Bariatric Surgery Webinar 2 – Jan 11, 2016 Outstanding Questions

These are the additional questions not able to be addressed during the webinar.

Question	Answer
Why are we using American guidelines for everything these days? Do we not have Canadian guidelines?!	Great observation! Currently, all the nutrition-related clinical practice guidelines for bariatric surgery are American. The last Canadian CPG for obesity management was in 2006 (http://www.cmaj.ca/content/176/8/S1.full.pdf+html); since then, the Canadian Diabetes Association has also published a chapter on weight management in the 2015 CPG for Diabetes: (http://www.canadianjournalofdiabetes.com/article/S1499-2671(13)00026-9/pdf); The only nutrition-related guideline that has been created in Canada is from the Alberta Health Services titled "*Nutrition Guideline: Bariatric Surgery for Adults*" (http://www.albertahealthservices.ca/assets/Infofor/hp/if-hp-ed-cdm-ns-5-6-3-bariatric-surgery-for-adults.pdf), however these are not clinical practice guidelines but can serve as an excellent resource for dietitians and other health providers. PEN updated the Bariatric Surgery Toolkit in 2015 which was written and reviewed by Canadian Dietitians. And later this year (Summer 2016), the Ontario Bariatric Network will be publishing a handbook for Primary Care Providers that includes a nutrition chapter (also written by Canadian Dietitians). And lastly, the Academy of Nutrition and Dietetics EAL (Evidence Analysis Library) is currently working on a systematic review of nutrition care in bariatric surgery; the working group includes a Canadian dietitian (expected to be published in late 2016). I would agree that we need Canadian Nutrition Guidelines in Bariatric Surgery; if anyone is interested in pursuing this task, please email me (jebrown@toh.ca) as this has been one of my goals as well.
Can you repeat what you said about taking iron at bedtime?	We tend to see better tolerance and absorption if iron is taken before bedtime with vitamin C (250-500 mg) and separated from calcium-rich foods and/or supplements by 2 hours. NOTE: Not all patients will tolerate iron before bed – customized and trial different times for your patients' needs.
Do you have any go-to protein supplements or shakes that you usually recommend?	Protein supplements availability is quite variable across Canada, as is the quality of protein supplements. We tend to recommend protein supplements that provide 100% whey protein isolate or soy protein isolate, however recommendations are also individualized to patients' needs, taste/texture preferences and cost or availability. Here are some of the commercial supplements we've recommend (please note that I do not endorse one product over another; this is simply a list of products that provide adequate protein quality for post-op recovery and are not limited to only these products): - Unjury Whey Protein Isolate - Celebrate protein shakes/bars - Bariatric Advantage protein shakes - All Max Nutrition – IsoNatural or IsoFlex Whey Protein Isolate - Precision All Natural Whey Protein Isolate - Kaizan Whey Protein Isolate - BeneProtein (mixed into foods) - Premier Protein shakes (note: provides whey protein concentrate and may not be suitable for patients with lactose intolerance) - Six Star Whey protein isolate - Body Fortress Whey protein isolate - Etc.
Suggestion for difficult Vitamin D deficiency?	Pending the patients vitamin D levels; we typically recommend 3000-4000 IU/day to maintain levels above 75 nmol/L (ideally aiming for 100 nmol/L); however in patients that are below 50 nmol/L (and compliant with supplements) then we refer the patient to our NP or their PCP to have higher doses of ergocalciferol in 50,000 to 100,000 IU per week. Refer to page 720 of this resource (http://ncp.sagepub.com/content/29/6/718.full.pdf+html) or page 168 of https://asmbs.org/wp/uploads/2014/05/AACE_TOS_ASMBS_Clinical_Practice_Guidlines_3.2013.pdf (Recommendation R46)

