate, and casein	Banana crème, chocolate, cookies 'n crème, peanut butter chocolate, strawberries 'n crème, and vanilla crème	<a href="https://www.musclemilk.com">https://www.musclemilk.com</a>




Brand		Protein Content in grams per Scoop/ Container	Carb Content in grams per Scoop/ Container	Total Calories in kcal per Scoop/ Container	Protein Source	Flavors	Website
Muscle Milk Pro Series Protein Powder		25 grams	9 grams	160 kcal	Whey protein isolate, casein, and whey protein concentrate	Intense vanilla, knockout chocolate, and slammin' strawberry	<a href="https://www.muscle milk.com">https://www.muscle milk.com</a>
Muscle Milk Zero Protein Powder		8 grams	5 grams	50 kcal	Casein and whey protein isolate	Chocolate and vanilla crème	<a href="https://www.muscle milk.com">https://www.muscle milk.com</a>
Premier Protein Powder		15 grams	2 grams	75 kcal	Whey protein concentrate and whey protein isolate	Chocolate and vanilla	<a href="http://www.premierprotein.com/products">http://www.premierprotein.com/products</a>
Quest Protein Powder		20-26 grams	1-7 grams	100-120 kcal	Whey protein isolate and micellar casein	Vanilla milkshake, chocolate milkshake, salted caramel, peanut butter, cinnamon crunch, cookies and cream, and unflavored	<a href="https://www.questnutrition.com">https://www.questnutrition.com</a>



Brand		Protein Content in grams per Scoop/ Container	Carb Content in grams per Scoop/ Container	Total Calories in kcal per Scoop/ Container	Protein Source	Flavors	Website
Unjury Protein Powder		21 grams	4 grams	110 grams	Whey protein isolate	Chocolate splendor, vanilla, chicken soup, strawberry sorbet, French onion soup, beef and herb, moonbeam mist, cherry cola, root beer, and unflavored	<a href="https://www.unjury.com">https://www.unjury.com</a>
Unjury Protein Powder Packets		11 grams	2 grams	55 grams	Whey protein isolate	Chocolate splendor, moonbeam mist, beef and herb, chicken soup, French onion, and unflavored	<a href="https://www.unjury.com">https://www.unjury.com</a>




\*This is not a comprehensive list, please discuss protein supplements with you doctor or bariatric dietitian



\*\*Be careful with coffee flavored products because many contain caffeine

## Examples of Vegan Protein Powders

Brand		Protein Content in grams per Scoop/ Container	Carb Content in grams per Scoop/ Container	Total Calories in kcal per Scoop/ Container	Protein Source	Flavors	Website
Celebrate Natural Vegan Protein Shakes		20 grams	6 grams	130-140 grams	Pea protein	Vanilla Chai and lemon cream	<a href="https://celebratevitamins.com">https://celebratevitamins.com</a>
Evolve Protein Powder		10 grams	10-11 grams	70-80 kcal	Pea protein isolate	Vanilla bean, double chocolate, and berry medley	<a href="https://www.drinkevolve.com">https://www.drinkevolve.com</a>
Ghost Vegan Protein		20 grams	6 grams	110 kcal	Pea protein concentrate, pumpkin protein, and watermelon seed protein	Cinnabon®, peanut butter cereal milk, banana pancake batter, chocolate cereal milk, pancake batter,	<a href="https://www.ghostlifestyle.com">https://www.ghostlifestyle.com</a>

Brand		Protein Content in grams per Scoop/ Container	Carb Content in grams per Scoop/ Container	Total Calories in kcal per Scoop/ Container	Protein Source	Flavors	Website
IsoPure Plant		20 grams	5 grams	120 kcal	Pea and brown rice protein	Chocolate, vanilla, and unflavored	<a href="https://www.theisopurecompany.com">https://www.theisopurecompany.com</a> Amazon
Orgain Organic Protein Plant Based Protein Powder		11 grams	4-8 grams	70-90 kcal	Pea protein, brown rice protein, and chia seed	Creamy chocolate fudge, chocolate coconut, chocolate caramel sea salt, chocolate peanut butter, peanut butter, naturally unsweetened, vanilla bean, iced coffee, cookies 'n cream, and strawberries and cream	<a href="http://orgain.com">http://orgain.com</a>




Brand		Protein Content in grams per Scoop/ Container	Carb Content in grams per Scoop/ Container	Total Calories in kcal per Scoop/ Container	Protein Source	Flavors	Website
Orgain Simple Organic Plant Based Protein Powder		10 grams	5-6 grams	75 kcal	Pea protein, peanut flour, pumpkin seed protein, almond protein, and chai seed	Creamy chocolate, vanilla, and peanut butter	<a href="http://orgain.com">http://orgain.com</a>
Orgain Sport Protein Organic Plant Based Powder		15 grams	7 grams	100 kcal	Pea protein, brown rice protein, and chia seed	Chocolate and vanilla	<a href="http://orgain.com">http://orgain.com</a>
Orgain Organic Protein and Superfoods Plant Based Protein Powder		11 grams	10 grams	80-85 kcal	Pea protein, brown rice protein, and chia seed	Creamy chocolate fudge and vanilla bean	<a href="http://orgain.com">http://orgain.com</a>

Brand		Protein Content in grams per Scoop/ Container	Carb Content in grams per Scoop/ Container	Total Calories in kcal per Scoop/ Container	Protein Source	Flavors	Website
Premier Protein Plant Protein		25 grams	4 grams	150 kcal	Pea and brown rice protein	Chocolate and vanilla	<a href="http://www.premierprotein.com/products">http://www.premierprotein.com/products</a>
Unjury Planted Protein		20-23 grams	2-8 grams	100-150 kcal	Pea and brown rice protein	True chocolate, banana nut, Cinnamon donut, and unflavored	<a href="https://www.unjury.com">https://www.unjury.com</a>

\*This is not a comprehensive list, please discuss protein supplements with you doctor or bariatric dietitian




\*\*Be careful with coffee flavored products because many contain caffeine





## Examples of Ready-to-Drink Protein Shakes





Brand		Protein Content in grams per Container	Carb Content in grams per Container	Total Calories in kcal per Container	Protein Source	Flavors	Website
BariLife Protein Drink Bottles		15 grams	0-7 grams	60-100 kcal	Casein and milk protein isolate	Aloha mango, cappuccino, chocolate, kiwi strawberry, pineapple orange, strawberry, strawberry banana, and vanilla	<a href="https://www.barilife.com">https://www.barilife.com</a>
Bariatric Advantage Clearly Protein		20 grams	0 grams	80 kcal	Whey protein isolate	Fruit punch	<a href="http://www.bariatricadvantage.com">http://www.bariatricadvantage.com</a>
Boost Glucose Control Max 30g Protein Nutritional Drink		30 grams	4-6 grams	160 grams	Milk protein concentrate and milk protein isolate	Rich chocolate and very vanilla	<a href="https://www.boost.com">https://www.boost.com</a>






Brand		Protein Content in grams per Container	Carb Content in grams per Container	Total Calories in kcal per Container	Protein Source	Flavors	Website
Boost High Protein Nutritional Drink		20 grams	28 grams	250 kcal	Milk protein concentrate	Cinnabon®, rich chocolate, very vanilla, and creamy strawberry	<a href="https://www.boost.com">https://www.boost.com</a>
Core Power Elite Protein Shake		42 grams	8 grams	230 kcal	Filtered low fat milk	Vanilla, chocolate, and strawberry	<a href="https://www.fairlife.com">https://www.fairlife.com</a>
Core Power High Protein Milk Shake		26 grams	6-8 grams	170 kcal	Filtered low fat milk	Vanilla, chocolate, and strawberry banana	<a href="https://www.fairlife.com">https://www.fairlife.com</a>
Ensure High Protein Shake		16 grams	19 grams	160 kcal	Milk protein concentrates and soy protein isolates	Vanilla, milk chocolate, and strawberry	<a href="https://www.abbottnutrition.com">https://www.abbottnutrition.com</a>

Brand		Protein Content in grams per Container	Carb Content in grams per Container	Total Calories in kcal per Container	Protein Source	Flavors	Website
Ensure Max Protein		30 grams	6 grams	150 kcal	Milk protein concentrate and casein	Milk chocolate, café mocha, French vanilla, and creamy strawberry	<a href="https://www.abbottnutrition.com/our-products/Ensure-max-protein">https://www.abbottnutrition.com/our-products/Ensure-max-protein</a>
Equate High Performance Protein Shake		30 grams	4 grams	170 kcal	Milk protein concentrate, milk protein isolate, whey protein concentrate, and casein	Chocolate, vanilla, and caramel	<a href="https://www.walmart.com">https://www.walmart.com</a>
IsoPure 32G Protein		32 grams	0 grams	130 kcal	Whey protein isolate	Alpine punch, apple melon, blue raspberry, grape frost, green tea lemon, and lemonade	<a href="https://www.theisopure.com">https://www.theisopure.com</a>

Brand		Protein Content in grams per Container	Carb Content in grams per Container	Total Calories in kcal per Container	Protein Source	Flavors	Website
IsoPure 40G Protein		40 grams	0 grams	160 kcal	Whey protein isolate	Alpine punch, blue raspberry, and grape frost	<a href="https://www.theisopurecompany.com">https://www.theisopurecompany.com</a>
Muscle Milk Genuine Protein Shake		25 grams	9 grams	160 kcal	Casein and whey protein isolate	Banana crème, chocolate, cookies 'n crème, strawberries 'n crème, and vanilla crème	<a href="https://www.musclemilk.com">https://www.musclemilk.com</a>
Muscle Milk Pro Advanced Nutrition Protein Shake		40 grams	10-12 grams	210-220 kcal	Whey protein isolate and casein	Chocolate peanut butter, intense vanilla, knockout chocolate, and slammin' strawberry	<a href="https://www.musclemilk.com">https://www.musclemilk.com</a>
Muscle Milk Zero Protein Shake		20 grams	7 grams	100 kcal	Casein and whey protein isolate	Chocolate, strawberry banana, and vanilla crème	<a href="https://www.musclemilk.com">https://www.musclemilk.com</a>





Brand		Protein Content in grams per Container	Carb Content in grams per Container	Total Calories in kcal per Container	Protein Source	Flavors	Website
Orgain 20g Clean Protein Shake		20 grams	11 grams	130 grams	Milk protein concentrate	Creamy chocolate fudge and vanilla bean	<a href="http://orgain.com">http://orgain.com</a>
Orgain Organic Nutrition Shake		16 grams	28 grams	125 kcal	Milk protein concentrate and whey protein concentrate	Creamy chocolate fudge, sweet vanilla bean, iced café mocha, and strawberries and cream	<a href="http://orgain.com">http://orgain.com</a>
Orgain Organic Protein Grass Fed Protein Shake		26 grams	15 grams	160 kcal	Milk protein concentrate and whey protein concentrate	Creamy chocolate fudge	<a href="http://orgain.com">http://orgain.com</a>
Premier Clear Protein Drink		20 grams	0 grams	90 grams	Whey protein isolate	Tropical punch and peach	<a href="http://www.premierprotein.com/products">http://www.premierprotein.com/products</a>


Brand		Protein Content in grams per Container	Carb Content in grams per Container	Total Calories in kcal per Container	Protein Source	Flavors	Website
Premier Protein Shakes		30 grams	4 grams	160 kcal	Casein and whey protein concentrate	Chocolate, vanilla, caramel, chocolate peanut butter, cake batter, strawberries and cream, cinnamon roll, cookies and cream, bananas and cream, and peaches and cream	<a href="http://www.premierprotein.com/products">http://www.premierprotein.com/products</a>
Quest Protein Shakes		30 grams	3-4 grams	160-170 kcal	Whey protein isolate and casein	Vanilla, chocolate, and salted caramel	<a href="https://www.questnutrition.com">https://www.questnutrition.com</a>
Unjury Ready to Drink Shakes		20 grams	2 grams	110 grams	Whey protein isolate	Chocolate and vanilla	<a href="https://www.unjury.com">https://www.unjury.com</a>

\*This is not a comprehensive list, please discuss protein supplements with you doctor or bariatric dietitian

\*\*Be careful with coffee flavored products because many contain caffeine

## Examples of Ready-to-Drink Vegan Protein Shakes




Brand		Protein Content in grams per Container	Carb Content in grams per Container	Total Calories in kcal per Container	Protein Source	Flavors	Website
Evolve Protein Shakes		20 grams	15-18 grams	130-150 kcal	Pea protein isolate	Vanilla bean, double chocolate, berry medley, and café mocha	<a href="https://www.drinkevolve.com">https://www.drinkevolve.com</a>
Kate Farms		16 grams	38 grams	330 kcal	Pea protein and brown rice protein	Chocolate, coffee, vanilla	<a href="https://shop.katefarms.com">https://shop.katefarms.com</a>
Orgain Plant Based Protein Shake		20 grams	8 grams	140 kcal	Pea protein	Creamy chocolate	<a href="http://orgain.com">http://orgain.com</a>
Orgain Vegan Organic Nutrition Shake		16 grams	30 grams	240 kcal	Pea protein and chia seed	Smooth chocolate and vanilla bean	<a href="http://orgain.com">http://orgain.com</a>

