Chronic Pancreatitis

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Major Case Study

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Overview

- Chronic Pancreatitis
- Case Study
  - Medial Treatment
  - Nutritional Treatment
- Implications to the Field of Dietetics

Chronic Pancreatitis (CP)

- Pancreas
  - Endocrine Functions: Produces glucagon and insulin
  - Exocrine Functions: Secretes bicarbonate and digestive enzymes
- Pancreatitis
  - Enzymes activate within the pancreas and auto-digest the pancreatic tissue
  - Acute → Chronic

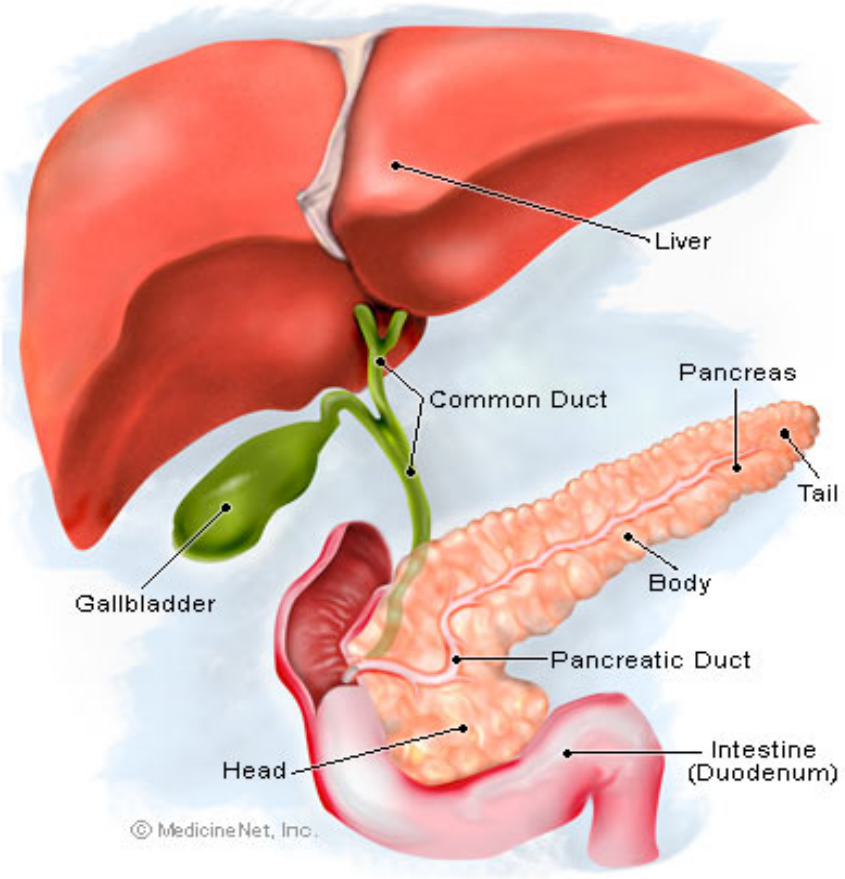
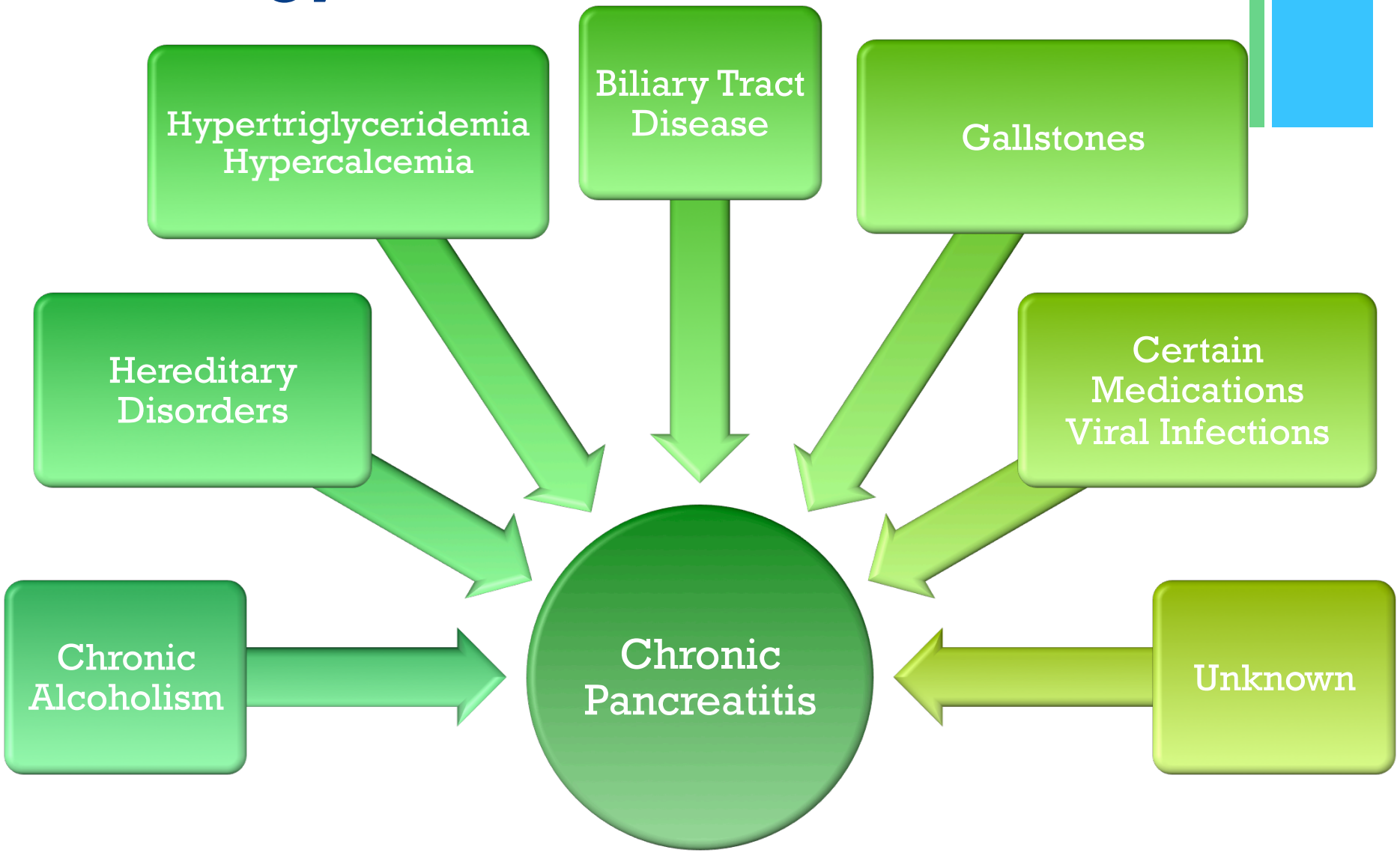


