

Managing the Bariatric Surgery Patient:

A Practical Reference Guide
For Primary Care Providers
in Ontario



ONTARIO
Bariatric Network

www.ontariobariatricnetwork.ca

This handbook is intended as a resource specifically for Primary Care Providers of OBN Surgical Program patients only, and is not to be disseminated or used for any other purposes.

Disclaimer:

The information within *Managing the Bariatric Surgery Patient – A Practical Reference Guide For Primary Care Providers in Ontario* (Reference Guide) is intended to be used as a supplement to guide practice, inform general patterns of care, and enhance management efforts. The information in the Reference Guide is not intended to serve as a comprehensive text for bariatric management and is not meant to be a substitute for professional advice and is not to be used solely for clinical diagnosis. All recommendations, tables, figures and calculations must be confirmed by qualified healthcare professionals before clinical use or diagnostic purposes. Ultimately it is the sole responsibility of the medical professional to make his or her own professional judgements, so as appropriately to advise and treat patients. In the situation where the reader is not a healthcare provider, the reader should always consult a healthcare provider if he/she has any questions regarding the information set out in the Reference Guide. The information in the Reference Guide does not create a physician-patient relationship between the Ontario Bariatric Network (OBN) and the reader.

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About Us

The Ontario Bariatric Network (OBN) was established in 2009 as part of the Ontario Bariatric Services Strategy initiated by the Ministry of Health and Long-Term Care of Ontario.

The Ministry of Health and Long-Term Care (MOHLTC) had a vision to develop the Provincial Bariatric Program to make treatment more accessible, reduce the number of people suffering from obesity and obesity related diseases seeking out of province treatment and improve patient flow.

The success of this program is due to the leadership of the OBN Advisory Board, comprised of clinical and administrative specialists from each of the bariatric programs within the province. This Advisory Board was established to promote collective decisions and collaborative action amongst leading experts in bariatrics in order to guide clinical decision making and provide the best standard of care to bariatric patients in Ontario.

**Collective Decisions.
Collaborative Actions.**



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- Section 1 -

The Nuts and Bolts of Bariatric Surgery

The Case for Bariatric Surgery

The management of obesity has traditionally consisted of psychological and behavioural interventions to reduce energy intake (i.e., “diet”) and maximize energy expenditure (i.e., exercise). While these measures always serve to improve a patient’s overall health, they very rarely result in substantial long-term weight loss in patients with **moderate to severe forms of obesity** (BMI ≥ 35 kg/m²).

Although this may seem counterintuitive, convincing evidence now suggests that significant weight loss induces a cascade of hormonal and metabolic regulators that work to maintain energy homeostasis by promoting weight regain. This misguided effort by the body to fend off starvation involves highly complex pathways involving the gut-brain axis, neurohormonal signalling, microbiome adaptations and gene activation. It is now widely accepted that the old adage of “energy in – energy out” is deeply flawed, and that obesity is less an issue of personal choice than an inevitable consequence of biology. Once obesity grabs hold, it becomes exceedingly uncommon to escape its chokehold.

Bariatric surgery appears to uniquely interrupt this weight-preserving cascade, allowing patients to successfully adhere to the dietary and lifestyle modifications needed to attain long-term weight loss. For individuals with moderate to severe obesity, bariatric surgery is currently **the only** intervention shown to consistently achieve substantial long-term weight loss. Indeed, there is now consensus from over 50 leading professional organizations worldwide that bariatric surgery should be strongly considered for treatment of moderate-severe obesity and/or certain obesity-related comorbidities, such as type 2 diabetes mellitus.

PCPs are faced each day with patients who suffer from the consequences of excess weight. Until recently, there was little to offer in terms of practical and effective long-term solutions. Fortunately, the horizon now looks much brighter. Family physicians are uniquely positioned to identify and support these patients by starting a conversation about bariatric surgery.

Benefits of Bariatric Surgery



MIGRAINES
89% resolved or improved



DEPRESSION
40-70% reduction in prevalence and severity of depression



IDIOPATHIC INTRACRANIAL HYPERTENSION
92% resolution of symptoms



OBSTRUCTIVE SLEEP APNEA
79% resolution



HYPERTENSION
79% resolution or remission



CARDIOVASCULAR EVENTS
50-60% reduction in incidence of MI and cerebral vascular accidents



DYSLIPIDEMIA
70.7% resolved



COPD
72% resolved



ASTHMA
79.3% improved or resolved



GERD
70% symptom improvement or resolution



NON-ALCOHOLIC FATTY LIVER DISEASE
69.5% improved steatosis



STRESS URINARY INCONTINENCE
71% resolved



TYPE II DIABETES MELLITUS
83% remission or improvement



VENOUS STASIS ULCERS
91.9% resolved



MUSCULOSKELETAL PAIN
73% improvement of musculoskeletal pain from osteoarthritis on weight-bearing joints



OSTEOARTHRITIS
62.9% resolved

Misconceptions about Bariatric Surgery

- ① MISCONCEPTION:** Bariatric surgery is reserved for patients with "EXTREME" obesity.
REALITY: *Bariatric surgery is not only intended for patients with extreme forms of obesity - patients with a BMI as low as 35 may benefit dramatically from the effects of bariatric surgery. If your patient meets the eligibility criteria for the OBN Surgical Program, it is worth having a conversation about bariatric surgery to determine if it is right for them. See eligibility criteria on page 8.*
- ② MISCONCEPTION:** Most patients regain all of the weight they lost post-surgery.
REALITY: *Patients reach their maximum weight loss 12-18 months after surgery and the overwhelming majority maintain a substantial weight loss for life. Bariatric surgery is not curative and requires adherence to nutritional recommendations and behavioural changes for patients to maintain long term successful outcomes.*
- ③ MISCONCEPTION:** After bariatric surgery, patients will never eat “normally” again.
REALITY: *One of the most common patient concerns is that patients will constantly be hungry after surgery and yet unable to eat. In fact, bariatric surgery actually decreases the production of hunger hormones resulting in a significant loss of hunger for most patients. Following surgery, patients are able to eat small, healthy portions of most foods.*
- ④ MISCONCEPTION:** Most patients suffer from severe diarrhea, nausea & vomiting after surgery.
REALITY: *It is an enduring misconception that bariatric surgery patients commonly suffer from severe diarrhea, nausea, and vomiting. In truth, diarrhea is a relatively uncommon phenomenon with constipation being far more typical. Occasional bouts of nausea are sometimes seen in the early weeks and months following surgery. These episodes are usually related to inappropriate eating behaviours and/or food selection and are easily remedied with simple dietary counseling. See scenarios on page 36.*



MISCONCEPTION: Most patients experience significant mineral & vitamin deficiencies.

REALITY:

All patients require post-operative supplementation with, at least, a daily multivitamin. However, studies have shown that a substantial percentage of patients with obesity have significant vitamin and mineral deficiencies even BEFORE they undergo surgery. It should therefore not be surprising that some patients may require some degree of additional supplementation (e.g. Vit D, Ca++, iron and /or Vit B12). Fortunately, most patients respond effectively to supplementation.



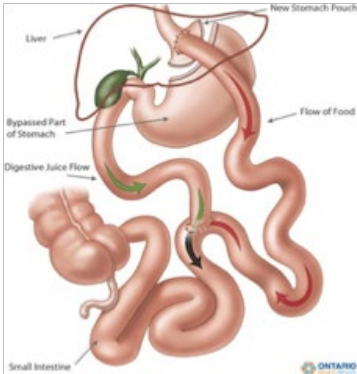
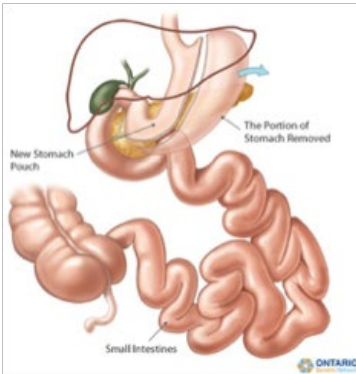
MISCONCEPTION: Bariatric surgery is associated with a high morbidity & mortality rate.

REALITY:

The risk of mortality associated bariatric surgery is extremely low and comparable to that of gallbladder surgery; the OBN has a 30-day mortality rate of 0.03%. All OBN bariatric surgeries are performed laparoscopically, significantly reducing morbidity and recovery time for patients. The estimated risk of significant non-life threatening complications following surgery is less than 3%. Overall, the risks associated with bariatric surgery tend to be greatly outweighed by the benefits of long term weight loss and the resolution of obesity-related comorbidities for appropriate candidates.

Types of Bariatric Procedures

All OBN bariatric surgeries are performed in a minimally invasive manner using laparoscopic techniques. The Roux-en-Y Gastric Bypass (RYGB) is considered the “gold standard” of bariatric surgery and is the most commonly performed procedure. Some key differences between the RYGB and the Vertical Sleeve Gastrectomy (VSG) may make one option more favourable for specific patients. The type of bariatric procedure performed is determined on a case-by-case basis, but will ultimately be decided by the bariatric surgeon; sometimes this cannot be determined until the time of surgery.

