# Nutrition II: Long Term Post Op Care

Sherry Waroway, RD

2nd Annual Obesity Updates- For Healthcare Providers

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Alberta Health Services

# Disclosures

- BSc. Nutrition and Food Science.
- Registered Dietitian,

  Edmonton Adult Bariatric Specialty Clinic.
- No other relevant financial or non financial relationships to disclose.

# Objectives

Support you in helping your clients meet nutrition needs after bariatric surgery.

When a bariatric surgery client comes into your office, what do you do?

- Where do you start?
- What eating behaviours should they be doing? Not doing?
- What vitamins and minerals should they be taking? How much?
- What if a client is pregnant or wants to become pregnant?
- When and How to refer to an RD

# Where to start

- What surgery? When?
- Weight history
  - Highest weight
  - Pre surgery weight
  - Lowest weight post surgery
  - Present weight
- Compare to expected weight loss[1].
- Assess basic eating patterns and vitamin and mineral supplementation (See Nutrition I: PMR and CMR).

1) AACE/TOS/ASMBS Guidelines. *Endocr Pract*. 2013; 19 (No2).

# Supporting Positive Behaviors Post Bariatric Surgery

1) Be choosey! (↑ protein + nutrients, ↓ fat, sugar + sodium)
2) Avoid challenging textures (sticky, doughy, stringy, dry, tough)
3) Avoid carbonated beverages
4) Choose small portions (1- 1 ½ cups per sitting)
5) Eat slowly, chew food well, be mindful
6) Separate solids and liquids (after food wait 30min before drinking liquids)
7) Avoid high sugar foods and beverages

Nutrition Practice Guideline- Adult Bariatric Care 2010, Revised Draft 2018. Edmonton, Alberta, Canada.

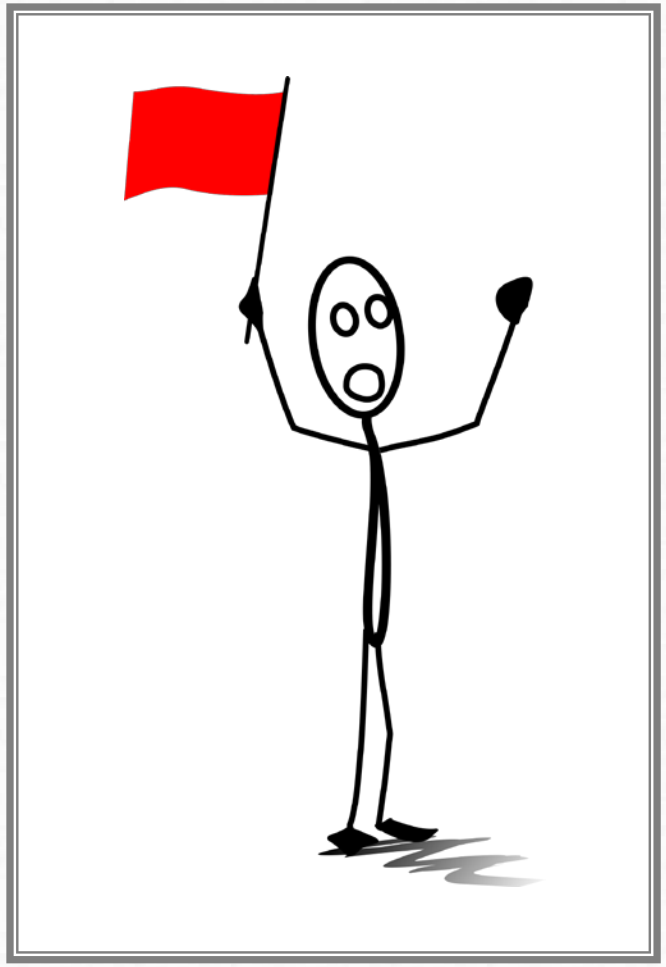
# Other nutrients of concern

## Caffeine

- Consumption within general recommended amounts (<400mg daily), as per Health Canada.

## Alcohol

- Known changes in metabolism post RYGB/LSG/BPD.
- Should be used with caution, may be advised to avoid.
- Canada's Low Risk Drinking Guidelines may not be appropriate.
  Women: ≤ 2 drinks/day or ≤10 drinks/week.
  Men: ≤ 3 drinks/day or ≤15 drinks/week.
- If choosing alcohol: choose non carbonated, no or low sugar.