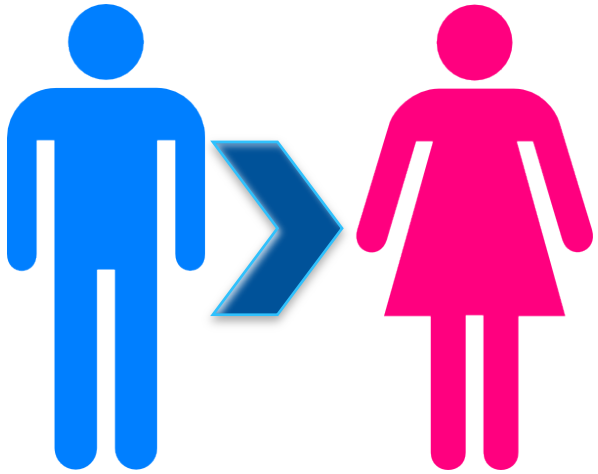
Image from emedicinehealth.com/pancreatitis/article_em.htm

Etiology


Hypertriglyceridemia
Hypercalcemia
Biliary Tract Disease
Gallstones
Hereditary Disorders
Certain Medications
Viral Infections
Chronic Alcoholism
Chronic Pancreatitis
Unknown

Chronic Pancreatitis

- Prevalence:
  - 2 out of every 25,000
  - Men > Women
  - Blacks > Whites
  - 30 – 40 years old



- Diagnosis:
  - Lab Values
  - Abdominal CT Scan
  - Abdominal Ultrasound
  - Endoscopic Retrograde Cholangiopancreatography (ERCP)
  - Magnetic Resonance Cholangiopancreatography (MRCP)

Chronic Pancreatitis

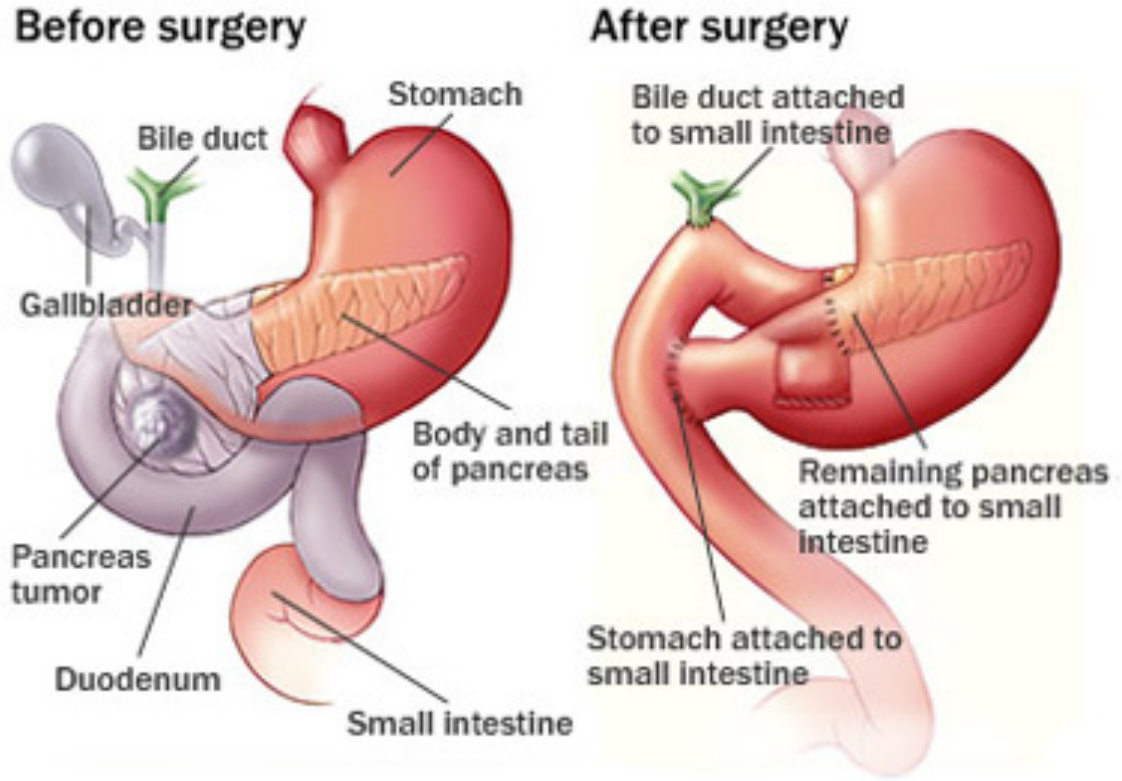
- Symptoms:
  - Abdominal Pain
  - Diarrhea
  - Nausea
  - Vomiting
  - Steatorrhea
- Nutritional Implications: Malnutrition
  - Inadequate Oral Intake
  - Malabsorption
  - Fat Soluble Vitamin Deficiency
  - Poor Bone Health

Chronic Pancreatitis

- Treatment:
  - Pancreatic Enzyme Replacement Therapy (PERT)
  - Nutrition
    - EN: ~5%, PN <1%
    - NPO → Small, frequent meals with highest amount of fat tolerated
    - Alcohol Avoidance
    - Fiber
    - High CHO
  - Diabetes
  - Pain Relief
    - Narcotics
    - Nerve Blocks