	Roux-en-Y Gastric Bypass (RYGB)	Vertical Sleeve Gastrectomy (VSG)
		
Procedure Description	The surgeon creates a small stomach pouch and attaches a section of the small intestine directly to the pouch. This allows food to bypass a portion of the small intestine.	During the sleeve gastrectomy procedure, a thin vertical sleeve of stomach is created using a stapling device. The sleeve is about the size of a banana, the rest of the stomach is removed.
Procedure Selection	Gold standard - default. Procedure of choice in Ontario.	May be performed when: <ul style="list-style-type: none"> • Gastric bypass not possible due to adhesions from previous surgery • Performed as a planned staged procedure in patients with a BMI>60 • Certain chronic medical conditions that preclude gastric bypass (e.g., Crohn’s disease, etc.)
Expected Weight Loss	Higher (65-80% excessive weight loss, 20-35% total weight loss)	Lower (55-60% excessive weight loss, 15-25% total weight loss)
Weight regain	Lower	May be higher than Roux-en-Y
Reversibility	Reversible in exceptional circumstances	Irreversible
Early operative risk	Same	Same
Nutrient Deficiencies	Impacts on absorption of iron, vitamin B12, calcium and vitamin D	Impacts on absorption of iron, vitamin B12, calcium and vitamin D
Remission of Type 2 DM	Higher (approx. 80%)	Lower (approx. 60%)
GERD	Often curative	May exacerbate reflux symptoms in some patients



- Section 2 -

OBN Bariatric Surgery Program: Getting your patient to Surgery

▶ BEGINNING THE PROCESS

Is My Patient Eligible for Bariatric Surgery?






The Ontario Bariatric Network (OBN) Surgical Program is a Ministry of Health and Long Term Care (MOHLTC) funded program with pre-determined eligibility criteria that patients must meet in order to qualify for bariatric surgery. The online referral system is programmed to determine whether patients meet this criteria based on the required referral information provided by referring physicians.

ELIGIBILITY (not limited to):	INELIGIBILITY (not limited to):
<ul style="list-style-type: none">• 18 years of age and older• Inability to achieve a healthy weight loss sustained for a period of time with prior weight loss efforts• BMI \geq 40, or• BMI \geq 35 with at least one of the following obesity-related comorbidities:<ul style="list-style-type: none">• Coronary heart disease• Hyperlipidemia• Type II Diabetes mellitus• Hypertension• Diagnosed sleep apnea• Intractable Gastroesophageal Reflux Disease (GERD)• Pseudotumor cerebri	<ul style="list-style-type: none">• Recent drug or alcohol dependency (within 6 months of referral)• Major life-threatening cancer within last 2 years• Untreated or inadequately treated psychiatric illness• Smoking within 6 months of referral

Additional factors may also impact patients' eligibility for bariatric surgery. Once referred, patients will be thoroughly assessed by the interdisciplinary bariatric team to determine whether they are appropriate candidates for bariatric surgery. Certain medical conditions or behaviours may predispose patients to excessive surgical risks, making them unsuitable for surgery.

▶ More information is available online at <http://www.ontariobariatricnetwork.ca/our-programs>.

Having the Bariatric Surgery Conversation with your Patient

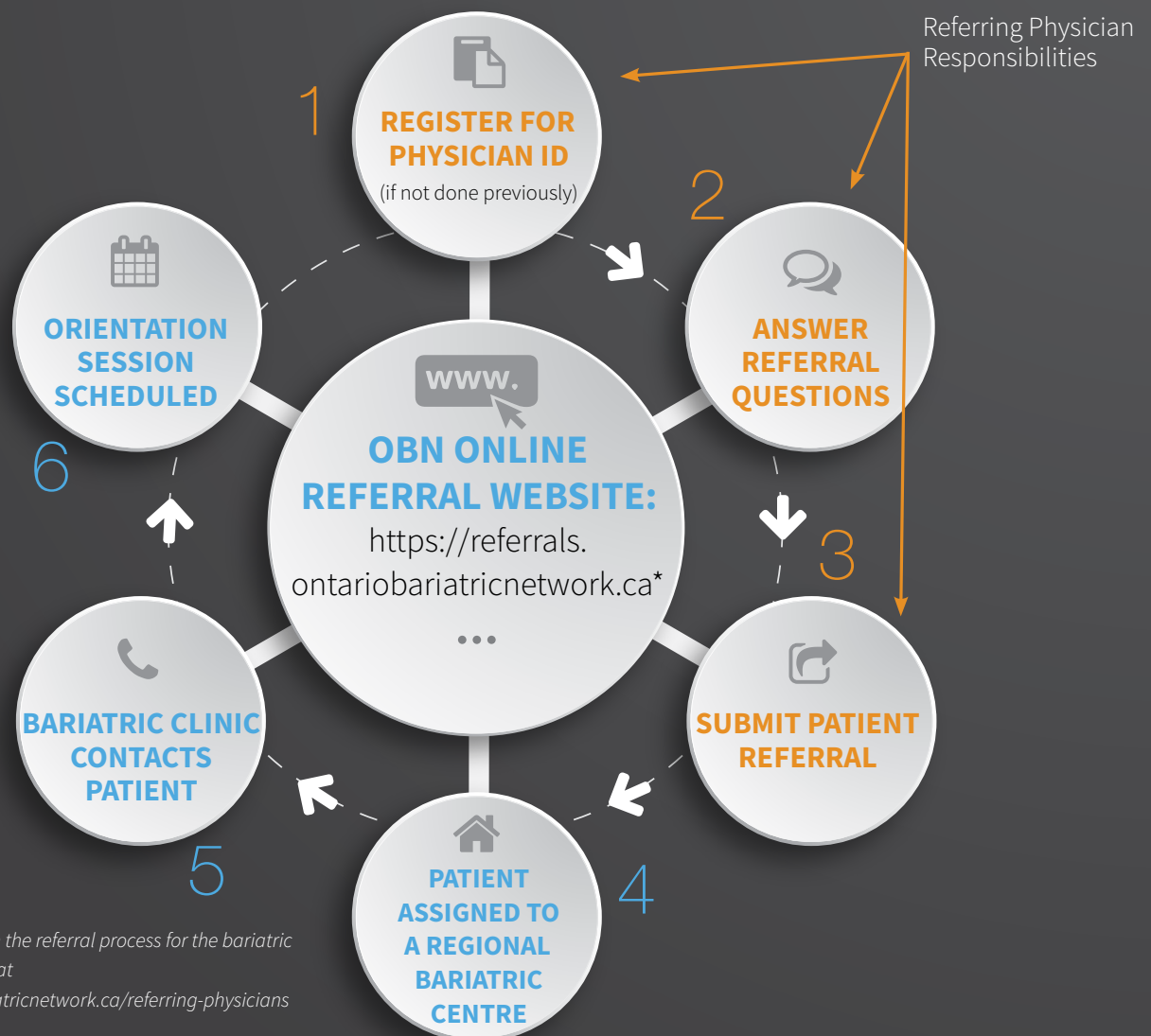
Key Points	Discussion Starters	Tips for Talking with Your Patient
<p> Ask permission to discuss weight with your patient</p>	<p>“You’ve mentioned several symptoms that may be related to weight. Would you like to talk about this?”</p> <p>“Would it be okay if we discussed your weight & how it may affect your health?”</p>	<ul style="list-style-type: none"> • Set an effective tone for communication • Weight is a sensitive issue that can incite embarrassment & blame; avoid verbal cues that imply judgment • Approaches using guilt or “scare tactics” are ineffective & can deter patients from pursuing interventions
<p> Assess weight history, current weight/BMI, previous weight loss attempts & impact on quality of life</p>	<p>“How long have you struggled with your weight?”</p> <p>“How is your weight affecting you? How do you feel it has most impacted your life?”</p> <p>“Are you concerned about the effects on your health & quality of life?”</p> <ul style="list-style-type: none"> • obesity-related comorbidities • obesity-related psychological symptoms • functional limitations in daily activities 	<ul style="list-style-type: none"> • This information will help determine whether your patient is a suitable candidate for bariatric surgery • See eligibility criteria on page 8 • Patients likely already know the negative impact of obesity – ask what they know then affirm, clarify & correct as needed
<p> Explore your patient’s readiness to change</p>	<p>“Are you aware of the different treatment options available that might help you with your weight?”</p> <p>“Have you ever thought of bariatric surgery as an option?”</p> <p>“Are there any barriers preventing you from pursuing these interventions? What would need to happen for you to feel more ready for change?”</p>	<ul style="list-style-type: none"> • Indication of readiness may indicate better outcomes • Addressing potential barriers in advance can help with setting expectations & goals • Discuss all available treatment options, including behavioural, medical and surgical interventions
<p> Rationale for bariatric surgery to assist with weight loss</p>	<p>“Based on our discussion, I’d like to refer you to learn more about bariatric surgery to help with managing your weight. Is this okay with you? What are your thoughts?”</p> <p>“There is no commitment of obligation to proceed if you feel this option is not right for you.”</p> <p><i>Refer to ‘Benefits of Bariatric surgery’ on page 4</i></p>	<ul style="list-style-type: none"> • Currently the only intervention shown to consistently achieve substantial long-term weight loss for individuals with moderate to severe obesity • Discuss the health risks of continued weight/lifestyle • Emphasize the benefits of behavioural changes & that surgery allows those changes to be longer term
<p> Expectations & realistic outcomes</p>	<p>“Even modest weight loss can have a significant impact on your health.”</p> <p>“Obesity is a complex, chronic condition that requires a comprehensive care strategy. Bariatric surgery should be part of the ongoing process of obesity management, not an end goal or ‘quick fix’ solution.”</p>	<ul style="list-style-type: none"> • Discuss benefits & risks associated with bariatric surgery • Help your patient set a few measurable & realistic goals • Lifelong commitment to ongoing weight management as a requirement for long-term successful outcomes

Referral Process & Patient Care Pathway

The OBN referral process and patient care pathways are standardized provincially to ensure consistency and quality of care across all Bariatric Centres of Excellence (BCOEs) and Regional Assessment and Treatment Centres (RATCs).