Brand		Protein Content in grams per Container	Carb Content in grams per Container	Total Calories in kcal per Container	Protein Source	Flavors	Website
Owyn Protein Shakes		20 grams	8-11 grams	170-180 kcal	Pea protein, pumpkin seed protein, and flaxseed oil	Dark chocolate, cold brew coffee, smooth vanilla, cookies and creamless, sea salted caramel, and strawberry banana	<a href="https://liveowyn.com">https://liveowyn.com</a>




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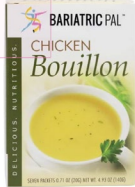
\*\*Be careful with coffee flavored products because many contain caffeine



## Examples of Other Liquid Protein Products

Brand		Protein Content in grams per Container	Carb Content in grams per Container	Total Calories in kcal per Container	Protein Source	Flavors	Website
<b>Gelatin</b>							
Medtrition Gelatein		20 grams	0 grams	90 kcal	Hydrolyzed collagen and whey protein isolate	Orange, lime, fruit punch, and grape	<a href="https://www.medtrition.com/products/">https://www.medtrition.com/products/</a>
Medtrition Gelatein Plus		20 grams	20 grams	160 kcal	Hydrolyzed collagen and whey protein isolate	Lemon and pineapple and cherry	<a href="https://www.medtrition.com/products/">https://www.medtrition.com/products/</a>
<b>Hot Chocolate</b>							
BariatricPal Hot Chocolate Protein Drink		15 grams	3-5 grams	80 kcal	Casein, hydrolyzed gelatin, and nonfat milk	Classic hot chocolate, cinnamon, amaretto, hot chocolate with marshmallows, Irish cream, raspberry, mocha, and mint	<a href="https://store.bariatricpal.com">https://store.bariatricpal.com</a>



Brand		Protein Content in grams per Container	Carb Content in grams per Container	Total Calories in kcal per Container	Protein Source	Flavors	Website
BariLife Hot Chocolate		15 grams	3-5 grams	80-90 kcal	Casein, hydrolyzed gelatin, and nonfat milk	Amaretto, cappuccino, cinnamon, classic, Irish cream, marshmallow, mint, and mocha	<a href="https://www.barilife.com">https://www.barilife.com</a>
<b> pudding and Gelato</b>							
BariatricPal Protein Shake or Pudding		15 grams	3-7 grams	80-100 kcal	Milk protein isolate and casein	Chocolate, chocolate salted caramel, vanilla, double chocolate, tropical banana, and New York cheesecake	<a href="https://store.bariatricpal.com">https://store.bariatricpal.com</a>
BariLife Pudding Shakes		15 grams	5-10 grams	80-118 kcal	Milk protein isolate and casein	Banana, cheesecake, chocolate, chocolate peanut butter, strawberry, and vanilla	<a href="https://www.barilife.com">https://www.barilife.com</a>

Brand		Protein Content in grams per Container	Carb Content in grams per Container	Total Calories in kcal per Container	Protein Source	Flavors	Website
Unjury Bonjoy! Protein (makes pudding or gelato)		25 grams	14-15 grams	190-200 kcal	Whey protein concentrate	Chocolate cookie, campfire latte, and mixed berry	<a href="https://www.unjury.com">https://www.unjury.com</a>
<b>Soup</b>							
BariatricPal 15 g Protein Soup		15 grams	1-7 grams	70-95 kcal	Hydrolyzed gelatin and whey protein concentrate	Beef bouillon, chicken bouillon, cream of broccoli, cream of chicken, chicken with pasta, beef with pasta, cream of mushroom, cream of tomato, and tomato bouillon	<a href="https://store.bariatricpal.com">https://store.bariatricpal.com</a>

Brand		Protein Content in grams per Container	Carb Content in grams per Container	Total Calories in kcal per Container	Protein Source	Flavors	Website
BariLife Protein Soups		15-16 grams	0-7 grams	70-100 kcal	Whey protein concentrate	Beef, beef with pasta, chicken, chicken with pasta, cream of broccoli, cream of chicken, cream of tomato, onion, and tomato	<a href="https://www.barilife.com">https://www.barilife.com</a>
Celebrate Bariatric High Protein Soup		15 grams	5-7 grams	90-100 kcal	Whey protein isolate	Cream of broccoli and cheese, cream of tomato, and cream of vegetable	<a href="https://celebratevitamins.com">https://celebratevitamins.com</a>

\*This is not a comprehensive list, please discuss protein supplements with you doctor or bariatric dietitian

\*\*Be careful with coffee flavored products because many contain caffeine

\*\*\*Pasta in soup is not compliant until the Bariatric Soft diet

## Chewable Multivitamin Options

Multivitamin Options	Servings Size per Day	Amount of Iron	Additional Supplementation Needed	Where to Purchase
<b>Non-Bariatric Formulations</b>				
Centrum <ul style="list-style-type: none"> <li>• Chewable Adult</li> <li>• Chewable Adult 50+</li> </ul>	2 2	16 mg 0 mg	-Thiamin, B12, iron, vitamin D, and calcium - Thiamin, B12, iron, vitamin D, and calcium	<a href="http://www.centrum.com">http://www.centrum.com</a> Amazon, Walmart, Target, Costco, CVS, Walgreens, and Rite Ade
<b>Bariatric Formulations</b>				
Bariatric Advantage <ul style="list-style-type: none"> <li>• Chewable Essentials without Iron</li> <li>• Chewable Advanced</li> <li>• Chewable Ultra Solo with Iron</li> </ul>	2 2 1	0 mg 45 mg 45 mg	-Iron and calcium -Calcium -Calcium	<a href="https://www.bariatricadvantage.com">https://www.bariatricadvantage.com</a> Amazon
Bariatric Choice <ul style="list-style-type: none"> <li>• My Bariatric Vitamins Chewable Multivitamin</li> <li>• All-in-One Chewable Multivitamin and Calcium Citrate</li> </ul>	4 4	45 mg 45 mg	-Vitamin K -Vitamin K	<a href="http://www.dietdirect.com">http://www.dietdirect.com</a> Amazon and Walmart
Bariatric Fusion <ul style="list-style-type: none"> <li>• Complete Chewable Bariatric Multivitamin</li> <li>• Bariatric Multivitamin Soft Chews</li> <li>• Complete Chewable Multivitamin with Vitamin K</li> </ul>	2 2 2	22.6 mg 0 mg 22.6 mg	-Thiamin, iron, vitamin D, calcium, and vitamin K - Iron, vitamin D, calcium, and copper - Thiamin, iron, vitamin D, and calcium	<a href="https://www.bariatricfusion.com">https://www.bariatricfusion.com</a> Amazon
BariLife <ul style="list-style-type: none"> <li>• Just One Chewable: Once Daily Bariatric Multivitamin + Iron</li> <li>• Complete Bariatric Vitamin Formula Powder</li> </ul>	1 1 (scoop)	45 mg 22.5 mg	-Calcium -Iron and calcium	<a href="https://www.barilife.com">https://www.barilife.com</a> Amazon and Walmart

Multivitamin Options	Servings Size per Day	Amount of Iron	Additional Supplementation Needed	Where to Purchase
BariatricPal <ul style="list-style-type: none"> <li>Multivitamin ONE Iron-Free Chewable</li> <li>Multivitamin ONE 45 Fe Chewable All-in-One MVI with Calcium and Iron</li> </ul>	1  1  2	0 mg  45 mg  22.6 mg	-Iron and calcium  -Calcium  - Thiamin, iron, vitamin D, and calcium	<a href="https://www.bariatricpal.com">https://www.bariatricpal.com</a> Amazon and Walmart
BariMelts Multivitamin	2	0 mg	-Thiamin, iron, vitamin D, and calcium	<a href="https://www.barimelts.com">https://www.barimelts.com</a> Amazon and Walmart
BariSlim <ul style="list-style-type: none"> <li>Advanced Chewable Bariatric Multivitamin</li> <li>All-in-One Chewable Bariatric Multivitamin</li> <li>Complete Chewable Bariatric Multivitamin</li> </ul>	2  4  3	36 mg  45 mg  45 mg	-Iron and calcium  -Calcium  -Calcium	<a href="https://www.barislim.com">https://www.barislim.com</a> Amazon and Walmart
Celebrate <ul style="list-style-type: none"> <li>Multivitamin Soft Chews</li> <li>Chewable Essential Multi 2-in-1 Multivitamin with Calcium</li> <li>Multi 3-in-1 Multivitamin with Calcium and fiber</li> </ul>	2  1  1 (scoop)	0 mg  0 mg  0 mg	-Iron and calcium  - Thiamin, iron, vitamin D, and calcium  - Thiamin, iron, vitamin D, and calcium	<a href="https://www.celebratevitamins.com">https://www.celebratevitamins.com</a> Amazon and Walmart
FitForMe <ul style="list-style-type: none"> <li>WLS Forte Chew</li> <li>WLS Optimum Chew</li> </ul>	1  1	0 mg  0 mg	-Thiamin, Iron, vitamin A, and copper  - B12, iron, vitamin D, calcium, and copper	<a href="https://usa.fitforme.com">https://usa.fitforme.com</a> Amazon
ProCare Health Bariatric Multivitamin Chewable with 45 mg Iron	1	45 mg	Calcium	<a href="https://www.procarenow.com">https://www.procarenow.com</a> Amazon and Walmart



## Capsule Multivitamin Options

Multivitamin Options	Servings Size per Day	Amount of Iron	Additional Supplementation Needed	Where to Purchase
<b>Non-Bariatric Formulations</b>				
Centrum <ul style="list-style-type: none"> <li>Adult Multivitamin</li> <li>Adult 50+</li> </ul>	2 2	36 mg 0 mg	-Thiamin, B12, iron, vitamin D, and calcium -Thiamin, B12, iron, vitamin D, and calcium	<a href="http://www.centrum.com">http://www.centrum.com</a> Amazon, Walmart, Target, Costco, CVS, Walgreens, and Rite Ade
Equate <ul style="list-style-type: none"> <li>Adult Multivitamin</li> <li>Adult 50+</li> </ul>	2 2	36 mg 0 mg	-Thiamin, B12, iron, vitamin D, and calcium -Thiamin, B12, iron, vitamin D, and calcium	<a href="http://www.walmart.com">http://www.walmart.com</a> Amazon and Walmart
<b>Bariatric Formulations</b>				
Bariatric Choice <ul style="list-style-type: none"> <li>Once Daily Bariatric Multivitamin with 45 mg Iron</li> </ul>	1	45 mg	-Calcium	<a href="http://www.dietdirect.com">http://www.dietdirect.com</a> Amazon and Walmart
Bariatric Fusion <ul style="list-style-type: none"> <li>Multivitamin Capsule</li> <li>Multivitamin Capsule One-per-Day with 45 mg Iron</li> </ul>	2 2	0 mg 45 mg	-Iron, vitamin D, calcium, and vitamin K - Vitamin D, calcium, and vitamin K	<a href="https://www.bariatricfusion.com">https://www.bariatricfusion.com</a> Amazon
Celebrate <ul style="list-style-type: none"> <li>Bariatric Multivitamin</li> <li>ONE without Iron</li> <li>ONE 18 mg Multivitamin with Iron</li> <li>ONE 45 mg Multivitamin with Iron</li> <li>Complete 45 mg Multivitamin with Iron</li> <li>Complete 60 mg Multivitamin with Iron</li> </ul>	2 1 1 1 2 2	0 mg 0 mg 18 mg 45 mg 45 mg 60 mg	-Thiamin, vitamin D, and calcium -Iron and calcium -Iron and calcium -Calcium -Calcium -Calcium	<a href="https://www.celebratevitamins.com">https://www.celebratevitamins.com</a> Amazon and Walmart