Chronic Pancreatitis

- Treatment:
  - Surgical Options:
    - Drainage Procedures
    - Resection Procedures
      - Whipple
  - CAM:
    - Antioxidants, Herbs
    - Discuss with doctor



Whipple Procedure

Image from Mayoclinic.com Health Library

Case Study

General Information

- AH is a 36-year-old obese Black female
- Admitted to BWMC on 11/11/13 for a planned Whipple procedure for chronic pancreatitis.
- Hospital Duration: 7 days

Past Medical History

- Cardiomyopathy with AICD
- Congestive Heart Failure
- Dyslipidemia
- Hypertension
- Obesity
- Type II Diabetes
- GERD
- Chronic anemia
- Major Depressive Disorder

Past Medical History

- Pancreatitis:
  - Initial Onset- 5 years ago (2008)
  - CP- 3 years ago (2010)
    - Initial Etiology: Hypertriglyceridemia
    - Possible Current Etiology: Common bile duct stones
  - Attempted Interventions:
    - Partial cholecystectomy
      - Remaining gallbladder contains gallstones
    - ERCP's- Unsuccessful due to severe duodenal stenosis
    - MRCP- Unable to perform due to pt's AICD

Social History

- Independent in ADLs and IADLs
- Currently unemployed, receiving disability since 2012
- Single and lives with her mother
- Insured with prescription coverage
- Former cigar smoker (quit in 2000)
- Denies alcohol use, recreational drug use, or prescription drug abuse
- Decreased social life due to current condition

Medical Treatment

- Plan: Surgical Intervention – Whipple
- 11/11/13: The laparoscopic Whipple was converted to an open-cholecystojejunostomy and gastrojejunostomy due to significant inflammation of the pancreas, affecting safe dissection of blood vessels around the pancreas.
- 11/12/13: POD 1. Patient recovering well from surgery. Documenting effective biliary bypass. Wound drainage serosanguineous with no evidence of leak from biliary anastomosis.
  - GI Status: Abdominal soft, non-distended, and appropriately tender. Continue NPO secondary to gastrojejunal anastomosis; will start sips tomorrow.

Medical Treatment

- 11/13/13: POD 2- Given nature of wound drain output and presence of biliary drainage in NGT, ongoing bleeding or biliary stricture not suspected. Low NG output suggests good gastric emptying through gastrojejunstomy.
  - GI Status: Abdominal soft, non-distended, and appropriately tender. Bowel sounds are present. Sips of clear liquid diet- will likely further advance diet tomorrow if patient stable.
- 11/14/13: POD 3- NGT has been removed and patient has been restarted on medications for cardiomyopathy.
  - GI Status: Abdominal soft, non-distended, and appropriately tender. Bowel sounds are present. Patient is tolerating sips of clear liquids. AH denies flatus or BM, as well as N/V. Will hold on advancing diet.

Medical Treatment

- 11/15/13: POD 4- Patient was transferred to 6W telemetry floor from SICU with a cardiac monitor.
  - GI Status: Patient with one episode of bilious vomiting yesterday, but reports feeling better this AM. Diet to be advanced from sips to clear liquid diet.
- 11/16/13: POD 5-
  - GI Status: Abdominal soft, RLQ tender to touch; Bowel sounds are normal; patient passing gas but denies BM. No vomiting but patient reports some nausea of which is now controlled with medications around the clock. Patient tolerating the clear liquid diet. Diet to be advanced to regular diet with small frequent meals. Reglan will be added to improve gastric emptying.

Medical Treatment

- 11/17/13: POD 6- Patient found with a magnesium level of 1.4 and given 4 gms of magnesium sulfate for repletion. Patient continues to ambulate hallway independently with no shortness of breath. Patient's activity level is returning to normal. Remains stable from a cardiac perspective.
  - GI Status: Patient tolerating diet with adequate intake; no N/V.
- 11/18/13: POD 7- Patient hemodynamically stable and pain is well controlled. Hypomagnesaemia has been resolved. Patient to be discharged home today.
  - GI Status: Abdominal soft, non-tender, and non-distended. Patient had a BM this AM and is tolerating a regular diet. Reported one episode of yellow liquid emesis of small amount. No further N/V. Reglan to be continued to improve gastric emptying. The importance of 6 small meals per day was discussed with the patient for discharge.
  - Plan: Patient to follow-up with her pain management physician upon discharge to discuss weaning of chronic pain medication.