# Red Flags

- Reliance on meal replacements or nutrition supplements.
- Reliance on liquid, soft or slurry textures.
- Long list of foods not tolerated.
- Meal length >40-45 minutes.
- Grazing.

# Vitamin and Mineral Supplementation

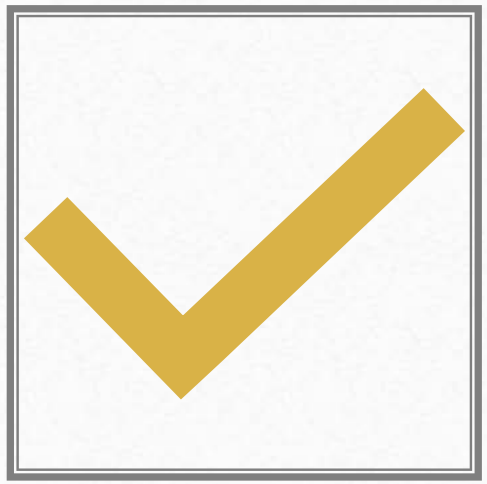
Bariatric surgery clients are at increased risk for vitamin and mineral deficiencies.

- Malabsorptive component of bariatric surgery.
- Inadequate intake.
- Decreased micronutrient absorption in low acid environment.
- Presence of comorbidities.
- Drug-nutrient interactions.
- Knowledge deficit and limited adherence.

# Vitamin and Mineral Supplementation- Preventative Therapy

- Is individualized, multifactorial.
- Avoid toxicity and deficiency.
- To prevent deficiencies after bariatric surgery, there are well established targets for:
  - Thiamine, Vit B12, Folate, Vit A, Vit D, Calcium, Iron, Zinc and Copper.
  - These vitamins and minerals are required in amounts above the DRIs.

# Vitamin and Mineral Supplementation



## What should my client be taking?

1) Multivitamin x2, prenatal vitamin or bariatric multivitamin daily.
2) Vitamin B12 350-500mcg daily (sublingual tablet).
3) Vitamin D 3000IU daily (from all sources) or more to maintain normal serum value.
4) Calcium 900-1000mg daily. Historically calcium citrate has been preferred, conflicting evidence at present.
5) Iron 45-60mg daily (from all sources). Iron salts are preferred. Ferrous gluconate,/sulfate or fumerate.

# Vitamin and Mineral Supplementation

## What should my client NOT be taking

- Gummy/chew
- Transdermal patch
- Pediatric versions
- Enteric coated or extended release
- Products without a DIN or NPN number

# Vitamin and Mineral Supplementation- Repletion Therapy

## Treating a deficiency

- Confirmed with blood work.
- Use well established treatment pathways for vitamin and mineral deficiencies. You may want to refer to an RD.
- Use single source vitamin or mineral supplements to treat a deficiency. Requires follow up and retesting of blood work.

# Vitamin and Mineral Screening

- Clients should undergo nutrition screening annually (once weight stable).
- If part of EABSC, instructions are included in discharge package.
- May include: CBC/diff, PT, PTT, Ferritin, Vit B12, FBS, Na, K, Cl, C02, creatinine, Ca, Phos, Mg, total protein, albumin, alk phos, ALT, AST, Bili, lipids, PTH, urea.
- Vitamin D
- May be warranted: Iron studies, Vit A, serum folate, Cu, Zn, Se.
- Bone Mineral Density (2 years post bariatric surgery, then as indicated- based upon previous test results and risk factors).

# Vitamin and Mineral Supplementation- Special Populations

- GERD- with use of PPIs and or OTC antacids
- Pregnancy
- Renal Disease
- History of Kidney Stones
- Hemachromatosis
- Dietary Patterns (Vegan)

# Pregnancy

- Not recommended until 12-18 months post surgery[1], or until weight and nutrition status stable[2].
- Strongly consider referring to:
  - High risk pregnancy clinic
  - RDs with bariatric surgery and prenatal/post natal expertise.
- Nutrition support should be provided through all stages of pregnancy and until weight and health targets achieved.

1) Mechanick JI et al, *Obesity* 2013;21:S1-27. 2) ACOG *Obstet Gynecol* 2009;113:1405-13.

# Pregnancy

Pregnancy may increase requirements for the following:

- Iron
- Folate
- Vitamin D
- Vitamin B12

It is recommended to add single source supplements to meet these needs (not a 2nd multivitamin or prenatal vitamin).