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I've encountered some patients who have diarrhea and loss of controls of bowels a while after surgery (up to 1 year) would this be related to the surgery? What do you recommend?	Diarrhea after RYGB and/or SG can be related to lactose intolerance, dumping syndrome and/or inadequate fibre intake. Loss of control of their bowels is typically seen in patients that have undergone the biliopancreatic diversion/duodenal switch surgery otherwise, I suspect if they've had a RYGB or SG, it is likely related to dumping syndrome. - Ensure patients are consuming sufficient fibre intake (14-25g/day) from at least 130 grams carbohydrates per day. - Consider adding fibre supplements (psyllium fibre) and/or dietary sources of fibre at each meal and monitor bowel movements - Avoid added sugars (sweats, chocolate, cookies, cakes, etc) and fried foods. - If diarrhea continues (especially for months) – consider referral to a gastroenterologist to rule out bacterial overgrowth and/or other GI-related disorders. NOTE: patients that have been on high doses or extended doses of antibiotics can report chronic diarrhea – trial a probiotic and monitor symptoms.
Do you have a resource for vitamin/mineral supplementation in pregnancy?	Yes, this will also be covered in webinar #3 (Feb. 1). Here are some resources: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3901983/pdf/ISRN.OBESITY2013-492060.pdf http://bariatrictimes.com/clinical-considerations-and-recommendations-for-pregnancy-after-bariatric-surgery/
Would you tell patients to take a prenatal MVI as that would be one of the only with 18 mg iron?	Some centres recommend a prenatal MVI as it contains 27mg iron and is close to the 200% DRI's for vitamin/minerals, however the concern for recommending prenatal MVI is they only contain 1.4 mg vitamin B1 (thiamine) per pill, which is below the 200% DRI requirements for men and women after bariatric surgery (2.4 mg and 2.2 mg, respectively). Additionally, prenatal MVI only contain 100% DRI for most B-vitamins and most the minerals, meaning that you could recommend 2 prenatal MVI but this means 2 mg folic acid (>1mg folic acid may mask vitamin B12 deficiency) and some patients may not tolerate 54 mg iron (ferrous fumerate). Our centre does not recommend prenatal MVI (unless a patient is pregnant – then we'd recommend 1 prenatal + 1 regular adult MVI).
There are many multi-vitamin products available in the market place. Are their specific products that your centre recommends? Any products that are specifically developed for post-bariatric surgery? Any specific supplement brands recommended?	In Canada, there is limited MVI products available that meet the needs of post-bariatric patients. I have included a handout that lists some products available in USA and Canada. Please note that these products change regularly, check with your local bariatric centre (dietitian) for updated lists of products. Specific companies for post-bariatric patients: - Opurity - Celebrate Vitamins - Bariatric Advantage
Can a patient take a prenatal vitamin instead of the 2 multivitamins	See above the above answer related to prenatal supplements.

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that you recommended?	
BMI 29.9 used for all energy/ nutrient calculations or just protein?	Energy calculations are based on the Mifflin-St. Joer equation: **Men**: 10 x weight (kg) + 6.25 x height (cm) - 5 x age (y) + 5 **Women:** 10 x weight (kg) + 6.25 x height (cm) - 5 x age (y) – 161 Protein calculations are based on 1.0-1.5g/kg IBW/day (IBW using a BMI of 24.9)
What are the bold vitamin deficiencies more commonly seen?	I'm slightly uncertain as to the question, but I think you're referring to the "bold" vitamin/minerals list in the presentation slides (showing the visual deficiencies in a SG, RYGB and BPD/DS)? If so, you can refer to the following resources that outline these deficiencies in more detail: http://asmbs.org/wp/uploads/2014/05/nutritional-guidelines.pdf http://ncp.sagepub.com/content/29/6/718.full.pdf+html http://www.ncbi.nlm.nih.gov/pubmed/25078533
Is there a prevalence or do we know the incidence of thiamin def post bariatric sx?	"Thiamin deficiency after RYGB surgery can occur in up to 49% of patients. Saif et al. observed normal B1 levels at 1 year after SG, but this dropped to 30.8% at year 5 postoperatively." (from Isom, K., et al. 2014 *Nutr Clin Pract:* http://ncp.sagepub.com/content/29/6/718.full.pdf+html Here are some reviews on the incidence of thiamine deficiency post-surgery: http://www.ncbi.nlm.nih.gov/pubmed/18948797 http://www.ncbi.nlm.nih.gov/pubmed/25564426 http://www.ncbi.nlm.nih.gov/pubmed/17353468 http://www.karger.com/Article/Pdf/366012 http://www.ncbi.nlm.nih.gov/pubmed/22398110
What is the calories we should aim for immediately post op and thereafter?	This is difficult as there are no specific guidelines for post-op energy requirements immediately post-op, however this is typically the recommendations after surgery: Immediately after surgery (0-8 weeks) = 500-900 kcal 6 months to 1 yr post-op = 800-1000 kcal After 1 year post-op = 800-1400 kcal Literature ranges from 800-1800 kcal (3 months post-op to 8yrs post-op) (http://bariatrictimes.com/recommended-levels-of-carbohydrate-after-bariatric-surgery/)
Will you be able to comment more on weight re gain for patients who have had surgery? Typically, 2 years out of surgery?	Webinar #3 will have information on weight regain after surgery.
What biochemical markers would you monitor as a baseline and during regular follow-up? Also, what is the frequency of lab	https://asmbs.org/wp/uploads/2014/05/AACE_TOS_ASMBS_Clinical_Practice_Guidlines_3.2013.pdf (table 6) http://ncp.sagepub.com/content/29/6/718.full.pdf+html (table 1) Typically biochemical markers are measured before surgery (baseline), 3 months post (not all micronutrients); 6 months, 12 months and yearly. Here is a list of common markers. Check with your local bariatric centre of their biochemical markers and frequency.

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work during follow up?	▪ CBC, platelets ▪ Electrolytes ▪ Glucose/Alc ▪ 25-hydroxyvitamin D ▪ Iron studies (TIBC, iron, ferritin) ▪ Serum vitamin B12 ▪ Liver function tests ▪ Alkaline phosphatase, s. calcium ▪ Albumin ▪ Lipid profile ▪ Thiamine (B1) ▪ Folate ▪ PTH ▪ TSH ▪ Zinc ▪ Copper
Since iron and zinc can interfere with one another's absorption is there an ideal Fe:Zn ratio in supplements?	No, there has not been any recommendations for iron to zinc ratios in supplements.