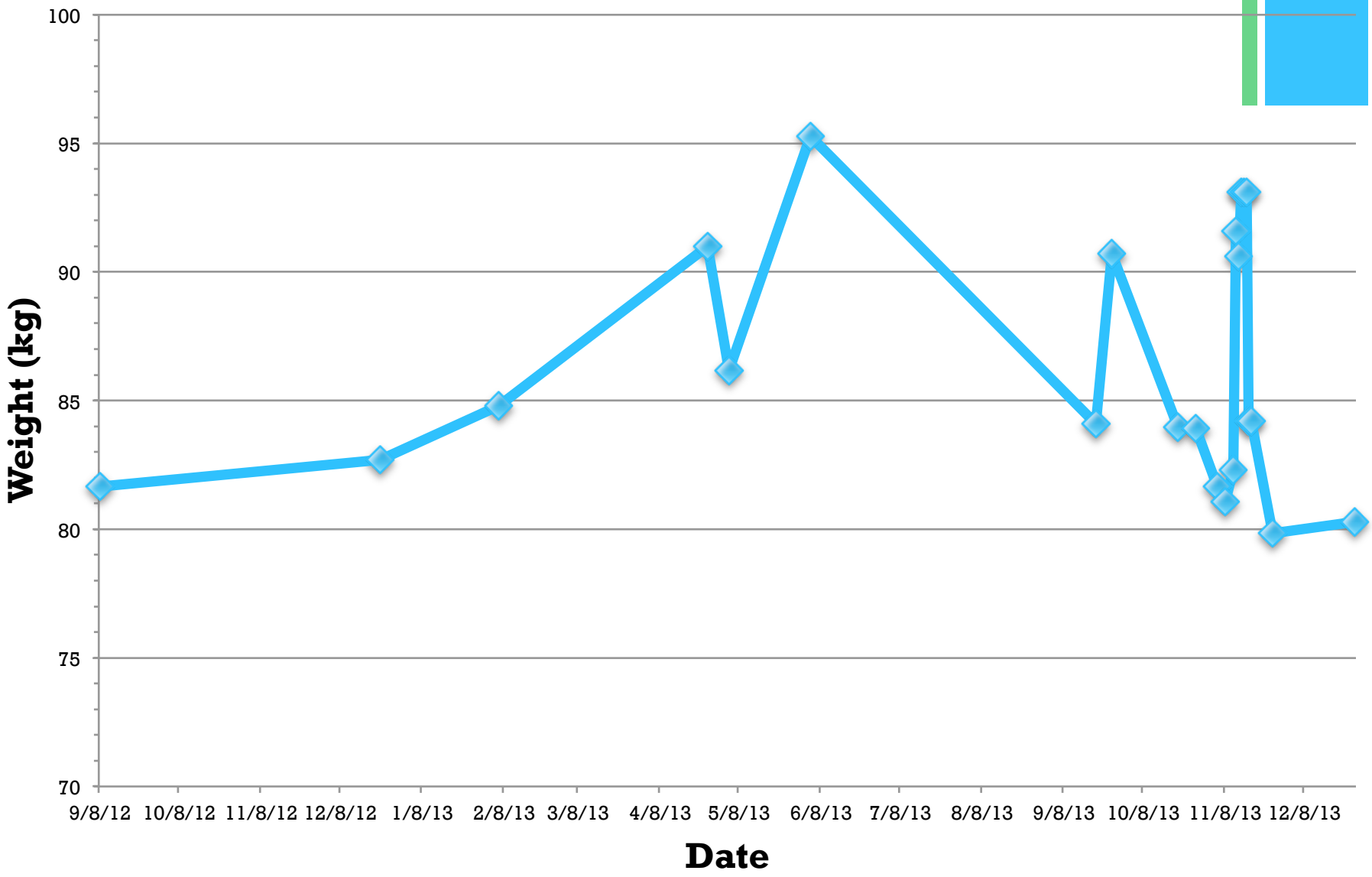
Nutrition History

- TPN x 2 weeks PTA
- Prior to Nutrition Support: Only able to consume small amounts of food due to N/V
- Low Fat/Fat-Free Diet
- Previous Education:
  - CHO Counting: Unsuccessful
  - Weight Management Classes
  - Low Fiber Diet
- Physical Activity Level: Sedentary
- No known food allergies

