

# RICHMOND METABOLIC & BARIATRIC SURGERY

Vancouver Coastal Health  
Richmond, British Columbia

Patient Manual – 9th edition, May 2023

## Contributing authors

### Registered Dietitians

- Nooshin Alizadeh-Pasdar, PhD, RD
- Angel Luk, RD, IOC Dip Sp Nut

### Registered Nurse

- Raj Sangha, BScN, RN, CRN

### Mental Health Clinicians

- Viki Xing, MSW, RSW

### Physicians

- Dr. Sharadh Sampath, Surgeon, BSc, MD, FRCSC
- Dr. Nam Nguyen, Surgeon, BSc MD, FRCSC
- Dr. Ekua Yorke, Surgeon, BSc, MD, FRCSC
- Dr. Jacqueline Chang, Bariatrician, MD, dip ABOM
- Dr. Jordanna Kapeluto, Endocrinologist, BSc, MD, FRCPC, dip ABOM
- Dr. David Harris, Endocrinologist, MD, FRCPC, dip ABOM
- Dr. Iqbal H. Ahmed, Respiriologist, MD, FRCPC, MPH
- Dr. Siri Reinbold, Psychiatrist, BSc, MD, FRCPC

## Contents

Welcome message .....	7
Managing expectations.....	8
How much weight will you lose? .....	8
Will the weight loss be permanent?.....	8
What are the expectations of you? .....	8
What you can do starting now .....	9
No show & cancellation policy .....	10
Weight gain.....	10
Patient Commitment – Acceptance of Expectations.....	11
Bariatric surgery options.....	14
Laparoscopic Vertical Sleeve Gastrectomy (VSG) .....	14
Laparoscopic Gastric Bypass (RNY).....	15
Single Anastomosis Duodeno-Ileal Bypass with Sleeve Gastrectomy (SADI-S) .....	16
Biliopancreatic Diversion with Duodenal Switch (BPD-DS).....	17
Preparing for surgery .....	19
Medications to avoid .....	19
Typical patient journey from referral to surgery .....	20
Obstructive sleep apnea syndrome (OSAS).....	21
Pregnancy and birth control .....	22
Endocrinology and metabolism.....	25
Mental health.....	26
Why is mental health important when pursuing bariatric surgery?.....	26
The role of our mental health clinician .....	26
Recommendations and resources .....	27
Dealing with emotional eating .....	29
Tools to manage triggers .....	31
Goal setting.....	31
*Smart goals .....	32
Arranging supports .....	32

All or nothing mindset .....	33
Physical activity .....	34
As treatment and preventative medicine .....	34
Exercise guidelines.....	36
Going home after surgery .....	37
Breathing exercises.....	37
Leg exercises .....	37
Walking .....	37
Pain management and wound care.....	38
Recovery .....	39
Activities .....	39
Post bariatric body contouring (PBBC) .....	40
Troubleshooting symptoms.....	42
Nutrition (before surgery).....	52
Summary of appointments with the dietitian .....	53
Nutrition guidelines prior to bariatric surgery .....	54
Lifestyle modifications for bariatric patients .....	55
Pre-Operative diet .....	56
Nutrition (after surgery).....	58
Post-Op Diet Progression* .....	59
Bariatric Clear Fluids (Post-operative Days 0 - 1) .....	60
Bariatric Full Fluids: (Post Op Day 2 to Post-op Week 3) .....	60
Sample Menu for Full Fluid Diet (Post-op Week 1 - 2).....	63
Sample Menu for Full Fluid Diet (Post-op Week 3).....	65
Progressing from Full Fluid to Pureed Foods (Post-op Week 4 - 5) .....	66
Sample Menu for Pureed Diet .....	67
Progressing from Pureed to Soft Solids (Post-op week 6 - 3 months) .....	68
Sample Menu for Soft Solids Diet Stage.....	69
Soft Solids – Tips on Meal Balance .....	70
Progressing from Soft Solids to Normal Texture (Post-op Month 3 and beyond).....	74

Vitamin and mineral supplements .....	74
Protein Supplements .....	76
Recipes .....	78
Tzatziki .....	78
Carnation Instant Breakfast Smoothie .....	79
Fruit Smoothie .....	80
Yogurt Smoothie .....	81
Pumpkin Dessert.....	82
Rice Pudding .....	83
Cherry Clafoutis .....	84
Chocolate Pudding.....	85
Creamy Strawberry-Orange Pops.....	86
Homemade Chicken Broth.....	87
Creamy Vegetable Soup .....	88
Chicken Soup .....	89
Mashed Potatoes.....	90
Gravy.....	91
Six Bean Chili.....	92
Roasted Salmon .....	93
Vegetables and Cheese Casserole .....	94
Pureed Cauliflower .....	95
Creamy Slow Cooker Chicken .....	96
Cheesy Spinach Frittata .....	97
Cabbage Rolls.....	98
Stuffed Eggplants.....	99
Chicken, Spinach, and Bulgur Meatloaf.....	100
Lentil Soup .....	101
Steamed Fish Fillets with Potatoes and Green beans .....	102
Three Color Pepper Soufflés.....	103
Three Bean Chili (non-spicy).....	104



RICHMOND METABOLIC AND  
BARIATRIC SURGERY



**RICHMOND METABOLIC AND  
BARIATRIC SURGERY**

## Welcome message

Dear Program Participant,

We would like to welcome you to the Richmond Metabolic and Bariatric Surgery Clinic.

Our bariatric clinic is one of the only two comprehensive multidisciplinary bariatric surgery programs in British Columbia. All our surgeries are done using laparoscopic techniques, also known as minimally invasive surgery.

We offer you this valuable manual to help you through the process of navigating bariatric surgery. Your decision will start a new chapter in your life, and we will be part of your care team from the very beginning up to until 2 years post operatively in most cases.

We are hoping that this manual will act as a valuable resource for the life-long process that you have started. We are honored to be a part of your journey and look forward to providing you with the best care possible.

  
RICHMOND METABOLIC AND  
BARIATRIC SURGERY

Sincerely,

Bariatric Team

NOTE: Additional information is available via our program website:

<https://www.vch.ca/en/location-service/metabolic-bariatric-surgery-richmond-hospital>

## Managing expectations

### How much weight will you lose?

The rate of weight loss depends on a number of factors, including your baseline weight, weight lost thus far, activity, hydration and diet. Each person's weight loss pattern is different. If you lose weight too quickly, you are at risk for muscle loss, hair loss, and nutritional deficiencies.

On average, weight loss will continue for 12 to 18 months after surgery. The expected total body weight loss for each surgical procedure ranges from 25 to 50%, more specifically:

- 25% sleeve gastrectomy
- 30-35% gastric bypass
- 35-40% single anastomosis duodeno-ileal bypass with sleeve gastrectomy (SADI-S)
- 50% biliopancreatic diversion – duodenal switch with sleeve gastrectomy (BPD-DS)

Once you have reached your lowest weight after surgery, it is normal to re-gain some weight. For most people, their weight will stabilize at about 10% higher than their lowest post-surgery weight.

It is normal to experience weight plateaus where your weight may not change for a few weeks. During this time, your body is adjusting to the amount of food and exercise. Continue to follow your nutritional guidelines and exercise routine to facilitate weight loss.

### Will the weight loss be permanent?

For 70-80% of patients, the majority of their weight loss is maintained for many years. However, up to 30% of patients will regain weight. As with other methods of managing weight, weight loss will not be permanent without lifestyle changes. You will likely regain weight if you do not maintain healthy eating habits, exercise regularly, monitor your intake and manage stress.

### What are the expectations of you?

You will be required to participate in an assessment process to determine if surgery is the right option for you. It is important to take time to work on lifestyle changes and determine



if surgery is the correct step for you. At any point, you may opt out of the program if you decide surgery is not suitable for you.

The assessment process consists of several appointments with our multi-disciplinary team. You are encouraged to ask questions and find out as much about surgery as possible.

Our team consists of a group of health-care professionals dedicated to educating and helping you adopt healthy lifestyle changes and coping strategies – both before and after surgery. The team consists of surgeons, dietitians, nurses, endocrinologists, respirologists, psychiatrists, a bariatrician, and a social worker. They are excellent resources in helping you achieve your weight loss goals!

### What you can do starting now

Please start researching bariatric surgery as soon as possible following orientation to prepare yourself for what to expect both before and after this life altering surgery. Having a good understanding and reasonable expectations of bariatric surgery and how it will affect your life is essential for successful and long-term surgical outcomes. Bariatric surgery is just a tool and to use the tool effectively, it is essential to make a commitment to lifelong lifestyle modifications, which involve eating regular small nutritious meals, daily exercise, daily supplements, follow up appointments with your bariatric team, and healthy coping mechanisms for stress. Please use the following resources to educate yourself about bariatric surgery so you are well prepared for the changes that will affect all aspects of your life.

### Websites

- Our program website: <https://www.vch.ca/en/location-service/metabolic-bariatric-surgery-richmond-hospital>
- ASMBS: <https://asmbs.org/patients/bariatric-surgery-procedures>
- Canadian Obesity Network (Public website): <http://www.obesitynetwork.ca/>
- Mayo Clinic: <https://www.mayoclinic.org/tests-procedures/bariatric-surgery/about/pac-20394258>
- Obesity Help: <http://www.obesityhelp.com/>
- Obesity Action: <http://www.obesityaction.org/>
- Misconceptions about bariatric surgery: <http://www.theglobeandmail.com/life/health-and-fitness/health-advisor/weight-loss-surgery-is-anything-but-an-easy-way-out/article20306480/>

## Books

- Weight Loss Surgery for Dummies: <http://www.amazon.ca/Weight-Loss-Surgery-For-Dummies/dp/0764584472>
- Weight Loss Surgery Work Book: <http://www.amazon.ca/The-Weight-Loss-Surgery-Workbook/dp/1572248998>
- The Complete Weight Loss Surgery Guide and Diet Program: <http://www.amazon.ca/Complete-Weight-Loss-Surgery-Guide-Program/dp/0778802736>

## No show & cancellation policy

We require a minimum 24 hours' notice if you are unable to attend a scheduled appointment, unless an EMERGENCY (death in the family, sudden illness, hospitalization, etc.) occurs. You will be discharged from the program if you have two no-shows **or** cancelled appointments (less than 24 hours' notice), which were non-emergency.

## Weight gain

Weight gain through the pre-operative stage may be associated with poor outcomes and surgical risks. Therefore, we encourage our patients to gradually lose weight prior to the surgery. We understand this is difficult for many patients, and weight stability may be a more feasible goal. This will be reviewed on an individual basis.

RICHMOND METABOLIC AND  
BARIATRIC SURGERY

## Patient Commitment – Acceptance of Expectations

As a patient of the Richmond Metabolic and Bariatric Surgery program:

1. I have attended the RMBS orientation and understand the risks and benefits of this program.
2. I acknowledge that my objective is to have bariatric surgery, and not solely for access to resources of a multidisciplinary obesity management program. Signing up for the program however will not automatically guarantee that I will have bariatric surgery.
3. I understand that I must demonstrate competency with the necessary lifestyle changes to be offered a surgery. Lack of significant progress or patient initiative will result in discharge from the program.
4. I understand that it is my responsibility to attend all appointments with healthcare professionals on the team and to complete all necessary tests and investigations. Two missed appointments will equal automatic discharge. Rescheduling 3 times for the same appointment will equal a missed appointment. Exceptional circumstances (death of a family member, emergencies, etc...) will be considered on a case-by-case basis.
5. I understand that I need to journal my dietary intake and activity habits comprehensively, for the rest of my life. I understand that I am to start immediately after the orientation and that I must bring this journal to all appointments with members of the team. This includes appointments with my physicians and surgeons. No journal equals no appointment.
6. I understand that I need 30 minutes of sustained physical activity per day for long-term weight loss success. I will stay within my limitations and consult with a Qualified Exercise Professional if needed. I understand that it will be a very gradual process for me to reach these goals.
7. I understand that I must be smoke-free for 6 months minimum prior to orientation to the RMBS program. Smokers who receive bariatric surgery are at a higher risk for inter-operative and postoperative complications, including ulcers, strictures, leaks, wound infection, blood clots, and delayed healing. RMBS Clinic will not offer orientation to patients who have been smoking or vaping nicotine or non-prescription marijuana until they are smoke-free for a period of 6 months.

8. I understand post-operative complications that may arise, including, but not limited to: nausea, vomiting, dumping syndrome, hair-loss, re-hospitalization, dehydration, malnutrition, worsening of mental health, changes in personal relationships, or even death. These may be exacerbated by not following the guidelines.
9. I understand that I am at increased risk of cross-addiction post-surgery (alcoholism, drug abuse, binge eating, gambling, etc...). As such, it is in my best interest to be free of recreational drug or alcohol use, and if I have had an addictions history, to ensure that I find supports before and after the surgery (counselling, psychiatry, support groups, etc...). I understand that I must be sober of any substance abuse for a period of 12 to 18 months to be eligible for the RMBS program.
10. I understand that significant weight loss will result in excess skin. This may require body-contouring (plastic) surgery, which will be an additional cost to me.
11. I understand that it is crucial for me to be compliant with all guidelines and lifestyle changes in order to have optimal outcomes from the program and surgery. These outcomes may include weight-loss, diabetes resolution, increased mobility, decreased medications, improved comfort, etc.
12. I understand that surgery times vary by person and I cannot expect to have a surgery date within a pre-determined time. I understand that to qualify for the surgery, there are 2 main factors: (1) Logistics – is there a surgical time available, am I physically fit for surgery, have I completed all necessary investigations, etc. (2) Proficiency - I must demonstrate to the multidisciplinary team that I am compliant *and* competent with life-long lifestyle change (problem solving around nutritional, activity, mental health challenges).
13. I understand that the team has made all attempts to minimize the costs of the program. However, there may be costs related to the required travel, accommodations while staying in the Lower Mainland, and cost of supplements.
14. I understand that the use of aggressive or abusive language or actions towards team members, whether verbally or in written communication, will result in immediate and permanent discharge from the program.
15. I understand that if I have questions, I will take initiative to investigate and/or consult with the appropriate health professionals within the VCH-Richmond team. I

will trouble-shoot and research on my own prior to contacting the team. Resources available to me include the RMBS Bariatric Manual, <https://www.vch.ca/en/location-service/metabolic-bariatric-surgery-richmond-hospital>,

16. I understand it is my responsibility to inform the bariatric team about any changes in my medical conditions or if there are complications, pre or post-operatively.
17. I understand that I will be provided with the tools to facilitate behaviour change and to optimize my health. Though I have access to these supports and tools, I am expected to take initiative to educate myself about the surgery and lifestyle changes, i.e. surgery specifics, new recipes, learning how to read food labels, etc. For optimal surgical outcomes, I am expected to problem solve around the maintenance of these lifestyle changes throughout my lifetime.
18. I understand that the Richmond Metabolic and Bariatric Surgery Program may need to request information related to my medical and/or mental health from various health care providers/organizations in order to assess my eligibility and optimize my health for bariatric surgery and authorize the program to do so.

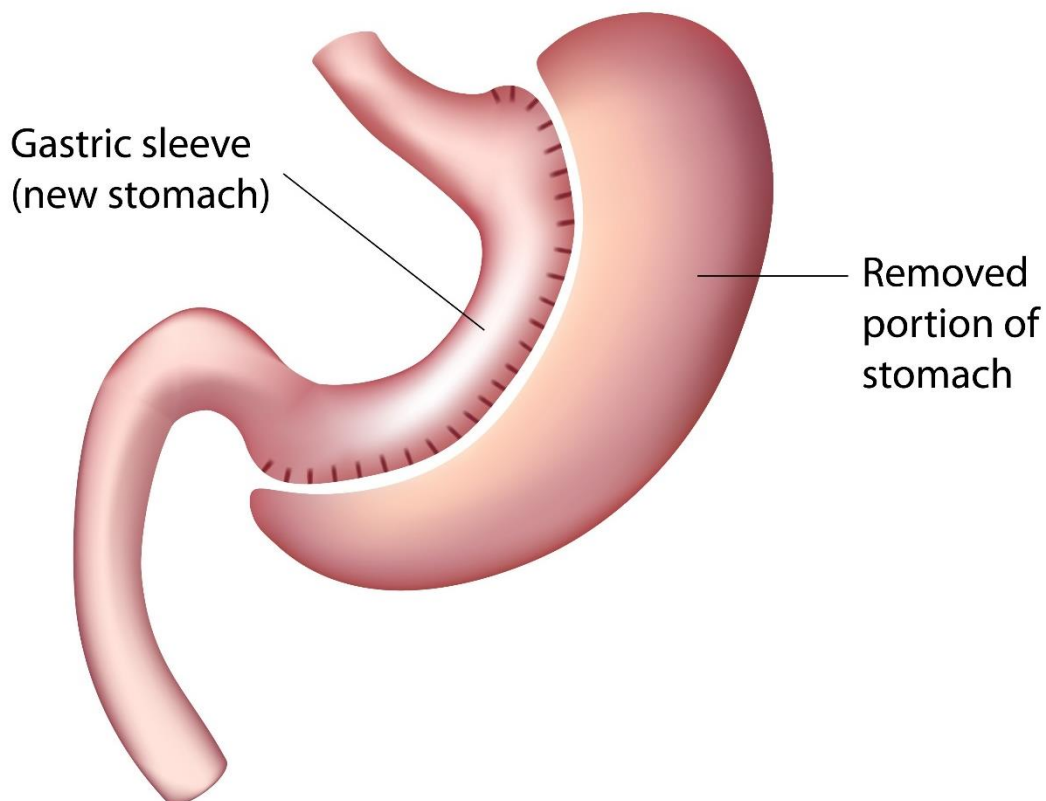
NOTE: The multidisciplinary team provides comprehensive support to a very large group of patients. The team makes all attempts to address questions and concerns in a timely manner. We cannot respond to persistent inquiries about surgery dates and expedition of appointments. Harassment will result in discharge from the program.

## Bariatric surgery options

The following are summaries of the four bariatric surgeries we do at RMBS. The surgeries are performed laparoscopically which involves 6 small incisions to the abdomen. For more information, please refer to the references at the end of manual, including <https://www.vch.ca/en/location-service/metabolic-bariatric-surgery-richmond-hospital> and <https://asmbs.org/patients>.

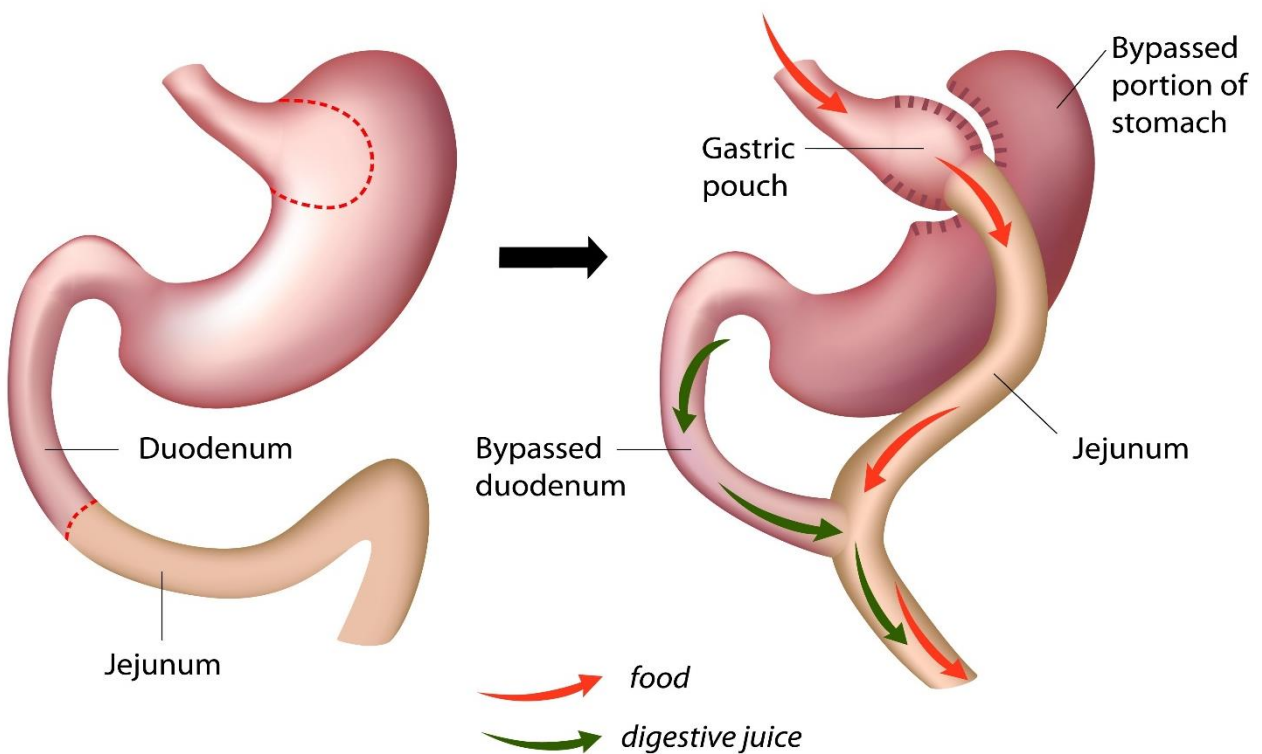
### Laparoscopic Vertical Sleeve Gastrectomy (VSG)

The Vertical Sleeve Gastrectomy is performed by making several small incisions in your abdomen. A vertical incision is then made to remove approximately 80-85% of your stomach. Your new stomach sleeve, which is shaped similar to a tube, holds approximately 100 -125ml in the beginning. This new smaller stomach significantly reduces the amount of food and calories that can be consumed. It also causes favorable changes in gut hormones, which help to suppress your appetite, improve the feeling of satiety (or fullness) soon after eating, and improve blood sugars.