Multivitamin Options	Servings Size per Day	Amount of Iron	Additional Supplementation Needed	Where to Purchase
BariatricPal <ul style="list-style-type: none"> <li>Multivitamin ONE Iron-Free</li> <li>Multivitamin ONE with 18 mg Iron</li> <li>Multivitamin ONE with 45 mg Iron</li> <li>Multivitamin ONE with 60 mg Iron</li> </ul>	1 1 1 1	0 mg 18 mg 45 mg 60 mg	-Iron and calcium -Iron and calcium -Calcium -Calcium	<a href="https://www.bariatricpal.com">https://www.bariatricpal.com</a> Amazon and Walmart
BariLife <ul style="list-style-type: none"> <li>Complete Bariatric Vitamin Formula</li> <li>Just One: Once Daily Multivitamin with Iron</li> </ul>	6 1	45 mg 45 mg	-None -Calcium	<a href="https://www.barilife.com">https://www.barilife.com</a> Amazon and Walmart
BariMelts The Step-Up Multivitamin	1	45 mg	-Calcium	<a href="https://www.barimelts.com">https://www.barimelts.com</a> Amazon and Walmart
BariSlim <ul style="list-style-type: none"> <li>Daily Bariatric Multivitamin</li> <li>Once Daily Bariatric Multivitamin</li> </ul>	1 1	45 mg 45 mg	-Calcium -Calcium	<a href="https://www.barislim.com">https://www.barislim.com</a> Amazon and Walmart
FitForMe <ul style="list-style-type: none"> <li>WLS Optimum Capsule</li> <li>WLS Forte Capsule</li> </ul>	1 1	28 mg 70 mg	-Thiamin, B12, iron, calcium, vitamin A, and vitamin K -Thiamin, B12, calcium, vitamin A, and vitamin K	<a href="https://usa.fitforme.com">https://usa.fitforme.com</a> Amazon
ProCare Health <ul style="list-style-type: none"> <li>Bariatric Multivitamin with 18 mg Iron</li> <li>Bariatric Multivitamin with 45 mg Iron</li> </ul>	1 1	18 mg 45 mg	-Iron and calcium -Calcium	<a href="https://www.procarenow.com">https://www.procarenow.com</a> Amazon and Walmart



Multivitamin Options	Servings Size per Day	Amount of Iron	Additional Supplementation Needed	Where to Purchase
Shiny Leaf <ul style="list-style-type: none"> <li>Bariatric Multivitamin Iron-Free</li> <li>Bariatric Multivitamin with 45 mg Iron</li> </ul>	1	0 mg	-Iron and calcium	<a href="https://www.shinyleaf.com">https://www.shinyleaf.com</a> Amazon
	1	45 mg	-Calcium	
Unjury <ul style="list-style-type: none"> <li>Opurity Multi Capsule No Iron</li> <li>Opurity Multi Capsule with 45 mg Iron</li> </ul>	2	0 mg	-Iron and calcium	<a href="https://www.unjury.com">https://www.unjury.com</a>
	2	45 mg	-Calcium	

## Chewable Calcium and Vitamin D Options

Calcium and Vitamin D Options	Serving Size	Number of Servings per Day	Amount of Calcium	Amount of Vitamin D	Where to Purchase
Bariatric Advantage <ul style="list-style-type: none"> <li>• Calcium Citrate Chewy Bites 250 mg</li> <li>• Calcium Citrate Chewy Bites 500 mg</li> </ul>	2 1	3 3	500 mg 500 mg	250 IU 500 IU	<a href="https://www.bariatricadvantage.com">https://www.bariatricadvantage.com</a> Amazon
Bariatric Fusion Bariatric Calcium Citrate Soft Chew	1	3	500 mg	200 IU	<a href="https://www.bariatricfusion.com">https://www.bariatricfusion.com</a> Amazon
BariMelts Calcium Citrate	2	3	500 mg	1,500 IU	<a href="https://www.barimelts.com">https://www.barimelts.com</a> Amazon and Walmart
BariSlim <ul style="list-style-type: none"> <li>• Calcium Citrate Chewable</li> <li>• Calcium Citrate Plus</li> </ul>	2 1 (scoop)	3 2	500 mg 600 mg	600 IU 100 IU	<a href="https://www.barislim.com">https://www.barislim.com</a> Amazon and Walmart
Caltrate <ul style="list-style-type: none"> <li>• 600 + D3 Soft Chew</li> </ul>	1	2	600 mg	800 IU	<a href="https://www.caltrate.com">https://www.caltrate.com</a> Amazon, Costco, CVA, Meijer, Rite Ade, Sam's Club, Target, Vitacost, Walgreens, and Walmart
Celebrate <ul style="list-style-type: none"> <li>• Calcium Soft Chew</li> <li>• Calcium Plus</li> <li>• Calcium Plus 300 Chewable</li> </ul>	1 3 1	3 2 3	500 mg 600 mg 500 mg	500 IU 600 IU 333 IU	<a href="https://www.celebratevitamins.com">https://www.celebratevitamins.com</a> Amazon and Walmart
FitForMe Calcium Soft Chew	1	3	500 mg	500 IU	<a href="https://usa.fitforme.com">https://usa.fitforme.com</a> Amazon
Unjury Opurity Calcium Citrate Plus Chewable	2	2	650 mg	400 IU	<a href="https://www.unjury.com">https://www.unjury.com</a>

## Capsules Calcium and Vitamin D Options

Caltrate					
<ul style="list-style-type: none"> <li>• 600 + D3</li> <li>• 600 + D3 Plus Minerals</li> <li>• 600 + D3 Minis Plus Minerals</li> </ul>	1	2	600 mg	800 IU	<a href="https://www.caltrate.com">https://www.caltrate.com</a> Amazon, Costco, CVA, Meijer, Rite Ade, Sam's Club, Target, Vitacost, Walgreens, and Walmart
	1	2	600 mg	800 IU	
	2	2	600 mg	1,600 IU	
Equate Calcium + Vitamin D	1	3	500 mg	2,000 IU	<a href="http://www.walmart.com">http://www.walmart.com</a> Amazon and Walmart
Shiny Leaf Calcium Citrate	2	2	600 mg	400 IU	<a href="https://www.shinyleaf.com">https://www.shinyleaf.com</a> Amazon

## Chewable Iron Options

Iron Options	Amount of Iron	Where to Purchase
Bariatric Advantage Iron Chewy (18 mg, 29 mg, 30 mg, or 60 mg)	18 mg, 29 mg, 30 mg, or 60 mg	<a href="https://www.bariatricadvantage.com">https://www.bariatricadvantage.com</a> Amazon
Bariatric Fusion Iron Soft Chew with Vitamin C	45 mg	<a href="https://www.bariatricfusion.com">https://www.bariatricfusion.com</a> Amazon
BariLife Iron with Vitamin C	27 mg	<a href="https://www.barilife.com">https://www.barilife.com</a> Amazon and Walmart
BariMelts Iron and Vitamin C Tablets	18 mg	<a href="https://www.barimelts.com">https://www.barimelts.com</a> Amazon and Walmart
Celebrate		<a href="https://www.celebratevitamins.com">https://www.celebratevitamins.com</a> Amazon and Walmart
<ul style="list-style-type: none"> <li>• Iron Chewable (18 mg, 30 mg, 45 mg, or 60 mg)</li> <li>• Iron Soft Chew (45 mg or 60 mg)</li> </ul>	18 mg, 30 mg, 45 mg, or 60 mg  45 mg or 60 mg	
FitForMe		<a href="https://usa.fitforme.com">https://usa.fitforme.com</a> Amazon
<ul style="list-style-type: none"> <li>• Ferro Optimum Tablets</li> <li>• Ferro Forte Tablets</li> </ul>	28 mg 70 mg	
Vita FerroStat High Potency Iron Supplement	65 mg	<a href="https://www.ferrostatmelt.com">https://www.ferrostatmelt.com</a> Amazon

### Capsule Iron Options

Iron Options	Amount of Iron	Where to Purchase
BariSlim Iron Plus	30 mg	<a href="https://www.barislim.com">https://www.barislim.com</a> Amazon and Walmart
Celebrate Iron 46 mg or 60 mg	45 mg or 60 mg	<a href="https://www.celebratevitamins.com">https://www.celebratevitamins.com</a> Amazon and Walmart

## B Vitamin Options

B Vitamin Option	Serving Size	Amount of Thiamine	Amount of Vitamin B12	Amount of Folic Acid	Where to Purchase
<b>Sublingual</b>					
Bariatric Advantage B12	1	0 mg	1,000 mcg	200 mcg	<a href="https://www.bariatricadvantage.com">https://www.bariatricadvantage.com</a> Amazon
BariMelts B12	1	0 mg	1,000 mcg	235 mcg	<a href="https://www.barimelts.com">https://www.barimelts.com</a> Amazon and Walmart
BariSlim Vitamin B12 Plus	1	0 mg	1,000 mcg	100 mcg	<a href="https://www.barislim.com">https://www.barislim.com</a> Amazon and Walmart
EZ Melts B12	1	0 mg	2,500 mcg	0 mcg	<a href="https://ezmelts.com">https://ezmelts.com</a> Amazon
Unjury Opurity Bariatric Vitamin B12 Plus Folic Acid	1	0 mg	1,000 mcg	100 mcg	<a href="https://www.unjury.com">https://www.unjury.com</a>
<b>Capsule</b>					
Bariatric Advantage					<a href="https://www.bariatricadvantage.com">https://www.bariatricadvantage.com</a> Amazon
• B50 Complex	2	50 mg	250 mcg	400 mcg	
• Thiamin	1	100 mg	0 mcg	0 mcg	
BariLife Vitamin B1	1	100 mg	0 mcg	0 mcg	<a href="https://www.barilife.com">https://www.barilife.com</a> Amazon and Walmart
Celebrate					<a href="https://www.celebratevitamins.com">https://www.celebratevitamins.com</a> Amazon and Walmart
• B50 Complex	1	50 mg	150 mcg	400 mcg	
• Thiamin	1	100 mg	0 mcg	0 mcg	
<b>Nasal</b>					
			500 mcg		Prescription
<b>Injection</b>					
			1000 mg		Prescription

# Chair Exercises For Older Adults

**Many of these exercises were adapted from these sources:**

National Institute on Aging, Exercise: A Guide from the National Institute on Aging, 2001, <http://www.nia.nih.gov/HealthInformation/Publications/ExerciseGuide/>.

Tufts University and Centers for Disease Control and Prevention, Growing Stronger: Strength Training for Older Adults, 2002, [http://www.cdc.gov/nccdphp/dnpa/physical/growing\\_stronger/growing\\_stronger.pdf](http://www.cdc.gov/nccdphp/dnpa/physical/growing_stronger/growing_stronger.pdf).

**Prepared at The University of Georgia by:**

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## Chair Exercise Outline

### Module A

Exercise	Primary Areas Targeted	Modifications	Equipment Needed
1. Sunshine arm circles	Torso and shoulders; opens ribcage	Make small circles by extending arms in front	Ball (optional)
2. Tummy twists	Sides of the waist	Soup cans or a hand weight for resistance can replace a ball	Ball (optional)
3. Hand squeeze	Grip strength; chest	--	Ball
4. Seated shin strengtheners	Shins and lower legs	Try to hold a ball on top of flexed feet	Ball (optional)
5. Back massage	Upper back and rear shoulder relaxation	--	Ball
6. Neck stretch	Neck and shoulder relaxation	Gently reach extended arm behind back	--

### Module B

Exercise	Primary Areas Targeted	Modifications	Equipment Needed
1. Ball chest press	Chest; upper back	Stand and rock the body forward and back as you do the presses	Ball (optional)
2. Front arm raises	Shoulders	Soup cans or water bottles for resistance can replace a ball	Ball (optional)
3. Inner thigh squeeze	Inner part of thighs	Change the count of the squeezes	Ball
4. Duck wing squeeze	Shoulders; chest	Without a ball, move arms in flapping motion	Ball (optional)
5. Knee extensions (CDC and NIA)	Muscles surrounding the knee	Add a long lever by lifting and lowering entire extended leg	--
6. Chest and upper back stretches (CDC)	Upper and lower back, shoulders, and chest relaxation	--	--

## Module C

Exercise	Primary Areas Targeted	Modifications	Equipment Needed
1. Chair stands (NIA)	Buttocks; front and back of legs	Try squats	Ball (optional)
2. Overhead arm extensions (NIA)	Back of arms; shoulders	Substitute seated tricep extensions	Ball (optional)
3. Elbow to knee	Stomach	Stand up to do this one	--
4. Balancing toe taps	Stomach (abdominals); hip flexors and stabilizers for balance	Lift both feet off floor and release hands from chair; without ball, stand on one foot behind the chair	Ball (optional)
5. Seated heel raises	Calves of lower legs	Try doing this exercise standing	--
6. Overhead reach with side bends	Opens entire torso; oblique abdominals	--	--

## Module D

Exercise	Primary Areas Targeted	Modifications	Equipment Needed
1. Pliés	Front of thighs; inner thighs; buttocks	Hold a ball instead of holding onto the chair, or change the count of the pliés	Ball (optional)
2. Rear leg extensions (NIA)	Buttocks; back of thighs	Change the count of the extensions	--
3. Side leg lifts (CDC and NIA)	Hips; outer thighs	Tap toes out to one side, then pull back in	--
4. Inner thigh stretch	Inner part of thighs	Hold onto back of a chair for more support	--
5. Sit and reach stretch	Calves of the lower legs and back of legs	Reach to knees or ankles depending on flexibility	--
6. Around the big wide world	Abdominals; chest; arms	--	Ball



## Module E

<b>Exercise</b>	<b>Primary Areas Targeted</b>	<b>Modifications</b>	<b>Equipment Needed</b>
1. Biceps Builders	Front of upper arms	Use a different grip to hold the band	Band or hand weights
2. Triceps Tugs	Back of the upper arms	Extend one arm at a time instead of both	Band
3. Double Arm Rows	Upper back and rear shoulders	--	Band or hand weights
4. Lat Pull Downs	Upper back	Adjust tension of band (loosen or tighten)	Band
5. Push Open the Door	Chest and triceps	--	Band
6. Bear Hugs	Chest	--	Band
7. Seated Spinal Rotation	Back and torso	Reach arms behind chair for bonus stretch	--
8. Hamstring Stretch	Back of upper legs	--	--

## **Exercise Module A**

Module A is the first of four groups of exercises that contains several fun and easy-to-learn movements designed to help you feel comfortable with chair exercises, and with using a ball as an exercise tool.