# Pregnancy

- Folate, Iron, Vitamin D and Vitamin B12
  - Complete a nutrition assessment.
  - Assess baseline micronutrient status.
  - This will help guide additional supplementation.
- Monitor blood work including:
  - CBC, iron, ferritin, folate, Vit B12, calcium, Vit A, D and E.

# Pregnancy

## What should my clients be taking?

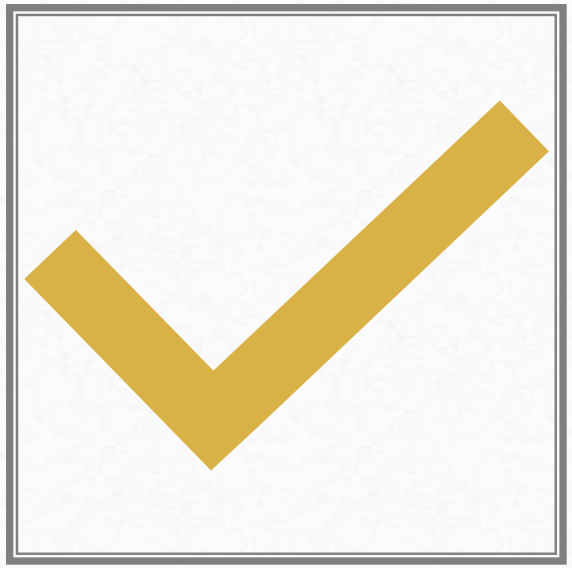
1) Multivitamin: as recommended
2) Vitamin B12: 350-500mcg daily
3) Vitamin D: 3000IU daily (from all sources)
4) Calcium: 900-1000mg daily
5) Iron: 45-60 mg daily (from all sources)

## If pregnant or planning:

- Ensure Folic Acid is at 1000mcg daily[1].
- Plus extra Vitamin B12, Vitamin D and Iron as needed.

Society of Obstetricians and Gynecologists Canada- CPG 2015.

# Pregnancy



- Fluid: 3L/day (as per DRI for pregnancy [1]).
- Protein: Upper end of protein requirements for post bariatric surgery (1.2-1.6g/kg IBW[2]).
- Screening for GDM via OGTT may not be appropriate (hypoglycemia, dumping syndrome, inability to complete test)

1) Health Canada, *Dietary Reference Intakes*, 2010. 2) Consensus- Adult Bariatric Specialty Care Clinics.

# When to Refer to a Dietitian

- Client is interested
- Poor adherence with supportive nutrition behaviours post surgery or red flag behaviors
- Micronutrient Deficiencies
- Complications
- Pregnancy (preconception, pregnancy, post partum)

# How to Refer to a Dietitian

## Post Bariatric Surgery Client: Needs Weight Management or General Nutrition Support

- **My Health Alberta** (Self Learning Module)
  www.myhealth.alberta.ca
  Health Information and Tools→Healthy Living→Managing Your Weight →Your Best Health: Adult Weight Management Learning Module.
- **Alberta Healthy Living Program** (Community Classes)
  http://www.albertahealthservices.ca/info/page13984.aspx
- **Post Bariatric Surgery Support Group Modules**
  https://www.albertahealthservices.ca/assets/programs/ps-1063953-post-bariatric-surgery-schedule-support-group.pdf

# How to Refer to a Dietitian

Post Bariatric Surgery Client: Needs Weight Management or General Nutrition Support

- **PCN**: Adult community referrals should be sent to appropriate PCN.
- **Private Practice**: Many health plans cover RD services.
  www.dietitians.ca Your Health→Search for Dietitian.
  www.collegeofdietitians.ab.ca For the Public→How can I find an RD.
- **Hotline Services**: Weight Management 780 735 1078 (M-F).
- **Health Link**: 811 General nutrition questions.

# How to Refer to a Dietitian

Post Bariatric Surgery Client: Experiencing complications and needs Nutrition Support

- **Edmonton Adult Bariatric Specialty Clinic**: Clients who have had bariatric surgery at the EABSC and are experiencing complications related to that surgery.
- **Revision Clinic**: Clients who have had bariatric surgery at a facility other than the EABSC and are experiencing complications related to that surgery.
- **Outpatient RD**: Accepting adult referrals for clients in AHS programs only (As of October 15/18).


ASK
The Dietitian