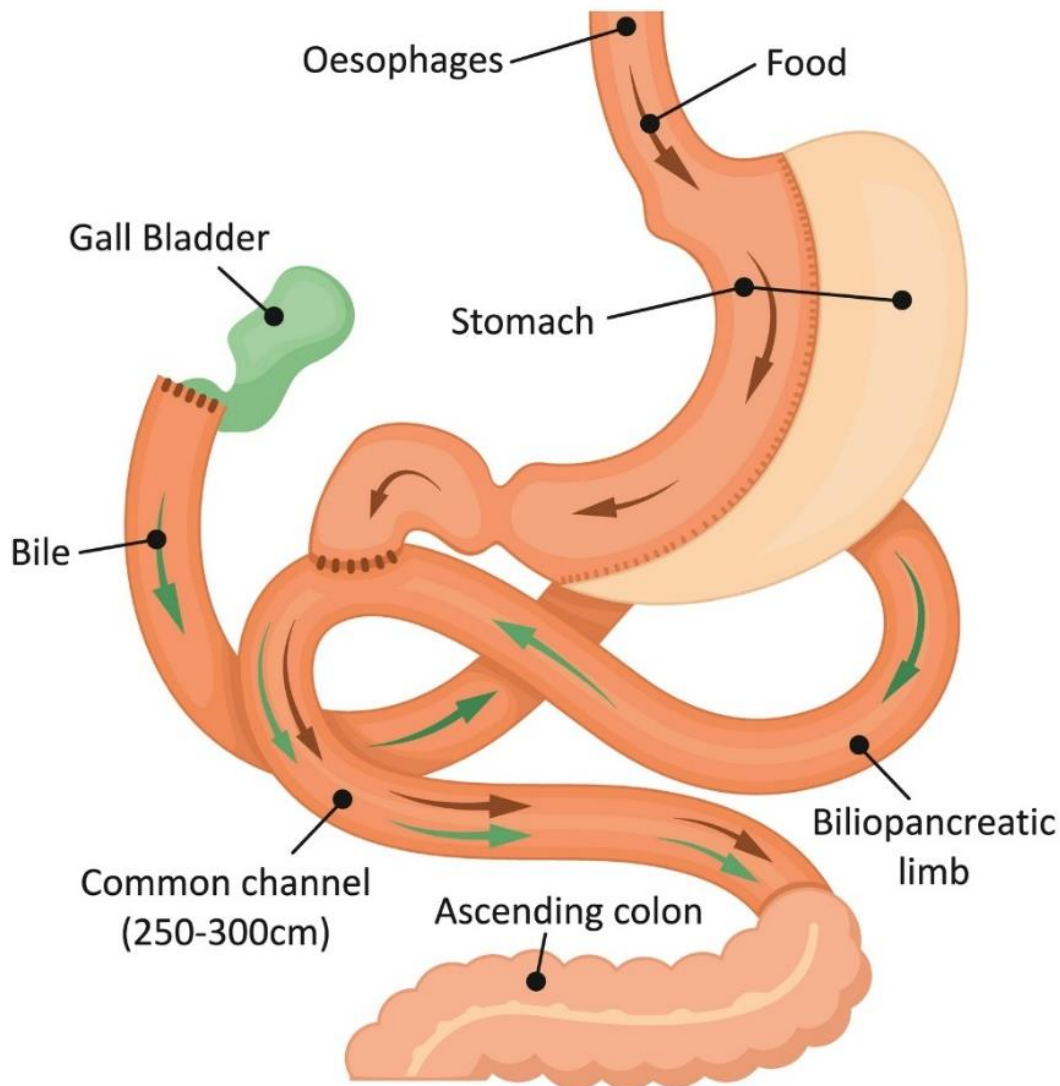
## Laparoscopic Gastric Bypass (RNY)

A small pouch about the size of a large egg is made at the top of your stomach and then your small intestine is divided just past your stomach. One end of the intestine is attached to your new stomach pouch and the remainder of your stomach (food no longer travels through this remnant stomach) though remains in your body. The other end of your divided intestine (the one attached to your remnant stomach) is reattached to your small intestine a little further down. This allows for digestive juices and enzymes to meet with the food stream. This procedure not only reduces the size of your stomach, but also reduces how much food you absorb by bypassing part of the small intestine. There is significant weight loss along with significant improvements in obesity related illness such as, Diabetes, high blood pressure, heart disease, GERD, etc.



## Single Anastomosis Duodeno-Ileal Bypass with Sleeve Gastrectomy (SADI-S)

This procedure is a modified version of the Duodenal Switch (described in detail in the next section). The duodenum is detached just below the stomach and reattached to a loop of small intestine about 3.6 meters downstream. This creates two separate pathways and one common channel. The shorter pathway (digestive channel) allows food to flow from the stomach to the common channel. The longer pathway (biliopancreatic channel) carries bile from the liver to the common channel. This diversion limits the amount of time that food mixes with digestive juices and reduces the amount of calories that can be absorbed, leading to weight loss.

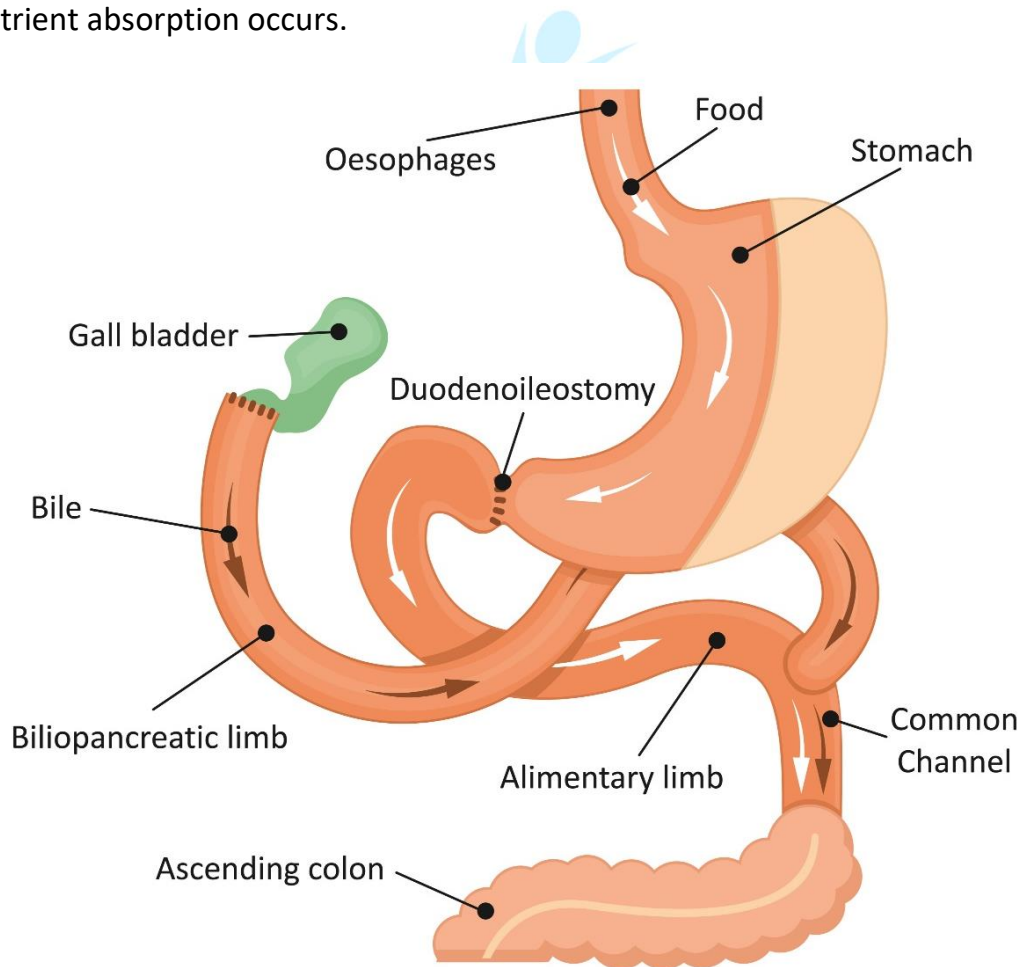




## Biliopancreatic Diversion with Duodenal Switch (BPD-DS)

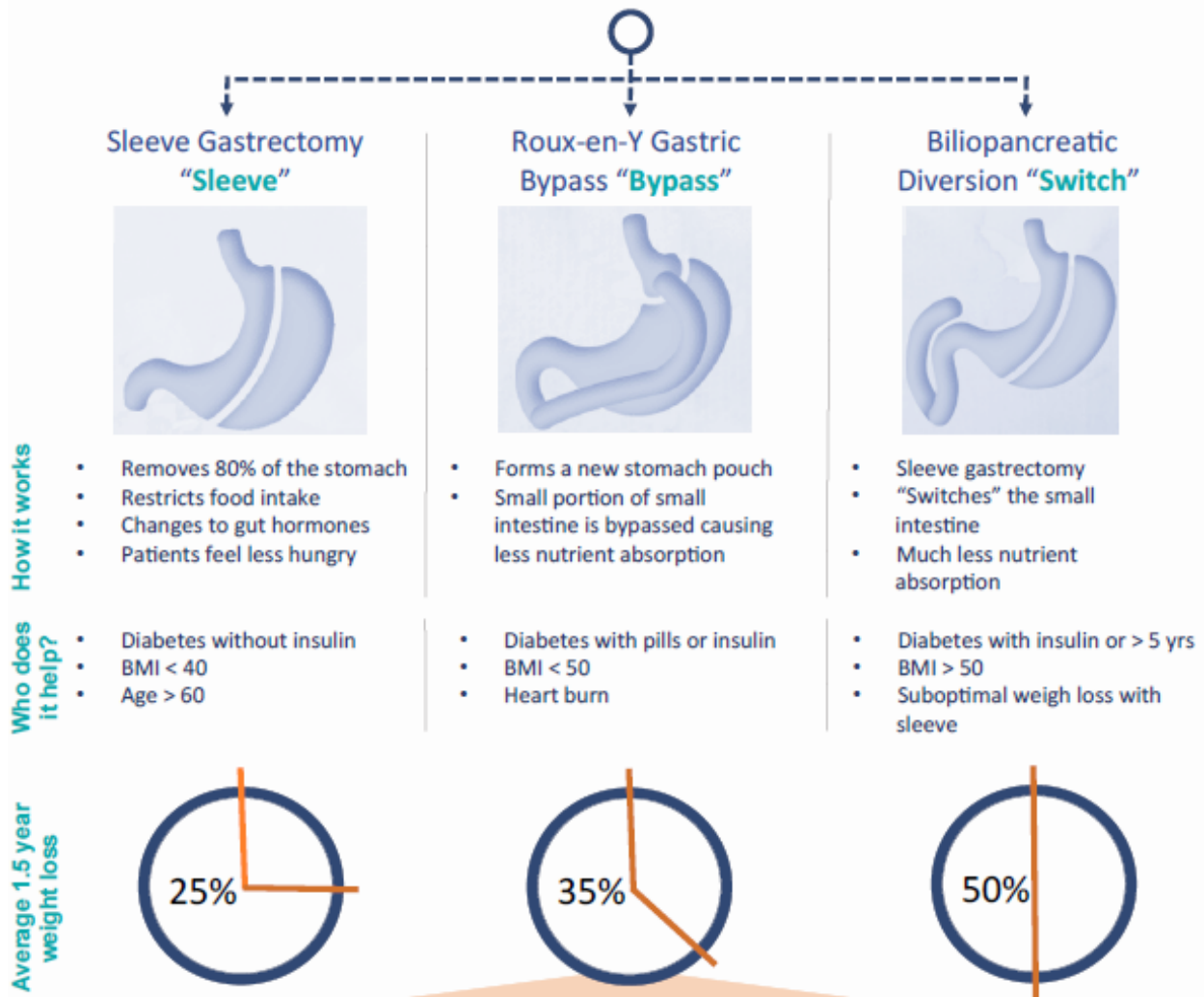
Biliopancreatic diversion with duodenal switch (BPD/DS) or simply duodenal switch (DS) is a bariatric surgery that can help patients lose up to 80% of their excess body weight. It is performed laparoscopically and often done as a single stage surgery but can also be done for patients that have had a VSG in the past and still have significant weight to lose or struggling with comorbidities such as, DM2, HTN, dyslipidemia, etc. It can help you lose more weight and improve your comorbidities by its malabsorptive action via reducing the absorption of macro- and micronutrients (vitamins and minerals).

In this surgery, the intestine is bypassed starting from below the pylorus to the ileum, 50 to 125 centimeters from the colon. The bypassed portion of the intestine (biliopancreatic limb) delivers bile and pancreatic juices to the anastomosis at the ileum, where it meets the alimentary limb (proximal duodenum, through which food passes) to form the common channel. This is where food combines with bile and pancreatic juices for the first time and most nutrient absorption occurs.

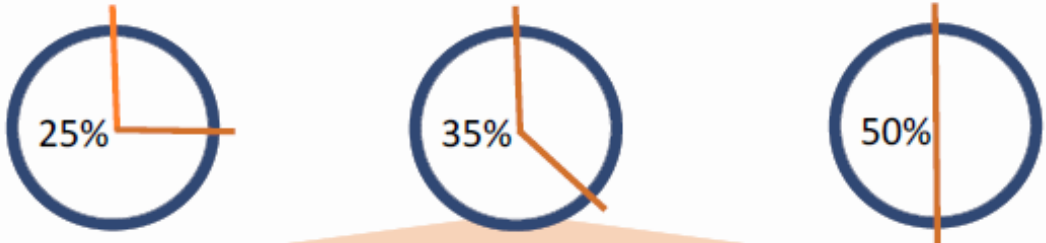


# WEIGHT LOSS SURGERY

Which Procedure is Right for Me?



Average 1.5 year weight loss



Starting weight of 300 pounds with a gastric bypass would mean average post-surgery weight loss of 105 pounds

## How is the type of surgery chosen?



Richmond Metabolic and Bariatric Surgery Program (2019) • [www.rmbsurgery.com](http://www.rmbsurgery.com)

## Preparing for surgery

We need to ensure that our patients are able to tolerate the potential stresses that arise from surgery. Therefore, the following tests are required:

- Blood tests and urine tests both pre-operatively and post-operatively
- Sleep studies and treatment for sleep apnea as needed
- Abdominal ultrasound and bone mass density (BMD)
- Nutrition assessments
- Psychological and mental health assessment
- Attendance at required classes and appointments
- Pre-surgical screening by the anesthesiologist and possibly an Internist
- Nursing assessments

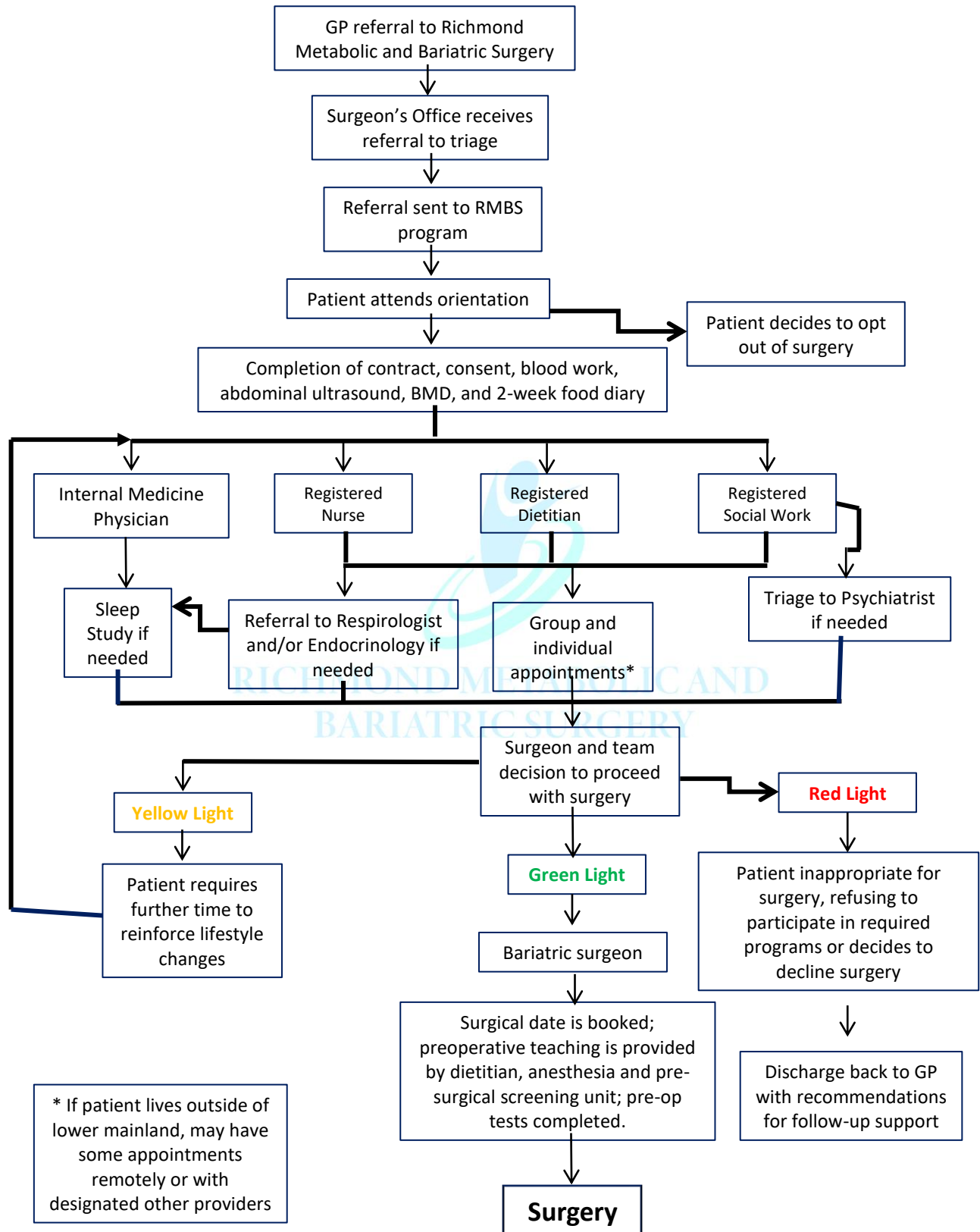
## Medications to avoid

You should avoid non-steroidal anti-inflammatory medications such as Ibuprofen, Advil®, Motrin®, Aleve®, Naprosyn (naproxen sodium), Aspirin and ASA, since they can cause serious ulcers and damage to the stomach.

After surgery, your surgeon will give you a prescription for an acid-reducing medication called a Proton Pump Inhibitor for a minimum of 6 weeks depending on which surgery you have (i.e. pantoprazole). Oral steroid medications should be avoided in the first 6 months after surgery, unless prescribed by your surgeon.

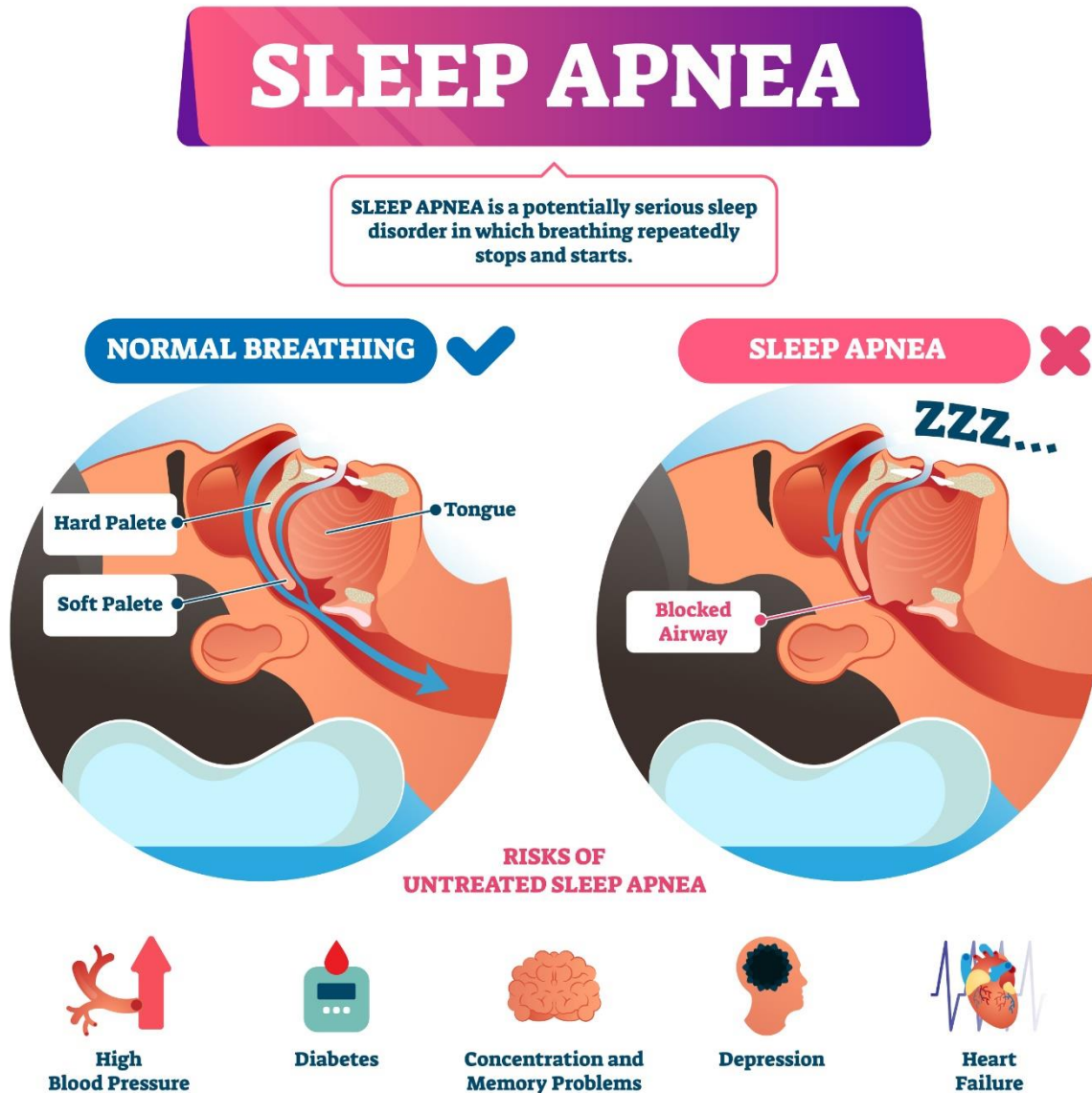
If you have obstructive sleep apnea, avoid nighttime sedation, unless recommended by your respirologist to improve CPAP adherence.

## Typical patient journey from referral to surgery



## Obstructive sleep apnea syndrome (OSAS)

Obstructive Sleep Apnea Syndrome (OSAS) is a serious breathing disorder during sleep, seen in 55-90% of people with obesity. If left untreated, OSAS can lead to a number of long-term complications including high blood pressure, diabetes, depression, stroke, heart attacks and heart failure, which all contribute to a reduced life expectancy.



The main problem in obesity related OSAS is a narrowing of the throat (upper airway) from excess fat, which leads to blocked airflow during sleep when the airway muscles and tissues are relaxed. The lack of airflow (apnea) causes a drop in blood oxygen levels, which briefly

interrupts sleep until the oxygen level is back to normal. This cycle may repeat itself hundreds of times at night so that people with OSAS often wake feeling un-refreshed, with a headache and dry throat. They may feel tired and sleepy during the daytime.

Everyone who enters the bariatric program will be evaluated and undergo a home sleep apnea test and if abnormal, a polysomnogram (sleep study) may be ordered at the UBC Sleep Lab, to provide a more comprehensive diagnostic assessment. A referral to our team respirologist may be required.

The best treatment for OSAS involves the use of a nasal mask, which provides air under pressure (Continuous positive airway pressure or CPAP) to keep the airway open during sleep, thereby preventing apnea and snoring. Patients work with a Respiratory Therapist (RT) to identify the best type of mask and optimal pressure. It is very important to be established on CPAP as soon as possible, to improve symptoms and to reduce the risks of breathing complications following surgery.

You will be closely monitored by your respirologist and respiratory therapist as your OSAS improves with weight loss and the CPAP required, to control your OSAS, decreases.

