

## General Tips for Bariatric Surgery:

- Nutrition is incredibly important. Follow the diet progression and any recommendations from your dietitian!
- Exercise can help supplement good nutrition for improved health and weight loss.
  - Aim for 150 minutes of exercise per week and 2 days of strength training.
  - Exercise can also help with gut motility.
- Following the supplement recommendations given to you by your RD and/or surgeon is extremely important. The changes in your digestion and appetite can lead to vitamin and mineral deficiencies if you do not supplement.

## Introduction to Nutrition:

### Calories

- Calories are units of energy. Each individual requires a different amount of energy (calories) depending on their age, height, metabolism, and activity levels. Calories that are consumed in excess are stored by the body as fat, leading to weight gain.
- In general, those who have had bariatric surgery require anywhere from 800-1,200 calories/day, depending on their individual factors.

### Macronutrients

- Macronutrients are the components of food that we consume in large quantities. They provide energy in the form of proteins, carbohydrates and fats.
- Protein
  - Proteins are the most important macronutrient in the bariatric diet. When protein intake is insufficient, the body will break down lean body mass to offset poor intake.
  - Protein helps the body burn fat instead of muscle, it supports the metabolism to help you lose weight faster, and it keeps you full for longer periods of time.
  - Protein goals for those with bariatric surgery will vary, but are generally between 60-80g/day.
- Carbohydrates
  - Carbohydrates are made of sugar molecules and are important sources of fuel for our bodies. However, when consumed in excess, they can lead to weight gain and unstable blood sugar. Some carbohydrates, particularly grains such as pasta, sugar-sweetened beverages, and junk foods are easy to overeat.
  - Simple carbohydrates are foods that have small molecules of sugar, so they are absorbed quickly into the bloodstream and have a fast impact on blood sugar values. These include most processed foods that have little to no nutritional benefit. It also includes more nutritious foods such as dairy products and some fruits that provide vitamins, minerals and fiber.
  - Complex carbohydrates are foods that include starches and fiber. They have larger molecules that take longer to digest and absorb. These foods have a slower effect on your blood sugar and help you feel fuller for longer. Complex carbohydrate foods include whole grains, whole fruit, whole vegetables and legumes such as beans and lentils.

- Fiber is a type of carbohydrate that the body cannot digest. It passes through the body and helps regulate hunger and blood sugar levels. Aim for 25-30g of fiber per day. Good sources include whole grains, fruits, vegetables, nuts, and legumes.
- Fats
  - Fats are the most calorie-dense of all the macronutrients. This means that they provide a greater number of calories in a smaller serving size.
  - Benefits of fats include maintaining healthy cell membranes, aiding in nutrient absorption, and making hormones. They are also satiating.
  - Saturated fats should be limited, as they can raise levels of LDL (bad) cholesterol and increase the risk of developing heart disease and high blood pressure. Examples of foods high in saturated fats include fatty cuts of meat such as sausage and salami, high-fat dairy products, bacon and lard, some oils such as palm and coconut oil, and certain processed foods such as cookies, baked goods and pastries.
  - Unsaturated fats are healthy fats that can lower levels of LDL (bad) cholesterol, lower blood pressure, and improve insulin sensitivity. Examples of foods high in unsaturated fats include nuts such as almonds, peanuts and walnuts, seeds such as chia, flax and sesame, olives, and avocados.
  - Omega-3 fatty acids are anti-inflammatory. They can protect the brain and joints, promote heart health, and prevent chronic disease. Examples of foods high in omega-3 fatty acids include seafood or fatty fish such as salmon, nuts and seeds, avocado, and certain fortified foods.

## Micronutrients

- Micronutrients are vitamins and minerals. They are essential to life and are important for healthy development, disease prevention and overall wellbeing. With the exception of vitamin D, they must be obtained from the diet. Those who have had bariatric surgery require supplementation to meet their micronutrient needs, as food is being consumed in smaller quantities and absorption is disrupted due to surgery.
- Important micronutrients for bariatric surgery include the B vitamins (there are eight of them), calcium, iron, and vitamin D. Initially, vitamins should be in liquid form or chewable. Over time, they can be consumed in pill form.
- B-complex
  - B vitamins are important for metabolism and making sure that the body's cells are functioning properly.
  - B-complex vitamins should contain at least 12mg of thiamine (vitamin B1).
  - This is optional after starting the bariatric-formulated multivitamin.
- Calcium and vitamin D
  - Calcium is critical for bones, muscles, and nerve function. Vitamin D helps regulate the amount of calcium and phosphate in the body.
  - The supplement should be in the form of calcium citrate.
  - Be sure to take calcium supplement doses at least two hours before or after iron supplements or multivitamins containing iron, as it can interfere with absorption.
  - Calcium supplements should be taken in doses of 500-600 mg. This will depend on the type of surgery that you had. There are higher calcium needs for those with duodenal switch/SADI surgery and gastric bypass. For those who have had gastric sleeve surgery, take 2 supplements per day. For those who have had duodenal switch/SADI or gastric bypass, take 4 supplements per day.

- Multivitamin
  - Begin taking a multivitamin 2-4 weeks prior to surgery and continue lifelong.
  - A bariatric-formulated multivitamin that contains iron is recommended.
- Elemental iron and vitamin C
  - Iron is needed for growth and development, DNA synthesis, oxygen transport, and metabolism in general.
  - Vitamin C is important for tissue growth/repair and immune function.
  - Most bariatric multivitamins contain iron. Additional iron is recommended for menstruating women and patients with a history of iron deficiency anemia.
  - Take iron and iron-containing supplements with food to avoid an upset stomach.
  - The iron chews provided by Bruce Bariatrics include vitamin C to help improve iron absorption.