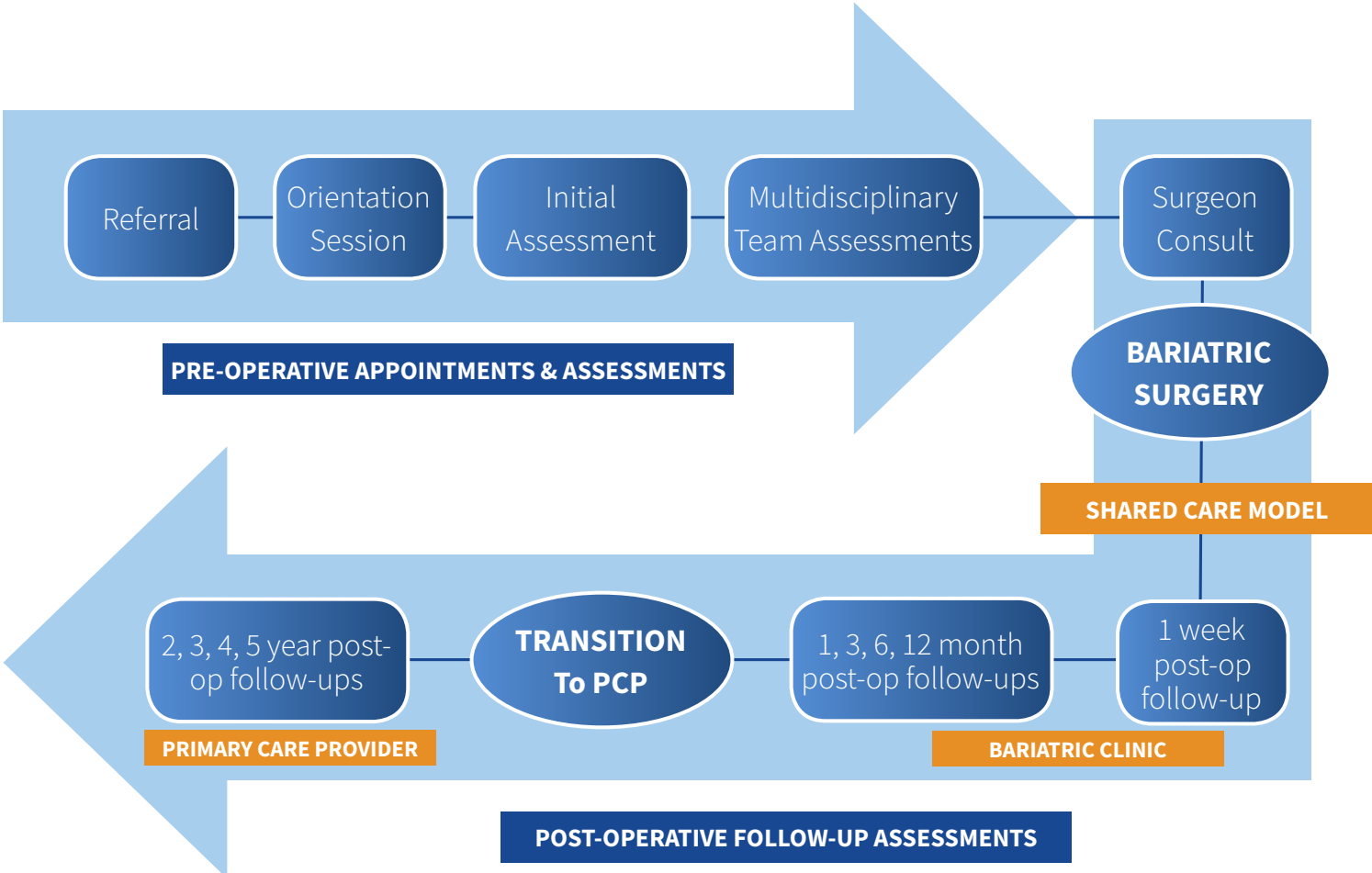
ALL REFERRALS ARE SUBMITTED ONLINE THROUGH THE OBN REFERRAL PORTAL (<https://referrals.ontariobariatricnetwork.ca>).

Referring physicians only need to register once and can then access the portal at any time to submit new referrals or manage their existing patient referrals in the online system.



*Detailed instructions on the referral process for the bariatric programs are available at <http://www.ontariobariatricnetwork.ca/referring-physicians>

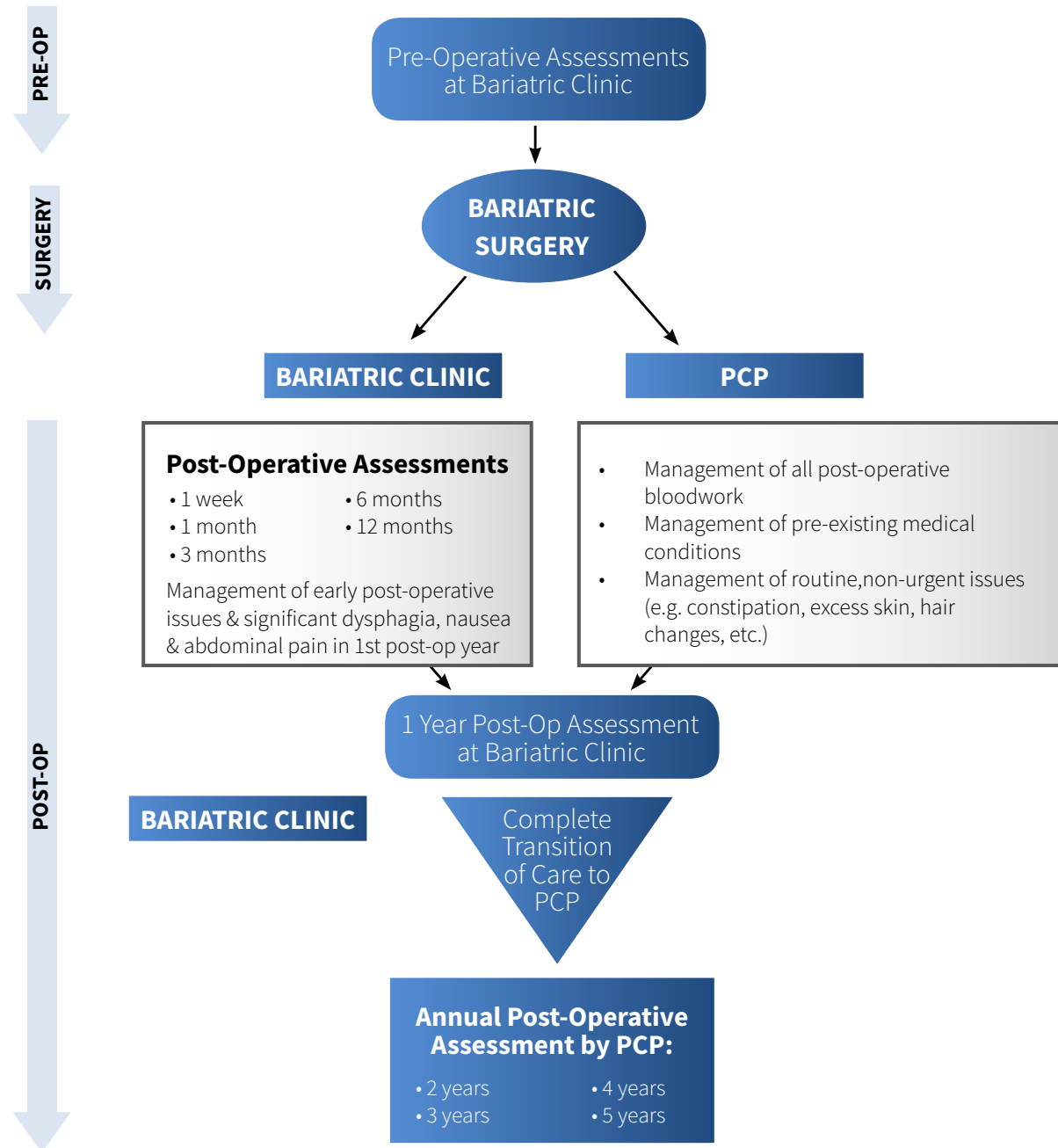
Bariatric Surgical Program Patient Care Pathway



▶ SHARING PATIENT CARE

What Is The Shared Care Model?

The Shared Care Model for the OBN Surgical Program involves a partnership between our bariatric centres and patients’ primary care providers (PCPs) to provide the necessary medical care to patients during the post-operative period. Complete care is then transitioned to PCPs at 1 year after surgery with bariatric centre involvement only as needed.



Who is Responsible for What?

SHARING POST-OPERATIVE CARE FOLLOWING BARIATRIC SURGERY		
	Bariatric Clinic	Primary Care Provider
Management of obesity-related comorbidities		+
Management of routine, non-urgent issues (e.g., constipation, hair loss, excess skin, etc.)		+
Ordering & Management of blood testing (**see below)	PRE-OPERATIVELY from referral to surgery	POST-OPERATIVELY ongoing after surgery
Management of early post-operative issues	+	
Management of significant dysphagia, nausea & abdominal pain in the 1st post-op year	+	
Routine Follow-up Assessments	0-12 months post-op	Annually at 2, 3, 4 & 5 years post-op

The patient is scheduled for routine follow-up with the bariatric clinic at 1, 3, 6 & 12 months post-bariatric surgery. We kindly ask that PCPs manage all bloodwork after the patient has had surgery; your patient will be instructed to **pick up a standard laboratory requisition form from your office** prior to each bariatric clinic appointment.