The exercises in this module benefit our bodies in many ways:

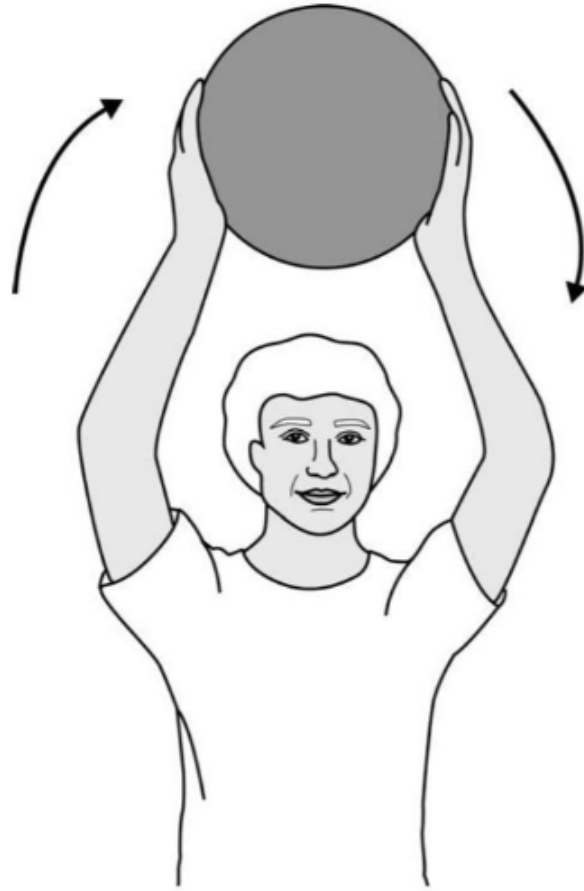
1. Sunshine arm circles: open torso and ribcage
2. Tummy twists: strengthen sides of the waist (oblique abdominals)
3. Hand squeeze: improves grip strength and strengthens the chest muscles (pectorals)
4. Seated shin strengtheners: strengthen the shins to help prevent shin splints
5. Back massage: promotes back and shoulder relaxation
6. Neck stretch: helps relieve neck tension

Begin this module with a light warm-up, about 5 minutes in length, to prepare the muscles and joints, and to help focus your attention.

Perform the suggested warm-up movements listed below:

- Marches in place with shoulder rolls
- Walking in a circle around the room
- Hamstring curls in place (alternately pulling heels up toward buttocks, also called knee flexion)
- Tapping the toes to warm up the lower legs
- Knee lifts to warm up the hips and upper legs
- Light stretches

## Sunshine Arm Circles

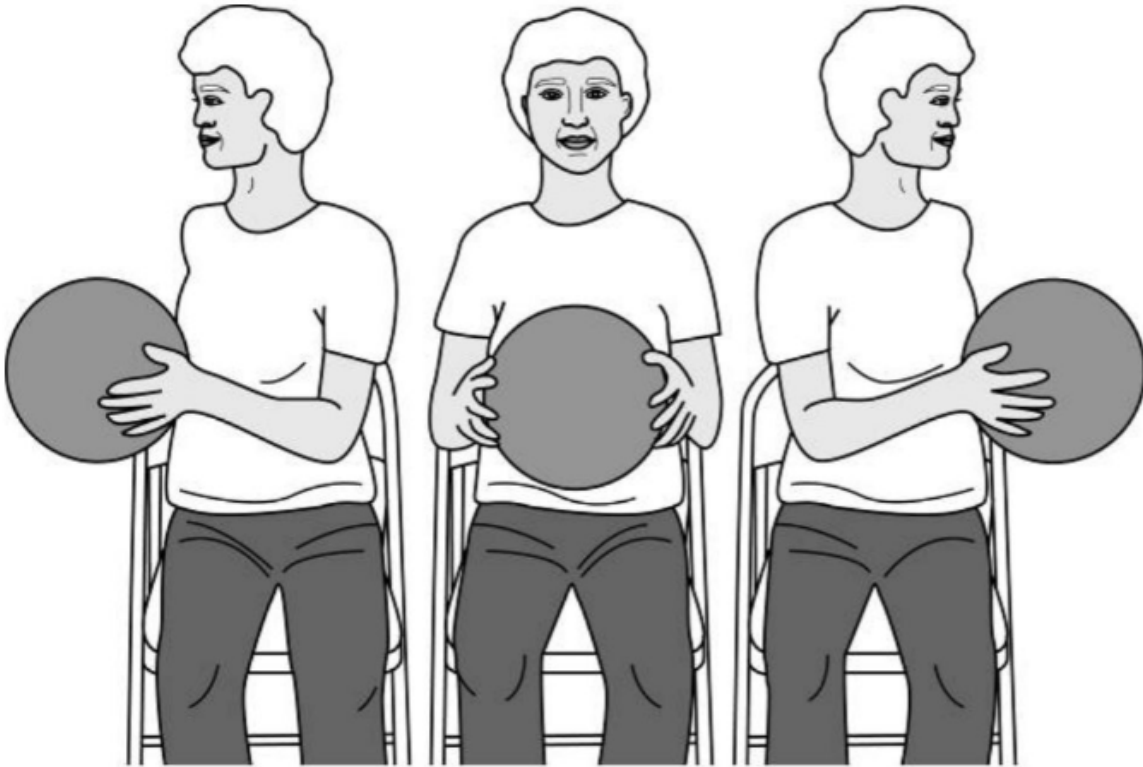


Seated in a chair with good posture, hold a ball in both hands with arms extended above your head and/or in front of you, keeping elbows slightly bent. Visualizing the face of a clock out in front of you, begin by holding arms up overhead at 12 o'clock. Circle the ball around to go all the way around the clock in a controlled, fluid motion.

When you've reached 12 o'clock again, reverse directions and circle the opposite way. Keep alternating circle directions for 8 repetitions. Rest. Do another set of 8 repetitions.

**Modification:** A ball is not required for this exercise. Imagine that you are holding a ball while performing the motion. If it is difficult to bring your arms overhead, extend them out in front of you and move arms as if drawing a circle on the wall with or without the ball.

## Tummy Twists



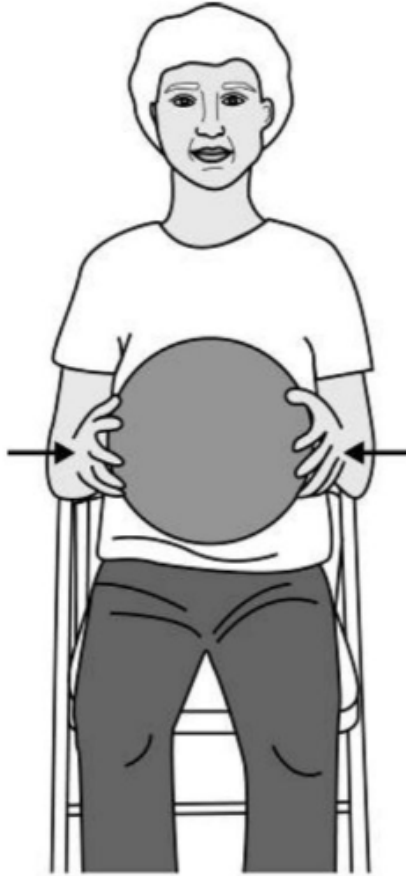
Seated in a chair with good posture, hold a ball with both hands close to the body, with elbows bent and pulled in close to the ribcage.

Slowly rotate your torso to the right as far as you comfortably can, being sure to keep the rest of your body still and stable. Rotate back to the center and repeat in the opposite direction. Do this 8 times, with two twists counting as a full set.

Rest. Do another 8 sets (two twists each).

**Modification:** A ball is not required for this exercise. Imagine you are holding a ball while performing the motion, or hold a small object such as a can of soup or water bottle to add resistance.

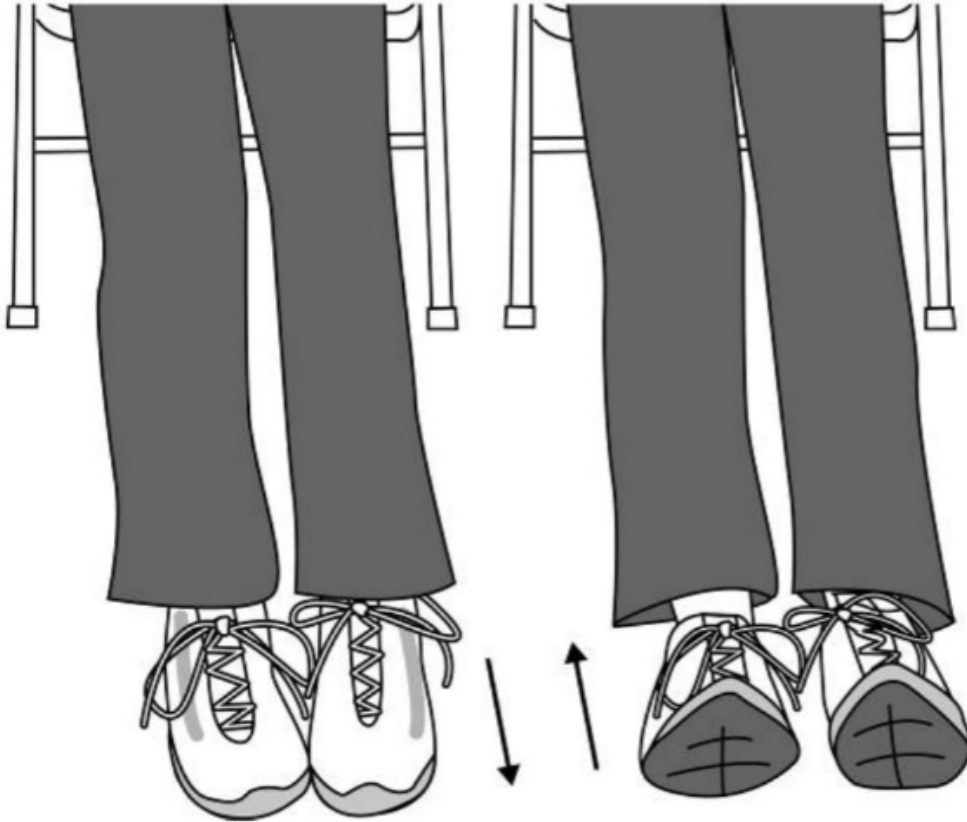
# Hand Squeeze



Seated in a chair with good posture, hold a ball with both hands slightly in front of your body. Squeeze the ball to activate the finger joints, then slowly press the ball with both hands, as if trying to deflate the ball. Hold for 4 seconds and slowly release.

Repeat the exercise 8 times, rest, then do another set of 8 repetitions.

## Seated Shin Strengthenener



Sitting on the edge of a chair, extend your legs out in front of you, keeping your knees slightly bent and placing your heels on the floor, toes pointed upward.

Point the toes downward, then flex them upward.

Do 10 to 15 sets of point and flex. Rest. Do another set of 10 to 15 repetitions.

**Modification:** Sitting in the same position as above, flex the toes and place the ball on top of your shoelaces. Try to hold the ball with flexed toes in that position for about 10 seconds, or as long as you can. Repeat 1 to 2 times, resting for a few seconds between each exertion.



