PREGNANCY RECOMMENDATIONS FOR POST-OPERATIVE BARIATRIC PATIENTS

PROVIDED BY CENTER FOR WEIGHT REDUCTION
Instructions for Pregnant/ Breastfeeding Post-Operative Bariatric Patients

PREGNANCY AFTER WEIGHT LOSS SURGERY
- Recommend delaying pregnancy at least 12-18 months after surgery
- If pregnancy early post-op, body may be in catabolic state with the major wt. loss. Inadequate protein/calories --> adverse effect on growth/development of fetus. Higher rate of miscarriage in early post-op group
- Best to use more than one means of contraception. Likely altered absorption of oral contraceptives after gastric bypass. Change in hormone levels --> normalized periods
- Careful in screening for gestational DM – can have dumping syndrome

WEIGHT GAIN
- Weight goal to enable appropriate wt. gain for mother & fetus:
  - Gain 1-4# in first trimester and 0.5#/wk in the second and third trimester
- Using current BMI post-op:
  - BMI < 18.5 -------- 28-40# gain
  - BMI 18.5-24.9 ------ 25-35# gain
  - BMI >25-29.9 ------ 15-25# gain
  - BMI >30 ---------- 11-20# gain
- For adjustable gastric bands, recommended to remove all fluid from the band during the 1st trimester to help alleviate N/V

NUTRITIONAL INTAKE
In pts < 6 mo., post-op
- Increase cal/protein intake to prevent rapid wt. loss
- Minimum intake of 1200 cal/d
- If wt. loss > 2#/week, advance to 1500 cal/d
- If wt. loss > 2#/week occurs consistently, alternative nutrition sources must be considered
- Protein: Roux-en-Y (RNY), Sleeve Gastrectomy (SG)
  - Goal is 1.5 gm/kg IBW/d
- Protein: Adjustable Gastric Band
  - 20 gm more protein/d above maintenance level

In patients > 6 mo., post-op
- Additional 340 cal/d in 2nd trimester, additional 450 cal/d in 3rd trimester.
- Protein: RNY, SG
  - Goal is 1.1gm/kg IBW/d or 20gm more/d, 60-80g/d
- Protein: Adjustable Gastric Band
  - 20 gm more protein/d above maintenance level
- Fluids goal: 64+ oz/d

Vitamin/Minerals:
RNY
- Monitor the blood count, iron, ferritin and Vit D levels every trimester
- Can continue bariatric multivitamins or a prenatal vitamin w/ additional Vit B12 & calcium citrate supplements, and additional iron & folic acid as needed
- Iron: 40-65 mg/d or based on iron studies
- Vit B12: 500 mcg/d sublingual or 1000 mcg/mo Im
- Vit D3: 2000-6000 IU/d
- Thiamine: a baseline level is prudent
- Calcium: 1500-2000 mg/d (w/ Vit D3)
- Folic acid: supplement further if serum levels are low 4mg
- DHA: 300 mg/d or combination prenatal (DHA+prenatal)

Adjustable Gastric Band
- Normal prenatal vitamin. Additional calcium citrate & Vit D3 as needed. Other additional supplementation based on low dietary intake or laboratory deficiency

Laparoscopic Sleeve Gastrectomy
- Normal prenatal vitamin
- Additional calcium citrate 1000-1500 mg and Vit D3 as needed
- Iron 40-65 mg/d
- Vit D3: 2000-6000 IU/d
- Vit B12: 500 mcg/d sublingual or 1000 mcg/mo Im
BREASTFEEDING
• Breastfeeding can assist with wt. loss post-partum. Follow same nutrition guidelines as during pregnancy to enable appropriate quantity & quality of milk production
• Calorie goal: 300-500 Cal/d above maintenance level

Issues:
• Vit B12 – if mom is deficient, baby becomes deficient
• Vit D – breastfed babies have a hard time getting enough D; obese moms & surgical wt. loss pts. can be low; babies influenced more by Vit D status of mother during pregnancy & by amount of sun exposure, as Vit D content of human milk is typically low
• Thiamine – a baseline level would be prudent
• Iron – iron deficiency may occur in up to 50% of pts after RNY, esp. in women still menstruating. Amenorrhea from sustained lactation may be beneficial d/t decreased blood loss
• Iron from human milk is better absorbed than iron from formula
• Water-soluble vitamins – in human milk are greatly influenced by mother’s diet. Avoid high doses of Vit B6 as production of prolactin may be inhibited
• Fat – lipid comprises 50% of breast milk calories & is highly variable. Breast milk contains ARA (arachidonic acid) & DHA (docosahexaenoic acid) – associated w/ improved cognition, growth & vision in children. Some experts recommend supplementation of ARA & DHA in pregnancy & lactation
• Breast tissue changes – if mom has had breast reduction, has extensive ptosis or asymmetrical breasts, these would be red flags for watching for adequate milk production
• Obese women may have delayed lactogenesis – this can be misinterpreted in the first week as an inability to breastfeed

LAB VALUES FOR BREASTFEEDING PATIENTS AND INFANTS
• CBC, albumin, folate, Vit B12, calcium, phosphorus & 25-dehydroxy-Vit D should be tested during pregnancy & after birth to detect deficiencies & supplement accordingly
• Infants – evaluate for adequate growth, adequacy of Vit B12, calcium & folate levels throughout the duration of breastfeeding

General Guidelines for Pregnancy/ Breastfeeding After Bariatric Surgery

GENERAL GUIDELINES
• Eat small, frequent meals and snacks (at least 5-6 per day) in order to achieve calorie and protein goals
• Do not skip meals or planned snacks
• Eat a variety of foods from all food groups
• Do not eliminate or severely restrict carbohydrates
• Separate consumption of solids and liquids by at least 30 minutes to decrease early satiety and increase food tolerance
• A high protein, low carbohydrate liquid nutrition supplement may be helpful to meet nutrition goals (i.e. Unjury, IsoPure, etc.)
• Report any persistent vomiting after meals or other significant barriers to meeting the meal plan goals
• Weight goal: to enable appropriate weight gain for mother and fetus:
  – 1st trimester goal = +1-4#
  – 2nd trimester goal = +0.5#/wk
  – 3rd trimester goals = +0.5#/wk
# Lab Tests
## Post Operative Bariatric Patients

<table>
<thead>
<tr>
<th>Roux-en-Y Gastric Bypass</th>
<th>Laparoscopic Sleeve Gastrectomy</th>
<th>Gastric Banding</th>
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| Labs during first year post op:  
  • 3, 6 & 12 months  
Labs after first year: Annually | Labs during first year post op:  
  • 3 & 12 months  
Labs after first year: Annually | Labs post op:  
  • Labs performed only if pre-op labs are abnormal |
| Chemistry Test Panels:  
  • Fasting (8 hours)  
  • Comprehensive Metabolic  
Chemistry Routine Tests: Iron/TIBC Panel | Chemistry Test Panels:  
  • Fasting (8 hours)  
  • Comprehensive Metabolic  
Chemistry Routine Tests: Iron/TIBC Panel | Chemistry Test Panels:  
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Hematology:  
  • CBC with Differential |
| Chemistry Miscellaneous:  
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