Transitioning Care from Bariatric Clinic to PCP

Patients will be closely monitored by the bariatric centres for the first year following bariatric surgery with regular follow-up appointments. At the 1-year post-operative assessment, the interdisciplinary bariatric team will assess patients for suitability of transitioning complete post-operative care to PCPs; **PCPs will then facilitate post-operative assessments with their patients annually at 2, 3, 4 and 5 years post-bariatric surgery.**

PCPs will be sent a Transition of Care Summary Letter and Clinical Handover Form notifying them whether the patient will be transitioned to them for post-operative care moving forward. If significant unresolved post-surgical issues remain, the bariatric team may decide to temporarily or permanently defer the transition of care.

Annual PCP Follow-Ups

Annual assessments and post-op care will be transitioned from the bariatric clinics to the PCPs at 1 year post-surgery, with the first annual assessment facilitated by PCPs at 2 years post-surgery and then annually at 3, 4 and 5 years post-op.

PCPs will be provided with an annual assessment package with a checklist to guide the assessments and a questionnaire to be completed by the patient; **we ask that these forms are completed and faxed back to the respective bariatric clinic after each annual assessment.**



ANNUAL POST-BARIATRIC ASSESSMENT CHECKLIST



Example of checklist for PCPs to facilitate annual post-op assessments:

SECTION 1: MEASUREMENTS		
Weight (kg):	Waist Circumference (cm):	Blood Pressure:

SECTION 2: RECENT CLINICAL EVENTS	
1. In the past 12 months, has the patient been hospitalized?	<input type="checkbox"/> No <input type="checkbox"/> Yes Hospital: _____
2. a) In the past 12 months, has the patient required surgery for any reason related to their bariatric procedure.	<input type="checkbox"/> No <input type="checkbox"/> Yes Specify: _____
b) In the past 12 months, has the patient required surgery for any non-bariatric related reason?	<input type="checkbox"/> No <input type="checkbox"/> Yes Specify: _____
3. Has the patient undergone a gastroscopy in the past 12 months?	<input type="checkbox"/> No <input type="checkbox"/> Yes Findings: _____
4. Significant vitamin or nutrient deficiencies requiring supplementation in the past 12 mths?	<input type="checkbox"/> No <input type="checkbox"/> Yes Specify: _____

SECTION 3: CLINICAL RED FLAGS	
<small>**A POSITIVE RESPONSE MAY INDICATE AN UNDERLYING SURGICAL ISSUE. PLEASE REFER TO PCP HANDBOOK OR CONTACT OUR PCP LIAISON FOR GUIDANCE.</small>	
1. Is the patient experiencing frequent moderate-severe abdominal pain that is unexplained?	<input type="checkbox"/> No <input type="checkbox"/> Yes
2. Is the patient experiencing DAILY intolerance to most solid foods?	<input type="checkbox"/> No <input type="checkbox"/> Yes
3. Is the patient experiencing daily nausea and vomiting?	<input type="checkbox"/> No <input type="checkbox"/> Yes
4. Has the patient regained a significant amount weight?	<input type="checkbox"/> No <input type="checkbox"/> Yes
5. Is the patient currently smoking nicotine/tobacco (in any form)?	<input type="checkbox"/> No <input type="checkbox"/> Yes Specify: _____

SECTION 4: COMORBIDITIES (CHECK BOX FOR ACTIVE MEDICAL COMORBIDITIES)			
Sleep apnea requiring CPAP	Diabetes Mellitus Type 2	Musculoskeletal pain	
Angina/Heart Failure/MI	Hypertension	Polycystic ovarian syndrome (PCOS)	
Cerebral accident/TIA	Hyperlipidemia	Gastroesophageal reflux Disease (GERD)	

If you have any clinical questions or concerns regarding any aspects of your patient's post-op care, please directly contact the bariatric clinic's **PCP Support Liaison** at (____)-____-____.

Primary Care Provider Name	Signature	Date of Assessment
----------------------------	-----------	--------------------

Please fax completed forms to the bariatric clinic at _____
FAX: (____)-____-____

Ministry of Health and Long-Term Care Laboratory Requisition Requisitioning Clinician / Practitioner		Laboratory Use Only <div style="border: 1px solid blue; padding: 2px; display: inline-block; color: blue; font-weight: bold;">Clear Form</div>		
Name		Clinician/Practitioner's Contact Number for Urgent Results		
Address		() Service Date yyyy mm dd		
Clinician/Practitioner Number	CPSO / Registration No.	Health Number	Version	Sex
				<input type="checkbox"/> M <input type="checkbox"/> F Date of Birth yyyy mm dd
Check (✓) one: <input type="checkbox"/> OHIP/Insured <input type="checkbox"/> Third Party / Uninsured <input type="checkbox"/> WSIB		Province	Other Provincial Registration Number	Patient's Telephone Contact Number
Additional Clinical Information (e.g. diagnosis)		Patient's Last Name (as per OHIP Card)		
		Patient's First & Middle Names (as per OHIP Card)		
<input type="checkbox"/> Copy to: Clinician/Practitioner Last Name First Name		Patient's Address (including Postal Code)		
Address				
Note: Separate requisitions are required for cytology, histology / pathology and tests performed by Public Health Laboratory				
x	Biochemistry	x	Hematology	x
<input checked="" type="checkbox"/>	Glucose <input type="checkbox"/> Random <input checked="" type="checkbox"/> Fasting	<input checked="" type="checkbox"/>	CBC	<input type="checkbox"/>
<input checked="" type="checkbox"/>	HbA1C	<input type="checkbox"/>	Prothrombin Time (INR)	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Creatinine (eGFR)	<input type="checkbox"/>	Immunology	<input type="checkbox"/>
	Uric Acid		Pregnancy Test (Urine)	Immune Status / Previous Exposure Specify: <input type="checkbox"/> Hepatitis A <input type="checkbox"/> Hepatitis B <input type="checkbox"/> Hepatitis C or order individual hepatitis tests in the "Other Tests" section below
	Sodium		Mononucleosis Screen	
	Potassium		Rubella	
<input checked="" type="checkbox"/>	ALT		Prenatal: ABO, RhD, Antibody Screen (titre and ident. if positive)	
<input checked="" type="checkbox"/>	Alk. Phosphatase		Repeat Prenatal Antibodies	<input type="checkbox"/> Total PSA <input type="checkbox"/> Free PSA
<input checked="" type="checkbox"/>	Bilirubin		Microbiology ID & Sensitivities (if warranted)	<input type="checkbox"/> Insured – Meets OHIP eligibility criteria
<input checked="" type="checkbox"/>	Albumin		Cervical	<input type="checkbox"/> Uninsured – Screening: Patient responsible for payment
<input checked="" type="checkbox"/>	Lipid Assessment (includes Cholesterol, HDL-C, Triglycerides, calculated LDL-C & Chol/HDL-C ratio; individual lipid tests may be ordered in the "Other Tests" section of this form)		Vaginal	<input type="checkbox"/> Insured - Meets OHIP eligibility criteria: osteopenia; osteoporosis; rickets; renal disease; malabsorption syndromes; medications affecting vitamin D metabolism
	Albumin / Creatinine Ratio, Urine		Vaginal / Rectal – Group B Strep	<input type="checkbox"/> Uninsured - Patient responsible for payment
	Urinalysis (Chemical)		Chlamydia (specify source):	Other Tests - one test per line
	Neonatal Bilirubin:		GC (specify source):	Electrolytes
	Child's Age: days hours		Sputum	Calcium
	Clinician/Practitioner's tel. no. ()		Throat	Phosphate
	Patient's 24 hr telephone no. ()		Wound (specify source):	PTH
	Therapeutic Drug Monitoring:		Urine	TSH
	Name of Drug #1		Stool Culture	Zn
	Name of Drug #2		Stool Ova & Parasites	Vitamin A
	Time Collected #1 hr. #2 hr.		Other Swabs / Pus (specify source):	Vitamin B12
	Time of Last Dose #1 hr. #2 hr.			
	Time of Next Dose #1 hr. #2 hr.			
			Specimen Collection	
			Time 24 hour clock Date yyyy/mm/dd	
			Fecal Occult Blood Test (FOBT) (check one)	
			<input type="checkbox"/> FOBT (non CCC) <input type="checkbox"/> ColonCancerCheck FOBT (CCC) no other test can be ordered on this form	
I hereby certify the tests ordered are not for registered in or out patients of a hospital.		Laboratory Use Only <div style="border: 1px solid blue; padding: 2px; display: inline-block; color: blue; font-weight: bold;">Print</div>		
X Clinician/Practitioner Signature Date				

▶ GETTING HELP

PCP Support Liaisons

Each bariatric centre has a PCP Support Liaison dedicated to providing support to the primary care providers of bariatric surgical patients. You can contact the PCP Support Liaison directly for inquiries regarding post-op care for bariatric surgical patients and the shared care model.

If at any time you feel inadequately prepared to deal with any aspects of your patient's post-operative care, you can follow up with the PCP Support Liaison at the bariatric centre your patient was assigned to with questions, concerns or to have the patient transitioned back to the bariatric clinic.





i Contact information for the PCP Support Liaison at each bariatric centre will be provided in the clinical documents and correspondence sent to PCPs.

This is a phone line dedicated exclusively to referring physicians to provide an effective method of communication for comprehensive support in providing post-operative patient care. For this system to work properly, we ask that you do not give out the phone number(s) for the PCP Support Liaisons to patients, and use them only for inquiries about post-operative care for surgical patients and the shared care model.

In case of emergencies, patients should be sent to the Emergency Department, preferably at the hospital where the bariatric surgery was performed. If this is not possible, send the patient to the nearest hospital.