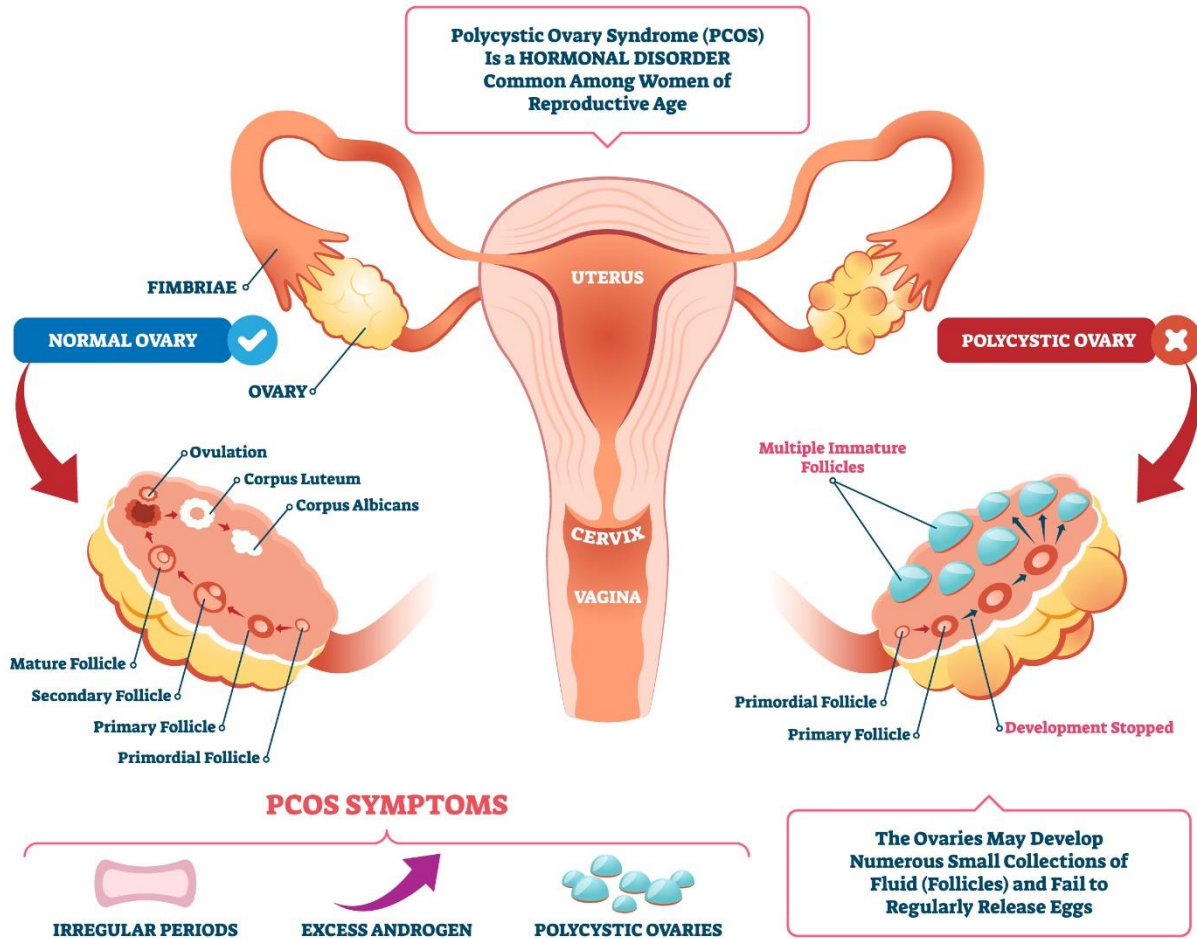


## RICHMOND METABOLIC AND BARIATRIC SURGERY

### [Pregnancy and birth control](#)

Challenges with fertility can occur for women (of childbearing age) at all ranges of weight. However, one of the common types of infertility is Polycystic Ovarian Syndrome (PCOS), occurring in 7-10% of all women. PCOS has higher illness (physiologic) activity with higher ranges of weight. In general, it is a very common cause of infertility and the struggle is under-recognized in society.

# PCOS - POLYCYSTIC OVARY SYNDROME



Bariatric surgery has been found to greatly improve fertility. It is variable to what degree specifically for each person, but in general, it likely improves in the majority of females. Women who were not ovulating for years, may start to ovulate for the first time within months after surgery.

However, it is **not** recommended to become pregnant within 18 months after surgery. This is a strict recommendation from the Obstetrical societies, to ensure that >98% of women's weight has stabilized at that time point after bariatric surgery, thereby, likely also achieving a balance of nutrition at the same time. Getting pregnant within 18 months of bariatric

surgery can risk the healthy development of your baby as you are still losing weight during this period. In reality, some data suggests that your weight should AT LEAST be stable for 3-4 months before achieving pregnancy, but this comes with higher risk. Obstetricians recommend patient has a NORMAL balance of nutrients (including Iron) prior to achieving pregnancy. Ultimately, we know now that women that have a pregnancy within 6 months of surgery have a higher rate of miscarriage or pregnancy loss, which can cause significant suffering after years of infertility.

Contraception: it is important to consider this for the first 18 months after surgery. Overall, the Obstetrical guidelines suggest that Intra-Uterine Device (IUD) is best for contraception. The Birth Control Pill is a second option if IUD is not possible (usually OK for Sleeve Gastrectomy surgery), but Obstetricians have raised concerns about adequate absorption of the pills from the digestive tract. If you are pursuing a malabsorptive surgery such as the Gastric Bypass (RNY) or Biliopancreatic Diversion – Duodenal Switch (DS) or Single-Anastomosis Duodenal Interposition (SADI), the birth control pill may especially not be as effective, and we would recommend an IUD in these cases specifically. Overall, there are other forms of birth control such as injections, patches, rings, condoms or fertility awareness, and we recommend **discussing this with your family physician or Obstetrician/Gynecologist.**

You should notify the bariatric program if you become pregnant in those first 18 months after surgery. You can notify Drs. Chang, Harris, Kapeluto, nursing or the Dietitian team (who will then inform the physician office) directly. Ultimately, trying to get normalized nutritional levels at that point to support the gestation is important.

If you achieve pregnancy AFTER 18 months, we recommend regular care – see your family physician, or get referred to Obstetrician, or Mid-Wife. Patients who have all normal nutritional levels are considered lower risk, but sometimes if you still have low Iron, for example, you might want a referral to an Obstetrician as they have protocols for Iron transfusions on their medical wards in the entire of BC labour and delivery hospitals.

The oral glucose tolerance test in pregnancy is usually NOT indicated after bariatric surgery, especially if you had prior RNY or Duodenal Switch or SADI. Even women who had prior Sleeve Gastrectomy may not tolerate the glucose tolerance test. Hemoglobin A1C level greater than 6% is consistent with a diagnosis of gestational diabetes, and can be collected on a random venous blood test at the lab.



## Endocrinology and metabolism

As part of your participation in the Richmond Metabolic and Bariatric Surgery program, you may be referred to one of our endocrinologists. Common reasons include:

- Preoperative endocrinology consultation
- Diabetes optimization before surgery
- Osteoporosis and bone health
- Medical weight loss therapy prior to surgery
- Screening for reversible medical causes of obesity
- Nutritional assessment
- Nutritional deficiencies prior to surgery

Dr. Harris provides nutritional surveillance for all patients after Gastric Bypass surgery. The first appointment is 6 months after surgery, and further follow up is determined based on patient presentation.

Dr. Harris's private medical office will contact patients directly. Dr. Harris does medical follow-up over virtual medicine – Skype, Face Time, Google, or via phone call if the person does not have internet access to the above services. Patients that require an in-person clinic appointment should notify the bariatric nurse about this, and then Dr. Harris will arrange follow-up with alternate bariatric Endocrinologist in Vancouver.

Patients who undergo SADI-S or duodenal switch surgery will be screened before and after surgery by one of the team endocrinologists (Dr.Harris or Dr.Kapeluto), whose office will also contact patients directly and provide bloodwork requisition(s) as appropriate.

For those patients that already see a general internal medicine specialist or endocrinologist for management of diabetes, dyslipidemia (cholesterol) or other related-endocrine/metabolic illnesses, they should continue this follow-up.

## Mental health

### Why is mental health important when pursuing bariatric surgery?

Bariatric surgery can have a positive effect on several aspects of an individual's mental health however, surgery and the recovery can be extremely psychologically challenging for some patients. A previous history of trauma, disordered eating, substance use and mood disorders can increase vulnerability during the recovery period. While there are known benefits to depression and anxiety related to obesity that can gradually improve with weight loss, surgery is not a treatment for mental health issues. There is a small proportion of patients who have extreme challenges with coping after surgery leading to increased risk of self-harm and utilization of emergency psychiatric services. Additionally, we can see the development of maladaptive coping including substance use and disordered eating which can lead to further complications after surgery.

There is a well-established link between previous trauma, mood and disordered eating. In order to ensure safety and reduce the risk of psychiatric decompensation with surgery we require appropriate management of all mental health conditions and require a period of stability for at least 18 months (as confirmed by family physician). Ensuring adequate supports and connecting with community mental health resources may be required prior to surgery for the purposes of risk reduction.

### The role of our mental health clinician

Our bariatric mental health clinician will conduct a psychosocial assessment to identify your strengths, as well as risk factors, in order to provide recommendations that can enhance your surgical preparation and optimize your potential long-term outcomes. Our mental health clinician will also assess your current coping mechanisms to ensure you have non-food related strategies to cope with potential challenges after surgery. Please note:

- After opting in to our program, your initial mental health clinician appointment will be booked by the unit clerk.
- The mental health clinician will provide therapeutic and educational sessions as follow up appointments. Usually, patients will require multiple appointments before taking the next steps.

- Our mental health clinician may refer you to our team’s psychiatrist, if needed, to help review risk factors related to your psychosocial well-being and provide recommendations that can enhance your surgical preparation and optimize your potential long-term outcomes as well as mitigate potential mental health risks associated with surgery.
- This can include assisting in connecting you with your local community mental health programs for additional supports or empowering you to communicate your health and wellness needs with your own family and friends.

### Recommendations and resources

All patients should connect with their family doctor, or a counselor, therapist, psychologist, or psychiatrist to address any current mental health concerns and to build healthy coping strategies before surgery.

It is mandatory that all substance use (i.e. alcohol, nicotine, marijuana, vaping, hookah, or likewise) be declared on your medical history forms and during provider appointments. You must be 6 months tobacco smoke free before attending orientation and remain tobacco free thereafter. Members of the bariatric team will assess all substance use.

Recommendations for change will be communicated to you during your private appointments as needed. Ultimately, the goal is risk reduction and any advice provided intends to optimize your intra-operative success and post-surgery health outcomes.

Your individual reasons for intake and amounts taken will be discussed in detail at your allied health appointments. We may reach out to your family physician to verify your current usage levels.

At each of your mental health clinician appointments, resources will be suggested to help cater to your specific needs. In general, we offer the following mental health resources:

- Changeways:
  - Free-of-charge

- 11-week cognitive behavioural therapy program to help prepare someone for long-term management of stress and healthy living (2 hours a session each week)
- Groups consist of about 10 participants who are pre- or post-surgery
- Sessions led by the Psychiatrist
- Topics include goal setting, stress and depression, healthy living, mindful eating, communication styles, thoughts awareness and thought stopping, and general tips on long-term maintenance after bariatric surgery.
- RMBS Changeways runs several times throughout the year and is only available to patients in the RMBS program (at the discretion of the mental health clinician)
- It is important to note that completing the RMBS Changeways program does not guarantee long-term change, nor does it guarantee surgery. The program is intended for those who are open to ideas and want to make sustainable changes.
- Binge and Emotional Eating Psychotherapy Group:
  - Free-of-charge
  - 8-week cognitive behavioural therapy program aimed at uncontrolled and emotional eating and developing strategies to enhance your relationship with food and address unhealthy habits
  - Groups consist of about 10 participants who are pre- or post-surgery
  - Sessions led by the team's psychiatrist and mental health clinician
  - Topics include: Identifying bingeing and emotional eating, exploring triggers, problem solving strategies to support healthier eating habits, establishing alternative emotional coping skills, evaluating dysfunctional core beliefs reinforcing emotional eating including overevaluation of shape and weight and perfectionism
  - The program is run several times throughout the year and is only available to patients currently connected with the RMBS program
  - As with the Changeways program, completing the Binge Eating group does not guarantee surgery, but is an adjunctive service provided by the program to optimize eating and lifestyle changes
- Psychiatric support
  - Our team psychiatrist can help with many aspects of your mental health, including but not limited to: assessment of your current psychiatric symptoms, and optimization of your psychiatric management in the context of weight management. A full review of current psychiatric medications and long term implications will be evaluated as bariatric surgery may affect medication

absorption post-operatively. Collaboration with your family doctor or community psychiatrist in order to develop a safety plan for long term success both immediately after surgery and for the long term.

- A referral to the psychiatrist may come from a member of the bariatric team if it is felt there may be benefit from review of medications, psychological supports or postoperative planning

### Dealing with emotional eating

To successfully change problematic behavior, it is important to be fully aware of the problem.

#### **WHY?**

Identifying WHY we eat is critical to changing behavior and is a crucial first step.

Often there is a learned association between external circumstances and our need to eat, regardless of physical hunger

Movie → want popcorn

Angry → eat chips

Christmas → eat large portions of food

It is ideal to not only BREAK these links, but also replace it with a positive behaviour

#### **HOW?**

Become aware of triggers for eating in your life – this can be done by logging your intake (food and drink), and taking note of the timing and environment; this can help you get to know yourself more

Practice slowing down your thought process before eating

#### **Question Your Type of Hunger:**

*For one full day, stop for just a moment each time you are about to eat or drink something and ask yourself “Is this stomach, mouth, or heart hunger?”*

**Stomach:** physically hungry, eating for your health

**Mouth:** craving food with a particular flavour, texture, or aroma

**Heart:** eating in response to an emotion or a learned eating behavior

**“H. A. L. T.” – Before eating.** For one full day, each time you are about to eat something, shout or whisper forcefully the word “HALT” Then stop and ask yourself if you are feeling:

**Hungry**

**Angry (anxious)**

**Lonely**

**Tired (tearful)**

Use this exercise to determine if you are eating due to physical hunger or to fill an emotional need for food. You can add this to your journal – make note of the type of hunger or emotion that may be relevant at the time. Do you notice patterns? Situations? Events? Certain people? Emotions?

**Sample emotional eating self-check in**

<b>Observations about eating behaviors</b>	<b>Potential strategies to manage</b>
<ul style="list-style-type: none"> <li>➤ I eat when I feel bored</li> <li>➤ I tend to eat _____ when I’m watching TV</li> </ul>	<p>Distract yourself:</p> <ul style="list-style-type: none"> <li>➤ Crafts to occupy your hands and mind</li> <li>➤ Call a friend or family member</li> <li>➤ Exercise or get fresh air</li> <li>➤ Do laundry, cleaning, gardening</li> <li>➤ _____</li> </ul>
<ul style="list-style-type: none"> <li>➤ I eat when I feel alone</li> <li>➤ I binge when I feel sad, anxious, or angry</li> </ul>	<p>Self-care activities:</p> <ul style="list-style-type: none"> <li>➤ Listen to music</li> <li>➤ Yoga or relaxing exercises</li> <li>➤ Read a book</li> <li>➤ See/speak to a counselor</li> <li>➤ _____</li> </ul>
<p><b>General strategies to consider:</b></p> <ul style="list-style-type: none"> <li>➤ Journal daily to maintain mindfulness over food behaviors</li> <li>➤ Stop buying foods that are unhealthy or triggering for you and try an “out of sight, out of mind” approach to add distance between cravings and your ability to act on them</li> </ul>	

## Tools to manage triggers

Gaining awareness helps provide insight into which tools may work for you. Manage your triggers and cravings with “skill power” rather than “will power”.

### Strategies to Try:

1. Nurture yourself vs. Nourish yourself
  - BEFORE: Stressful situation may trigger eating to comfort yourself
  - NOW: Choose a non-food reward for comfort. Practice nurturing WITHOUT food.
2. Put your cravings on hold - Give it a minute
  - Start to gain control over your cravings by waiting a small amount of time before satisfying them; gradually increase this time.
  - Discover the length of time needed to overcome a craving
  - This strategy is also used for quitting smoking or other substances
3. Ambush your triggers – Plan an activity to distract yourself
  - In the moment, use readily available distracters to get your mind off of food when not physically hungry, e.g. recite the alphabet backwards, sing a song, multiplication tables
  - Prevention: for situations in which you know your eating is problematic, plan an activity, remove yourself from the situation or distract yourself from the trigger, e.g. go for a walk, drink water or immerse yourself in conversation away from food table
4. Quench your thirst – Keep yourself well hydrated to decrease perceived food cravings.

Remember: changing your ways is a difficult process, but not impossible. Often support and guidance is required to determine *why* these behaviors are present and to develop strategies that are going to work for you in the long run.

## Goal setting

Creating and maintaining lifestyle changes that include diet and exercise can be challenging. To stay on track, try following these steps:

Step 1: Set your goal\*

Step 2: List the reasons that you value this goal

Step 3: Ask yourself how important this goal is to you and list any small changes you can make to achieve it.

Step 4: Include what you are specifically going to change:

- When and where you are going to do it
- How often or how long you are going to do it
- e.g. “I will walk for 40 minutes each day at lunch”

Step 5:

- List the barriers you might face in achieving your goal
- List strategies that you can try to overcome such challenges

Step 6:

Rate your confidence level in reaching your goal from 1 (not confident) to 5 (very confident)

- If you choose 1 to 3, ask yourself why you are not confident in meeting your goal
- If the goal is too large and seems insurmountable, take smaller steps to reach the larger goals

### \*Smart goals

Changing lifestyle and habits may not happen overnight and we need to take time to set small goals in order to reach our final goal towards success. These goals should have specific characteristics including being:

- Specific
- Measurable
- Achievable
- Realistic
- Time Specific



RICHMOND METABOLIC AND  
BARIATRIC SURGERY

### Arranging supports

Many people may feel shy or uncomfortable about sharing the fact that they are going for bariatric surgery. Please keep in mind that there is no shame in taking action to improve your health. Obesity is a chronic disease that often requires multiple tools to help with ongoing management – having surgery, as an additional tool is not a “cheat or easy way out”.

Support is important before and after bariatric surgery. Please explore your support system within your inner circle and invite them to appointments, follow up meetings, and your surgeon consult if you wish.



Emotional support is crucial as well. Going through bariatric surgery can be stressful; you will need someone to listen to your struggles without judgement and to support you in making lifestyle changes.

We know having social supports in place can decrease the emotional challenges associated with making significant changes to our diet and lifestyle and can improve overall outcomes for people.

### All or nothing mindset

All-or-nothing thinking (also known as black-or-white thinking) is when things are viewed as “all good” or “all bad”. However, anything less than “perfect” should not be considered a failure. Changing habits and developing coping skills can take a lot of practice and patience. These things are not easily changed overnight, if they were you would have done that already! Focus on small steps, goals, and achievements and give yourself credit along the way. Aim for progress instead of perfection; if you expect perfection, you are setting yourself up for feelings of failure which can derail you from achieving your long term goals.

Practice self-compassion. It may help to use the “speaking with a friend” rule when engaging in self talk around goals and progress. Would you say the same things you say to yourself as you would to a friend or family member who is trying to make big changes in their life?

Making lifestyle changes is not easy and it takes a long time to build consistent habits. Please focus on your achievements and strengths and remember to give yourself credit for all the steps you have (and continue to) take.

## Physical activity

As discussed through the course of this book, Bariatric Surgery is an effective tool to facilitate weight loss and better health. To attain maximum benefit from the surgery, Physical Activity (PA) and Exercise must be an integral part of your lifestyle both before and after the procedure. Research supports that PA and Exercise is a key component to long-term success when treating obesity. Physically active individuals tend to lose more weight and are less likely to re-gain weight. Additionally, staying physically active has broad health benefits that can treat and reduce the risks of chronic disease.

### As treatment and preventative medicine

#### **Physical Activity and Exercise can:**

- Help to prevent and control high blood pressure. Individuals who exercise regularly are able to decrease their high blood pressure and in many cases, reduce or even stop their need for blood pressure lowering medications.
- Raise High Density Lipoprotein (HDL) cholesterol known as the “good” cholesterol, while Low Density Lipoprotein (LDL) or “bad” cholesterol is lowered. This combination will decrease the amount of harmful plaques that can build up in the walls of your artery, keeping your blood flowing smoothly.
- Control blood sugar levels. When physical activity is regular; it is associated with HbA1C reduction in patients with Type 2 Diabetes. HbA1C is a test that shows the average level of blood sugar over the past 2 to 3 months Furthermore, structured exercise training of more than 150 minutes per week is associated with greater HbA<sub>1c</sub> declines.
- In women with Polycystic Ovarian Syndrome, reproductive function and menstrual cyclicity is improved.
- Keep your heart healthy. Individuals who meet the basic Physical Activity Guidelines have a 14% lower risk of Coronary Heart Disease (CHD) compared with those who are sedentary. Individuals who doubled the activity guideline minutes had a 20% lower risk of CHD.

- Prevent certain Cancers. Exercise can modulate some of the biomarkers potentially involved in Breast and Colon Cancer pathways.
- Help to control Chronic Inflammation. Low-level inflammatory mechanisms are involved in the pathogenesis of several chronic diseases, including Heart Disease, Stroke, Type 2 Diabetes, Chronic Obstructive Pulmonary Disease, and Alzheimer's disease.
- Maintain and boost your immune system. Moderate exercise training can restore optimal antibody responses in the face of stressors and ageing.
- Help mediate symptoms of chronic pain. For those with Osteoarthritis, function and pain is improved in those who exercise and adhere to a healthy diet. In addition, an exercise program customized to your needs can also regulate symptoms with Fibromyalgia and Rheumatoid Arthritis.
- Supports optimal bone health. Changes associated with bariatric procedures may place you at a higher risk of developing bone fractures. Regular exercise maintains strong and healthy bones and is an effective tool in preventing osteoporosis.
- Increase mobility, physical fitness, and overall functional independence. Those with higher levels of cardiorespiratory fitness are more able to perform regular activities of daily living and stay independent in older age.
- Enhance post-operative outcomes. Exercise has been reported to improve wound healing while engaging in light physical activity immediately post-surgery can prevent life-threatening blood clots.
- Keep your mind healthy and sharp. Regular exercise improves your mood, helps to prevent depressive symptoms, enhances memory, and produces a beneficial decrease in perceived stress.
- Promote better sleep. A good night's sleep can improve your concentration and productivity throughout the day, and exercise can help you fall asleep faster and sleep deeper. Moreover, sleep quality and quantity correlate positively to overall weight loss.

- Improve your sexual health. For women, those engaging in more physical exercise report higher levels of sexual desire. In addition, orgasm problems are more likely among women who reported no physical activity. For men, erection quality is significantly correlated with exercise tolerance and increased physical activity is associated with better sexual function.

Strong evidence supports Exercise and Physical Activity (PA) as potent forms of medicine. So how do you distinguish between PA and Exercise? PA is defined as any bodily movement produced by skeletal muscles that result in energy expenditure. Exercise is a subset of physical activity that is planned, structured, and repetitive and has as a final or an intermediate objective to improve or maintain physical fitness. PA in daily life can be categorized into occupational, sports, household, or other activities. Therefore, both PA and Exercise are important components that can be incorporated into your lifestyle, and a gym membership or a treadmill is not mandatory to be successful in this area. Take every opportunity to incorporate PA and movement into your life, every little bit adds up!

### Exercise guidelines

In general, we recommend people to achieve the recommended 30 min per day, 5 days per week minimum, of moderate activity (being out of breath and sweating also). Not all people can achieve this due to physical capability, but it continues to be one of the biggest factors in our patient's lifestyle to lose the most weight possible after surgery and to keep it off as well. Exercise is long term, to date, the strongest factor associated with keeping a stable lower weight after surgery.

Exercise should be tailored to one's capabilities. If you have had prior heart disease you might have been taught exercise in your cardiac rehab course that is appropriate for your health. However, if you have knee arthritis disease, then your medical team might have directed you to biking and swimming. Regardless of the type of activity that is applicable to your health we want our patients in the RMBS to be active, so try to stick to your regular activity routine.

Physical Activity Services at HealthLink BC is British Columbia's primary physical activity counseling service and your FREE resource for practical and trusted Physical Activity and Healthy Living information.

## Going home after surgery

The expected length of stay following the Sleeve Gastrectomy and Gastric Bypass surgeries is usually 1 night and for the SADI-S or Duodenal Switch, usually about 2 nights. You may need to stay in hospital longer until your surgeon decides you are medically stable to go home.

To ensure a speedy recovery the nurses will encourage you to do some exercises during your stay in the hospital. Anytime you are in bed for a few days in the hospital, your lungs and circulatory system need help to work properly. These exercises will help prevent pneumonia and blood clots in your legs and promote healing.