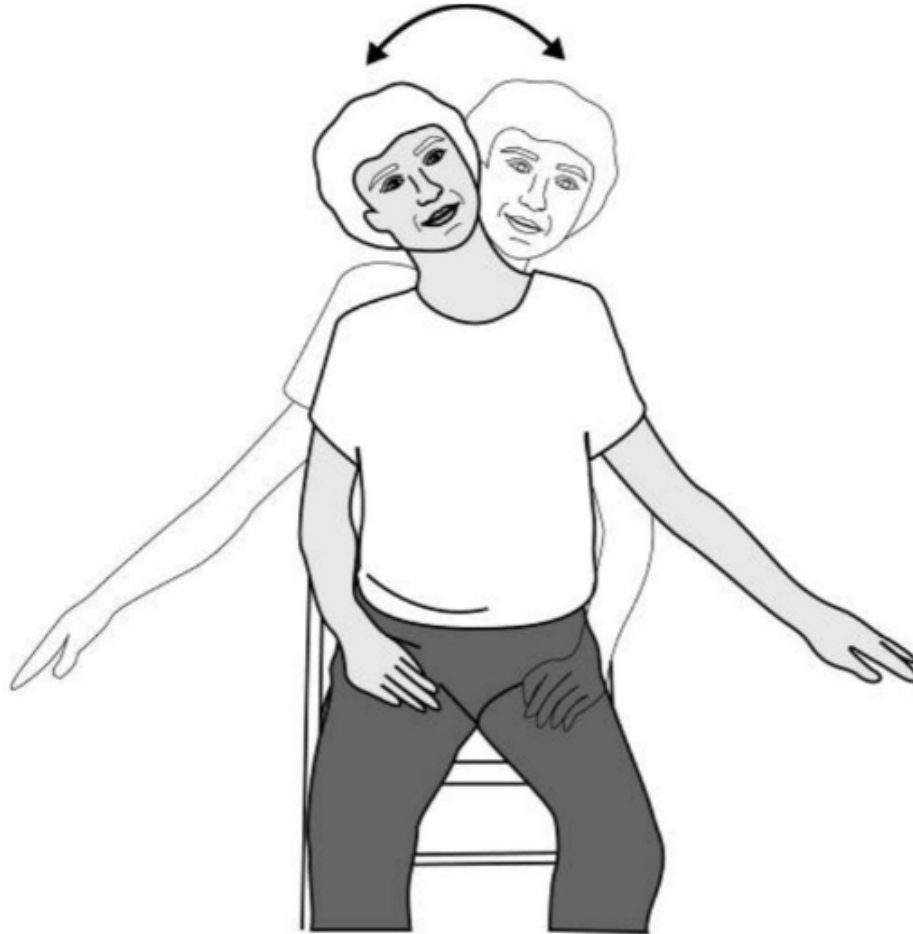
# Back Massage



Seated in a chair with good posture, place a ball behind you and lean against it with your upper back to hold the ball up between you and the chair.

Rotate your torso side to side and bend up and down to give yourself a relaxing massage.

## Neck Stretch



Seated in a chair with good posture, slowly tilt your head toward your right shoulder. Hold the head in this position, and extend your left arm out to the side and slightly downward so that your hand is at waist level. Release and repeat on the left side. Do 2 times for each side.

**Modification:** For a deeper stretch, gently pull the extended arm behind your back.



## **Exercise Module B**

Module B is the second of four groups of exercises that is slightly more challenging than module A. It includes fun exercises that use a ball to strengthen a variety of muscles groups.

The exercises in this module benefit our bodies in many ways:

1. Ball chest press: strengthens the chest muscles (pectorals)
2. Front arm raises: strengthen the shoulders (deltoids)
3. Inner thigh squeeze: strengthens the inner part of the thighs (adductors)
4. Duck wing squeeze: strengthens the chest muscles (pectorals) and arms
5. Knee extensions: strengthen the muscles surrounding the knees for healthy joints and legs
6. Chest and upper back stretches: promote flexibility and relaxation through the chest and upper back

Begin this module with a light warm-up, about 5 minutes in length, to prepare the muscles and joints, and to help focus your attention. Perform the suggested warm-up movements listed below:

- Marches in place, while extending arms out to the sides at shoulder level and circling the arms
- Low alternating front kicks with the legs, while pressing the arms forward and back
- Marching in a circle around the room, pumping the arms
- Light stretches

## Ball Chest Press



Seated in a chair with good posture, hold a ball with both hands at chest level, palms facing toward each other and elbows bent. Avoid bending forward by keeping your shoulders back at all times. Squeeze the ball slightly as you push the ball away from you in a fluid motion, taking about 2 seconds to extend the arms. Squeeze your shoulder blades together as you pull the ball back toward your chest.

Repeat the push and pull motion 10 to 15 times. Rest. Do another set of 10 to 15 repetitions.

**Modification:** For a greater challenge, add a Tai Chi feel by standing with one leg slightly in front of the other (with a chair nearby if needed for extra balance) and slowly rocking the entire body forward and back as you push the ball away and pull back in.

## Front Arm Raises

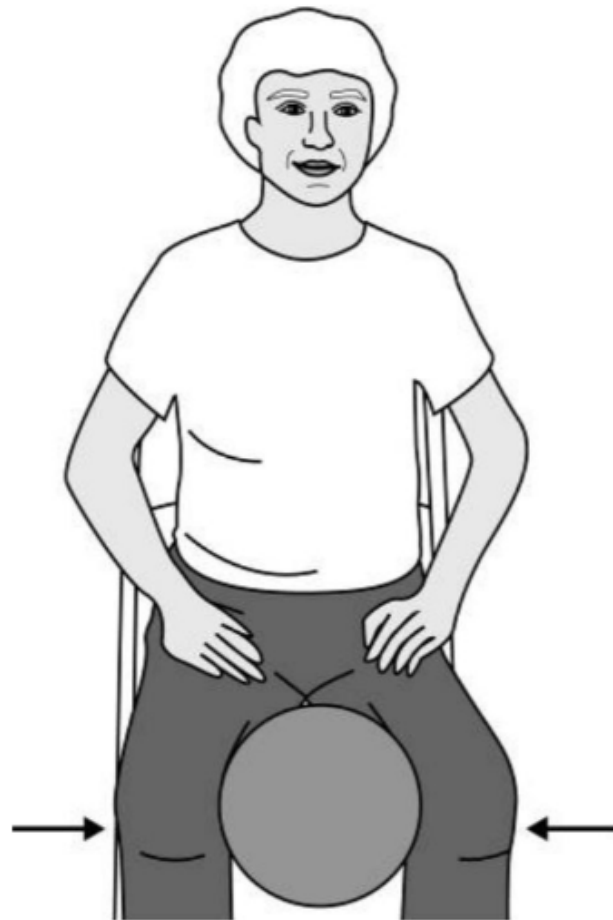


In a seated position with good posture, hold a ball in both hands with palms facing each other. Extend the arms out in front of your body, keeping your elbows slightly bent. Starting with the ball lowered toward the knees, slowly raise your arms to lift the ball up to shoulder level (no higher), then lower the ball back to the starting position, taking about 2 to 3 seconds to lift and lower.

Repeat 10 to 15 times. Rest. Do another set of 10 to 15 repetitions.

**Modification:** A ball is not required for this exercise. Imagine you are holding a ball as you perform the motion, or hold a small object, such as a can of soup or water bottle for added resistance.

# Inner Thigh Squeezes



Sitting toward the edge of a chair with good posture and knees bent, place a ball in between your knees; press the knees together to squeeze the ball, taking about 1 to 2 seconds to squeeze. You should feel the resistance in your inner thighs. Slowly release, keeping slight tension on the ball so that it does not fall.

Repeat 8 to 10 times. Rest. Do another set of 8 to 10 repetitions.

**Modification:** For a greater challenge, change the count of the squeezes by squeezing the ball and holding for 5 seconds, then releasing again. Or, do short, quick pulsing squeezes.

# Duck Wing Squeeze



In a seated position with good posture, place a ball underneath your right arm in the armpit region so that it does not fall. Squeeze the upper arm and elbow onto the ball like a duck folding its wing, feeling the chest and arm muscles tighten as you squeeze. Do not bend at the waist. Release and repeat 8 to 10 times.

Switch to the opposite side and perform 8 to 10 repetitions. Rest briefly. Do another set of 8 to 10 repetitions on each side.

**Modification:** A ball is not required for this exercise. Keeping arms in the same position as above, move your arms in a controlled flapping motion, like wings.



# Knee Extensions



Sitting toward the edge of a chair with good posture and bent knees, hold on to the sides of the chair with your hands. Extend the right knee out so that the toes come up toward the ceiling, being sure to keep the knee slightly bent without locking it through the entire movement. Lower the leg back to a bent position and repeat this movement 8 to 10 times, using about 2 seconds each to lift and lower the leg.

Switch to the opposite leg and perform 8 to 10 repetitions. Rest briefly. Do another set of 8 to 10 repetitions for each leg.

**Modification:** If you are more advanced, sitting in the same position as above, extend one leg out in front of you with toes pointed to the ceiling. Lift and lower the entire leg only as high as you comfortably can, keeping the knee slightly bent. The longer lever adds difficulty to the exercise.

# Chest and Upper Back Stretch



In a seated position with good posture and shoulders back and down away from the ears, extend your arms out in front of you at shoulder height. Interlace the fingers or grasp one hand with the other, and press out as you round the upper back and shoulders forward, feeling the upper back fan out. Hold for 10 seconds and release.

For the shoulders, pull extended arms back behind you and interlace the fingers or grasp one hand with the other, keeping your hands down toward the buttocks. Feel the chest and shoulders open up as you pull your shoulders back. Hold for 10 seconds and release.

Repeat the upper back and chest stretches.

## **Exercise Module C**

Module C is the third of four groups of exercises. This module uses the ball for several of the movements, however, it is not required. The exercises can be modified as needed to accommodate different ability levels.

These exercises in this module benefit our bodies in many ways:

1. Chair stands: strengthen the legs (quadriceps and hamstrings) and buttocks (gluteals)
2. Overhead arm extensions: strengthen the back of the arms (triceps)
3. Elbow to knee: strengthens muscles around the waistline (oblique abdominals)
4. Balancing toe taps: improves balance by strengthening stabilizer muscles and stomach (abdominals) and improving body awareness
5. Seated heel raises: strengthen the calves of the lower legs (gastrocnemius)
6. Overhead reach with side bends: opens torso and ribcage to improve flexibility and promote relaxation

Begin this module with a light warm-up, about 5 minutes in length, to prepare the muscles and joints, and to help focus your attention.

Perform the suggested warm-up movements listed below:

- Marches in place, with overhead reaches with the arms
- Knee lifts with bicep curls
- Step touches, also called side steps, with arms swinging in a controlled motion side to side
- Walking in a circle around the room
- Light stretches



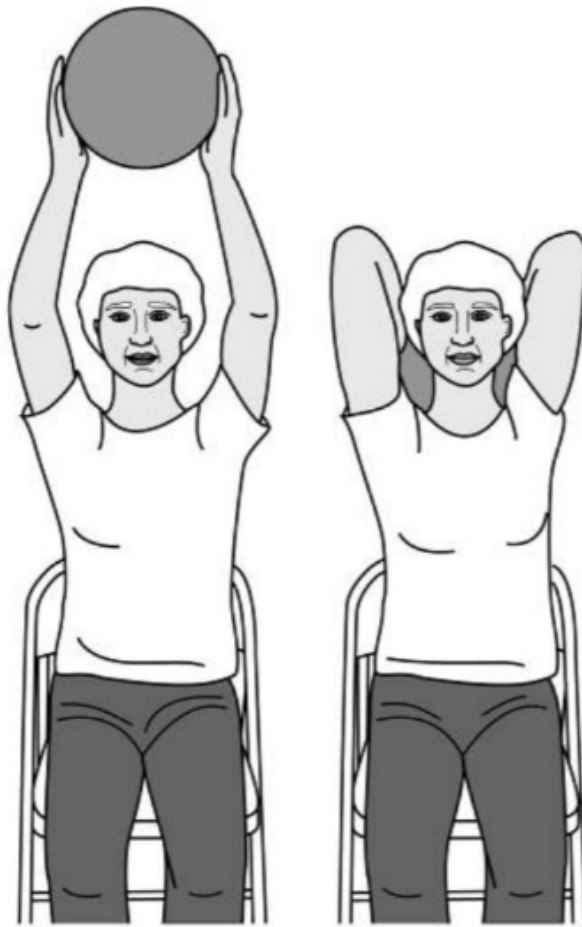
# Chair Stands



In a seated position with good posture and feet flat on the floor, cross your arms over your chest or hold a ball with both hands at chest level. Keeping your weight on your heels, stand up, using your hands as little as possible or not at all. As you bend slightly forward to stand up, keep your back and shoulders straight. Take at least 3 seconds to sit back down. Repeat 8 to 15 times or as many as you can comfortably do with good form. Rest. Do another set of 8 repetitions.

**Modification:** If you are more advanced, try doing squats. Beginning in a standing position with back facing the seat of a chair, slowly bend the knees to lower down toward the seat of the chair. Stick out the buttocks so that your knees do not jut beyond your toes. Just before your buttocks get to the seat of the chair, stand back up to the starting position in a fluid motion, squeezing your buttocks and putting all the weight in your heels as you push back up.

# Overhead Arm Extensions



Seated in a chair with good posture, hold a ball with both hands and raise it up over your head, with arms extended without locking the elbows. Keeping the elbows pulled in toward the head, slowly bend the elbows to lower the ball down along the back of the neck, using about 2 seconds to go down, then 2 seconds to push the ball back up over your head.