▶ CLINICAL RED FLAGS

Clinical Red Flags after Bariatric Surgery

 Is the patient experiencing frequent moderate-severe abdominal pain that is unexplained?
 Is the patient experiencing DAILY intolerance to most solid foods?
 Is the patient experiencing daily nausea and vomiting?
 Has the patient regained a significant amount of weight? (e.g. >25-50% of their total weight loss)



A positive response to any of the questions above may indicate an underlying surgical issue. Contact the PCP Support Liaison at the appropriate bariatric clinic for further guidance or support.

Contact Information for Bariatric Clinics:

PCP Support Liaison contact information for the respective bariatric clinics will be listed on the clinical forms and documents provided to all PCPs. The phone & fax numbers for the bariatric clinic at each of our individual bariatric centres across the province are listed below — **please ensure you are contacting the bariatric centre that your patient was assigned to.**

If you are not sure which site your patient was referred to, you can log in to your account on the online referral system at any time and check your submitted referrals to verify the appropriate bariatric centre and contact information.

OTTAWA	KINGSTON
Location: The Ottawa Hospital Bariatric Clinic Phone #: 613-761-5101 Bariatric Clinic Fax #: 613-761-4789	Location: Kingston Hotel Dieu Hospital Bariatric Clinic Phone #: 613-544-3310 x 3550 Bariatric Clinic Fax #: 613-544-3199
THUNDER BAY	SUDBURY
Location: Thunder Bay Regional Health Sciences Centre Bariatric Clinic Phone #: 807-684-6058 Bariatric Clinic Fax #: 807-344-7910	Location: Health Sciences North Bariatric Clinic Phone #: 705-671-5611 x 2918 Bariatric Clinic Fax #: 705-671-5635
GUELPH	WINDSOR
Location: Guelph General Hospital Bariatric Clinic Phone #: 519-837-6440 x 2700 Bariatric Clinic Fax #: 519-837-6773	Location: Hotel Dieu Grace Healthcare Bariatric Clinic Phone #: 519-257-5111 x 79100 Bariatric Clinic Fax #: 519-971-9566
HAMILTON	TORONTO
Location: St. Joseph's Healthcare Hamilton Bariatric Clinic Phone #: 905-522-1155 x 33240 Bariatric Clinic Fax #: 905-521-6152	HUMBER Location: Humber River Hospital Bariatric Clinic Phone #: 416-242-1000 x 23300 Bariatric Clinic Fax #: 416-242-1060 TORONTO WESTERN Location: UHN: Toronto Western Hospital Bariatric Clinic Phone #: 416-603-5800 x 6145 Bariatric Clinic Fax #: 416-603-5142

i FOR HELP WITH CLINICAL QUESTIONS OR CONCERNS:

BARIATRIC CLINICS..... All standard clinical inquiries about processes, appointments and patient care
PCP SUPPORT LIAISONS Post-op care for surgical patients & shared care model

i FOR HELP WITH THE ONLINE REFERRAL SYSTEM:

TECHNICAL SUPPORT bariatricreferral.techsupport@phri.ca

i FOR NON-CLINICAL QUESTIONS ABOUT OBN PROGRAMS & SERVICES OFFERED:

OBN PROVINCIAL INFORMATION LINE905-522-1155 x35346



- Section 3 -

Managing Patients after Bariatric Surgery

▶ KEY THINGS TO REMEMBER

- ① **NO NSAIDS** following gastric bypass
- ② Patients should remain on a complete multivitamin-mineral supplement for life
- ③ Severe cramping or abdominal pain lasting longer than 4–6 hours requires emergent assessment to rule out internal hernia
(see *surgical scenarios* section on page 22)
- ④ It is never normal to be vomiting on a regular basis
- ⑤ Patients should not smoke nicotine/tobacco in any form after bariatric surgery
- ⑥ Contraception is essential for women after bariatric surgery; only non-oral forms of contraception should be prescribed
- ⑦ Patients should be seen annually by PCPs for routine assessment beginning at 2 years post-surgery

▶ COMMON CLINICAL SCENARIOS

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► SURGICAL SCENARIOS

Assessment and Management of G.I. Complaints after Bariatric Surgery

Epigastric Pain ± Food Intolerance

Key Diagnostic Consideration	Etiology	Management	Recommendation for Follow-up
<p>Marginal ulcer (Ulcer at junction gastric pouch and small bowel)</p>	<ul style="list-style-type: none"> Key Risk factors: NSAIDs and/or smoking Marginal ulcers seen only in RYGB patients (not following VSG) Most common between 3 and 12 months, but can occur any time 	<ul style="list-style-type: none"> Ensure patient isn't smoking or taking NSAIDs as these may lead to intractable marginal ulceration Start high-dose PPI regimen (i.e., twice daily) ± Sulcrafate (1g po QID) 	<ul style="list-style-type: none"> Refer patient back to bariatric clinic for an upper endoscopy If unable to tolerate sufficient liquid intake (~2L/d), contact BCoE urgently or send to ER for rehydration + assessment

Severe Abdominal Pain (Intermittent or Constant)

Key Diagnostic Consideration	Etiology	Clinical Presentation	Recommendation for Follow-up
<p>Internal hernia</p>	<ul style="list-style-type: none"> Internal hernias occur when the intestine protrudes through mesenteric or peritoneal defects within the abdominal cavity Potentially life threatening condition that risks pan-intestinal infarction Seen in patients who have undergone RYGB (typically not VSG) 	<ul style="list-style-type: none"> Severe, crampy & generalized episodes of abdominal pain (intermittent or constant) is an internal hernia until proven otherwise Unlike abdominal wall hernias, these hernias do not present with palpable abdominal wall protrusions Abdominal exam is often unremarkable CT findings are subtle and often read as "normal" by radiologists with limited bariatric experience <p>ⓘ Bottom line: A negative CT does not rule out internal hernia.</p>	<ul style="list-style-type: none"> <u>If patient is presently symptomatic,</u> communication with a bariatric surgeon should be made immediately If unable to reach surgeon or bariatric clinic, patient should be sent to ER (preferably at the assigned bariatric clinic hospital) If pain is episodic and patient is not presently in pain, PCP liaison should be contacted for urgent Clinic appointment

Frequent Nausea and Vomiting Without Abdominal Pain

Key Diagnostic Considerations	Management
<ul style="list-style-type: none"> It is a misconception that regular episodes of nausea and vomiting are typical and “to be expected” in patients who have undergone bariatric surgery Daily nausea and/or vomiting is never normal <p>Behavioural:</p> <ul style="list-style-type: none"> Inappropriate eating behaviours after surgery (e.g., eating too quickly, not chewing food adequately, etc.) can precipitate occasional bouts of nausea or emesis (see <i>dietary scenarios section on page 36</i>) <p>Surgical (mechanical):</p> <ul style="list-style-type: none"> Mechanical obstruction at the pouch outlet (e.g., anastomotic stenosis) or elsewhere 	<ul style="list-style-type: none"> If symptoms are occasional and appear to be triggered by patients’ eating behaviours, simple counselling is all that is required: <ul style="list-style-type: none"> e.g., chew each bite of food for 30 seconds - use a timer if necessary Avoid trigger foods (bread, rice, etc.) Frequent (e.g., daily) <u>painless</u> nausea and/or vomiting <ul style="list-style-type: none"> Contact PCP liaison at bariatric clinic for expedited assessment Will need surgeon evaluation Strongly consider oral IM Thiamine administration Nausea/vomiting with abdominal pain requires urgent or emergent assessment (see <i>marginal ulcer & internal hernia algorithm</i>)

Management of Abdominal Wall Hernias

Key Considerations	Management	Recommendation for Follow-up
<ul style="list-style-type: none"> Significant numbers of patients living with obesity have pre-existing abdominal wall hernias Hernias tend to become more evident when there is a loss of subcutaneous fat following weight loss surgery 	<ul style="list-style-type: none"> Preferable to wait to repair these hernias until after the patient has lost the preponderance of their excess weight (approximately 18 months post-surgery) unless there are compelling reasons otherwise 	<ul style="list-style-type: none"> Repairs do not need to be done by the original bariatric surgeon Laparoscopic approach preferred (but not mandatory) to minimize adhesion formation in the event that future intra-abdominal surgery is required Patients who present with acute, incarcerated or strangulated ventral wall hernias should be managed urgently similar to any non-bariatric patient

Management of Suspected Biliary Colic

Key Considerations	Recommendation for Follow-up
<ul style="list-style-type: none">• Although biliary colic following bariatric surgery is seen in approximately 5-7% of patients, it is critical that upper abdominal pain not be immediately attributed to biliary disease• Definitive diagnosis of biliary colic in post-operative bariatric patients generally cannot be made without an endoscopic evaluation to rule out other surgical pathologies (e.g., marginal ulceration)	<ul style="list-style-type: none">• Patients who fit the profile of having a possible marginal ulcer, internal hernia or have frequent nausea/vomiting should be evaluated by the BCoE or RATC (see above). Communication with a bariatric surgeon should be made immediately for patients with pain lasting more than 4 hours.• In cases with a very high suspicion of biliary colic, it is reasonable to order an ultrasound and bloodwork, however, PCPs should have a low threshold to refer back to the BCoE or RATC for evaluation if the diagnosis is at all in doubt

► MEDICAL SCENARIOS

Management of Comorbidities Postoperatively

Diabetes

<ul style="list-style-type: none">• Significant improvement in glycemic control often occurs immediately following bariatric surgery independent of any weight loss• Dependent on the procedure performed: Complete remission of Type 2 Diabetes can be seen in 70–95% of patients following bariatric surgery. <p>i NOTE: It is currently unclear whether this remission is a durable phenomenon over the patient's lifetime.</p>	
<ul style="list-style-type: none">• Diabetic medications need to be adjusted immediately following bariatric surgery as requirements are significantly lessened compared with those used pre-operatively. Increased blood glucose monitoring is recommended until a safe regime is established.	
<p>Oral Therapy</p> <ul style="list-style-type: none">• Requirements are significantly diminished compared with those postoperatively. <u>Most patients leave hospital on no diabetic medications.</u>	<p>Insulin Therapy</p> <ul style="list-style-type: none">• Adjustment varies greatly based on the degree of insulin resistance and preoperative doses. Recommendation should be made on an individual basis. Patients should expect to cut back on their basal insulin to half or less than their daily preoperative dose, and to significantly reduce the mealtime insulin titrating up/down as required.
<ul style="list-style-type: none">• Over time, if a patient's blood glucose remain or become elevated, re-introduction of previously administered diabetic medications may become necessary.	