### Breathing exercises

#### Deep Breath and Hold

1. Take a **BIG**, slow breath in through your nose to fill the bottom of your lungs.
2. Hold your breath for about 2-3 seconds.
3. Slowly blow all the air back out.
4. Repeat this deep breathing exercise 4 times each hour until you are out of bed for most of the day.

#### Deep Breath and Cough

1. Take a faster deep breath and cough the air from the bottom of your lungs. It is important for you to use a pillow to support your abdomen while you cough.
2. Take a break for 30 seconds.
3. Repeat this deep breathing and coughing exercise 4 more times.

### Leg exercises

1. Point your toes, then flex them towards your head, and back towards the foot of the bed. Do this exercise 5 times per hour until you are out of bed for most of the day.
2. Point your toes and then rotate your ankle in big circles. Move your toes clockwise twice and then counter clockwise twice. Do this exercise 5 times per hour taking a short rest between each exercise.

### Walking

You will also be encouraged to get out of bed for short walks soon after surgery. Getting up to the bathroom and walking in the hallways every few hours will help you recover faster.

Walking is very important to your recovery as it improves your blood flow, prevents blood clots from forming, helps your incisions heal, and allows you to pass gas. Gravity is your friend after surgery. Sitting up in a chair as much as possible during the day will help your recovery.

### Pain management and wound care

You can expect to have some discomfort from the incisions after surgery, but it is important that we keep your pain under control. The less pain you have, the easier it will be for you to walk and to do your deep breathing and coughing exercises, which will help you to recover faster. The nurses will be asking you how much pain you have on a scale of 0-10, as everyone's pain threshold is different. 0 = no pain and 10 = worst pain you could imagine. This scale helps the nurse assess your pain and the amount of medicine to give you for the pain. You will be given a prescription for an analgesic (pain medication) before leaving the hospital. You may use this medication as prescribed for pain relief at home. The pain/discomfort will improve daily and you will likely not require the pain medication for more than a week. As the pain/discomfort improves, please wean yourself off the prescription pain medication and use Tylenol (regular or extra strength) instead if needed. Please note that the prescription pain medication can also contribute to constipation.

After surgery, you can expect the following with your wounds:

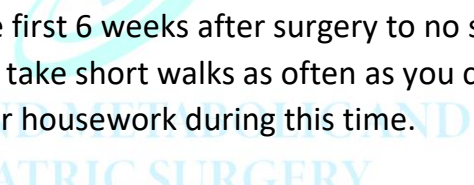
- Steri-strips or surgical glue may be used to close the smaller holes used for the laparoscopic procedure. Steri-strips, if used, will fall off on their own 7-10 days after surgery. If they do not, you may gently remove them after 10 days in the shower.
- If staples are used, please see your family doctor 7-10 days following surgery to have them removed.
- Occasionally a drain is inserted (with the Duodenal Switch surgery) which is removed prior to going home after surgery.
- To keep your incisions clean, you can shower daily, starting 2 days after surgery, and gently pat incisions dry. Do not use antibiotic cream unless prescribed and do not have a bath or submerge your abdomen for 4-6 weeks postoperatively or until your surgeon allows you to.
- Try to leave the incisions open to air when possible at home to help them heal.

## Recovery

On average, most people return to work 4 weeks after surgery. Jobs that require physical exertion or professional drivers may need 1-2 extra weeks off work. Avoid heavy lifting (>10lbs) for 6 weeks after surgery. You should be feeling a little better each day. Ensure you are going for several short walks each day to help prevent blood clots, improve wound healing and minimize constipation. Please practice deep breathing (ideally 10 times an hour) to reduce risk of chest infection after surgery.

You may have some discomfort at the surgical sites. Be sure to ask your surgeon about any significant pain you are having. Shoulder pain can also occur within the first few days of surgery. This happens because of gas administered into your abdomen during surgery and normally disappears within the first few days.

## Activities

- 
- Your activity is restricted in the first 6 weeks after surgery to no strenuous activity. You can and should try hard to take short walks as often as you can tolerate. Please find alternate arrangements for housework during this time.
  - You should plan to walk at least 15 minutes daily within the first few days of surgery to improve your recovery (it is fine to do multiple short walks (e.g. 2-5 minutes) and progress to longer walks as time goes on).
  - If feeling tired for the first few weeks after surgery, the fatigue is normal. Ensure you get adequate sleep each night.
  - Driving is restricted for at least 2 weeks after surgery or until you are off the pain medication and pain free.
  - Please consult with your surgeon on when you can restart strenuous activity.
  - Avoid sitting and standing for long periods.
  - Ask your surgeon before starting activities like swimming and weight lifting. You should avoid lifting >10lbs for 6 weeks after surgery.

## Post bariatric body contouring (PBBC)

Excessive skin after massive weight loss, is one of the most common issues in living after bariatric surgery. The lower abdomen is the most common issue, followed by the chest /breasts, then thighs, and finally the triceps (arms) region. Unfortunately, only in very significant/severe circumstances is skin revisional surgery (plastic surgery) actually covered under MSP in BC. This means that roughly 98% of people have to pay PRIVATELY for this surgery. The decision on where MSP funding is applicable, is up to the plastic surgeon you are seeing in consultation, and once again is not typically covered. While we are advocates for our patient's to have this under MSP funded surgery, it is truly not the case, so all people should be aware of this entering this bariatric surgery process.

The most common body area of excessive skin is the abdominal region. Excess skin in this area of the body can generate feelings of unattractiveness, or remind an individual about their prior weight, and it can restrict physical activity. The right body contouring procedure might address all of these issues. We acknowledge that a Panniculectomy, may be covered under MSP coverage. Many patients have obtained a referral to a plastic or general surgeon for this skin removal alone. However, the issue is more complex than mere skin removal, sometimes surgical treatment of muscle or fat tissue are needed for best healing or physical appearance after. Thereby, consultation with the plastic surgeon is essential to determine what is best for the body re-contouring.

The most common body contouring procedures for post-bariatric patients are:

- Tummy tuck (abdominoplasty)
- Circumferential body lift
- Breast lift (mastopexy)
- Arm lift (brachioplasty)
- Thigh lift

Making the decision about when to have body contouring surgery is an important one. Often these procedures are 'major life events' (not unlike your bariatric surgery) that require time off work, careful planning and help from friends and family. Patients should be weight stable for at least 6 months prior to surgery. It is independent of the bariatric surgery program and you would require a referral from your family physician.

***Currently, body-contouring procedures to remove excess skin are not a benefit of the medical services plan in British Columbia.*** The total cost will be made up of several items that may include prescriptions, post-op garments and supplies, surgical facility fees, taxes, professional fees for the anesthesiologist, and professional fees for the surgeon(s). Quotes



are largely determined by the length of surgery and not necessarily the type of surgery, for example, not every quote for a lower body lift is the same.

During the pre-operative visit (3-4 weeks prior to surgery), plastic surgeon will:

- Confirm your priorities for surgery
- Answer any questions
- Review results of lab work
- Review post-op care plans

For more information on Dr. Reid and Post-Bariatric Body Contouring, please visit [www.drreidplasticsurgery.ca](http://www.drreidplasticsurgery.ca)



RICHMOND METABOLIC AND  
BARIATRIC SURGERY

## Troubleshooting symptoms

### When to Contact Your Doctor

- Any bleeding from or signs of infection (e.g., fever of greater than 38°C, redness, unusual pain, swelling, foul smelling drainage, oozing from incisions)
- Persistent abdominal pain
- Severe bloating
- Persistent nausea, vomiting, diarrhea
- Inability to tolerate fluids
- Dark and foul-smelling stools
- Dark urine or decreased urine production (may indicate dehydration)
- Sweats
- Cramping leg pain
- Pain that is not relieved by pain medication

### When to Contact 911

Any symptoms associated with difficulty breathing, chest pain, or urine output less than 3 times in 24 hours, needs immediate medical attention.

### Normal Symptoms after Surgery

- Mild or moderate pain or discomfort
- Mild to moderate fatigue
- Moderate swelling or bruising
- Itchiness at your incision sites due to the healing process of the nerves.
- Numbness in the abdominal area in the first 2-3 months (gradually returns to normal)
- A small amount of nausea is common after surgery related to the anesthesia and the inflammation of the stomach

### Diarrhea

Diarrhea may be due to following:

- Lactose intolerance: Diarrhea may be caused by new onset of lactose intolerance, which is usually temporary. If this happens, you may switch to milk alternatives (i.e. fortified soy/rice/almond milk and/or use lactose-free milk) or use lactase enzyme. Lower lactose products such as yogurt and low fat cheese are better tolerated than milk itself.
- Consumption of sugar-containing foods and medications can cause dumping syndrome

- Products containing sugar alcohols; those ending with “-ol” such as mannitol, sorbitol, xylitol
- Clostridium difficile (bacterial infection in your bowel)

As soon as you notice diarrhea, limit the following foods: milk and milk products, greasy foods, high fibre foods, and sugar alcohol containing foods and include foods with soluble fibre such as banana, soft apple without skin, and oatmeal. Make sure you eat small meals and drink fluids between meals.

## **Dumping Syndrome**

More commonly occurring after gastric bypass, dumping syndrome is triggered typically by liquid carbohydrates (juice, milks – dairy and plant, soda-pop, alcoholic beverages, etc.), eating too quickly, and/or not separating solids and fluids properly. While ALL liquid carbohydrate drinks are the most common, junk foods like candy or sweets, or starchy carbs – rice, potatoes, breads or pastas can all cause this as well. Ultimately eating carbohydrates on an empty stomach is the biggest trigger of dumping syndrome.

The symptoms of early dumping syndrome, which occurs 30-60 minutes after eating and may last up to 60 minutes, may include:

Sweating, flushing, nausea, diarrhea, dizziness, cramping, loose stools, weakness, desire to lie down, upper abdominal fullness, cramping, vomiting, and heart palpitations.

The symptoms of late dumping syndrome, which occurs 1-4 hours after eating and is due to low blood sugar, may include sweating, shakiness, loss of concentration, hunger, and fainting.

To prevent dumping syndrome:

- Avoid foods that are sweetened and/or have high fat content; examples are sweets, cookies, candy, donuts, muffins, pies, cake, fries or fried foods, chicken wings, syrup, ice cream, fruit drinks, and fruit juice
- If sugar (in the form of glucose, fructose, sucrose, cane sugar and syrups) appears among the first three ingredients of the food, do NOT consume that product, especially on an empty stomach.
- Aim for less than 10g of sugar per serving.
- Choose foods with lower fat content; look for less than 5% daily value of fat on the label
- Avoid drinking fluids with meals; fluids must be consumed ½ hour before or ½ hour after solid meals.

- Do not try to wash down solid food that seems stuck; this makes you feel worse and may cause you to vomit. Let the food pass through without eating or drinking more.
- Notify the Dietitian or Nurse in the Bariatric program if you suspect this is happening, as medical consultation with the team Endocrinologist may be necessary.

## Constipation

Constipation may be due to following:

- Administration of narcotic pain medications after surgery
- Inadequate fluid intake
- Inadequate consumption of fibre, fruits, and vegetables, and high protein intake
- Taking iron supplements
- Lack of physical activity

You may try the following tips to improve your bowel movement:

- Drink enough fluids regularly (slowly working your way back to 8 cups water/day as soon as it is tolerated)
- **One week prior to surgery**, please start taking Restoralax® or Lax-a-day (17grams) once or twice per day to maintain one bowel movement per day. This is only required if you are not having one bowel movement per day. Please stop laxative use if you are having loose or liquid movements more than once a day.
- Work towards 30 minutes of sustained physical activity per day, as tolerated
- You may take Restoralax® or Lax-a-day® daily as needed once you are consuming at least 6 cups of water/day
- May take a magnesium supplement up to 350mg (including magnesium content in any other supplements such as a multivitamin) per day
- Incorporate ¼ cup of unsweetened prune juice and dilute with equal amount (1/4 cup) of water. After having the prune juice, drink warm water, decaffeinated coffee or tea. You can do this 1 to 2 times a day to help.
- Include fibre-rich foods in your diet, e.g., cooked beans, vegetables, pear
- Add Benefibre® (fiber source: wheat dextrin, inulin, soluble corn fiber, partially hydrolyzed guar gum) to your liquids or food after week 3 post-op or Metamucil® (100% natural psyllium fiber) after week 10 post-op
- Seek medical attention if constipation doesn't improve

## Decreased Appetite and Taste Changes

The relationship with food is a fascinating topic to the RMBS team. Most patients have reduced appetite, but also notice that their food preferences have been altered. Foods one may have liked prior to surgery may change in preference. For example, this is a common

thing when discussing eggs and egg-based foods as some people find they start to dislike the taste of eggs, or vice versa. The important point is to ensure that patients concentrate on fluid intake but also the proteins that they do enjoy and palate normally as a staple of the diet after bariatric surgery.

### **Dehydration**

Diarrhea, vomiting, and not drinking enough fluids may cause dehydration. The goal is to drink at least 6-8 cups of fluids daily, which may include water, calorie-free fluids (that are non-caffeinated, non carbonated), fat free broth, decaffeinated coffee, tea, milk, ice chips, and sugar-free popsicles.

Some people may experience an intolerance to plain water after surgery. Trial different temperatures to see if your tolerance improves with colder or warmer fluids. Adding acceptable flavoring options such as decaf or herbal tea or sugar free water enhancers such as Mio® drops may help. Other people prefer cucumber water, lemon or lime water, etc. Use of sugar free electrolyte drinks such as Gatorade Zero) may help you tolerate fluids and improve hydration as well, but be mindful if you have underlying health conditions that may require you to limit your electrolytes such as sodium and potassium.

Dehydration signs include dark urine, headaches, dizziness, lethargy, dry skin, and/or a white coating on the tongue. Drinking less than 600 mL of fluids (in addition to your 6 small meals/day) will affect your kidney function. If you are unable to drink enough fluids, for reasons such as intolerance and vomiting, you need to seek medical attention.

### **Food Intolerances**

Patients may be intolerant to some foods after gastric bypass surgery.

The most problematic foods are:

- Dry (e.g. roast beef, turkey, pork),
- Sticky (peanut butter),
- Gummy (fresh bread), or
- Stringy (chicken, celery, fibrous fruit, and vegetables)
- Bread, pasta, and rice: fresh bread, pasta, and rice tend to become “gummy” and can cause blockage of the stomach pouch outlet. However, toasted bread, crackers, tortilla shells are more tolerable.
- Abdominal cramping has been reported with consumption of vegetables such as cauliflower and broccoli.
- Lactose intolerance is also reported, as previously mentioned.
- Increased sensitivity to alcohol

## Gas and Bloating

It is common to feel bloated in the first few weeks after the surgery, especially if you have developed intolerance to lactose. Try the following tips to prevent gas and bloating:

- Drink slowly only up to 4 tbsp. of fluids at once
- Do NOT use straw
- Do NOT chew gum
- Do NOT drink carbonated beverages
- Do NOT eat foods that contain sugar alcohols such as sorbitol, mannitol, and xylitol
  - If using xylitol to for dental hygiene, speak with dentist about alternatives

## Hair Loss

Hair loss is common between 4 to 8 months after surgery and is usually due to massive weight loss. This is a temporary symptom and hair will re-grow once your weight loss is stabilized. In order to promote hair re-growth and prevent excessive hair loss, you must eat enough protein, take all your supplements, and eat nutritious meals. Inadequate protein, iron and zinc may all contribute to hair loss. Many patients inquire about using biotin, hair, nail and skin supplements. Currently, there is inadequate evidence to support this. However, if you wish to trial, please ensure that products with high doses of biotin are stopped at least 1 week prior to any bloodwork testing as it may interfere with the results. If you feel that hair loss is still highly active after 14 months of surgery, then we generally recommend you speak to your primary care provider about a Dermatology referral to rule out other causes of hair loss.

## Nausea & Vomiting

Mild nausea is common in the first few months following bariatric surgery. Nausea and vomiting may be caused by eating too fast or too much, not chewing the food enough (must chew food 30 times prior to swallowing), eating solids at the same time with fluids, eating foods that are too dry or rough, gulping fluids, eating while distracted, dehydration, or swallowing air.

If nausea or vomiting occurs:

- Stop eating and drinking until the nausea stops.
- Return to full fluid and/or pureed food stage for a day or so before re-starting the solids.
- If a certain food caused nausea and vomiting, avoid that food for a few days before re-introducing it.

- Cut foods into small pieces and take your time to eat, put down utensil between bites, eat without distraction and chew food well.
- Avoid cold beverages as well as those that are caffeinated or carbonated.
- Make sure you drink enough fluids, but also separate from solids.
- Continue journaling and keep track of your symptoms.
- Contact your doctor if the nausea and vomiting persists more than 24 hours.

To prevent nausea and vomiting, you can:

- Take small bites of food and sip on fluids slowly. Chew your food well.
- Take 30-45 minutes to eat your food.
- Avoid drinking with meals.
- Avoid cold, caffeinated or carbonated beverages

## **Heartburn**

Avoid drinking carbonated beverages, acidic food/beverages, caffeine, spicy foods, and using a straw. You might have to take acid-reducing medications if heartburn is affecting your food and fluid intake – discuss this with your surgeon.

## **Dysphagia**

Dysphagia means difficulty swallowing and can be a side effect of restrictive bariatric surgeries. Patients may feel pain in the esophagus or tightness in the throat after eating too fast, too much, or not chewing food well. To prevent this symptom, chew food well, eat slowly and avoid tough foods such as doughy bread and dried meat, and avoid drinking fluids 30 minutes before and after having solid meals.

Everyone's individual experience with swallowing will differ slightly following surgery. In the first few months after surgery for our patients there is a learning curve in determining what amount the body can handle in a single sitting for a meal.

If you suddenly experience difficulty swallowing that is new after surgery, please contact the bariatric team or your primary care provider.

## **Metabolic Changes**

The following changes are common:

There might be a need to change dosages of oral diabetic medications, insulin, hypertension medications, and diuretics, after the surgery. If you take such medications, ask your physician about what symptoms to watch for and follow up with your family physician

regularly. We ask the family physician be actively engaged in helping manage medications after surgery. The surgical team, nurse, and endocrinologist may recommend medication changes directly after surgery when going home.

Some cholesterol medications may cause nausea post-operatively. If your physician suspects this is contributing to your nausea, he/she may choose to reduce or stop these medications.

### **Strictures**

If you are following proper eating techniques and still vomiting (even with fluids) and your saliva is white, sticky, and foam-like, you may have a stricture. A stricture (excessive scar tissue formation) occurs when the small opening between your pouch and small intestine is too tight. You need to see your surgeon urgently, if you suspect a stricture. Smoking contributes to a higher stricture rate after surgery, which is another reason why you need to be smoke-free prior to surgery.

### **Swelling and Bruising**

Moderate swelling and bruising is normal after surgery, but more severe cases may indicate infection and/or bleeding. Seek medical attention if there is a hard, swollen, hot, red spot on your abdomen or if you are having significant pain at the incision sites.

### **Ulcer**

An ulcer may develop in the area where the new stomach pouch is connected to the small bowel. It is accompanied with symptoms such as pain when eating, bleeding (accompanies bloody stool), vomiting blood and nausea. An upper endoscopy examination can help to diagnose ulcers and can be treated with anti-ulcer medications. Smoking, caffeine, anti-inflammatory medications (i.e. Ibuprofen, Advil®, Motrin®, Naproxen, Aleve®, Naprosyn, Indomethacin, Indocin, Nabumetone, Relafen, and Aspirin) and corticosteroid medications (i.e. Prednisone, Hydrocortisone) increases risk of developing ulcers. To avoid complications such as an ulcer, do not resume smoking after your surgery, avoid caffeine, and avoid the above medications unless ordered by your physician. You will be given a prescription for acid-reducing medications for a minimum of 1 month after surgery. Make sure you take your acid-reducing medication daily as prescribed after discharge from the hospital.

RICHMOND METABOLIC AND  
BARIATRIC SURGERY



## **Abdominal Pain**

After surgery, weight loss can lead to an internal hernia (gastric bypass) and gallstone formation (both gastric bypass and sleeve gastrectomy). As mentioned, ulcers can also form after surgery. If you develop pain in the central / upper abdomen, after meals associated with nausea, this may be an internal hernia or gallstone attack. If pain persists, you must seek urgent medical attention. We prefer you return to Richmond Hospital if possible as our surgeons are trained to manage severe complications such as internal hernias. If you go to another hospital, ask the physician who is taking care of you to call your bariatric surgeon.

## **Low Blood Sugar**

Low blood sugar (glucose reading less than 4mmol/L; hypoglycemia) may occur in patients after bariatric surgery, especially with those patients who are still on diabetic medications, waiting longer than 6 hours to eat, or after exercising. If you are being treated for diabetes, it is important to see your family physician / diabetes specialist / endocrinologist within 4 weeks post bariatric surgery so that your medications are adjusted. Symptoms of hypoglycemia may include feeling shaky, weak, cold with sweaty skin, dizzy, hungry, irritability, etc.

To prevent hypoglycemia, make sure that you eat regularly, have adequate amount of protein (as calculated by your dietitian) with each meal, and choose high fibre foods (e.g., beans, soft cooked pears). Treating low blood sugar before and after the surgery is the same, e.g., having glucose tablets.

Please keep a detail log of your blood sugars after surgery and contact the bariatric nurse for blood sugars that are consistently below 4.0 or above 10.0.

## **Weight Loss Plateau**

Everyone's weight loss journey is different and weight loss patterns vary among patients; it is almost impossible to predict how much weight an individual will eventually lose. We recommend you do not compare your weight loss with other patients. Patience and a regular routine of lifestyle habits is essential. Note that it is normal to lose a significant amount of weight at the beginning and then stall for weeks at a time. Sometimes, you might also gain some weight; research has shown that once you have reached your most stable weight, you may gain up to 10% of the weight you have lost back. Fixating on a "magic number" (your perceived goal weight) constantly is not helpful during your weight loss journey. There are many other ways that you can observe your progress such as

improvement in your blood work, reduction of the number of medications you are taking, the reduction in size of clothes you are wearing, more flexibility in your day-to-day activities, or sports that you can now enjoy, and more!

Here are some tips on how to boost your weight loss: 1) make sure you consume an adequate amount of protein (as recommended by your dietitian) and always eat protein first; 2) vary the types of foods you eat and mainly eat solid foods at 3 months post-surgery and beyond; 3) vary types of physical activities you do and include some weight training (you may contact bariatric QEP by calling 811 to help you get started on this or other activities); 4) stay positive and committed and patient.

### **Food Taste Changes**

It is normal to observe some changes in your taste sensation after the surgery. Some people develop food aversions toward certain foods or water. Some do not find eating a pleasurable experience anymore. Again, we cannot predict who will develop such aversions but for the majority of people, the change is temporary.

### **Dental Changes**

Recently there have been several reports suggesting that dental related illness - e.g. caries (cavities) or periodontal disease are increased after bariatric surgery, for reasons that are unknown at this time (e.g. it occurs in people taking supplements routinely as well). It is important to share this information with dentists, as it would minimize inaccurate conclusions about causes of poor dentition. While more research on dental management for these issues is underway, we recommend the following:

1. Routine visit to dentist, such as 2 to 4 times per year, or more to address concerns. This is to monitor for increased signs of wear on teeth, cavity surveillance, and monitoring for periodontal breakdown. Inform your dentist that bariatric surgery is a cause of poor dental health, and not necessarily the patients fault from poor dental hygiene.
2. Xylitol lozenges (such as Xylimelts®) that you put in the side of your mouth at night AND/OR xylitol mouth rinses.
3. Fluoride varnishes at all times in dental care

## **Psychological Considerations**

Some people believe that bariatric surgery alone will stop one's addiction or compulsion to eat. Unfortunately, this is not typically the case.