Repeat 8 to 10 times. Rest. Do another set of 8 to 10 repetitions.

**Modification:** Try seated tricep extensions (ball not required for this modification). Bending slightly forward with elbows tucked into your sides, slowly extend the elbows so that your forearms go back behind you, keeping the elbows pulled up and in for the entire movement. Return to the starting position and repeat. Hold soup cans or small weights for added resistance.

## Elbow to Knee



Seated toward the edge of a chair with good posture and knees bent, start with your right arm extended up overhead. Slowly lift the left knee up as you lower your right elbow down toward your left knee, taking about 2 seconds to lower down. Try not to bend over at the waist. Release and go back to the starting position. Repeat 8 to 10 times.

Switch sides and do 8 to 10 repetitions, pulling one elbow to the opposite knee. Rest. Do another set of 8 to 10 repetitions on each side.

**Modification:** Try this (with a chair nearby for balance) exercise in a standing position for an increased range of motion.

## Balancing Toe Taps

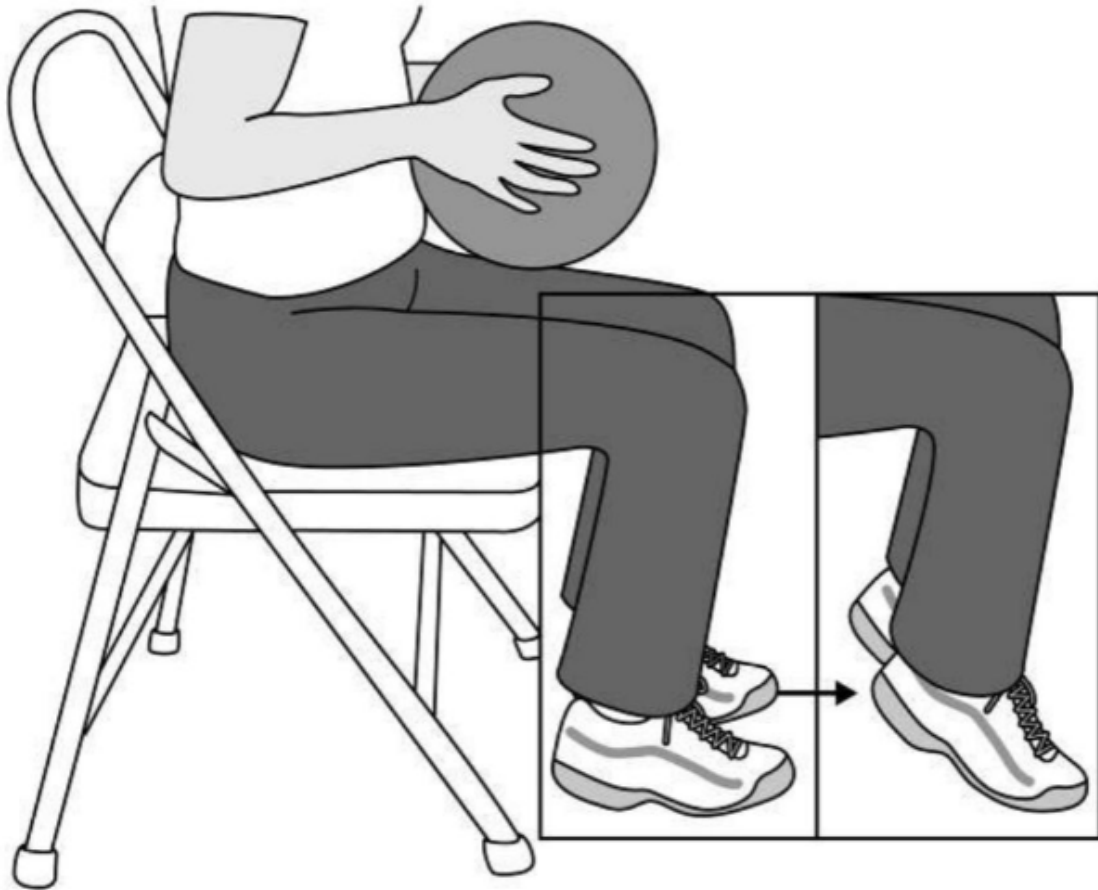


In a seated position with good posture and knees bent, take a ball and place it on the floor near your feet. Holding onto the chair for balance as needed, place your right foot on top of the ball, trying to balance your weight as you do this. The left foot that is not on the ball can remain on the floor or can be lifted up off the floor if you feel stable enough. Hold for 3 to 4 seconds.

Switch feet and repeat with the opposite foot. Keep alternating feet on the ball for 8 to 10 repetitions. Rest. Do another set of 8 to 10 repetitions.

**Modification:** A ball is not required for this exercise. Try standing on one foot while holding the back of a chair (balance without holding as you progress).

# Heel Raises



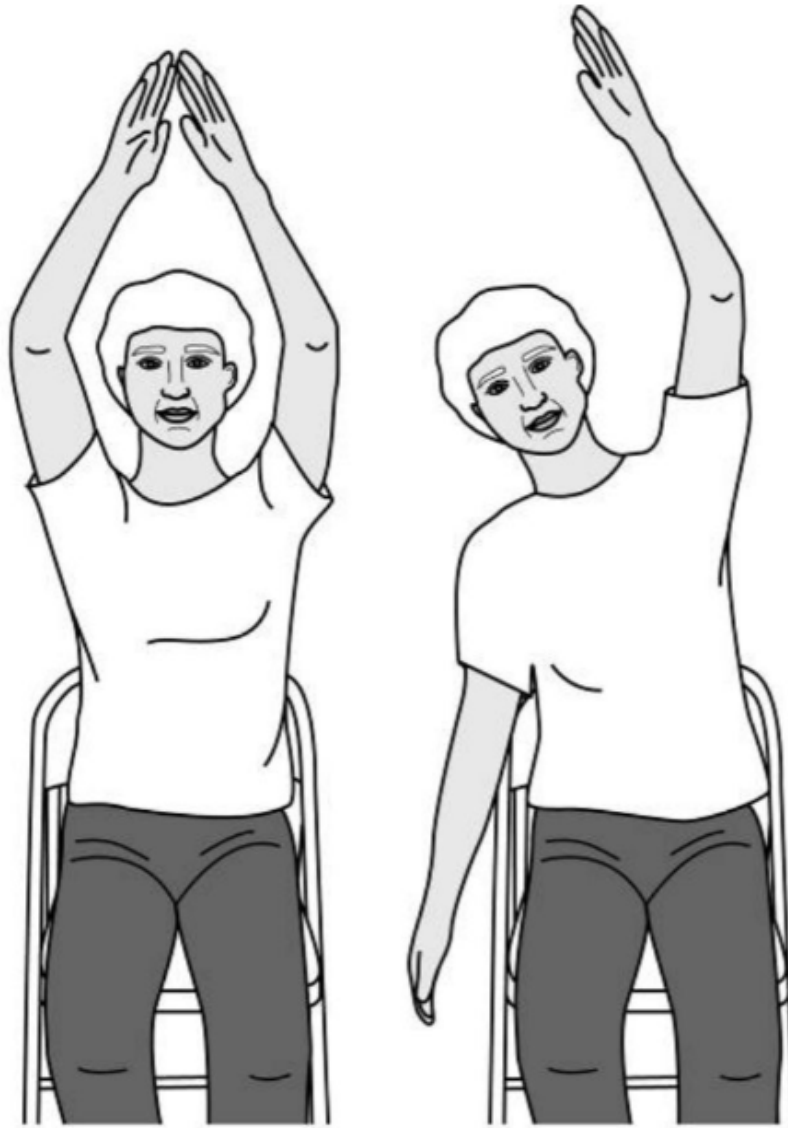
Seated toward the edge of a chair with good posture and knees bent, place feet flat on the floor. Raise heels up off the floor, coming up onto the balls of the feet. Hold for 1 second, then release.

Do 2 sets of 10 to 15 repetitions each, resting briefly between sets.

**Modification:** If you are more advanced, stand behind a chair and hold on lightly for balance. Come up to the balls of your feet to lift the heels up off the floor. Release and repeat as described above.



## Overhead Reach with Side Bends



Seated in a chair with good posture, reach your arms up overhead. Hold for 10 seconds. Allow your right arm to relax down by your side (can rest hand on chair seat) while your left arm stays up overhead. Slowly lean to the right and reach your left arm over your head to the right. Hold for 8 to 10 seconds. Come back up to the center position, pulling both arms overhead again. Repeat by bending to the opposite side, relaxing the left arm to the side this time. Do another set.

## **Exercise Module D**

Module D is the final group of exercises. Most of the exercises begin in a standing position, using the back of a chair for balance. The exercises help to strengthen and tone the muscles and fight stiffness.

The exercises in this module benefit our bodies in many ways:

1. Pliés: strengthen the front and inner parts of the thighs (quadriceps and adductors) and the buttocks (gluteals)
2. Rear leg extensions: strengthen the back of the thighs (hamstrings) and buttocks (gluteals)
3. Side leg lifts: strengthen the outer thighs (abductors) and hips
4. Inner thigh stretch: lengthens the muscles of the inner thighs (adductors) to promote flexibility and alleviate stiffness
5. Sit and reach stretch: promotes flexibility in the legs and alleviates stiffness
6. Around the big wide world: promotes flexibility in the arms and shoulders and improves body awareness

Begin this module with a light warm-up, about 5 minutes in length, to prepare the muscles and joints, and to help focus your attention. Perform the suggested warm-up movements listed below

- Marches in place, punching the arms out in front alternately
- Hamstring curls in place (alternately pulling heels up toward buttocks, also called knee flexion)
- Tapping the toes to warm the lower legs
- Walking in a circle around the room, while pumping the arms
- Light stretches

## Pliés



Holding the back of a chair, stand with legs a little wider than shoulder width apart, and toes pointed outward slightly toward the corners of the room. Bend your knees to lower yourself straight down, using about 2 seconds to do this. Make sure that your legs are wide enough apart that your knees do not jut beyond the toes when you go down. Return to the starting position by pushing through your heels as you come back up.

Perform the pliés 8 times. Rest. Do another set of 8 repetitions or as many as you can comfortably do while maintaining good form.

**Modification:** For an added challenge, do not hold onto a chair. Try holding a ball in your hands instead. Or, change the count of the exercise by lowering down and holding for several seconds or doing short, pulsing pliés.



# Rear Leg Extensions



Begin by standing behind a chair with the right leg slightly in front of the left, holding on to the back of the chair for balance. Keeping your back straight and leaning slightly forward, lift the left foot a few inches off the floor or as high as you comfortably can, squeezing the buttocks as you do this. Do not arch your back. Lower the leg back down and repeat the movement 8 to 10 times.

Switch sides to work the other leg. Rest briefly. Do another set of 8 to 10 repetitions for each leg.

**Modification:** For an extra challenge, change the count of the movement. Lift the leg and hold for 5 seconds, or do short, quick pulse lifts for 5 seconds.

## Side Leg Lifts



Begin by holding onto the back of a chair as needed, standing with feet slightly apart. Take 2 to 3 seconds to lift your right leg 6 to 12 inches out to the side, keeping the knee and toes pointed forward. Hold the position for 1 second. Take 2 to 3 seconds to lower your leg back to the starting position. Perform 8 to 15 lifts. Switch to the opposite leg. Do another set of 8 to 15 repetitions for each leg.

**Modification:** For a less advanced version, tap the toe out to the side and pull back in, rather than lifting and lowering the leg. For a more advanced version, change the count of the movement by lifting the leg and holding for 5 seconds or lifting and pulsing the leg and releasing back down.

# Inner Thigh Stretch

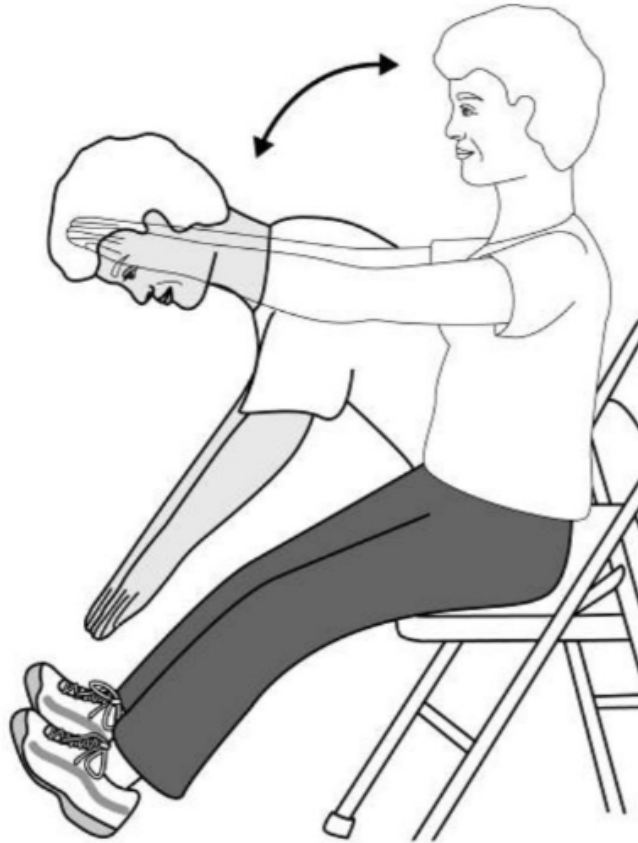


Begin in a standing position and take feet greater than hip distance apart with toes pointing slightly outward to the corners of the room. Slowly lean to the right side by bending the right knee, keeping your left leg straight. Rest your hands on your right leg for support. Make sure the bent knee does not jut beyond your toes. Feel the inner thigh of your left leg lengthen as you hold the stretch for 10 seconds. Slowly come back up to the starting position and repeat on the left side, keeping the right leg straight and bending the left knee this time.