There are no universally accepted guidelines for diabetes management following bariatric surgery. Frequently used approaches are outlined below.

Drug		Recommendation for Immediate Postoperative Management
Insulin:	Basal	T2 DM: Significantly reduce or discontinue in most patients with Type II Diabetes T1 DM: Continue in patients with Type I Diabetes - lowering doses will be needed
	Bolus Mealtime	Significantly reduce or discontinue
Sulfonylureas & Meglitidines		Withhold post-operatively due to the risk of hypoglycemia and re-implement with caution only if required
Alpha-glucosidase inhibitors		Discontinue (but may play a role in management of persistent episodes of reactive hypoglycemia in selected patients)
Biguanides and DPP-4 inhibitors		Discontinue. May be restarted postoperatively to treat mild hyperglycemia if necessary
Incretin Agents: GLP-1 receptor antagonists		Usually discontinue
Thiazolidinediones		Usually discontinue
Novel sodium – glucose co-transporter 2 inhibitors		Role in patients post bariatric surgery remains undetermined

Other comorbidities

Comorbidity	Management
Hypertension	<ul style="list-style-type: none"> • Post-operative resolution of hypertension occurs in the vast majority of patients • BP should be monitored closely within the first 3 months after surgery and medications discontinued or decreased accordingly • If possible, the use of diuretic agents should be avoided in the first month to avoid dehydration and/or electrolyte abnormalities • First sign of BP improvement is often light-headedness <p>All patients with hypertension should be managed as per the most recent CHEP guidelines http://guidelines.hypertension.ca/</p>
Obstructive Sleep Apnea	<ul style="list-style-type: none"> • Re-evaluate CPAP requirements: adjustment of CPAP pressures may be necessary during weight reduction process • Patients not requiring CPAP therapy should be followed clinically for resolution of their sleep disorder breathing symptoms • Patients should be followed closely over time as the emergence of clinically significant OSA has been documented independent of weight regain several years after surgery
Dyslipidemia	<ul style="list-style-type: none"> • Significant improvements and often complete resolution of hyperlipidemia occurs in most patients following bariatric surgery • Use of lipid lowering agents after bariatric surgery is based on the patient's cardiovascular risk assessment • Lipid lowering medication should be adjusted to achieve target goals according to estimated risk <p>All patients with dyslipidemia should be managed as per the Canadian Dyslipidemia Guidelines & 2013 Clinical Practice Guidelines from Diabetes Canada</p>

Managing Vitamin & Mineral Deficiencies Following Surgery

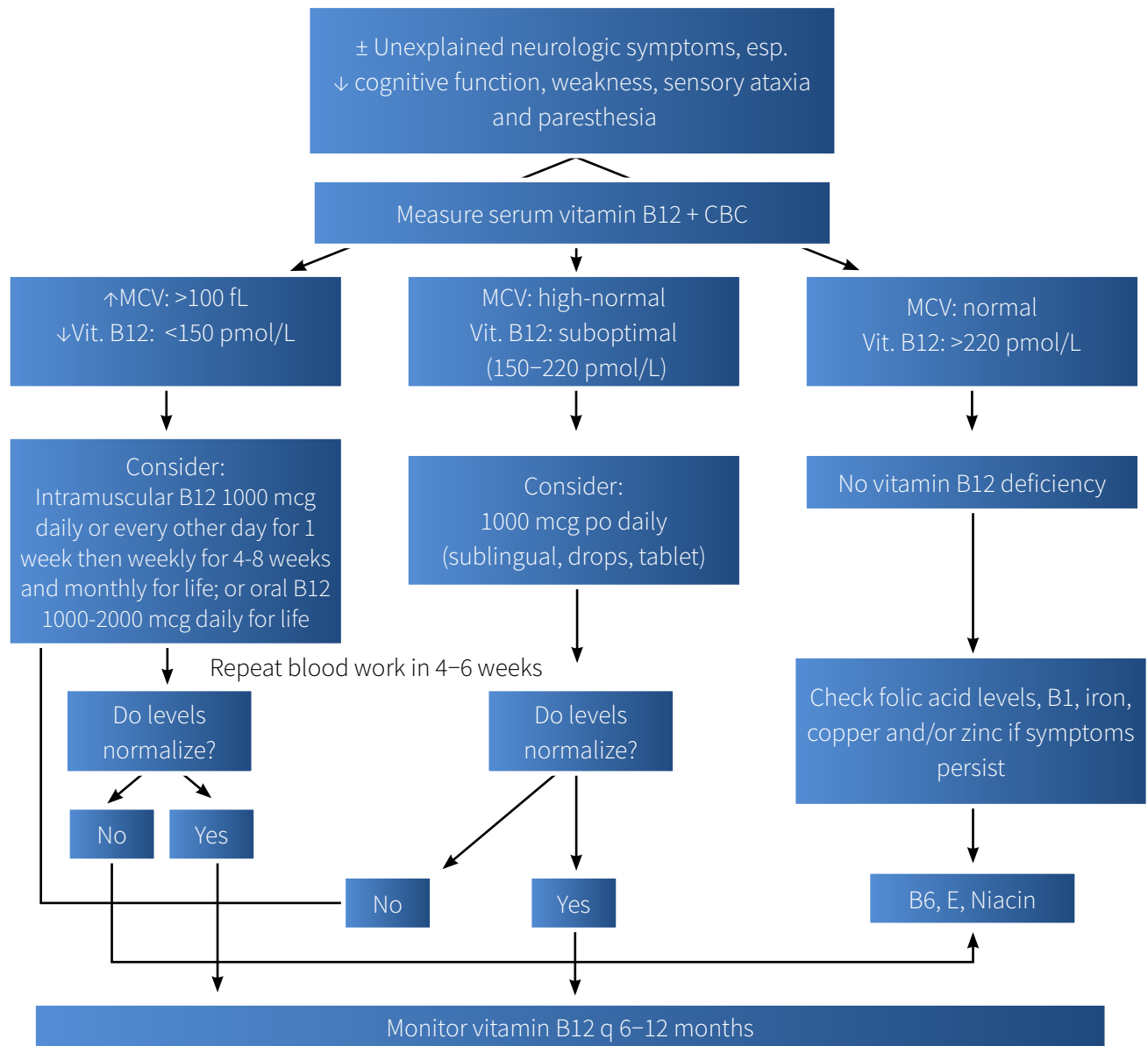
Post Bariatric Surgery Vitamin and Supplement Recommendations from the Perioperative Task Force of the OBN

- ① We recommend that **all** patients receive 1-2 multivitamins daily after bariatric surgery, and this be continued indefinitely. The supplement should be one that contains both vitamins and minerals.
- ② Deficiencies identified **before** surgery should continue to be replaced post-surgery (i.e. vitamin D, vitamin B12, iron, etc.) as appropriate.
- ③ Post-surgical supplementation for various minerals and vitamins should be dictated by the lab work recommended by OBN for Surgical Program patients.
- ④ Dietary replacement should be the ultimate goal. If daily vitamin/mineral requirements are not met by diet alone, then oral or parenteral supplements should be considered.
- ⑤ Lifelong follow-up of nutritional status and lab work is essential.

① Daily recommended vitamins and minerals. Vitamin D 2000-3000 IU, Calcium 1200-1500 mg, iron over 18 mg for men/post-menopausal women, 45-60 for females menstrating, B12 500-1000 mcg daily

② Resources: <https://asmbs.org/resources/clinical-practice-guidelines-for-the-perioperative-nutritional-metabolic-and-nonsurgical-support-of-the-bariatric-surgery-patient>

Managing Vitamin B12 Deficiency



Make sure the patient:

- 1) Avoids time-released vitamin B12 supplements if they have had a RYGB
- 2) Is taking a multivitamin containing folate
- 3) Does not exceed 1mg folic acid per day
- 4) Oral Vitamin B12 supplement is as effective as parenteral supplementation but requires significant patient adherence. Consider parenteral administration until B12 levels normalize if neurological abnormalities are present

NOTE: Prolonged use of histamine H2 receptor blockers or proton pump inhibitors can reduce vitamin B12 absorption

Managing Iron Deficiency and/or Iron Deficiency Anemia

Confirm patient is taking multivitamin/minerals (MVI) containing iron (total daily intake 36–100 mg from supplements).
 REMEMBER: Bariatric surgery patients are not immune to malignancy and GI bleeding. Evaluation for occult gastrointestinal bleeding should be considered when appropriate.