There is emerging evidence that for some patients, food can be an addiction because of its impact on the pleasure centers of the brain. Just as some people with substance use disorders can switch one addiction to another, there is data that some patients who have undergone bariatric surgery can be at risk of switching their addiction to food to a different type of unhealthy addiction.

In addition, unaddressed trauma/abuse, high stress lifestyle, and/or other unresolved psychological issues will not be treated by bariatric surgery. Patients who have used food to cope with their emotions can struggle after the surgery if they have not learned healthier coping mechanisms.

Our team is committed to helping our clients reduce their psychological risks and find healthy, non-food alternatives for coping with the stresses of everyday life. Our clients who have addressed these factors are the ones who have been the most successful with their long terms weight loss and health goals.

**If you feel you need help with some of the above psychological factors, talk to us! We have programs and services available to help you.**

## Nutrition (before surgery)

All patients will meet with a Registered Dietitian one-on-one and receive intensive education on behavior modification, including but not limited to:

- Comprehensive nutrition assessment
- Lifestyle choices
- Self-monitoring
- Food choices
- Meal planning and prepping
- Fluid and nutrient requirements (considering existing medical conditions)
- Nutrition label reading
- Mindful eating
- Eating techniques
- Pre-op and post-op diets
- Vitamin/mineral supplements counseling
- Review of blood test results
  - fasting may be required
  - do not take any biotin containing supplements, except multivitamin and mineral, for at least one week prior to your blood work since it may affect the results of tests such as TSH, Folate, and Ferritin

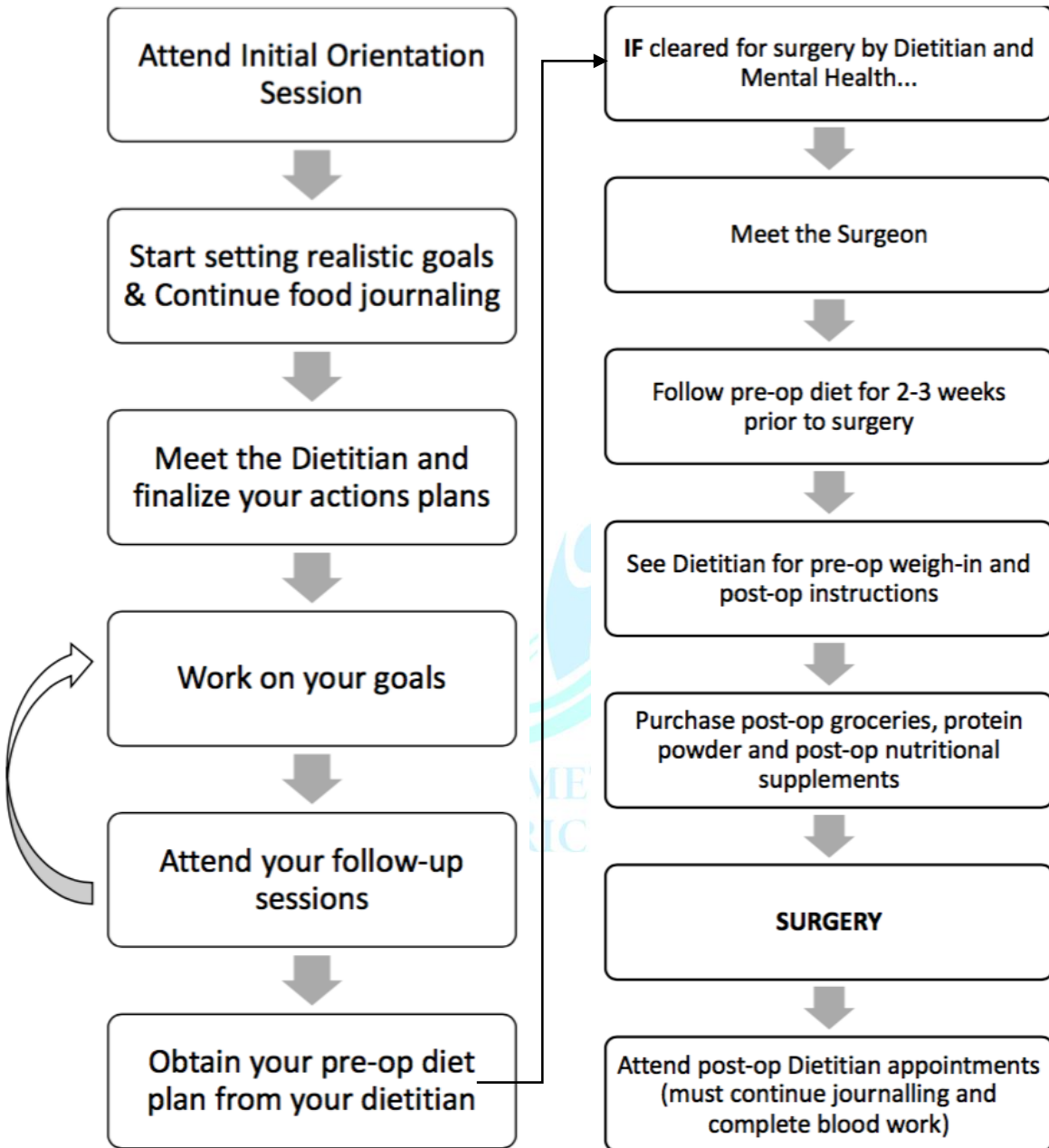
RICHMOND METABOLIC AND  
BARIATRIC SURGERY

When possible, nutrition classes are offered in-person or virtually. However, when classes are not offered, please watch the nutrition videos on our website:

<https://www.vch.ca/en/location-service/metabolic-bariatric-surgery-richmond-hospital>

**Please note:** the nutrition videos above do not replace the individual advice you have been provided at your dietitian appointments or from your physician(s). They are simply to provide you with generic information for learning purposes.

Summary of appointments with the dietitian



## Nutrition guidelines prior to bariatric surgery

Following healthy eating guidelines is important in preparation for the bariatric surgery and for the rest of your life; it is not only about what you eat, when you eat, how much you eat, but also how you eat. The key is having a balanced diet and limiting unhealthy foods.

Following Canada's Food Guide and the Healthy Plate Model will be the first steps toward healthy dietary habits. This includes:

- having plenty of vegetables and fruits
- eating protein foods
- making water your drink of choice
- choosing whole grain foods
- being mindful of your eating habits
- cooking more often
- enjoying your food
- eating meals with others
- using food labels
- limiting highly processed foods
- gaining awareness of how marketing can influence your food choices



RICHMOND METABOLIC AND  
BARIATRIC SURGERY

Your dietitian will help you develop a balanced and sustainable diet depending on your age, gender, medical conditions, and preferences. Coaching will be provided to help with reading nutrition labels, addressing nutritional deficiencies, eating regularly, not skipping meals or snacks, addressing emotional eating, and focusing on mindful eating behaviors.

Helpful resources (copy and paste link into your internet browser):

**Food Guide Basics:** <https://tinyurl.com/food-guide-basics>

**Build a Healthy Meal - Use the Eat Well Plate:** <https://tinyurl.com/healthy-meal-plate>

**Food Guide and Healthy Eating:** <https://tinyurl.com/food-guide-healthy-eating>

**Overcoming Barriers:** <https://tinyurl.com/overcome-barriers-solutions>

**Healthy Eating:** <https://tinyurl.com/healthy-eating-8100>

**Weight Management:** <https://tinyurl.com/healthy-weight-8100>

**Mindful Eating:**

<https://food-guide.canada.ca/en/healthy-eating-recommendations/be-mindful-of-your-eating-habits/>

<https://www.cravingchange.ca/public/>

**Emotional Eating:**

<https://www.healthlinkbc.ca/health-topics/aa145852>

<https://www.cravingchange.ca/public/>

<https://www.amazon.com/Emotional-First-Aid-Kit-Practical-ebook/dp/B0054RXXS0>

[Lifestyle modifications for bariatric patients](#)



You need to practice the following prior to surgery in order to be prepared for your new lifestyle after surgery:

- Manage portion size, eating pace and food tolerance:
- Use smaller plates and utensils
- Cut food into small pieces
- Chew each bite of food 30 times until mushy
- Stop eating when you feel comfortably satisfied, not stuffed
- Include 30-60 minutes of physical activity every day

After surgery, you may feel pain in your upper stomach area or further up when you have eaten more than you should, when you have eaten dry food or the food was not chewed well.

- Avoid drinking fluids with meals, and ~30 minutes before and after meals
- Having fluids too close to your meal will fill up your small stomach or overwhelm it with excessive volume. This is not only dangerous soon after surgery, but can also eventually stretch your new stomach, which defeats the purpose of bariatric surgery.
- Avoid feasting (food funerals) before the surgery thinking that you will never eat the same way after the surgery

Any weight gain, especially in the weeks leading to surgery, can increase the size of your liver and risks associated with surgery

To ensure adequate hydration:

- Practice sipping fluids slowly throughout the day
- You won't be able to gulp fluids after surgery
- Carry water with you all the time
- Gradually eliminate caffeinated, carbonated and alcoholic beverages

To ensure adequate nutrition:

- Read nutrition labels to identify high-protein foods
- Eat protein with each meal
- After surgery, protein must be the first item to be consumed at each meal
- Explore and purchase protein supplements (examples are provided later) such as whey protein isolate, since you may not be able to eat enough high protein foods to meet your body's needs after the surgery.
- Consistently take your recommended vitamin and mineral supplements

Pre-Operative diet

## RICHMOND METABOLIC AND BARIATRIC SURGERY

Your liver partially covers the top of your stomach and needs to be lifted during the surgery to avoid complications. In order to decrease the risk of injury to your liver, you are required to not only attempt losing weight prior to surgery, but also follow a special diet for a minimum of 2 weeks (or longer as per surgeon's instructions) prior to surgery.

Some medications, such as blood sugar-lowering drugs, **must be adjusted** while on this diet to avoid potential health issues, such as hypoglycemia (low blood sugar). Therefore, it is important that patients talk to their doctor before starting their pre-op diet, and then trial the diet, well in advance of their surgery date.

While on the pre op diet, ensure that you are drinking plenty of fluids that are non-caffeinated, non-alcoholic, non-carbonated, and non-caloric (8 cups or more, unless otherwise advised by a physician). If you are constipated, take a stool softener or laxative 2 days before surgery. The first few weeks of your post op surgery diet has minimal fiber, therefore it is imperative that you do not enter surgery already constipated.



**PLEASE NOTE:** If you already have a pre-existing sleeve gastrectomy and your upcoming surgery is for conversion or revision purposes, your surgeon may not need you to go on a pre-op diet. Please double check with your surgeon by calling the surgeon's office directly.

There are two pre-operative diet options to choose from – liquid and food based. Your dietitian will review the options during your pre op appointments.

General reminder: Do NOT consume anything that you are allergic/intolerant to, or cannot have due to a medical condition.

- Contact your dietitian to make substitutions.
- Please note: Substitutions are only offered for medical necessity, not preferences.

Remember: **DO NOT** take any non-prescription vitamins, supplements, herbal medications or herbal tea for **7 days** before surgery.



RICHMOND METABOLIC AND  
BARIATRIC SURGERY

## Nutrition (after surgery)

After surgery, you will only be taking sips of clear fluids. This is to allow your suture site (staple line) to heal and to reduce the risk of a post-operative leak. You will slowly increase your clear fluid intake to 2 tbsp. every 15 minutes. The following table outlines the usual diet progression for people having bariatric surgery for the first time (no prior bariatric surgery).



**RICHMOND METABOLIC AND  
BARIATRIC SURGERY**

Post-Op Diet Progression\*

Diet	Time Post Op	Diet Duration	Portion Size	Meal Time
Bariatric Clear Fluids	Surgery Day (Post op Day 0) and Post op Day 1:	2 days  (maybe longer if kept in hospital)	Post op Day 0 - 1:  0.5oz/15mL/1tbsp every 15 minutes	n/a
Bariatric Full Fluids	Post op Day 2 until end of Post Op Week 3	3 weeks	Starting Post-op Day 2: 1oz/30mL/2tbsp every 15 minutes  Week 1: ½ cup/meal Week 2-3: ½ - ¾ cup/meal	Week 1: 60min or longer  Week 2: 45-60min
Bariatric Pureed	Post Op Week 4 - 5	2 weeks	½ - ¾ cup/meal	45-60min
Bariatric Soft Solids	Post Op Week 6 - 12	6 weeks	½ - ¾ cup/meal  Protein, then vegetables, then carbohydrates last	45-60min
Bariatric Regular	Starting Post Op Month 3	Maintained for life. If unwell, may step back to fluids until feeling better.	Sleeve: ¾ to 1 cup/meal Bypass: ½ - ¾ cup/meal  SADI-S & DS: ½-¾ cup/meal (max ¾ to 1 cup /meal)  Protein, then vegetables, then carbohydrates last	30-60min

\*Patients having revisional surgery may have a different diet progression schedule.

## Bariatric Clear Fluids (Post-operative Days 0 - 1)

The bariatric clear fluid diet consists of water, diluted clear juice, broth, diabetic Jell-O®, and decaf tea or coffee. You must avoid caffeinated coffee and tea because they offer no nutritional value, fill your smaller stomach too much, and may cause dehydration and heartburn. We discourage carbonated beverages as the gas causes pain/discomfort and fills what little space you have in your stomach with empty calories.

Aim for 1 tablespoon (15 mL) every 15 minutes. Avoid use of straws. Drinking through straws causes you to drink too quickly, which can cause discomfort in the pouch. Straws also introduce air into the pouch and cause excess gas. Avoid straws until you are comfortable regulating how quickly to drink. You should also be getting other fluids via IV (intravenously) while in hospital.

## Bariatric Full Fluids: (Post Op Day 2 to Post-op Week 3)

You will be discharged home the evening of your surgery or the morning after surgery and can start on a bariatric full fluids diet on Post Op Day 2. You may now increase fluid intake to 2 tbsp. (30 mL) every 15 minutes. You may use a medicine cup that holds 30 mL (1 oz.) as a guide. The full fluid diet includes fluids as well as some foods that are easy to swallow.

It is generally milk (or milk alternative) based, high in protein, and low in fat and sugar. Listen to your body cues. Always stop drinking if you feel pain, pressure, or discomfort. Try drinking again later, after taking a break.

Please remember the priority is water and ensuring you are drinking at least 4 cups (= 1 litre) per day. Take your time slowly reaching your protein goal over the next several weeks as tolerated. Please reach out to our dietitian if you are struggling with any of the protein supplements to determine what may work best for you. Limit protein supplement drinks to one per day as these drinks may be fortified in vitamins and minerals. You may start using protein powder at the beginning of Post Op Week 2 if you are tolerating the diet well so far.

Make sure to focus on staying hydrated and take your time. You may drink or eat 2 tbsp (1 oz) every 15 minutes. It is ideal to spend 1 to 1.5 hours slowly eating your meal, which consists of ½ to ¾ cup (4-6 ounces) of full fluids.

Avoid using a straw as you may drink too much or too fast and swallow air or over stretch the small pouch. Full fluids must be rich in protein and may contain protein powder which contain 20-40 g protein per serving and can be dissolved in preferably fat free or low fat milk or no sugar added soy milk.

**Full fluids are foods or drinks that are:**

- Liquid at room temperature
- Melt at room temperature
- Can be poured
- Do NOT contain solid pieces of food

**Struggling to tolerate plain water? Try adjusting...**

- Temperature – some people tolerate colder water better while others prefer warmer
- Flavor and Viscosity – trial use of natural flavors such as squeeze of fresh lemon/lime, fresh cucumber slices in fuse the water with (strain all pulp/seeds before drinking). Sugar free sweeteners such as Crystal Light or MiO Drops may also be trialed.

## Full Fluid Options

Food Group	Choose	Limit or avoid
<b>Milk and Milk Products</b>	<ul style="list-style-type: none"> <li>➤ Skim or 1% milk</li> <li>➤ Lactose free milk (Lactaid®, Fairlife®)</li> <li>➤ Lactose reduced milk (Joyya®)</li> <li>➤ Low fat, unsweetened fortified soy beverage</li> <li>➤ Smooth, plain fat-free yogurt (no fruit bits)</li> <li>➤ Low fat, sugar free pudding or custard</li> <li>➤ <b>Strained</b> and thinned low fat soup</li> <li>➤ Skim milk powder added to full fluids</li> <li>➤ (Week 3) low fat cottage cheese or ricotta cheese</li> </ul>	<p>High fat ice cream; high calorie milkshakes;</p> <p>Avoid all solid milk products like cheese</p>
<b>Grain Products (starting week 3)</b>	<ul style="list-style-type: none"> <li>➤ (Week 3) thin plain oatmeal</li> <li>➤ (Week 3) thin cream of wheat</li> <li>➤ (Week 3) thin oat bran cereal</li> </ul>	<p>Avoid any bread, cold cereals, pasta, rice, noodles, grains, beans and legumes</p>
<b>Fruits and vegetables (starting week 3)</b>	<ul style="list-style-type: none"> <li>➤ (Week 3) Vegetable or tomato juice (low sodium), i.e. low sodium V8®</li> <li>➤ (Week 3) Unsweetened fruit sauce, store bought or homemade with no added sugar, fruit peel removed</li> </ul>	<p>Avoid fruit juice (even 100%) unless it is prune juice being used to treat constipation.</p> <p>Avoid pureed vegetables;</p> <p>Avoid all raw vegetable and fruits</p>
<b>Meat and Alternates</b>	<ul style="list-style-type: none"> <li>➤ Silken or soft tofu (not dessert tofu)</li> <li>➤ meats broths (fat free)</li> </ul>	<p>Avoid all meat, fish, poultry and firm tofu even if pureed</p>
<b>Protein supplements</b>	<ul style="list-style-type: none"> <li>➤ (Week 2) Protein powder (Per 1 scoop: 20-40g protein, &lt;1.5g fat, &lt;5g carbohydrate, no protease).</li> <li>➤ 100% whey isolate preferred; otherwise soy is best plant based option</li> <li>➤ Diabetic (sugar free) nutritional supplements</li> </ul>	<p>Plant based proteins except for soy</p> <p>(speak with your dietitian re: allergies restricting options)</p>

<b>Other</b>	<ul style="list-style-type: none"> <li>➤ Water, broth, consommé</li> <li>➤ Popsicles® made with artificial sweetener</li> <li>➤ Decaffeinated coffee/tea or herbal tea</li> <li>➤ Any non-carbonated decaf sugar-free beverage made with artificial sweeteners, i.e. Crystal Light®</li> <li>➤ Sugar free Jell-O® or popsicles</li> </ul>	Avoid caffeine; alcohol; carbonated drinks; solid or semi-solid foods; all forms of added sugar including honey and syrups
--------------	---	--

### Sample Menu for Full Fluid Diet (Post-op Week 1 - 2)

<b>Breakfast</b>	½ cup protein drink (sip slowly over 1 hour)
<b>Morning Snack</b>	¼- ½ cup fat-free, sugar free plain or vanilla Greek yogurt thinned with skim milk/milk alternative as needed (eat slowly over 1 hour).
<b>Lunch</b>	¼- ½ cup low fat broth or low-fat cream soup (e.g. Campbell's cream of mushroom, STRAINED), thinned with skim milk or fat free, low sodium broth (eat slowly over 1 hour).
<b>Afternoon Snack</b>	½ cup protein drink (sip slowly over 1 hour). OR ¼- ½ cup fat-free, sugar free plain or vanilla Greek yogurt (eat slowly over 1 hour).
<b>Dinner</b>	¼- ½ cup low fat broth or low-fat cream soup (e.g. Campbell's cream of mushroom, STRAINED), thinned with skim milk or fat free, low sodium broth (eat slowly over 1 hour).
<b>Evening Snack</b>	½ cup protein drink (sipped slowly over 1 hour) OR non-fat, sugar-free Greek yogurt (thinned with milk as needed)

#### Important Notes:

- **Water is your priority: Drink at least 4 cups of water or calorie free fluid throughout the day and slowly increase intake as tolerated.**
- Sip all fluids slowly to avoid complications, abdominal pain and nausea (e.g. ½ cup meals/snacks over 1 hour).
- To keep your food and fluids cold or hot as long as possible, try using a thermos.
- Using a shaker cup to mix your protein drink will create fewer air bubbles vs blender.
- No shaker cup? Use a blender on low speed. Then, let your protein shake settle to minimize bubbles before drinking (or skim the bubbles off with spoon).

## High Protein Drink Sample Recipe

1 scoop protein powder should have 20-40g protein, <5g carbohydrate, <1.5g fat, <1g sugar

Directions:

1. Mix  $\frac{1}{2}$  scoop of protein powder with  $\frac{1}{2}$  to  $\frac{3}{4}$  cup skim milk or plain soy milk or  $\frac{1}{2}$  cup fat-free, sugar-free Greek yogurt (plain or vanilla, NO fruit bits)
2. Then add these optional flavors:
  - 1 packet of Crystal Light®
  - 1 squirt of Mio® sugar free flavoring drops
  - 2 tbsp. diet Jell-O® sugar free powder or prepared sugar free Jell-O cup
  - 2 tbsp. low fat, sugar-free pudding
  - 1 tsp unsweetened cocoa powder
  - 1 tsp instant decaf coffee
  - Small amounts of other calorie free sweeteners

**\*Hint:** Mix protein powder (plain and flavored) well in a room temperature liquid first before adding to hot fluids (e.g. decaf coffee or herbal tea) or food (e.g. oatmeal or soup). This will help prevent clumps.



## Sample Menu for Full Fluid Diet (Post-op Week 3)

Breakfast	<p>¼ cup cooked plain oatmeal (runny consistency) which has ¼ cup skim milk; (add protein powder at room temperature)</p> <p>¼ cup fat-free, sugar free plain or vanilla Greek yogurt</p>
Morning Snack	¾ cup protein drink (¾ cup of skim milk + ½ scoop protein powder)
Lunch	½ - ¾ cup STRAINED low fat cream soup made with low fat milk, with ½ scoop protein powder (mixed at room temperature)
Afternoon snack	¾ cup protein drink (¾ cup of skim milk + ½ scoop protein powder)
Dinner	<p>½ cup low fat cottage cheese (mashed with a fork) or fat-free, sugar free plain or vanilla Greek yogurt</p> <p>¼ cup unsweetened fruit sauce</p>
Evening Snack	¾ cup protein drink (¾ cup of skim milk + ½ scoop protein powder)

### Important Notes:

- **If you are struggling with nausea/not tolerating Full Fluids, please return to Clear Fluid diet stage for 2 days or until nausea improves before trying Full Fluids again.**
- Water is your priority: Have 4 cups of water or calorie free fluid throughout the day.
- Sip all fluids slowly to avoid abdominal pain or nausea from drinking too fast.
- To keep your food and fluids cold or hot as long as possible, try using a thermos.
- Using a shaker cup to mix your protein drink will create fewer air bubbles vs blender.
- No shaker cup? Use a blender on low speed. Then, let your protein shake settle to minimize bubbles before drinking (or skim the bubbles off with spoon).

## Progressing from Full Fluid to Pureed Foods (Post-op Week 4 - 5)

Once the full fluid diet is tolerated (first 3 weeks after surgery), it is time to proceed to pureed or blended foods. The pureed food stage lasts for 2 weeks, until you start soft solids at post op week 6. All foods taken at this stage must be low in fat and sugar.

You will need a blender to puree the food to a smooth consistency (lump free, like baby food). Eat 2 to 4 tablespoons (1 to 2 ounces) every 15 minutes to a total of  $\frac{1}{2}$  to  $\frac{3}{4}$  cup (4 to 6 ounces) at each meal. It may take you 1 to 1.5 hours to finish the whole meal.