Come back to center and repeat the stretch on both sides.

**Modification:** Hold onto the back of a chair for more support.

## Sit and Reach

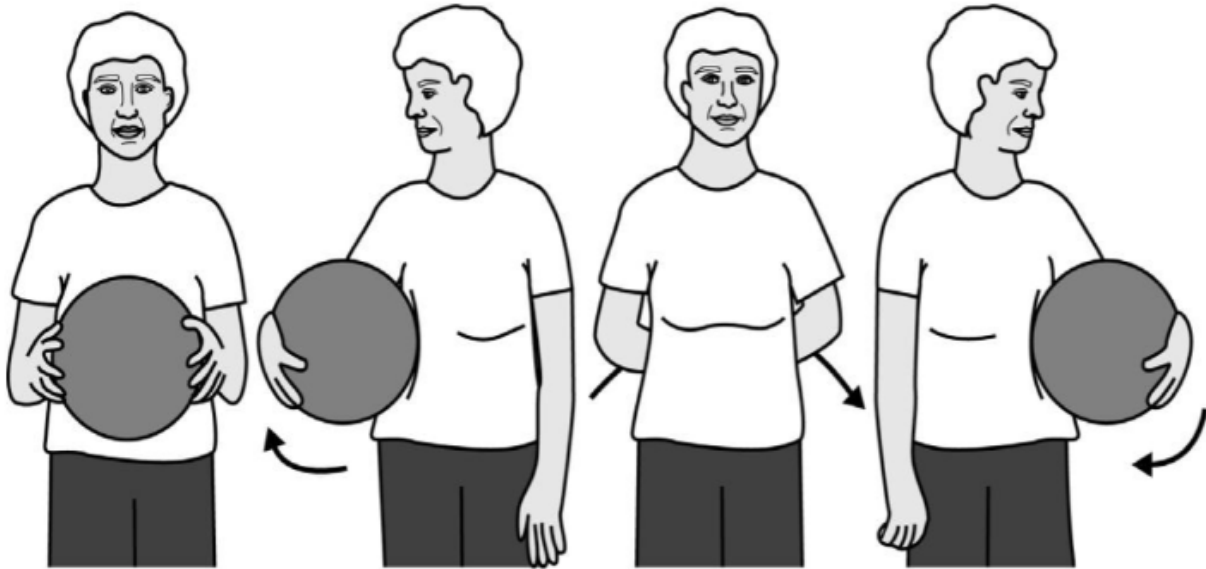


Seated toward the edge of a chair, extend your legs out in front of you, keeping the knees slightly bent. With heels on the floor and toes pointed up toward the ceiling, extend your arms out in front of you and try to reach down toward your toes. Hinge at the hips to do this, keeping your back straight. Gently ease into the stretch, going only as far as you comfortably can. Avoid bouncing. Hold the stretch for about 10 seconds. Come back up to the starting position.

Repeat the stretch 1 to 2 more times.

**Modification:** Depending on your flexibility, you may only be able to go to your knees or shins. If you are very flexible, you may be able to reach your fingers out past your toes.

## Around the Big Wide World



Starting in a seated or standing position with good posture, hold a ball with both hands at your stomach. Keeping the ball in contact with your body the entire time, move the ball around your waist, over your abdominals and lower back. Try to hold in your stomach without holding your breath as you do this exercise. Repeat 8 to 10 times. Switch directions, circling the ball around your waist 8 to 10 times.



## **Exercise Module E**

Module E uses resistance bands in many of the exercises to promote muscle strength gains. The exercises are performed seated in a chair and focus on the major muscles of the upper body.

The exercises in this module benefit our bodies in many ways:

1. **Biceps Builders:** Strengthen the front of the upper arms; these are the muscles that we use for many everyday tasks, such as lifting grocery bags and other objects.
2. **Triceps Tugs:** This exercise targets the back of the arms. The triceps are less frequently used for everyday tasks, so targeted exercises can help to keep them firm and strong. The triceps work with the biceps muscles to extend the arms.
3. **Double Arm Rows:** This tried and true exercise is great to keep the muscles of the upper back (rhomboids, latissimus dorsi) and rear shoulders (deltoids) strong. The pulling motion, as if starting a lawn mower, targets these muscle groups.
4. **Lat Pull Downs:** This exercise simulates what you might do on a machine at a gym. The downward pulling motion targets the large muscles of the back, the latissimus dorsi.
5. **Push Open the Door:** This exercise targets the chest (pectoral) muscles, with the triceps assisting the movement.
6. **Bear Hugs:** Traditionally called chest flies, this exercise is great for strengthening and toning the chest (pectoral) muscles.
7. **Seated Spinal Rotation:** This exercise helps to keep the back and torso flexible for greater mobility.
8. **Hamstring Stretch:** This stretch elongates the hamstring muscles, located at the back of the thighs. These muscles are important to keep flexible so that they do not tug on the lower back.

Begin this module with a light warm-up, about 5 minutes in length, to prepare the muscles and joints, and to help focus your attention. Perform the suggested warm-up movements listed below:

- Marches in place, punching the arms out in front alternately
- Hamstring curls in place (alternately pulling heels up toward buttocks, also called knee flexion)
- Alternate knee lifts, while pushing the arms up overhead
- Light stretches

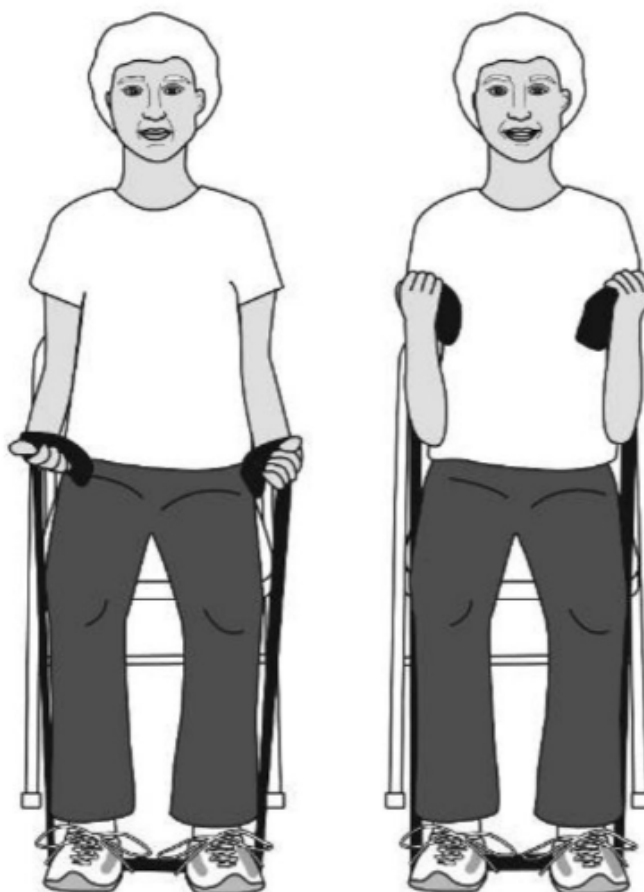
## Tips for Resistance Bands



Here are some general pointers that can help you to get the most out of your muscle conditioning exercises using resistance bands:

- Remember to keep good posture and alignment whenever you exercise.
- You may want to begin by trying the exercise motions without resistance so that you can master proper form and technique before progressing.
- Check your band for signs of wear or fraying before use to avoid snapping and possible injury.
- Make sure the band is secure (i.e., in your hands, under your feet, behind a chair) to prevent snapping or getting hit by the band.
- Bands come in different resistance levels depending on desired difficulty level, so choose a band with a tension you feel comfortable with. It should be easy enough that you can keep your motions fluid and have good form, but not so easy that your muscles do not feel challenged.
  - 8 to 12 repetitions is usually a set. The exercise should be hard enough that the muscle approaches exhaustion by the last repetition, but not so hard that you cannot complete a set.
- Keep control – avoid letting the band snap or jerk; remember that you're in control of the band, not vice versa.
- Keep constant tension – keep slight tension on the band so that it doesn't sag in between muscle contractions. This keeps your muscles in a working zone.
- Avoid wrapping the band tightly around the hands and cutting off circulation.
- Adjust the band length for each exercise to get the proper tension for your strength. For example, for the stronger, larger muscles of the upper back, you may need to hold the band in closer for greater tension than for smaller muscle groups that can't handle as much resistance, such as the triceps. A practice repetition can help you to find the right length.
- Remember the principle of progressive overload. As your strength and form improve, increase to a higher tension band or fold the band over itself to up the resistance challenge. Progression is needed for continued improvements.
- For many of the exercises, hand weights may be substituted for those who find the bands uncomfortable or prefer not to use them.

## Biceps Builders (Curls)

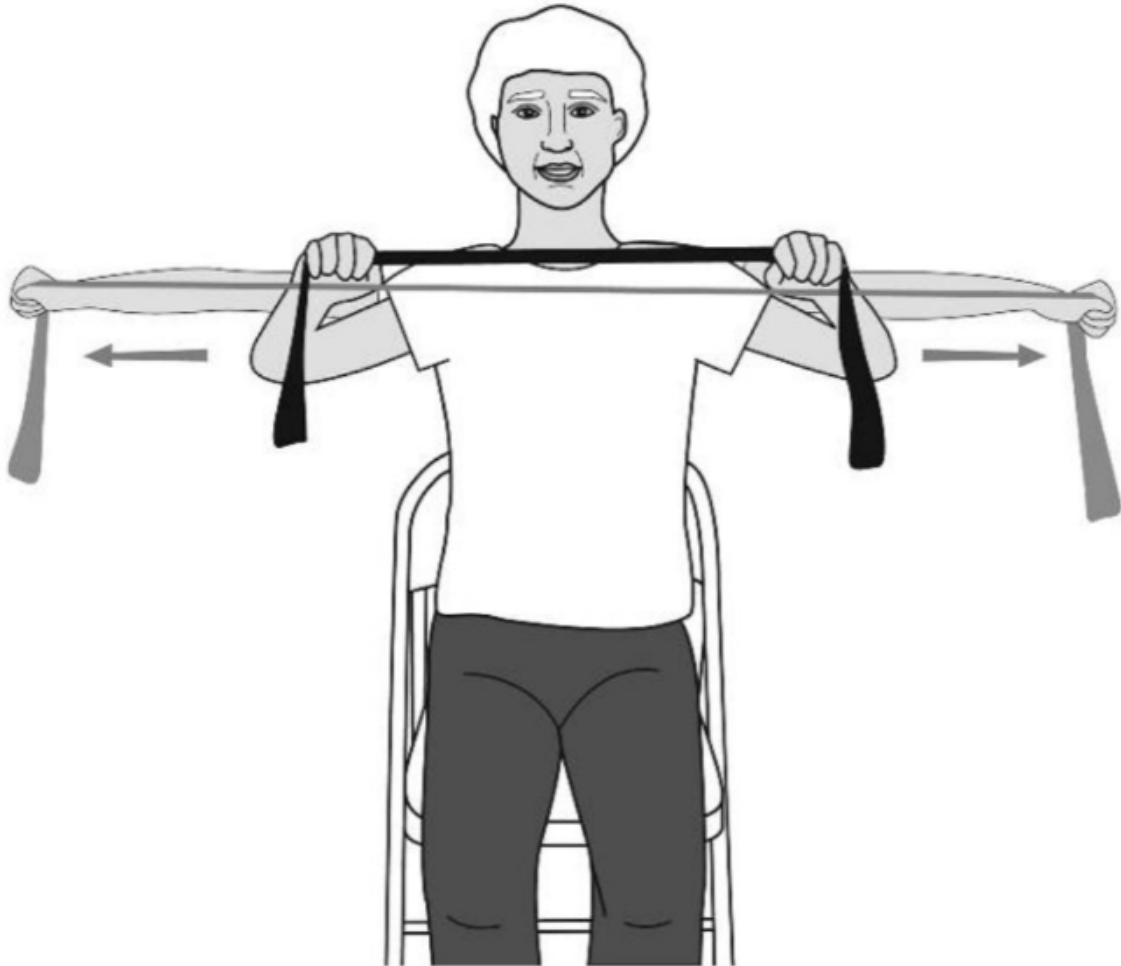


Have the back of a chair secure against a table or other firm surface so that it does not slide. Sit toward the edge of chair with good posture, and place the center of the band securely underneath the feet. Hold on to the band with an underhand grip so that the band has slight tension. Start with elbows bent at about a 90-degree angle, keeping them tucked in close to the sides of the body. Slowly (using about 2 counts) pull the ends of the band up with control, bringing your hands almost to the shoulders but not touching them. Be sure to keep the elbows close into the body as you stretch the band up. Hold for about 1 second, then slowly lower the band back down to the starting position, being careful not to let the band jerk back down. Perform 8-12 repetitions for a set. Rest. Do another set.