STEP 1: Start with iron salts

- Ferrous sulphate is preferred:
 - Ferrous Sulfate 300 mg po daily – as tolerated (start with 1 tab – gradually increase to 2 then 3 – if needed)
- Best tolerated before bed
- Best absorbed when taken on empty stomach with vitamin C 250–500mg or diluted orange juice
- Avoid taking calcium supplements, calcium-rich food, Antacids, PPIs, coffee or tea within 2 hours of iron supplements
- Continue treatment for 3-6 months

Change MVI to one with 18 mg iron per pill OR add ferrous sulphate 300 mg po daily

STEP 2: If iron salts not tolerated or show no improvements after 3–6 months

- Switch to Feramax® 1–2 tablets/day OR Proferrin® 1–3 tablets/day
- Continue oral treatment for additional 3–6 months

Repeat CBC + ferritin q 1–2 months post treatment to ensure no recurrence of ID/IDA

Targets:

	<i>Hgb</i>	<i>Ferrit in</i>	<i>MCV</i>
<i>W</i>	>115g/L	>30ug/L	>80f

STEP 2: If iron salts not tolerated or show no improvements after 3–6 months

- Venofer® 200 mg IM or IV weekly/biweekly
- Measure CBC + ferritin before each infusion cycle
- Infusions can be arranged at your local hospital
- Although more accessible, IM iron can cause permanent tattooing, allergic reactions and pain with limited hematologic response

Calcium & Vitamin D Deficiency

Laboratory Measure	Markers for Deficiency	Treatment Plan	
25-OH Vitamin D (Normal: 75-100 nmol/L)	↓ 25-OH Vitamin D (<75 nmol/L) ↑ PTH ↑ ALP DXA†	Deficiency: <30 nmol/L	<ul style="list-style-type: none"> • Vit D3 5000 – 10000 IU po daily then recheck levels in 8 – 10 weeks, when normalized change to maintenance dose (1000 - 3000 IU/d)
		Insufficiency: 30-50 nmol/L	<ul style="list-style-type: none"> • Vit D3 5000 IU/day recheck levels in 8-10 weeks. When normalized, change to maintenance dose. • If levels remain low, consider 5000 – 10000 IU Vit D3 IU/day x 8-12 weeks, when normalized change to maintenance dose. • (1000 – 3000 IU/d)
		50 - 75 nmol/L	<ul style="list-style-type: none"> • 1000–2000 IU a day for 8 – 12 weeks -> reassess -> maintenance
<p>< 50 nmol/L – Affects bone health < 75 nmol/L – can affect non-bone health (e.g. lethargy, depression, cardiovascular disease)</p>			
<ul style="list-style-type: none"> • Vitamin D is fat soluble, and preferably should be taken with a meal that contains fat – lunch or dinner 			
1) Serum Calcium 2) Ionized Ca ⁺⁺ 3) PTH 4) ALP	↑ PTH ↑ ALP	<ul style="list-style-type: none"> • Confirm adequate dietary intake of calcium (i.e., dairy sources) • If a deficiency is identified (i.e. ↑ PTH), first increase dietary calcium; if this cannot be optimized, then consider using oral calcium supplements • For oral calcium supplementation: confirm patient is taking 1200-1500 mg/day calcium citrate supplements in divided doses (e.g., 500-600 mg po TID) • Confirm vitamin D levels are normal (if ↓, see above) • If patient is taking calcium carbonate, suggest switching to citrate form or ensure carbonated form is divided into 500 mg doses • Ensure calcium supplements are not taken within 2 hours of iron supplements and/or multivitamins containing iron 	
<p>Comments</p> <p>*Patients not achieving Vitamin D sufficiency with above recommendation should have higher doses</p> <ul style="list-style-type: none"> • Low serum calcium may be due to poor absorption/↓ PTH and/or malnutrition. In case of low albumin level, confirm total ↓ calcium levels by ordering ionized calcium. Cases of hypoparathyroidism should be referred for endocrine assessment. • Postmenopausal women with ↑ PTH (even with adequate calcium/vitamin D intake) should have a BMD test completed and be referred to endocrinology for further investigation. • Parenteral administration of calcium may be required in severe cases of hypocalcemia. • Hospital administration of intravenous calcium is recommended for patients with severe symptomatic hypocalcemia (carpopedal spasm, tetany, seizure). 			

† *Bone mineral density (BMD) testing should be performed within 2 years of surgery in postmenopausal women and patients over the age of 50 years. Patients with osteoporosis should be tested within 1 year of surgery.

► GENERAL SCENARIOS

Hair Loss

KEY CONSIDERATIONS

Hair shedding is commonly encountered in the early months following bariatric surgery and is believed to result, in part, from the premature entry of hair follicles into a dormant state (“*telogen effluvium*”). Hair shedding rarely lasts more than 6-12 months and generally does not require any action unless other causes are suspected. This type of hair loss does not lead to baldness and the patient should be reassured that normal growth will eventually return. Unfortunately there is little evidence that early hair loss is preventable after bariatric surgery.

RED FLAGS

Although far less common, one should be more suspicious of a nutritional contribution to post-bariatric surgery hair loss if:

- a. Hair loss persists beyond the first year of surgery.
- b. Hair loss first begins more than six months after surgery.
- c. Patient has significant ongoing issues maintaining adequate food intake due to severe dysphagia, nausea or vomiting.
- d. Patient has bloodwork demonstrating persistently low iron, zinc or protein levels.
- e. Other symptoms of vitamin and/or mineral deficiency exist.

MANAGEMENT

- Test for micronutrient deficiencies, particularly zinc, iron and B12; treat accordingly (*refer to medical scenarios section re: vitamins & minerals on page 28*).
- Ensure patient is consuming a minimum of 60-80g of protein per day.
- If concerned regarding ongoing food intolerance, refer back to BCOE/RATC for assessment.
- Ensure patient is taking daily multivitamins containing zinc (8-22mg) and copper (1-2mg).

Excess Skin

KEY CONSIDERATIONS

Predicting which patients will have problems with "hanging skin" after weight loss is difficult, but a majority of patients undergoing bariatric surgery will have some degree of complaint.

Plastic surgery should only be considered once the patient has achieved maximal excess weight loss and is at a stable weight for at least 3 months. This tends to occur at 12-18 months post-surgery.

In Ontario, Panniculectomy is only insured in the following circumstances:

- i. Where there is significant associated symptomatology related to the pannus (i.e., significant pain, chronic skin breakdown, recurrent cellulitis and/or ulcers)
- ii. Where the pannus extends to a level below the pubis symphysis
- iii. Where the patient's weight has been stable for a minimum of 6 months when panniculectomy is requested in relation to weight loss; and
- iv. The surgeon has obtained prior authorization of payment from the MOHLTC.

i NOTE: Excision of excess fatty tissue and/or skin other than for panniculectomy (e.g., arms, breasts & thighs) is not an insured service. Patients not meeting the above criteria may elect to pay directly out-of-pocket for the surgery.

Most community plastic surgeons perform body contouring following bariatric surgery.

Primary care physicians can refer directly for consultation.

Constipation

Post-op Constipation

Do not mistake an internal hernia for constipation. Severe, ongoing abdominal pain is rarely caused by simple constipation (see page 22 in surgical scenarios)

Dietary Recommendations

- 1) Ensure patient is drinking >2L fluid/day
- 2) Increase dietary fibre (fruits/vegetables, grains/starch.) **Consider adding sugar-free fibre supplements (i.e. Inulin or psyllium fibre as needed)
- 3) Encourage regular daily exercise (>30min)

Medical Recommendations

- 1) Avoid medications associated with constipation (especially narcotics)
- 2) If taking iron supplementation, consider switching to ferrous gluconate 300 mg po at bedtime with vitamin C 250-500mg for increased absorption

LAXATIVE RECOMMENDATIONS

- Milk of Magnesia tends to be highly effective as first line agent
- May combine initially with 1-2 glycerine suppositories for relief of obstructive defecation
- Stimulant laxatives: Dulcolax (If taking MoM, take 1 hour apart)
- Other Osmotic agents: PEG electrolyte solutions (e.g., Restoralax) or powdered preparations (e.g., MiraLAX) for severe constipation – Avoid Lactulose as this may cause dumping

REMEMBER:

- Surfactants (e.g., Colace) – May be effective for maintenance of normal bowel habits once constipation has been addressed
- May combine classes of laxatives and titrate to achieve desired effect
- Long-term ongoing therapy often necessary

Contraception, Fertility & Pregnancy Considerations

There are several key considerations related to women's reproductive health following bariatric surgery:









1. Fertility may improve dramatically following bariatric surgery, particularly in women whose obesity was associated with oligo- or anovulation (eg. Polycystic Ovary Syndrome).
2. Oral contraceptives may be less effective in women who have undergone Roux-en-Y gastric bypass or duodenal switch. The American College of Obstetricians and Gynecologists (ACOG) recommends using non-oral forms of contraception in this patient group (eg. Medroxyprogesterone injection, contraceptive patches and rings, intrauterine device).
3. It is strongly recommended that women delay pregnancy for 12-18 months following bariatric surgery.
4. If possible, women who have undergone bariatric surgery should be referred to a maternal-fetal medicine specialist with experience in bariatric surgery prior to conception and/or antepartum for assessment and monitoring.
5. In patients who have undergone a Roux-en-Y gastric bypass, there may be a slightly increased risk of internal hernia formation during pregnancy as a result of elevated intra-abdominal pressures. Close consultation should be made with a bariatric surgeon when pregnant patients present with unexplained or worrisome abdominal pain.

▶ DIETARY SCENARIOS

Managing Common Dietary Complaints

Minor dietary intolerances are frequently encountered following bariatric surgery (e.g., bloating, minor abdominal discomfort or occasional bouts of nausea).