You must stop eating as soon as you feel comfortably full and try eating again later. Eat slowly without distractions. Try to include 3 small meals and 2 to 3 small snacks. Always eat protein first, followed by vegetables or fruit, and lastly starches (only if you have room).

### Remember:

- **If you are struggling with nausea/not tolerating Pureed foods, please return to the Full Fluid diet stage for 2 days or until nausea improves before trying pureed food again.**
- Water remains a priority: Drink 6 to 8 cups of water or caffeine-free, calorie-free fluids throughout the day, separated from solids by 30 minutes before and after
- Do NOT have anything with nuts, seeds, tough skins or dried fruits
- Limit added fats, oils, and sugars
- Limit spicy foods, as they may trigger acid reflux

### Pureed Food Options

Food Group	Choose
<b>Milk and Milk Products</b>	Same as full fluid diet
<b>Grain Products</b>	Same as full fluid diet plus the following items: <ul style="list-style-type: none"><li>➤ Mashed potato, sweet potato or yam</li><li>➤ Low fat soda crackers (unsalted) or melba toast</li></ul> DO NOT eat pureed pasta, rice, bread, noodles, or muffins (these turn gummy and can cause stomach upset)

<b>Fruits and Vegetables</b>	<p>Same as full fluid diet plus the following items:</p> <ul style="list-style-type: none"> <li>➤ Pureed cooked vegetables (e.g. green beans, carrots, parsnips, peas, cauliflower)</li> <li>➤ Pureed cooked fruits (without skins or seed)</li> </ul>
<b>Meat and Alternates</b>	<p>Same as full fluid diet plus the following items:</p> <ul style="list-style-type: none"> <li>➤ Pureed chicken, turkey, or fish</li> <li>➤ Pureed legumes such as beans, split peas, and lentils</li> <li>➤ Poached or moist, scrambled eggs (need to chew well)</li> <li>➤ Pureed vegetable protein (i.e. ground soy)</li> </ul> <p>Note: Pureed red meat such as beef is often harder to digest, but you may try a small amount and assess your own tolerance</p>

### Sample Menu for Pureed Diet

<b>Breakfast</b>	<p>¼ cup cooked oatmeal or 1egg (poached or moist scrambled)  ¼ low fat, sugar free plain or vanilla Greek yogurt  2 - 4 tbsp. unsweetened applesauce</p>
<b>Morning Snack</b>	<p>½ cup low fat cottage cheese, mashed with fork  2 tbsp. pureed fruit</p>
<b>Lunch</b>	<p>2 - 4 tbsp. low fat pureed soup with added protein powder or low fat, sugar free plain or vanilla Greek yogurt  ⅓ cup low sodium tomato or vegetable juice</p>
<b>Afternoon snack</b>	<p>2 - 4 tbsp. low fat, sugar free plain or vanilla Greek yogurt + protein powder  OR ¾ cup protein drink (¾ cup of skim milk + ½ scoop protein powder)</p>
<b>Dinner</b>	<p>2 - 4 tbsp. pureed meat or fish  2 tbsp. mashed sweet potato  2 tbsp. pureed vegetables</p>
<b>Evening Snack</b>	<p>¾ cup protein drink (¾ cup of skim milk + ½ scoop protein powder)  OR ½-¾ cup low fat, no added sugar pudding with protein powder</p>

## Progressing from Pureed to Soft Solids (Post-op week 6 - 3 months)

After the pureed stage, you may gradually introduce soft solid foods, one at a time. Soft solids are foods that are cooked to a soft consistency, NOT raw. **You are NOT allowed to eat any raw fruits, veggies, nuts or seeds until you are at least 3 months post op.** To help you reduce discomfort and uncomfortable symptoms, carefully consider the following:

- **If you are struggling with nausea/not tolerating the Soft Solids foods, please return to the Pureed diet stage for 2 days or until nausea improves before trying soft solid food again.**
- Journal daily, including details such as time, amount, and symptoms, if any
- If a food causes discomfort, write it down and describe the discomfort you felt.
- Continue to choose small portions, about ½-¾ cup, as tolerated.
- Eat 3 small meals and 2 snacks (mid-morning and mid-afternoon) daily. Some people may need an additional snack after dinner. Eating too close to bedtime may cause discomfort or acid reflux, so remember to journal your personal experience.
- Eat only until you feel comfortably full. As you get used to the small portions, you may be able to slowly increase your portion size, but stay within 1 cup per meal.
- Eat mindfully and slowly; making sure you chew your food well (aim for 20-30 times before swallowing) and keep distractions (i.e. TV) turned off or away during meals.
- Eat balanced meals using the healthy plate - your smaller plate can still be divided as follows: ½ plate vegetables and fruits, ¼ plate grains and ¼ plate protein; eat protein foods first, then vegetables and fruits, and lastly, grains.
- Drink 6 to 8 cups of water or caffeine-free, calorie-free fluids throughout the day, separated from solids by 30 minutes before and after
- Avoid carbonated beverages, including carbonated water, diet and regular pop.
- Avoid caffeine to prevent heartburn and to avoid worsening dehydration.
- Take your vitamin and mineral supplements as recommended by your dietitian.
- Continue with regular physical activity as discussed with your health care provider.
- Avoid chewing gum, sucking on hard candy, using straws, and talking while eating.
- Dumping syndrome can be avoided by not mixing fluids and solid foods together, avoiding foods/drinks that are high in fat/sugars, and being mindful of portion sizes
- Read nutrition facts labels and aim for <5% DV of fat and <10g sugar per serving
- If you vomit, your next meal should be fluids. For the meal after that, try soft solids again; if vomiting continues, speak with your family doctor, surgeon, or dietitian.
- Attend all post-op appointments, and arrive prepared with your journal and questions, if any.

## Sample Menu for Soft Solids Diet Stage

<b>Breakfast</b>	<p><math>\frac{3}{4}</math> cup oatmeal (made with low fat milk, skim milk powder or protein powder, with cooked or canned fruit)</p> <p><b>OR</b> 1 egg (poached) with <math>\frac{1}{4}</math> cup low fat, low sugar yogurt and 2 - 4 tbsp. unsweetened applesauce</p>
<b>Morning Snack</b>	2 tbsp. homemade hummus and 2 low salt crackers
<b>Lunch</b>	$\frac{1}{2}$ cup chili and $\frac{1}{4}$ cup unsweetened canned or cooked fruit
<b>Afternoon snack</b>	2 tbsp. homemade tzatziki with 2 melba toast
<b>Dinner</b>	<p>3 oz. soft and moist meat or fish</p> <p><math>\frac{1}{4}</math> cup cooked green beans</p> <p><math>\frac{1}{4}</math> cup mashed sweet potato</p>
<b>Evening Snack</b>	$\frac{1}{2}$ cup low fat Greek yogurt and 1-2 tbsp. bran buds

## RICHMOND METABOLIC AND BARIATRIC SURGERY

### Remember:

- Water remains a priority: Drink 6 to 8 cups of water or caffeine-free, calorie-free fluids throughout the day, separated from solids by 30 minutes before and after
- Many people are returning to work or their usual activities by 6 weeks post op, so it's especially important to set timers or alarms on your phone, computer, watch, etc. to ensure you don't skip or delay any of your 3 meals and 2 to 3 snacks
- Hydration often declines during soft solids due to the necessity of separating fluids for 30 minutes before and after, especially when considering work meal breaks.
- If this is an issue for you, consider using Full Fluids for your snacks, so that you can drink your fluids up until your first mouthful of Full Fluids, then immediately after your last mouthful of Full Fluids. This will give you more time to meet your fluid goal.

**Fruits and Vegetables**

- Choose a rainbow of colors of fruits and vegetables (red, orange, yellow, dark green, purple, etc.) for phytochemicals (beneficial plant antioxidants)
- Choose soft, canned, well-cooked fruits and vegetables that are easier to chew well.
- Chew well or remove seeds and peel if needed
- Choose unsweetened and lower calorie varieties of fruits and vegetables

Good Choices	Suboptimal Choices
Unsweetened applesauce Fruit canned in its own juice Low sodium, unsweetened vegetable juice Plain sweet potatoes/yams Low sodium soups Low sodium tomato spaghetti sauce Cooked fresh, frozen, or canned vegetables	Canned fruit in syrup Dried fruits, fruit leather or fruit rollups Vegetables in cream or cheese sauces Battered or fried vegetables French fries or hash browns High fat cream soups Juice containing added sugar 100% fruit juice (limit to ½ cup per day and dilute at least 1:1 with water)

**Grain Products**

- Aim for 2 grams of fibre (or more) per serving on the nutrition label
- Choose whole grains unless poorly tolerated
- Crackers and lightly toasted bread is easier to chew and swallow compared to fresh, soft, doughy types of breads
- Many people struggle with tolerating rice and pastas, because they can feel very sticky and difficult to swallow. This may only be temporary. Avoid if you’re struggling and retry at a later time

Good Choices	Suboptimal Choices
Lightly toasted plain breads Unsweetened hot cereals, e.g. oatmeal Low sugar cold cereal Flatbreads: pita, tortilla, naan, roti, etc. Low salt pretzels, rice cakes; High fiber, low fat crackers, e.g. wasa	Pasta and rice, especially sticky, short grain Sugary breads, cereals or granola bars Popcorn and sugary granola Breads with nuts or dried fruit (like raisin bread), croissants, Danishes, French toast, sugary pancakes, perogies

## Milk and Alternatives

- These foods are a good source of protein, calcium, vitamin D and some B vitamins
- Choose lower fat dairy products: milk & yogurt (skim or 1%), cheese (<20% milk fat)
- Using Full Fluid milk and alternatives for snacks maximize your time for hydration
- Melted cheese can be stringy and hard to chew – take caution and chew 20-30 times
- You will likely need a calcium supplement to meet your daily post-op calcium goal
- Lactose intolerance is common after bariatric surgery – use of lactose free products and plant based alternatives that are calcium fortified are highly recommended

Good Choices	Suboptimal Choices
Skim, 1% or lactaid unsweetened milk 1% buttermilk Unsweetened, enriched soy, almond, rice, oat beverages Evaporated skim milk or skim milk powder Low fat, sugar free yogurt; plain or flavored Cheese: 20% milk fat or less Low fat, sugar free pudding Soup made with low fat milk; 1% or fat free plain Greek yogurt or sour cream Cottage cheese: 1% milk fat or less	High fat cream soups Whipping cream Coffee whitener, half & half, regular evaporated milk; sweet condensed milk Milkshakes, smoothies with added sugar, hot chocolate, chocolate milk Ice cream; sugary yogurt or yogurt drinks High fat cheese, cheese spreads or sauces Regular puddings with added sugar & fat Regular or light sour cream (5-14% milk fat)

## RICHMOND METABOLIC AND BARIATRIC SURGERY

## Meats and Alternatives

- These foods provide a good source of protein and iron.
- Even with good dietary intake, you may still need protein supplementation either temporarily or occasionally to meet your protein needs
- Lean, lower fat choices like skinless chicken breast, cooked using moist methods such as steaming, braising, boiling (e.g. stews and soups) is usually best tolerated
- Red meat such as beef is often harder to digest, but you may try a small amount and assess your own tolerance. If poorly tolerated, re-try at a later time.
- Whole nuts and seeds are not allowed until you're at the Regular diet stage (3 months post op)
- Nut and seed butters (all natural, no added sugar or salt) is allowed during Soft Solids, but use sparingly due to their higher calorie and (healthy) fat content
- Plant based proteins are an excellent way to reduce fat and increase dietary fiber
- Vegetarian, vegan, ethical or cultural restrictions and/or preferences will be fully respected and options can be discussed thoroughly with your dietitian

Good Choices	Suboptimal Choices
Soft cooked skinless chicken and turkey Lean red meat that is trimmed and skinless Fish or seafood, moist cooked (not dry) Canned proteins canned in water without added salt or sauces Eggs cooked without added fat Low fat, low sodium sandwich meats Soft cooked or canned beans, peas, lentils; tofu; edamame (soy beans); hummus; Unsalted nut/seed butter in small amounts.	Duck, goose meat Chicken tenders (battered and fried) Steak Pork chops, dry roasts, bacon Smokies, hot dogs, sausages Meat jerky Deep fried fish or seafood Poultry skin, chicken wings; bacon; Pepperoni, luncheon meat, bologna, salami

### Fats and Oils

- Choose unsaturated, non-hydrogenated, trans-fat free types most often
- Fats and oils are nutrient (calorie) dense, so use sparingly

Good Choices	Suboptimal Choices
Soft tub, non-hydrogenated margarine Canola, olive, peanut, safflower, sunflower, soy, corn, flaxseed oils Low fat or fat-free mayo or miracle whip Low fat or fat free salad dressing Avocado Fat-free cream cheese Ground flaxseed Olives Low fat gravy	Hard, block margarine Butter, lard, shortening Coconut oil Regular mayo or miracle whip Regular salad dressing Cream sauce Regular cream cheese Non-dairy whitener Regular gravy

### Beverages

- Choose beverages that are low in calories or calorie-free
- Avoid caffeine from coffee, tea, and energy drinks to avoid acid reflux or dehydration
- Avoid alcohol for 1 full year after surgery and keep to a minimum thereafter. Alcohol is nutrient (calorie) dense, may lead to ulcers and contribute to cross addictions after surgery. Alcohol may interact with some of your medications as well - Check with your health care provider.



<b>Good Choices</b>	<b>Suboptimal Choices</b>
Calorie-free, non-carbonated drinks; Sugar free or artificially sweetened drinks Decaf coffee or tea, including herbal tea Milk (skim, 1%) Calcium fortified plant milks (no-low sugar) Water	Carbonated drinks including pop and beer Fat-free coffee creamers Energy drinks Sugar sweetened drinks Regular coffee and tea, including iced tea; Regular drink crystals, e.g. lemonade Smoothies with added sugar, fruit slushes, milkshakes Alcohol and cocktails. Mock tails including added sugar

**Condiments and Extras (high sugar, high fat)**

- Although used in small amounts, they can contribute a fair amount of salt, calories, sugar and fat. Use your judgement and use sparingly.

<b>Good Choices</b>	<b>Suboptimal Choices</b>
Artificial sweeteners Powdered herbs and spices Lemon juice Mustard Pepper Mrs. Dash, no-salt seasonings Sugar free gelatin Sugar free popsicles Fat free or low fat vegetable spreads	Potato chips, nacho chips, corn/taco chips Chocolates, candies, cookies, trail mix Danishes, donuts, pies, cakes Gummy snacks, fruit roll-ups Ice cream, sherbet, frozen yogurt Buttered/flavored popcorn Sugar, honey, syrup, jam Ketchup, barbeque, tartar, sweet and sour or teriyaki sauce

## Progressing from Soft Solids to Normal Texture (Post-op Month 3 and beyond)

Continue experimenting with new foods one by one and always follow healthy eating guidelines including:

- Journaling
- Taking your supplements regularly
- Eating mindfully, stopping when you feel comfortably full
- Eating and drinking slowly (taking about 30 minutes to complete a meal)
- Do not drink fluids 30 minutes before and after solid meals
- Chewing food well (20 to 30 times)
- Eating protein first, then vegetables, and lastly starches
- Making sure you are getting adequate amounts of protein and fluids
- Avoiding carbonated, caffeinated and alcoholic beverages

## Vitamin and Mineral supplements

All bariatric patients must take specific vitamin and mineral supplements post-operatively, starting Post Op Week 3. You may switch to whole tablet/capsules starting Post Op Week 5 as tolerated (or you no longer need to crush them). Note that multivitamin and mineral supplements interact with calcium and iron supplements – these supplements must be separated by 2 hours from each other. Enteric-coated and time-released supplements should be avoided.

Taking the supplements regularly is mandatory in order to prevent nutritional deficiencies. We provide a list of the most commonly available supplements that are used by the majority of patients which meet the bariatric guidelines. You may choose other brands of supplements if you wish, but you need to ensure that the criteria for the micronutrient content is met. If you do not like the taste of certain chewable or liquid supplements, you may crush put them and put them inside foods or fluids you are taking. However, make sure you do not mix iron supplements with calcium containing foods or any caffeinated beverages (which you should not have anyway until you are able to drink an adequate amount of fluids and are not experiencing heartburn).

This is a sample list supplements only – **please do not purchase them, as it may be inappropriate for you.** You will receive your custom list of post op supplements to purchase from your dietitian at your mandatory pre-surgery appointment that is booked about 1 week before your confirmed surgery date. Please do not share your custom list with anyone else as it may be inappropriate for the other person and cause harm based on his or her medical history, surgery type, or other factors.

<b>Supplements</b>	<b>Dosage</b>	<b>Suggested Schedule</b>
<b>Multivitamin with Minerals</b>	1-3 depending on the brand	Morning
<b>Vitamin B<sub>12</sub> (sublingual)</b>	500 µg once a day, 1000 µg every other day. 1200 µg every 3 days, OR injections by your doctor once a month	Morning
<b>Vitamin B1 (Thiamine)</b>	1 per day (100 mg)	Morning
<b>Calcium Citrate (preferred) or Calcium Carbonate (if no kidney stones)</b>	2-3 x 500mg	Each calcium unit taken at separate times
<b>Iron</b> Note: Take with 250-500 mg vitamin C May discuss taking double dose of iron every other day with doctor (before & after surgery)	20 mg elemental plus the usual dosage before the surgery	Before bed (take with food to improve tolerance)
<b>Additional Vitamin D and A (surgery specific)</b>	Varies per patient	With calcium supplement

## Protein Supplements

Protein supplements are an important part of your post-operative diet since your overall food intake may not be enough to support basic protein needs and the additional needs for wound healing. Ideal protein supplements should be low in carbohydrates (less than 5 grams of carbohydrates per serving) and high in protein.

Unflavored protein powders are a great choice since they can be added to any food (such as soups or stews) or beverages. Just remember to dissolve the powder into room temperature fluid first, before adding to the hot fluid to avoid any clumps.

Your dietitian will help you to determine how much protein you will need during pre-op and post-operative stages. Protein supplements can be purchased at your local grocery, health food store, and pharmacy or even online.



RICHMOND METABOLIC AND  
BARIATRIC SURGERY

**Examples of Protein Supplements:**

<b>Product Name</b>	<b>Store Location</b>	<b>Container Size (g)</b>	<b>Serving Size (g)</b>	<b>Protein (g/serving)</b>	<b>Carbs (g/serving)</b>	<b>Fat (g/serving)</b>
Beneprotein® powder	Order from pharmacy	227 g (tin)	7	6	0	0
Beneprotein® powder packets	Order from pharmacy	75 x 7g	7	6	0	0
Kaizen Protein, Vanilla	Price Smart Foods Costco	908 g	29.4	24	2	1
100% Whey Protein, Unflavoured	Superstore (PC)	908 g	25	25	2	1
Dunawhey powder	Superstore	1080 g	36	30	1	1
Revolution Isolate Splash (fruit flavor)	GNC	28.8oz	35	24	5	0
Syntrax Nectar (Fruit flavor)	Low Carb Grocery	1 oz. sampler or 908g	27	23	0	0
LiquaCel; Global Health Products	Online	1 oz.	27g	16	9 (includes 7g from Glycerin)	0

## Recipes

*Pay careful attention to the recommended diet stages for each recipe and assess your own tolerance via daily journaling.*

### Tzatziki

Diet Stages: Pre-op, Regular

SERVINGS: 8

#### INGREDIENTS

2 cups fat-free plain Greek yogurt

1 garlic clove, minced

2 medium cucumbers, peeled, seeded & diced

1 tbsp. dried mint

Seasoning to taste

#### DIRECTIONS

Using blender, mix cucumbers, mint, and garlic.

Add Greek yogurt and mix with a spoon.

Place in a refrigerator for 3 hours until the flavors are developed.

Serve with whole-wheat crackers or low sodium/low-fat lentil crackers as dip or as a substitute for mayonnaise on toast.

NUTRIENTS PER SERVING	
Calories (kcal)	45.0
Fat (g)	0.21
Saturated Fat (g)	0.07
Trans Fat (g)	0
Cholesterol (mg)	1.25
Sodium (mg)	48.85
Potassium (mg)	268.35
Carbohydrate (g)	5.9
Fibre (g)	0.85
Sugar (g)	1.8
Protein (g)	5
Vitamin A (RAE)	5.05
Vitamin C (mg)	2.75
Calcium (mg)	134.7
Iron (mg)	0.25
Vitamin D (µg)	0
Vitamin E (mg)	0
Thiamin (mg)	0.02
Riboflavin (mg)	0.14
Niacin (NE)	0.1
Folate (DFE)	12.55
Vitamin B6 (mg)	0.03
Vitamin B12 (µg)	0.37

## Carnation Instant Breakfast Smoothie

Diet Stages: any (if without added fruits)

SERVINGS: 1

### INGREDIENTS

1 package vanilla or chocolate  
no-added-sugar Carnation Instant Breakfast

1 scoop protein powder

½ cup skim milk

5 ice cubes

### DIRECTIONS

Place the ingredients in a blender and serve immediately.

Variation: add ½ cup strawberry or small banana

NUTRIENTS PER SERVING	
Calories (kcal)	166.7
Fat (g)	1.7
Saturated Fat (g)	0.6
Trans Fat (g)	0.0
Cholesterol (mg)	11.2
Sodium (mg)	353.8
Potassium (mg)	544.9
Carbohydrate (g)	15.4
Fibre (g)	1.3
Sugar (g)	14.0
Protein (g)	24.1
Vitamin A (RAE)	614.3
Vitamin C (mg)	27.6
Calcium (mg)	277.6
Iron (mg)	2.8
Vitamin D (µg)	1.2
Vitamin E (mg)	3.4
Thiamin (mg)	0.4
Riboflavin (mg)	0.3
Niacin (NE)	10.5
Folate (DFE)	204.0
Vitamin B6 (mg)	0.5
Vitamin B12 (µg)	1.2

## Fruit Smoothie

Diet Stages: Pre-op, Regular

SERVINGS: 6

### INGREDIENTS

1 cup fat-free, plain Greek yogurt

1 scoop protein powder

6 medium strawberries

1 medium banana

1 tsp. vanilla extract

6 ice cubes

### DIRECTIONS

Place all ingredients in a blender and puree until smooth.

Distribute in 6 cups.

Serve immediately.

NUTRIENTS PER SERVING	
Calories (kcal)	51.2
Fat (g)	0.2
Saturated Fat (g)	0.1
Trans Fat (g)	0
Cholesterol (mg)	0.8
Sodium (mg)	56.0
Potassium (mg)	188.0
Carbohydrate (g)	8.6
Fibre (g)	0.8
Sugar (g)	6.0
Protein (g)	4.5
Vitamin A (RAE)	1.5
Vitamin C (mg)	9.1
Calcium (mg)	76.2
Iron (mg)	0.5
Vitamin D (µg)	0.1
Vitamin E (mg)	0.1
Thiamin (mg)	0.0
Riboflavin (mg)	0.1
Niacin (NE)	1.0
Folate (DFE)	15.2
Vitamin B6 (mg)	0.1
Vitamin B12 (µg)	0.2



RICHMOND METABOLIC  
BARIATRIC SURGERY



## Yogurt Smoothie

Diet Stages: Pre-op, Regular

SERVINGS: 12

### INGREDIENTS\*

1 cup plain yogurt, fat-free

3 cups mixed berries (i.e. raspberries, raw)

3 cups chopped peaches

2 packets sugar substitute (Splenda)

1 tbsp. freshly squeezed lime juice

1/4 tsp vanilla or rose extract

### DIRECTIONS

Puree fruits using a blender.

Add other ingredients and blend again.

Pour into 12 serving dishes.

Note: You may add 1 scoop of protein powder to increase the protein content.