**Modification:** For variety, use a hammer grip to target the biceps in a slightly different way. Hold the band so that the palms of both hands face into one another, fists pointed down. From there, complete the exercise as described above.



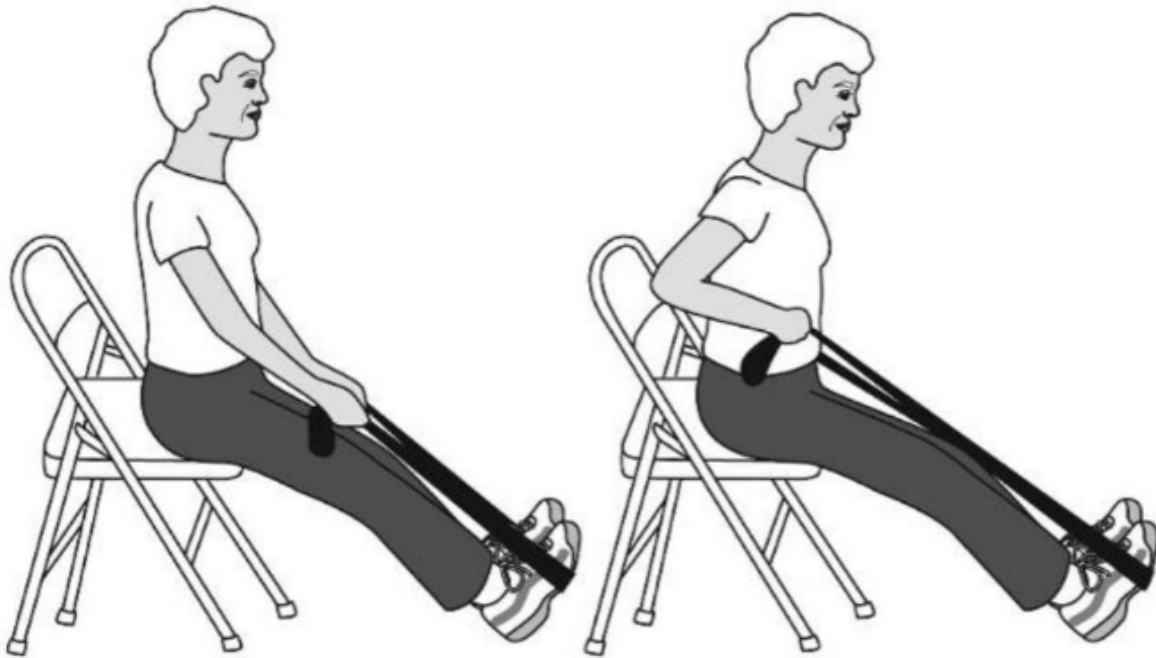
## Triceps Tugs (Extensions)



Seated in a chair with good posture, start with elbows bent at about shoulder height; keep shoulders back and down away from your ears. Hold the band so that equal lengths hang from each side and the band is straight in the center. Slowly stretch the band as you extend the arms out to the sides. Try to keep the elbows and upper arms stable to isolate the triceps. Slowly bend the elbows to bring the band back to the starting position. Be sure to keep your wrists strong and straight. Complete 8-12 repetitions for one set. Rest. Do another set.

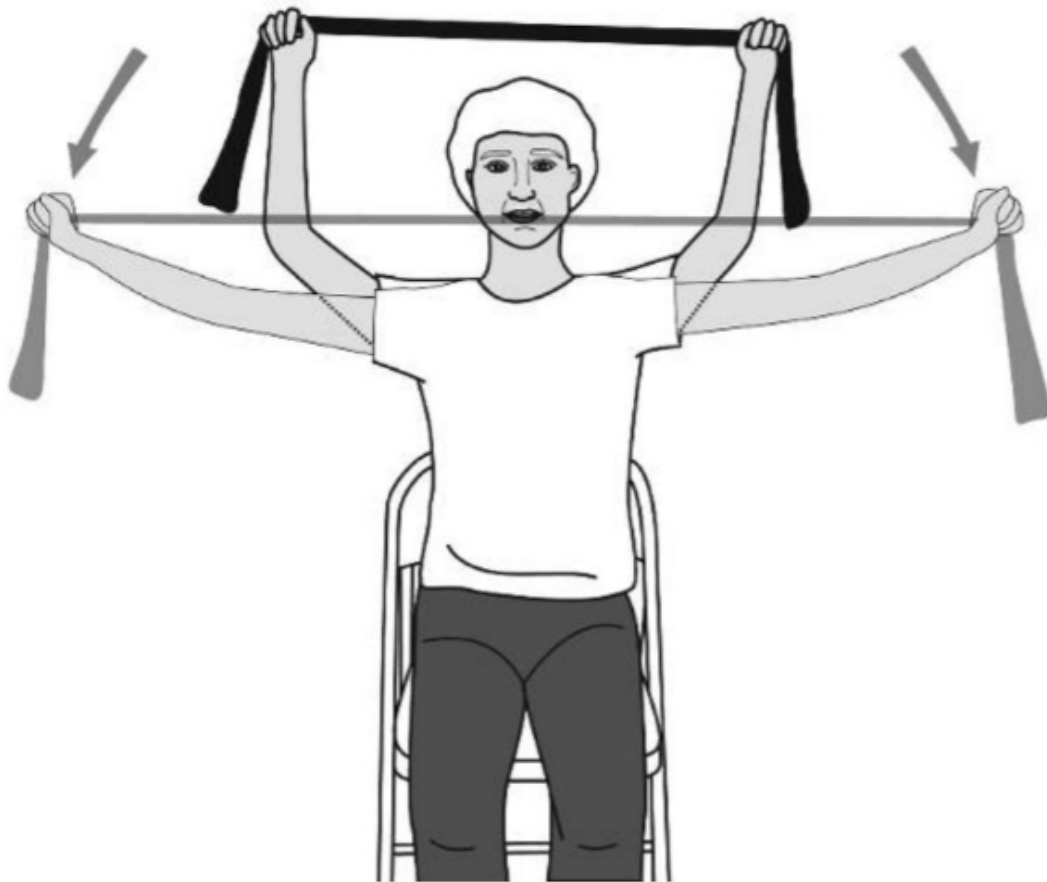
**Modification:** For an easier option, try extending just one arm at the time.

## Double Arms Rows



Position the back of a chair securely against a table or other firm surface so that it does not slide. Sit toward the edge of the chair with legs extended and heels on the floor so that the toes point up toward the ceiling. Wrap the center of the band around the balls of the feet so that you have equal lengths of band on each side to pull on. Start by holding the band so that there is slight tension, being sure to keep your wrists straight. Keeping the back straight and the shoulders back and down away from your ears, slowly pull the ends of the band toward your navel. Avoid rounding the back or dropping the neck – keep the spine and neck in neutral alignment. Squeeze the shoulder blades together, being sure to keep the elbows tucked in close to the sides of your body as if trying to hold an envelope under your armpit. Slowly lower the band back down to the starting position, always keeping slight tension on the band. Complete 8-12 repetitions for one set. Rest. Do another set.

## Lat Pull Downs



Seated in a chair with good posture, start by holding the band in your hands so that equal lengths hang down. Hold the band with enough tension that it stays straight and you don't have a "banana" in the middle. Raise the band up overhead so that it is slightly in front (not directly over your head) and you can see it out of the corner of your eye. Slowly stretch the band apart as you pull your arms down to about shoulder height. Keep your wrists strong and straight. You may need to do a practice repetition to see if the tension of the band is at a comfortable level that challenges your back muscles. Repeat the exercise for a set of 8-12 repetitions. Rest. Do another set.

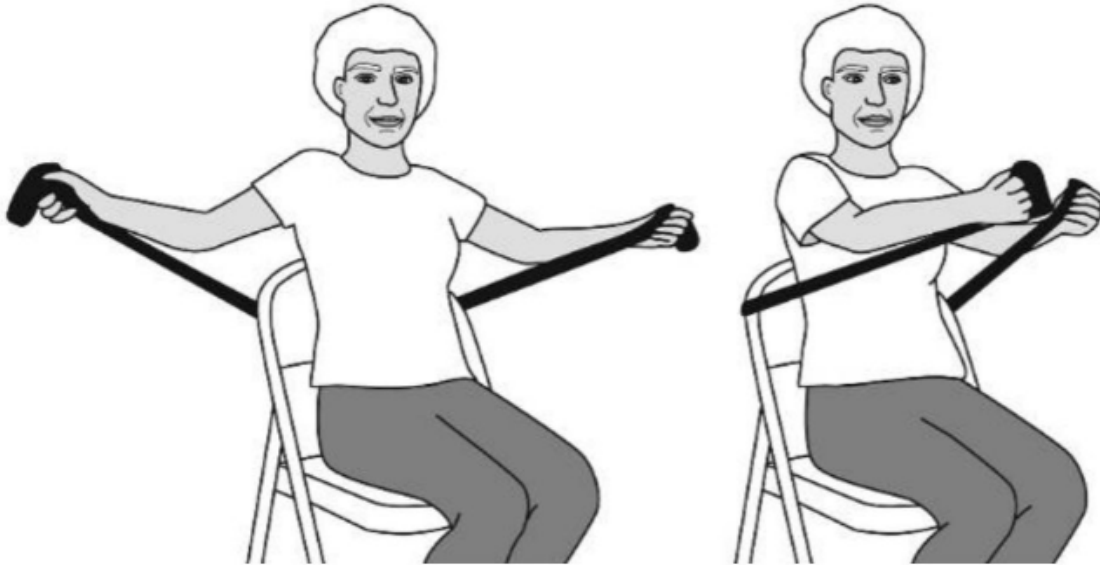
**Modification:** For a harder option, fold the band back on itself to "double up" the tension. For an easier option, let less of the band hang down on either side to allow more give, or do one arm at the time.

## Push Open the Door



Seated in a chair with good posture, wrap the band securely around the back of a chair or your own back so that you have equal band length in each hand. Start with the elbows bent and forearms parallel to the floor; hold on to the band so that the knuckles point forward. Slowly extend the arms out in front of you as if you were pushing a door open. Keep the elbows slightly bent and the wrists straight through the full range of motion. Pull the arms back in to the starting position and repeat for a set of 8-12 repetitions. Rest. Do another set.

## Bear Hugs



Sitting in a chair with good posture, wrap the band securely around the back of the chair. Spread the arms apart so that they are even with the sides of your body and the band is pulled taut, keeping elbows slightly bent. With arms at about shoulder height, squeeze the arms together as if hugging a giant teddy bear or beach ball; the hands should be facing in toward one another. Slowly pull the arms away from each other again to go back to the starting position. Complete 8-12 repetitions for a set. Rest. Do another set.



## Seated Spinal Rotation



Sitting in a chair with good posture, begin by facing forward. Slowly twist your torso to one side, reaching the arms toward the back of the chair for support. Be sure to turn gently and only as far as you comfortably can, letting your body naturally ease into the stretch. Keep the knees pointed forward. Come back to center and turn to the other side. Hold each stretch for about 10 seconds and repeat each side for an additional set.

**Modification:** For a bonus stretch for the arms and chest, sit in a chair facing forward with back rested against the back of the chair. Reach the arms back behind the chair, either one at a time or simultaneously, resting the palms on the back of the chair if you can. This stretch helps to open up the shoulders and chest.

# Hamstring Stretch



Seated in a chair with good posture, bring one knee up toward your chest and hold on to the back of the leg just above the knee to support the weight of your leg. Slowly rotate the ankle clockwise for about 10 seconds, then reverse and rotate counterclockwise. Lower the leg back down and do the same with the opposite leg. Do another set. Stretching the hamstrings helps to prevent them from tugging on the lower back, which can help to prevent lower back pain.

[Chair Exercises For Older Adults - Live Well Age Well \(yumpu.com\)](http://yumpu.com)