In contrast to surgical causes of food intolerance (see surgical scenarios on page 22), simple dietary intolerances are sporadic and tend to be specific to certain foods and/or behaviours. A quick dietary review is often sufficient to identify these precipitants so that patients can be counselled accordingly:

Guidelines for Managing Food Intolerances	
	Chew foods well with small bites and aim for a meal to take 20-30 minutes
	Avoid drinking fluids 30 minutes before and after a solid meal and do not gulp fluids
	Stop eating /drinking when full
	Avoid carbonated beverages and chewing gum to help prevent gas and bloating
	Use moist cooking methods (e.g., boiling, steaming, poaching and stewing)
	Avoid excessive use of sugar alcohols and sugars to prevent dumping syndrome
	For patients with lactose intolerance: Use lactose-free milk products, unsweetened soymilk and/or Lactaid pills
	If necessary, ask patients to keep a food/reaction diary to track and identify trends of intolerances

Common foods that are poorly tolerated	Choose Instead:
Bread, rice, pasta	Toast, crackers, couscous, quinoa, spaghetti squash, orzo
Dry or tough meats/poultry	Fish, eggs, ground meats, tofu/texturized vegetable protein or moisten meats
Raw vegetables/fibrous fruits	Cooked vegetables, removed skin from fruits
Nuts, seeds, popcorn	Avoid until tolerated

Getting Enough Protein

An adequate daily intake of protein is critical following bariatric surgery. All patients are carefully educated pre- and post-operatively to ensure that they consume sufficient quantities of protein.

Protein Needs	0-3 months	3-12 months	>12 months
Target Amount	60-120g/day (1.0-1.5 g/kg IBW*/day)		
Type	<ol style="list-style-type: none"> 1. Whey or soy protein isolate supplements 2. Liquid/pureed foods 3. Soft foods 	<ol style="list-style-type: none"> 1. Soft/solid foods 2. Protein supplements between meals (if needed) 	<ol style="list-style-type: none"> 1. Solid foods 2. Avoid pureed/liquid foods at meals 3. Protein supplements between meals (if needed)
Tips	<ul style="list-style-type: none"> • Protein supplements should be used for 6-8 weeks + slow progression of diet stages • Use protein supplements in smoothies, yogurts, pureed foods • Eat protein foods first 	<ul style="list-style-type: none"> • Aim for 2-3oz (cooked) meat per meal OR 20-30g protein per meal and 5-15g protein per snack • Include other food groups (vegetables, fruits, grains/starches) in addition to protein-rich foods • Be creative - try mixing foods together to increase protein without increasing volume (i.e., blend white beans into sauce and add ground meat) • Use protein supplements (drinks or bars) ONLY if needed and use between meals (instead of replacing a meal) 	

**IBW: Ideal body weight using a BMI 24.9 (*Ideal body weight should not be used for weight goals, rather should only be used for health professional calculations of nutrient requirements)*

Unfortunately, despite their best efforts, some patients experience difficulty in meeting their daily target of dietary protein. Here are some solutions to commonly encountered complaints:

Complaint	Possible Reasons	Recommendations
Unable to tolerate protein supplement	<ul style="list-style-type: none"> • Using too much protein powder • Mixing in water or making too bland 	<ul style="list-style-type: none"> • Use ¼ or ½ of the protein scoop • Make smoothies using frozen fruit, diluted juice, milk/soy milk, ice, yogurt, sugar-free flavour extracts • Try different flavours of protein supplements (unflavoured, chocolate, vanilla, etc.) • Consider possibility of new onset lactose deficiency
Unable to tolerate meat, chicken, pork	<ul style="list-style-type: none"> • Meat is too dry • Not chewing well enough • Normal intolerance 	<ul style="list-style-type: none"> • Use moist cooking methods (i.e., boiling, steaming, poaching and stewing) • Cut pieces small and chew until mush • Use other protein foods instead
Unable to eat much protein at a meal (i.e., only 1 oz meat)	<ul style="list-style-type: none"> • Eating too quickly • Nausea/adverse reaction • Hormonal influences causing satiety 	<ul style="list-style-type: none"> • Ensure patient is eating slowly • Try anti-nausea medications before meals • Consider using protein supplements throughout the day and/or revert to pureed/soft texture diet

Dumping Syndrome

Presentation / Clinical Symptoms	Questions to ask	Diagnosis	Etiology	Management
<p>VASOMOTOR:</p> <ul style="list-style-type: none"> • Intense desire to lie or sit down • Lightheadedness/ Dizziness • Palpitations • Sweating/flushing <p>GI DISCOMFORT:</p> <ul style="list-style-type: none"> • Gas, bloating, pain • Diarrhea • Nausea • Fatigue/drowsiness <p>(Patients may present with any or all symptoms)</p>	<ol style="list-style-type: none"> 1. Is the patient <12-18 months from surgery? 2. Do the symptoms occur within 10-30 minutes after eating? 3. Did the patient eat/drink something high in sugar? 4. Did the patient drink within 15 minutes of their meal? 5. Did the patient eat too much or too quickly? 	<p>Early Dumping Syndrome (75%)</p>	<p>Accelerated gastric emptying of hyperosmolar chyme leads to intraluminal shifting of fluid & release of vasoactive GI hormones.</p>	<p>**Avoid simple sugars</p> <ul style="list-style-type: none"> • Avoid drinking within 15-30 minutes of solid meals/ snacks • Eat slowly (20-30 minutes) • Small, frequent meals
	<ol style="list-style-type: none"> 1. Is the patient >18 months from surgery? 2. Do the symptoms occur 1-3 hours after eating? 3. Is patient complaining of mainly weakness, sweating, hunger and dizziness? 4. Is patient experiencing blood sugars <4.0 mmol/L? 5. Do symptoms occur regardless of type of food eaten? 	<p>Late Dumping Syndrome / Reactive Hypoglycemia (25%)</p>	<p>Reactive hypoglycemia resulting from post-prandial hyperinsulinemia due to the rapid absorption of simple sugars from the proximal small intestine.</p>	<p>Nutritional management:</p> <ul style="list-style-type: none"> • Small, frequent meals (6-8 per day) • Increase dietary fibre or add fibre supplements • Include protein + fibre- rich foods at each meal. • Avoid simple/refined carbohydrates <p>📍 Refer back to bariatric clinic for assessment if patient fails to improve.</p>

Psychosocial Considerations After Bariatric Surgery

Alcohol and Psychiatric Medications:



Although most patients experience benefit in their mental health with sustained weight loss after bariatric surgery, patients may experience new onset or recurrence of mental health conditions following bariatric surgery. For example, recurrent or new onset alcohol use disorders can emerge after bariatric surgery due to altered alcohol absorption and metabolism following roux-en-y gastric bypass surgery. Previously stable mental health conditions can be impacted by altered absorption of medications after bariatric surgery (e.g. antipsychotics, antidepressants, lithium). Psychiatric symptoms should be monitored as per below. Early signs of psychological distress may be increased emotional eating or non-adherence to multivitamins and medications.








Key Issue	Assessment Tools	Recommendations
↑Risk of alcohol use disorders after bariatric surgery	CAGE Questionnaire AUDIT	Educate patient of ongoing changes to alcohol absorption and metabolism Screen for changes in alcohol use after bariatric surgery
Relapse or new onset mood or anxiety symptoms	PHQ9 (depression) GAD7 (anxiety)	Assess mood and anxiety at follow-up. Consider initiating or optimizing current psychiatric treatment (medications and/or counseling)

Family Related Issues After Bariatric Surgery

Although weight loss after bariatric surgery may enhance a relationship, it can also create strain. Challenges include feelings of jealousy, impact on intimacy, sabotage of weight loss attempts by support people, and coping with relationships which revolve around food. Interventions include encouraging support group attendance and/or accessing online support, seeking marital counseling, and recommending the family make behavioral changes together.

► MEDICATIONS AFTER BARIATRIC SURGERY

Medications to Avoid After Bariatric Surgery	
	NSAIDs should not be taken after gastric bypass surgery as they may cause severe and intractable ulceration at the junction of the gastric pouch and small bowel (“marginal ulcer”)
	Weight gain can be associated with some prescription medications (i.e. oral corticosteroids, valproic acid, gabapentin, amitriptyline, lithium, etc.) – consider this risk against the benefits. Use appropriate or alternative medications if available.

Impact of Bariatric Surgery on Medications	
ABSORPTION & MEDICATION CHANGES	<ul style="list-style-type: none">  Medications may be absorbed differently after bariatric surgery - RYGB and DS procedures can affect absorption more significantly <ul style="list-style-type: none"> • Anti-depressants may require dosage adjustments to have the same effect for bypass patients • Avoid the use of long-acting, extended-release or enteric-coated medications following gastric bypass as they may not be absorbed in a predictable manner  Some dosages may decrease with improvements to obesity-related comorbidities or conditions (e.g., antihypertensive and cholesterol medication doses) <ul style="list-style-type: none"> • Glycemic control often improves rapidly following bariatric surgery, resulting in diabetic patients requiring less insulin/other diabetic medications
FORMS OF MEDICATION	<ul style="list-style-type: none">  Avoid large capsules/tablets in the early post-operative period (risk of pills getting stuck)  Some medications can't be crushed (refer to list at https://www.ismp.org/Tools/DoNotCrush.pdf), while others can be crushed and taken with food
ADDITIONAL MEDICATIONS	<ul style="list-style-type: none">  Oral forms of hormonal contraception should be avoided in women due to risk of failure  Patients taking long-term warfarin typically require a postoperative dose reduction of >20%, especially for RYGB procedures – INR should be monitored closely <ul style="list-style-type: none"> • Novel oral anticoagulants should be avoided following RYGB due to the potential for decreased drug absorption  See Vitamin & Mineral Supplementation section on <i>page 28</i>