NUTRIENTS PER SERVING	
Calories (kcal)	45
Fat (g)	0.3
Saturated Fat (g)	0.05
Trans Fat (g)	0.0
Cholesterol (mg)	0.4
Sodium (mg)	16
Potassium (mg)	180
Carbohydrate (g)	9.5
Fibre (g)	2.8
Sugar (g)	6.6
Protein (g)	1.8
Vitamin A (RAE)	8
Vitamin C (mg)	11.2
Calcium (mg)	46
Iron (mg)	0.3
Vitamin D (µg)	0.1
Vitamin E (mg)	1.0
Thiamin (mg)	0.1
Riboflavin (mg)	0.1
Niacin (NE)	0.8
Folate (DFE)	10
Vitamin B6 (mg)	0.1
Vitamin B12 (µg)	0.1

## Pumpkin Dessert

Diet Stages: Pre-op, Pureed, Regular

SERVINGS: 8

### INGREDIENTS

1 can (15 oz.) of pumpkin

4 tbsp. sugar-free Cool Whip

½ cup of skim milk

1 scoop vanilla protein powder

Allspice, nutmeg, ginger, cloves, and Splenda® to taste

### DIRECTIONS

Mix all ingredients together using blender

Whip until creamy and smooth

Pour in serving dishes

Cool for 1 hour before serving

NUTRIENTS PER SERVING	
Calories (kcal)	23
Fat (g)	0.2
Saturated Fat (g)	0.1
Trans Fat (g)	0.0
Cholesterol (mg)	0.3
Sodium (mg)	9.1
Potassium (mg)	133.4
Carbohydrate (g)	5.1
Fibre (g)	1.5
Sugar (g)	2.5
Protein (g)	3.1
Vitamin A (RAE)	423.2
Vitamin C (mg)	2.2
Calcium (mg)	32.5
Iron (mg)	0.7
Vitamin D (µg)	0.2
Vitamin E (mg)	0.6
Thiamin (mg)	0.0
Riboflavin (mg)	0.1
Niacin (NE)	0.4
Folate (DFE)	7.1
Vitamin B6 (mg)	0.0
Vitamin B12 (µg)	0.1

## Rice Pudding

Diet Stages: Pre-op, Regular

SERVINGS: 8

### INGREDIENTS

½ cup Bran Buds cereal

3 cups skim or 1% milk

½ cup white rice

½ tsp cinnamon

1 tsp vanilla

3 packets of sugar substitute

### DIRECTIONS

In a medium saucepan, bring almond milk and rice to a boil over medium-high heat. Reduce heat to low and simmer uncovered until rice is cooked through, about 25-30 minutes.

Add bran buds cereal and stir for 5 minutes.

Remove from heat and stir in vanilla, cinnamon

Serve warm or cold.

NUTRIENTS PER SERVING	
Calories (kcal)	90
Fat (g)	0.2
Saturated Fat (g)	0.0
Trans Fat (g)	0.0
Cholesterol (mg)	0.0
Sodium (mg)	92
Potassium (mg)	165
Carbohydrate (g)	18.5
Fibre (g)	2.5
Sugar (g)	5.1
Protein (g)	4.7
Vitamin A (RAE)	37
Vitamin C (mg)	0.0
Calcium (mg)	125
Iron (mg)	1.2
Vitamin D (µg)	0.8
Vitamin E (mg)	0.1
Thiamin (mg)	0.1
Riboflavin (mg)	0.1
Niacin (NE)	1.3
Folate (DFE)	1.3
Vitamin B6 (mg)	0.1
Vitamin B12 (µg)	0.3

## Cherry Clafoutis

Diet Stages: Pre-op, Regular

SERVINGS: 6

### INGREDIENTS

3 eggs

1 cup skim milk (or soy milk)

½ cup Bran Buds cereal

2 cups sweet cherries, pitted (can use frozen cherries that are thawed and the water is removed)

4 packets sugar substitute

1 tsp vanilla or rose extract

### DIRECTIONS

Preheat oven to 350° F (180° C).

Spray 6 soufflé cups with non-stick cooking spray.

Place cherries at the bottom of each cup.

Using a blender, mix the rest of ingredients.

Pour the mixture on top of cherries and bake for 25 minutes\*.

\* To test whether the soufflé is ready, insert a toothpick in the centre of each cup, which should not have any ingredients attached to it.

### NUTRIENTS PER SERVING

Calories (kcal)	109.0
Fat (g)	2.6
Saturated Fat (g)	0.8
Trans Fat (g)	0.0
Cholesterol (mg)	85.7
Sodium (mg)	99.0
Potassium (mg)	290.8
Carbohydrate (g)	17.6
Fibre (g)	4.0
Sugar (g)	11.7
Protein (g)	5.6
Vitamin A (RAE)	73.1
Vitamin C (mg)	3.8
Calcium (mg)	77.7
Iron (mg)	1.5
Vitamin D (µg)	0.8
Vitamin E (mg)	0.6
Thiamin (mg)	0.2
Riboflavin (mg)	0.2
Niacin (NE)	1.5
Folate (DFE)	31.7
Vitamin B6 (mg)	0.1
Vitamin B12 (µg)	0.7

## Chocolate Pudding

Diet Stages: Pre-op, Full Fluid, Soft Solids, Regular

SERVINGS: 6

### INGREDIENTS

1 package firm silken tofu (12 oz.)

1/3 cup soy milk (Beverage, soy, enriched, all flavors)

3 packets sugar substitute (Splenda®)

3 tbsp. cocoa powder (unsweetened)

### DIRECTIONS

Place tofu, Splenda, and cocoa powder in a blender.

Once smooth, add soy milk slowly.

Blend again.

Distribute the chocolate pudding in 6 individual serving dishes and chill for 30 minutes before serving.

NUTRIENTS PER SERVING	
Calories (kcal)	48.7
Fat (g)	2.1
Saturated Fat (g)	0.5
Trans Fat (g)	0.0
Cholesterol (mg)	0.0
Sodium (mg)	27.3
Potassium (mg)	167.3
Carbohydrate (g)	4.0
Fibre (g)	1.0
Sugar (g)	1.7
Protein (g)	4.8
Vitamin A (RAE)	5.3
Vitamin C (mg)	0.0
Calcium (mg)	38.3
Iron (mg)	1.0
Vitamin D (µg)	0.1
Vitamin E (mg)	0.0
Thiamin (mg)	0.1
Riboflavin (mg)	0.0
Niacin (NE)	1.2
Folate (DFE)	0.9
Vitamin B6 (mg)	0.0
Vitamin B12 (µg)	0.1

## Creamy Strawberry-Orange Pops

Diet Stages: Pre-op, Regular

SERVINGS: 8

### INGREDIENTS

1 container (8 oz.) (strawberry no-sugar-added, fat-free yogurt)

2 cups fresh or frozen strawberries

1 scoop protein powder

2 packets sugar substitute

Equipment: Ice Pop Maker Mold

### DIRECTIONS

Combine yogurt, strawberries, and sugar substitutes in a blender. Cover and process until smooth.

Add the strawberries and sugar substitute. Process until smooth.

Pour into the molds, filling each about  $\frac{3}{4}$  full.

Place in freezer for 1 hour.

NUTRIENTS PER SERVING	
Calories (kcal)	33.4
Fat (g)	0.2
Saturated Fat (g)	0.0
Trans Fat (g)	0
Cholesterol (mg)	0.9
Sodium (mg)	34.0
Potassium (mg)	106.5
Carbohydrate (g)	5.4
Fibre (g)	1.1
Sugar (g)	4.0
Protein (g)	2.9
Vitamin A (RAE)	0.4
Vitamin C (mg)	22.3
Calcium (mg)	40.4
Iron (mg)	0.5
Vitamin D ( $\mu$ g)	0.2
Vitamin E (mg)	0.1
Thiamin (mg)	0.0
Riboflavin (mg)	0.1
Niacin (NE)	0.6
Folate (DFE)	12.6
Vitamin B6 (mg)	0.0
Vitamin B12 ( $\mu$ g)	0.1

## Homemade Chicken Broth

Diet Stages: anytime

SERVINGS: 6

### INGREDIENTS

2 lbs skinless, boneless chicken legs\* (chopped)

1 lb celery, chopped

3 medium carrots, chopped

3 medium onions, chopped

1 bunch parsley

1 bunch cilantro

1 medium green pepper (not hot pepper), chopped

1 tbsp. dried mint, rosemary, or thyme

2 tbsp. canola oil

2 liters of water

2 tbsp. lemon juice

Seasoning to taste



RICHMOND METABOLIC AND  
BARIATRIC SURGERY

### DIRECTIONS

In a large pot, sauté onions with oil until golden.

Add chopped chicken leg and sauté for 15 minutes.

Add other ingredients. Bring to boil.

Cover and cook for 2 hours. Let it cool for a few minutes and remove the bones.

Strain the broth. Make pureed food (for pureed stage) out of the other ingredients.

Refrigerate the broth overnight and skim the thin layer of the fat from the surface.

Freeze the broth in small containers for later use.

\* You may alternatively use ground beef or turkey instead of chicken.

## Creamy Vegetable Soup

Diet Stages: Pre-op, Soft Solids, Regular

SERVINGS: 8

### INGREDIENTS

1 cup cauliflower, chopped

1 cup broccoli, chopped

1 cup carrots, chopped

8 green onions, chopped

1 cup spinach, chopped

1 cup parsley, chopped

2 cups chicken broth

1 large onion, diced

2 tbsp. vegetable oil

5 garlic cloves, minced

1 cup instant oats

1 cup Greek yogurt

Seasoning to taste

### DIRECTIONS

Sauté onion in a pot with vegetable oil until golden.

Add garlic and sauté until golden.

Add other ingredients (except Greek yogurt and instant oats) and bring to boil. Simmer for 15 minutes.

Let cool for 10 minutes and blend.

Place the pureed vegetables back to the pot and add oats. Continue cooking for 10 minutes, while stirring occasionally. Add Greek yogurt and mix. Serve hot.

NUTRIENTS PER SERVING	
Calories (kcal)	165
Fat (g)	5.4
Saturated Fat (g)	0.6
Trans Fat (g)	0.1
Cholesterol (mg)	0.6
Sodium (mg)	70.7
Potassium (mg)	435.0
Carbohydrate (g)	19.7
Fibre (g)	3.2
Sugar (g)	5.4
Protein (g)	9
Vitamin A (RAE)	219.0
Vitamin C (mg)	32.3
Calcium (mg)	120
Iron (mg)	1.8
Vitamin D (µg)	0.1
Vitamin E (mg)	2.0
Thiamin (mg)	0.2
Riboflavin (mg)	0.2
Niacin (NE)	2.7
Folate (DFE)	50.9
Vitamin B6 (mg)	0.2
Vitamin B12 (µg)	0.2



RICHMOND METABOLIC AND  
BARIATRIC SURGERY



## Chicken Soup

Diet Stages: Pre-op, Soft Solids, Regular

SERVINGS: 8

### INGREDIENTS

- 1 large onion, chopped
- 2 skinless, boneless chicken breasts, chopped
- 6 cups low sodium chicken broth
- 1 cups instant oats
- 2 tbsp. vegetable oil
- 1 lb. Carrots, chopped
- 6 cups water
- 2 cups finely chopped fresh parsley
- 6 green onions, chopped
- ½ cup Greek yogurt
- 1 tsp dried leaf thyme
- 1 tbsp. Mrs. Dash®
- 1 tbsp. lemon juice

### DIRECTIONS

- Sauté onions in vegetable oil until golden.
- Add chicken breast and stir for 5 minutes.
- Add other ingredients, except parsley and green onions and cook over medium heat for 15 minutes.
- Add parsley and green onions and cook for another 15 minutes.
- Serve hot.

NUTRIENTS PER SERVING	
Calories (kcal)	230
Fat (g)	6.8
Saturated Fat (g)	1.0
Trans Fat (g)	0.1
Cholesterol (mg)	24.8
Sodium (mg)	137.4
Potassium (mg)	680.5
Carbohydrate (g)	22.2
Fibre (g)	3.8
Sugar (g)	5.8
Protein (g)	20
Vitamin A (RAE)	557.4
Vitamin C (mg)	26.6
Calcium (mg)	110
Iron (mg)	2.7
Vitamin D (µg)	0.1
Vitamin E (mg)	2.2
Thiamin (mg)	0.2
Riboflavin (mg)	0.2
Niacin (NE)	10.8
Folate (DFE)	47.5
Vitamin B6 (mg)	0.3
Vitamin B12 (µg)	0.4



RICHMOND METABOLIC AND BARIATRIC SURGERY

## Mashed Potatoes

Diet Stages: Pre-op, Pureed, Regular

SERVINGS: 8

### INGREDIENTS

2 lb potatoes

½ cup skim milk

½ cup fat free Greek yogurt

1 cup green onion, chopped

1 tbsp. dried mint

1 liter water

Seasoning to taste

### DIRECTIONS

Fill a large pot with water.

Place potatoes in the pot.

Cook for 30 minutes or until potatoes are tender.

Let them cool enough to be able to handle them.

Remove potatoes' skin.

Mash them with fork.

Gradually add the milk, while stirring.

Add Greek yogurt, green onion, mint, and seasoning.

NUTRIENTS PER SERVING	
Calories (kcal)	115.3
Fat (g)	0.1
Saturated Fat (g)	0.0
Trans Fat (g)	0.0
Cholesterol (mg)	0.6
Sodium (mg)	25.9
Potassium (mg)	469.4
Carbohydrate (g)	25.2
Fibre (g)	2.0
Sugar (g)	2.1
Protein (g)	3.8
Vitamin A (RAE)	16.2
Vitamin C (mg)	10.8
Calcium (mg)	67.3
Iron (mg)	0.5
Vitamin D (µg)	0.2
Vitamin E (mg)	0.1
Thiamin (mg)	0.1
Riboflavin (mg)	0.1
Niacin (NE)	2.2
Folate (DFE)	20.8
Vitamin B6 (mg)	0.3
Vitamin B12 (µg)	0.2



## Gravy

Diet Stages: Pre-op, Pureed, Soft Solids, Regular

SERVINGS: 8

### INGREDIENTS

3 tbsp. flour

2 tsp unsalted bouillon granules (chicken, beef, or pork)

1.5 cups evaporated skim milk

½ cup water

Seasoning to taste (e.g., ground black pepper)

### DIRECTIONS

Mix the flour, bouillon, and seasoning in a pan.

Gradually add the milk and water, while stirring.

Place the pan on the stove over medium heat and cook until thickened, stirring occasionally.

NUTRIENTS PER SERVING	
Calories (kcal)	51.0
Fat (g)	0.3
Saturated Fat (g)	0.1
Trans Fat (g)	0.0
Cholesterol (mg)	2.0
Sodium (mg)	62.1
Potassium (mg)	164.4
Carbohydrate (g)	8.0
Fibre (g)	0.1
Sugar (g)	5.6
Protein (g)	4.1
Vitamin A (RAE)	60.6
Vitamin C (mg)	14.8
Calcium (mg)	140.8
Iron (mg)	0.3
Vitamin D (µg)	1.0
Vitamin E (mg)	0.0
Thiamin (mg)	0.0
Riboflavin (mg)	0.2
Niacin (NE)	1.2
Folate (DFE)	14.5
Vitamin B6 (mg)	0.0
Vitamin B12 (µg)	0.1

## Six Bean Chili

Diet Stages: Pre-op, Pureed, Soft Solids, Regular

SERVINGS: 3

### INGREDIENTS

1 can (540 mL or 19 oz.) six-bean blend

2 tbsp. lemon juice

2 tbsp. tomato paste (unsalted)

Seasoning to taste

### DIRECTIONS

Drain and rinse the canned beans with tap water.

Mix all ingredients together and heat on stove for 15 minutes.

For pureed diet stage, use blender to puree the beans before serving.

This food can be served with whole-wheat crackers.

NUTRIENTS PER SERVING	
Calories (kcal)	218.4
Fat (g)	0.9
Saturated Fat (g)	0.2
Trans Fat (g)	0
Cholesterol (mg)	0.0
Sodium (mg)	560.7
Potassium (mg)	649.4
Carbohydrate (g)	40.2
Fibre (g)	9.8
Sugar (g)	2.1
Protein (g)	14.3
Vitamin A (RAE)	8.4
Vitamin C (mg)	6.2
Calcium (mg)	91.3
Iron (mg)	3.7
Vitamin D (µg)	0.0
Vitamin E (mg)	2.0
Thiamin (mg)	0.3
Riboflavin (mg)	0.1
Niacin (NE)	4.1
Folate (DFE)	116.1
Vitamin B6 (mg)	0.2
Vitamin B12 (µg)	0.0

## Roasted Salmon

Diet Stages: Soft Solids, Regular

SERVINGS: 4

### INGREDIENTS

4 salmon fillets (6 ounces each) (Salmon, Atlantic, wild)

Juice of 1 lime or 2 tbsp. lemon juice

6 tbsp. low fat plain yogurt (1-2%)

Seasoning to taste

### DIRECTIONS

Preheat oven to 400°F.

Spray 2-quart casserole dish with cooking spray.

Place salmon fillets in the dish.

Rub other ingredients over fillets.

Bake for 15 minutes.



RICHMOND METABOLIC AND  
BARIATRIC SURGERY

NUTRIENTS PER SERVING	
Calories (kcal)	257.5
Fat (g)	11.2
Saturated Fat (g)	1.9
Trans Fat (g)	0
Cholesterol (mg)	95.6
Sodium (mg)	92.0
Potassium (mg)	894.8
Carbohydrate (g)	2.1
Fibre (g)	0.0
Sugar (g)	1.8
Protein (g)	35.0
Vitamin A (RAE)	20.5
Vitamin C (mg)	2.1
Calcium (mg)	62.8
Iron (mg)	1.4
Vitamin D (µg)	10.9
Vitamin E (mg)	0.0
Thiamin (mg)	0.4
Riboflavin (mg)	0.7
Niacin (NE)	19.8
Folate (DFE)	41.8
Vitamin B6 (mg)	1.3
Vitamin B12 (µg)	4.2

## Vegetables and Cheese Casserole

Diet Stages: Pre-op, Soft Solids, Regular

SERVINGS: 4

### INGREDIENTS

3 large eggs

¼ lbs skim milk cheese (Cheese, mozzarella, partially skim, 52% water, 16.5% M.F.)

6 tablespoons instant oats

2 cups non-fat cottage cheese

1 bunch chopped spinach

1 lb chopped broccoli

½ cup diced mushrooms

### DIRECTIONS

Preheat oven to 350°F.

Combine all ingredients.

Spray 2-quart casserole dish with cooking spray.

Place combined ingredients in the dish and cover with aluminum foil.

Bake for 90 minutes.

Serve hot.

### NUTRIENTS PER SERVING

Calories (kcal)	325.5
Fat (g)	10.5
Saturated Fat (g)	4.6
Trans Fat (g)	0.0
Cholesterol (mg)	163.2
Sodium (mg)	539.1
Potassium (mg)	1007.0
Carbohydrate (g)	21.5
Fibre (g)	5.7
Sugar (g)	5.3
Protein (g)	38.8
Vitamin A (RAE)	551.9
Vitamin C (mg)	125.2
Calcium (mg)	417.9
Iron (mg)	4.5
Vitamin D (µg)	0.6
Vitamin E (mg)	3.9
Thiamin (mg)	0.3
Riboflavin (mg)	0.8
Niacin (NE)	10.0
Folate (DFE)	280.7
Vitamin B6 (mg)	0.5
Vitamin B12 (µg)	1.8



## Pureed Cauliflower

Diet Stages: Pre-op, Pureed, Soft Solids, Regular

SERVINGS: 8

### INGREDIENTS

1 large (6-7" diameter) head of cauliflower

3 cloves of garlic

1 cup fat free Greek yogurt

4 tsp extra-virgin olive oil

Seasoning to taste

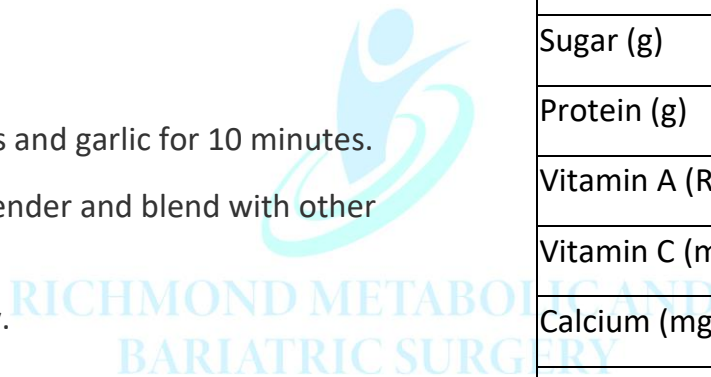
### DIRECTIONS

Steam cauliflowers and garlic for 10 minutes.

Place them in a blender and blend with other ingredients.

Serve immediately.

NUTRIENTS PER SERVING	
Calories (kcal)	65.1
Fat (g)	2.6
Saturated Fat (g)	0.4
Trans Fat (g)	0
Cholesterol (mg)	0.6
Sodium (mg)	55.3
Potassium (mg)	396.6
Carbohydrate (g)	7.1
Fibre (g)	2.0
Sugar (g)	2.2
Protein (g)	4.3
Vitamin A (RAE)	0.6
Vitamin C (mg)	51.2
Calcium (mg)	86.2
Iron (mg)	0.5
Vitamin D (µg)	0
Vitamin E (mg)	0.6
Thiamin (mg)	0.1
Riboflavin (mg)	0.2
Niacin (NE)	1
Folate (DFE)	63.5
Vitamin B6 (mg)	0.2
Vitamin B12 (µg)	0.2



## Creamy Slow Cooker Chicken

Diet Stages: Pre-op, Soft Solids, Regular

SERVINGS: 12

### INGREDIENTS

6 skinless, boneless chicken breasts (chopped)

1 can low sodium and low fat cream of mushroom soup (284ml)

1 cup fat free plain Greek yogurt

1 cup low sodium chicken broth

1 cup parsley, chopped

Seasoning to taste

Cooking spray

### DIRECTIONS

Cook chicken in a saucepan that was sprayed with cooking spray for 10 minutes.

Transfer the chicken to a low cooker.

Add the rest of ingredients on top of chicken.

Cover and cook for 4 hours on low.

NUTRIENTS PER SERVING	
Calories (kcal)	129.4
Fat (g)	2.8
Saturated Fat (g)	0.7
Trans Fat (g)	0.0
Cholesterol (mg)	49.4
Sodium (mg)	229.4
Potassium (mg)	344.3
Carbohydrate (g)	3.2
Fibre (g)	0.3
Sugar (g)	0.6
Protein (g)	21.4
Vitamin A (RAE)	26.9
Vitamin C (mg)	6.8
Calcium (mg)	54.5
Iron (mg)	1.0
Vitamin D (µg)	0.2
Vitamin E (mg)	0.4
Thiamin (mg)	0.1
Riboflavin (mg)	0.1
Niacin (NE)	12.2
Folate (DFE)	12.8
Vitamin B6 (mg)	0.4
Vitamin B12 (µg)	0.3



RICHMOND METABOLIC  
BARIATRIC SURGERY



## Cheesy Spinach Frittata

Diet Stages: Pre-op, Soft Solids, Regular

SERVINGS: 12

### INGREDIENTS

2 tsp vegetable oil (canola)

1 medium onion, chopped (0.75 large)

1 bunch spinach, chopped

½ cup fat free cheese, shredded (Cheese, processed, cheddar, fat free)

1/3 cup dry cottage cheese (0.4% M.F.)

4 egg whites

2 whole eggs

½ cup instant oats

Seasoning to taste

### DIRECTIONS

Heat oven to 375 degrees.

Coat a 12-cup muffin tray with vegetable oil spray.

In a saucepan, heat oil on medium high.

Add onions and cook until golden.

Add spinach and stir 5 more minutes.

Sprinkle cheese in muffin tray. Top with spinach/onion mixture.

In a medium bowl, whisk egg whites and whole eggs, cottage cheese, instant oat, and seasoning.

Pour mixture over spinach/onion mixture in the muffin tray.

Bake for 30 minutes.

NUTRIENTS PER SERVING	
Calories (kcal)	64.6
Fat (g)	2.2
Saturated Fat (g)	0.4
Trans Fat (g)	0.0
Cholesterol (mg)	29.1
Sodium (mg)	140.0
Potassium (mg)	234.1
Carbohydrate (g)	6.4
Fibre (g)	1.2
Sugar (g)	1.3
Protein (g)	5.5
Vitamin A (RAE)	169.8
Vitamin C (mg)	8.7
Calcium (mg)	74.3
Iron (mg)	1.2
Vitamin D (µg)	0.1
Vitamin E (mg)	1.2
Thiamin (mg)	0.1
Riboflavin (mg)	0.2
Niacin (NE)	1.6
Folate (DFE)	65.5
Vitamin B6 (mg)	0.1
Vitamin B12 (µg)	0.2



RICHMOND METABOLIC AND  
BARIATRIC SURGERY

## Cabbage Rolls

Diet Stages: Pre-op, Regular

SERVINGS: 12

### INGREDIENTS

1 lb. extra lean ground chicken

1 medium head of cabbage

1 cup instant oats

1 cup split peas

2 cups water

2 cups tomato sauce

2 teaspoons garlic powder

1 teaspoon onion powder

Seasoning to taste

### DIRECTIONS

Preheat oven to 350°F.

Separate cabbage leaves from the stem, wash and steam them.

Cook split peas with water for 15 minutes and add rice until all the water is evaporated.

In a non-stick saucepan, with non-fat cooking spray, sauté the ground chicken. Combine the ingredients.

Place ½ cup of mixture into center of 1 cabbage leaf. Rollup, sealing both ends as you roll. Place cabbage rolls in baking dish side by side.

Top the cabbage rolls off with the tomato sauce, letting it spill over to the bottom of the dish

Cover the dish with aluminum foil. Bake for 35 to 45 minutes. Let stand for 5 to 10 minutes before serving.

NUTRIENTS PER SERVING	
Calories (kcal)	178.6
Fat (g)	4.4
Saturated Fat (g)	1.2
Trans Fat (g)	0
Cholesterol (mg)	32.8
Sodium (mg)	264.3
Potassium (mg)	553.7
Carbohydrate (g)	24.0
Fibre (g)	3.5
Sugar (g)	5.7
Protein (g)	13.1
Vitamin A (RAE)	14.5
Vitamin C (mg)	30.6
Calcium (mg)	56.0
Iron (mg)	2.2
Vitamin D (µg)	0.1
Vitamin E (mg)	1.2
Thiamin (mg)	0.3
Riboflavin (mg)	0.2
Niacin (NE)	5.8
Folate (DFE)	87.4
Vitamin B6 (mg)	0.4
Vitamin B12 (µg)	0.2



RICHMOND METABOLIC AND BARIATRIC SURGERY

## Stuffed Eggplants

Diet Stages: Pre-op, Soft Solids, Regular

SERVINGS: 8

### INGREDIENTS

- 1 lb. extra lean ground chicken
- 4 American pear shaped eggplants, cut into halves
- 1 cup instant oat
- 1 cup split peas
- 2 cups water
- 1 cup tomato sauce
- 1 large onion, chopped
- 2 tbsp. vegetable oil
- 4 garlic cloves, minced
- 1 tbsp. Mrs. Dash

### DIRECTIONS

Preheat oven to 350°F.

In a saucepan, sauté onion with oil until golden; add garlic and continue sautéing for another 2 minutes.

Add the ground chicken. Cook split peas with water for 15 minutes and add oats until all the water is evaporated. Combine with other ingredients.

Scoop out the inside of the eggplant with knife, leaving the shell, and add them to other ingredients.

Cook the stuffing for another 10 minutes or until the water is evaporated. Pour the stuffing into the hollow eggplants. Place the eggplants in a shallow baking pan. Add ½ cup water. Cover the dish with aluminum foil. Bake for 35 to 45 minutes. Let stand for 5 to 10 minutes before serving.

NUTRIENTS PER SERVING	
Calories (kcal)	334.1
Fat (g)	10.4
Saturated Fat (g)	2.1
Trans Fat (g)	0.1
Cholesterol (mg)	49.1
Sodium (mg)	212.2
Potassium (mg)	1182.9
Carbohydrate (g)	44.8
Fibre (g)	12.4
Sugar (g)	10.8
Protein (g)	20.7
Vitamin A (RAE)	11.7
Vitamin C (mg)	10.3
Calcium (mg)	64.4
Iron (mg)	3.1
Vitamin D (µg)	0.1
Vitamin E (mg)	3.6
Thiamin (mg)	0.4
Riboflavin (mg)	0.3
Niacin (NE)	10.2
Folate (DFE)	142.1
Vitamin B6 (mg)	0.7
Vitamin B12 (µg)	0.2

Chicken, Spinach, and Bulgur Meatloaf  
Diet Stages: Pre-op, Soft Solids, Regular

SERVINGS: 8

**INGREDIENTS**

- ¼ cup fine bulgur
- ½ cup water
- 1 small onion, chopped (0.5 large)
- 1 cup spinach, chopped
- 1 large clove garlic, chopped
- 1 lb extra lean ground chicken breast
- 1 tablespoon tomato paste
- 2 eggs
- Seasoning to taste

**DIRECTIONS**

Preheat oven to 350°F (175°C).

Bring the bulgur and water to a boil in a saucepan over high heat. Simmer for 15 minutes.

Cook onion in a non-stick pan (while coated with non-stick cooking spray) until golden. Add the garlic and cook for another 2 minutes

In a large bowl mix together turkey, cooked bulgur, golden onions, tomato paste, chopped spinach, seasoning and eggs until well combined. The mixture will be very moist.

Shape into a loaf on an aluminum foil lined baking pan. Bake in the preheated oven until no longer pink in the center, about 50 minutes. An instant-read thermometer inserted into the center should read at least 160°F (70°C) Let the meatloaf cool for 10 minutes before slicing and serving.

NUTRIENTS PER SERVING	
Calories (kcal)	125.4
Fat (g)	6.9
Saturated Fat (g)	2.0
Trans Fat (g)	0.0
Cholesterol (mg)	91.6
Sodium (mg)	52.1
Potassium (mg)	217.7
Carbohydrate (g)	5.0
Fibre (g)	1.1
Sugar (g)	0.8
Protein (g)	12.1
Vitamin A (RAE)	41.3
Vitamin C (mg)	2.3
Calcium (mg)	25.4
Iron (mg)	1.2
Vitamin D (µg)	0.3
Vitamin E (mg)	0.5
Thiamin (mg)	0.1
Riboflavin (mg)	0.2
Niacin (NE)	5.7
Folate (DFE)	19.8
Vitamin B6 (mg)	0.3
Vitamin B12 (µg)	0.5



RICHMOND METABOLIC AND BARIATRIC SURGERY

## Lentil Soup

Diet Stages: Pre-op, Pureed, Soft Solids, Regular

SERVINGS: 8

### INGREDIENTS

1 cup dry lentils

2 cups chopped onion

1lb chopped carrots

4 bunches spinach, chopped

½ cup instant oats

2 tbsp. vegetable oil

6 cloves of garlic

1 cup Greek yogurt

6 cups water

Seasoning to taste

### DIRECTIONS

Place the oil in a large pot.

Sauté onion until golden.

Add garlic until brown.

Place ½ of the mixture in a small bowl and refrigerate.

Add the rest of ingredients to the pot (except spinach) and boil over medium heat for 30 minutes.

Add spinach, ½ cup of Greek yogurt, and oat and cook for another 15 minutes.

Pour the soup in a large bowl.

Place the rest of yogurt in the middle of soup and garnish it with the rest of mixture of brown onion and garlic. Serve hot.

NUTRIENTS PER SERVINGS	
Calories (kcal)	237.12
Fat (g)	4.95
Saturated Fat (g)	0.53
Trans Fat (g)	0.1
Cholesterol (mg)	0.62
Sodium (mg)	201.12
Potassium (mg)	1528.82
Carbohydrate (g)	36.2
Fibre (g)	9.12
Sugar (g)	6.05
Protein (g)	15.35
Vitamin A (RAE)	1272.02
Vitamin C (mg)	56.27
Calcium (mg)	277.5
Iron (mg)	7.03
Vitamin D (µg)	0
Vitamin E (mg)	5.8
Thiamin (mg)	0.42
Riboflavin (mg)	0.47
Niacin (NE)	5.00
Folate (DFE)	468.92
Vitamin B6 (mg)	0.62
Vitamin B12 (µg)	0.18

## Steamed Fish Fillets with Potatoes and Green beans

Diet Stages: Soft Solids, Regular

Servings: 4

### INGREDIENTS

1 cup small new potatoes

1 cup green beans

1 cup chopped parsley

2 x 6 oz. salmon fillets (Salmon, Atlantic, wild)

½ cup tomatoes, chopped

1 tbsp. vegetable oil

1 tsp lemon juice

### DIRECTIONS

Steam potatoes and green beans for 10 minutes and transfer them to a baking dish that is sprayed with non-fat cooking spray and vegetable oil.

Place fish fillets on top of them.

Top with tomatoes and parsley.

Sprinkle with seasoning.

Cover with aluminum foil and bake for 15 minutes or until fish is flaky.

Pour lemon juice and serve.

NUTRIENTS PER SERVING	
Calories (kcal)	197.3
Fat (g)	9.1
Saturated Fat (g)	1.1
Trans Fat (g)	0.1
Cholesterol (mg)	47.1
Sodium (mg)	58.5
Potassium (mg)	761.2
Carbohydrate (g)	10.3
Fibre (g)	2.0
Sugar (g)	1.3
Protein (g)	18.8
Vitamin A (RAE)	97.1
Vitamin C (mg)	34.0
Calcium (mg)	46.5
Iron (mg)	2.3
Vitamin D (µg)	5.4
Vitamin E (mg)	1.8
Thiamin (mg)	0.3
Riboflavin (mg)	0.4
Niacin (NE)	11.2
Folate (DFE)	63.3
Vitamin B6 (mg)	0.8
Vitamin B12 (µg)	2.0

## Three Color Pepper Soufflés

Diet Stages: Pre-op, Soft Solids, Regular

SERVINGS: 8

### INGREDIENTS

1 Cup Egg Whites

2 Large Eggs

2 Cups Fat-Free dry Cottage Cheese

1/3 Cup Self-Rising Flour

1/2 Teaspoon Salt

½ Cup Fat Free Shredded Cheese

0.5 cup green pepper, diced

0.5 cup red pepper, diced

0.5 cup orange pepper, diced

Seasoning to taste

### DIRECTIONS

Blend all ingredients in blender, except for diced peppers, until smooth.

Stir in diced peppers.

Pour into 8 soufflé cups, which are sprayed with non-stick cooking spray

Bake for 45 minutes at 400°F.

Remove from oven and cool for 5 minutes before serving.

NUTRIENTS PER SERVING	
Calories (kcal)	94.8
Fat (g)	1.6
Saturated Fat (g)	0.5
Trans Fat (g)	0.0
Cholesterol (mg)	51.5
Sodium (mg)	512.8
Potassium (mg)	173.2
Carbohydrate (g)	9.0
Fibre (g)	0.4
Sugar (g)	2.1
Protein (g)	10.7
Vitamin A (RAE)	70.4
Vitamin C (mg)	30.7
Calcium (mg)	110.5
Iron (mg)	0.6
Vitamin D (µg)	0.2
Vitamin E (mg)	0.5
Thiamin (mg)	0.1
Riboflavin (mg)	0.3
Niacin (NE)	3.2
Folate (DFE)	35.9
Vitamin B6 (mg)	0.1
Vitamin B12 (µg)	0.5



RICHMOND METABOLIC  
BARIATRIC SURGERY

### Three Bean Chili (non-spicy)

Diet Stages: Pre-op, Soft Solids, Regular

SERVINGS: 12

#### INGREDIENTS

½ cup dry black beans

½ cup dry red kidney beans

½ cup dry pinto beans

1 cup extra-lean ground chicken

1 cup green pepper, chopped

2 cups onions, chopped

4 garlic cloves, chopped

3 cups tomatoes, chopped

2 tbsp. vegetable oil

4 cups water

Seasoning to taste

#### DIRECTIONS

Soak beans overnight.

Rinse the soaked beans three times under running water.

Sauté onions until golden.

Add garlic to onions and continue sautéing until golden.

Add ground chicken and cook for 20 minutes

Place all ingredients in a slow cooker or pressure cooker and cook for 8 hrs or 1.5 hrs, respectively

NUTRIENTS PER SERVING	
Calories (kcal)	142.5
Fat (g)	3.7
Saturated Fat (g)	0.5
Trans Fat (g)	0.1
Cholesterol (mg)	8.2
Sodium (mg)	26.9
Potassium (mg)	533.3
Carbohydrate (g)	20.5
Fibre (g)	4.7
Sugar (g)	2.1
Protein (g)	8.1
Vitamin A (RAE)	33.7
Vitamin C (mg)	20.5
Calcium (mg)	40.4
Iron (mg)	1.8
Vitamin D (µg)	0.0
Vitamin E (mg)	1.1
Thiamin (mg)	0.2
Riboflavin (mg)	0.1
Niacin (NE)	2.8
Folate (DFE)	133.4
Vitamin B6 (mg)	0.2
Vitamin B12 (µg)	0.0



## References

Aills, L.; Blankenship, J.; Buffington, C.; Furtado, M.; Parrot, J. (2008). ASMBS Allied health nutritional guidelines for the surgical weight loss patient. *Surgery for Obesity and Related Diseases*, 4: S73-S108.

Alexander, C.A. (2009). *Emotional First Aid Kit: A Practical Guide to Life After Bariatric Surgery* Paperback – Jul 15 2009

Aversa, A., Bruzziches, R., Francomano, D., Greco, E. A., Violi, F., Lenzi, A., & Donini, L. M. (2013). Weight loss by multidisciplinary intervention improves endothelial and sexual function in obese fertile women. *Journal of Sexual Medicine*, 10(4), 1024–1033. doi:10.1111/jsm.12069

Brzozowska, M. M., Sainsbury, A., Eisman, J. A., Baldock, P. A., & Center, J. R. (2012). Bariatric surgery, bone loss, obesity and possible mechanisms. *Obesity Reviews*, 14(1), 52–67. doi:10.1111/j.1467-789X.2012.01050.x

Caspersen CJ, Powell KE, Christenson GM. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public Health Rep.* 1985; 100(2):126-31.

De Moura-Grec P.G., Yamashita J.M., Marsicano J.A., Ceneviva R., De Souza Leite C.V., De Brito G.B., Brienze S.L.A., De Carvalho Sales-Peres S.H. (2014). Impact of bariatric surgery on oral health conditions: 6-months cohort study. *International Dental Journal*, 64 (3) , pp. 144-149.

Deslandes, A., Moraes, H., Ferreira, C., Veiga, H., Silveira, H., Mouta, R., et al. (2009). Exercise and mental health: many reasons to move. *Neuropsychobiology*, 59(4), 191–198.

Ekserci, S; Klein, L. (2011) *The Complete Weight-Loss Surgery Guide and Diet Program: Includes 150 Delicious and Nutritious Recipes* Paperback.

Emery CF, Kiecolt-Glaser JK, Glaser R, Malarkey WB, Frid DJ. (2005). Exercise accelerates wound healing among healthy older adults: a preliminary investigation. *J Gerontol Med Sci* 60(A):1432-1436.

Engstrom, D. R., & Quebbemann, B. B. (2002). Behavioral factors affect outcomes following gastric bypass vs. banding procedures. Paper presented at the annual conference of the American Society of Bariatric Surgery, Las Vegas.

Garcia-Sanchez, A., Salgado-Peralvo, ÁO., Peña-Cardelles, JF. *et al.* Oral health in patients who have undergone bariatric surgery. *Clin Dent Rev* 6, 3 (2022).  
<https://doi.org/10.1007/s41894-022-00117-6>

Hagen, K., Dagfinrud, H., Moe, R., Østerås, N., Kjekken, I., Grotle, M., & Smedslund, G. (2012). Exercise therapy for bone and muscle health: an overview of systematic reviews. *BMC Medicine*, 10(1), 167. doi: 10.1007/s00198-009-0938-6

Health Canada. (2008). Nutrient Values of some common foods. [http://www.hc-sc.gc.ca/fn-an/alt\\_formats/pdf/nutrition/fiche-nutri-data/nvscf-vnqau-eng.pdf](http://www.hc-sc.gc.ca/fn-an/alt_formats/pdf/nutrition/fiche-nutri-data/nvscf-vnqau-eng.pdf).

Hopkins, M. E., Davis, F. C., Vantighem, M. R., Whalen, P. J., & Bucci, D. J. (2012). Differential effects of acute and regular physical exercise on cognition and affect. *Neuroscience*, 215, 59–68. doi:10.1016/j.neuroscience.2012.04.056

Humber River General Hospital. Nutrition guidelines after bariatric surgery: Roux-en-Y gastric bypass.

Jensen MD, Ryan DH, Apovian CM, et al. 2013 AHA/ACC/TOS Guideline for the Management of Overweight and Obesity in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and The Obesity Society. *Circulation*. 2013; 01.cir.0000437739.71477.ee.

Keylock KT, Vieira VJ, Wallig MA, DiPietro LA, Schrementi M, Woods JA. (2008). Exercise accelerates cutaneous wound healing and decreases wound inflammation in aged mice. *Am J Physiol Regul Integr Comp Physiol* 294:R179-R184.

Khoo, J., Tian, H.-H., Tan, B., Chew, K., Ng, C.-S., Leong, D., et al. (2013). Comparing effects of low- and high-volume moderate-intensity exercise on sexual function and testosterone in obese men. *Journal of Sexual Medicine*, 10(7), 1823–1832.  
doi:10.1111/jsm.12154

Lewis, R. W., Fugl-Meyer, K. S., Corona, G., Hayes, R. D., Laumann, E. O., Moreira, E. D., Jr, et al. (2010). Definitions/Epidemiology/Risk Factors for Sexual Dysfunction. *Journal of Sexual Medicine*, 7(4pt2), 1598–1607. doi:10.1111/j.1743-6109.2010.01778.x

Mammen, G., & Faulkner, G. (2013). Physical Activity and the Prevention of Depression. *American Journal of Preventive Medicine*, 45(5), 649–657.  
doi:10.1016/j.amepre.2013.08.001

Messier, S. P., Mihalko, S. L., Legault, C., Miller, G. D., Nicklas, B. J., DeVita, P., et al. (2013). Effects of Intensive Diet and Exercise on Knee Joint Loads, Inflammation, and Clinical Outcomes Among Overweight and Obese Adults With Knee Osteoarthritis: The IDEA Randomized Clinical Trial. *JAMA: the Journal of the American Medical Association*, 310(12), 1263–1273. doi:10.1001/jama.2013.277669

Nakamura, K. M., Haglund, E., & Clowes, J. A. (2014). Fracture risk following bariatric surgery: a population-based study. *Osteoporos Int*, (25), 151–158.

Parrott, J.; Frank, L.; Rabena, R.; Craggs-Dino, L.; Isom, KA.; Greiman, L. (2017). American Society for Metabolic and Bariatric Surgery Integrated Health Nutritional Guidelines for the Surgical Weight Loss Patient; Update: Micronutrients. *Surgery for Obesity and Related Diseases*. Review article.  
<https://asmbs.org/wp/uploads/2017/06/ASMBS-Nutritional-Guidelines-2016-Update.pdf>

Paterson, D. H., & Warburton, D. E. (2010). Review Physical activity and functional limitations in older adults: a systematic review related to Canada's Physical Activity Guidelines. *International Journal of Behavioral Nutrition and Physical Activity*, 7(38).

Patient education guide to gastric bypass surgery. University of Toronto Collaborative Bariatric Surgery Program.

Sattelmair, J., Pertman, J., Ding, E. L., Kohl, H. W., Haskell, W., & Lee, I. M. (2011). Dose Response Between Physical Activity and Risk of Coronary Heart Disease: A Meta-Analysis. *Circulation*, 124(7), 789–795. doi:10.1161/CIRCULATIONAHA.110.010710

Scibora, L. M., Ikramuddin, S., Buchwald, H., & Petit, M. A. (2012). Examining the Link Between Bariatric Surgery, Bone Loss, and Osteoporosis: a Review of Bone Density Studies. *Obesity Surgery*, 22(4), 654–667. Doi: 10.1007/s11695-012-0596-1

Shikora, S.A.; Ki, J.J.; Tarnoff, M.E. (2007) Nutrition and gastrointestinal complications of bariatric surgery. *Nutrition in Clinical Practice* 22:29-40.

Taghat, N, Mossberg, K, Lingström, P, et al. Oral health profile of postbariatric surgery individuals: A case series. *Clin Exp Dent Res*. 2021; 7: 811– 818. <https://doi.org/10.1002/cre2.411>

Thomson, C. A., Morrow, K. L., Flatt, S. W., Wertheim, B. C., Perfect, M. M., Ravia, J. J., et al. (2012). Relationship between sleep quality and quantity and weight loss in women participating in a weight-loss intervention trial. *Obesity*, 20(7), 1419–1425. doi:10.1038/oby.2012.62

Thomson, R. L., Buckley, J. D., & Brinkworth, G. D. (2011). Exercise for the treatment and management of overweight women with polycystic ovary syndrome: a review of the literature. *Obesity Reviews*, 12(5), e202–e210.

Umpierre D, Ribeiro PA, Kramer CK, et al. Physical activity advice only or structured exercise training and association with HbA1c levels in type 2 diabetes: a systematic review and meta-analysis. *JAMA: the Journal of the American Medical Association*, 2011; 305(17):1790-9.

Walsh, N. P., Gleeson, M., Shephard, R. J., Gleeson, M., Woods, J. A., Bishop, N. C., et al. (2011). Position statement. Part one: Immune function and exercise. *Exercise Immunology Review*, 17, 6–63.

Wing, R.R. & Jeffery, R.W. (1999). Benefits of recruiting participants with friends and increasing social support for weight loss and maintenance. *Journal of Consulting and Clinical Psychology*, 67(1), 132-138.

Winzer, B. M., Whiteman, D. C., Reeves, M. M., & Paratz, J. D. (2011). Physical activity and cancer prevention: a systematic review of clinical trials. *Cancer Causes & Control*, 22(6), 811–826. Doi: 10.1007/s10552-011-9761-4

Woods, J. A., Vieira, V. J., & Keylock, K. T. (2009). Exercise, Inflammation, and Innate Immunity. *Immunology and Allergy Clinics of North America*, 29(2), 381–393. doi:10.1016/j.iac.2009.02.

## **Websites**

<https://www.vch.ca/en/location-service/metabolic-bariatric-surgery-richmond-hospital>

<https://asmbs.org/patients>

<https://asmbs.org/patients/patient-videos>

<https://asmbs.org/resources/updated-position-statement-on-sleeve-gastrectomy-as-a-bariatric-procedure>

<https://asmbs.org/resources/position-statement-impact-obesity-obesity-treatment-fertility-fertility-therapy>

<https://asmbs.org/resources/alcohol-use-before-and-after-bariatric-surgery>



**RICHMOND METABOLIC AND  
BARIATRIC SURGERY**