Anthropometrics

Height	Weight	BMI	IBW	%IBW
154.9 cm (5 ft 1 in)	81.6 kg (180 lbs)	34.0 kg/m^2 Obese	47.7 kg (105 lbs)	171% Obese

Weight History



Pertinent Lab Values

Lab	11/12/13	Significance
Na	132 (L)	Overhydration, vomiting, tissue injury, gastric suction, hyperglycemia
K+	4.2	
Creat	0.61	
BUN	10	
Glucose	121 (H)	DM, acute stress, surgery, chronic pancreatitis
POC Glucose	109 (H)	DM, acute stress, surgery, chronic pancreatitis
Mg	2.0	
Phos	3.9	
Lipase	69 (H)	Chronic pancreatitis, gallstones, cholecystitis

Medications

Medication	Dosage	Medical Function	Nutrition Implication
Acetaminophen (Ofirmev) Injection	1,000 mg 3x daily	Analgesic, antipyretic	Avoid alcohol; N/V, headache, constipation
Enoxaparin Sodium (Lovenox) Injection	40 mg nightly	Anticoagulant	Cannot be used in those with pork allergies-derived from porcine intestinal mucosa
Fentanyl (Duragesic) Patch	1 patch every 72 hours	Analgesic, narcotic, opioid.	Anorexia, mood changes, dry mouth, stomach pan, gas, diarrhea, N/V/D/C
Hydromorphone PF (Dilaudid) Injection	2 mg every 3 hours PRN	Analgesic, opioid. Relieves severe pain	N/V/D/C, ileus, taste changes, xerostomia, stomach cramps, anorexia, ↓ gastric motility, impaction. May enhance EtOH, St. John's wort effects on CNS depression
Insulin Lispro (Humalog) Injection	0-12 Units 4 x daily- before meals and nightly	Rapid acting bolus insulin	Hypoglycemia, ↑ weight

Medications

Medication	Dosage	Medical Function	Nutrition Implication
Metoclopramide (Reglan) Injection	10 mg every 6 hours PRN	Antiemetic, anti-GERD, diabetic gastroparesis treatment	Dry mouth, ↑ gastric emptying, nausea, constipation; may alter insulin requirements for those with DM; does not cause diarrhea—its prokinetic effects do not extend beyond the duodenum
Metroprolol (Lopressor) Injection	2.5 mg 4x daily	Antihypertensive, anti-angina, CHF treatment	Diarrhea, dry mouth, N/V, dyspepsia, flatulence, constipation, hyperglycemia. Grapefruit juice interaction. Avoid natural licorice and EtOH. It may be necessary to decrease dietary calcium and sodium, which may decrease absorption.
Pantoprazole (Protonix) Injection	40 mg daily	PPI. Anti-GERD, Antisecretory	Diarrhea, ↓ gastric acid secretion, ↑ gastric pH, N/V/D/C, flatulence, dyspepsia, gastroenteritis
0.9% Sodium Chloride Continuous Infusion	75 ml/hr	Hydration, repletion	

Initial Nutrition Assessment

- Screened for TPN
- POD 1
- NPO x 1 day- to be advanced to sips tomorrow
- GI: Pt reports nausea but no vomiting since surgery; LBM 11/10; 150 mL bilious output from NGT
- Weight stable since admission- at pt's baseline; no edema
- Pt interested in CHO counting

Nutrition Diagnosis

- (NI-2.1): Inadequate oral intake related to s/p open cholecystojejunostomy and gastrojejunostomy due to chronic pancreatitis as evidenced by NPO status.

- (NC-1.4): Altered GI function related to compromised exocrine function of pancreas as evidenced by diagnosis of chronic pancreatitis, abdominal pain, N/V, and s/p open cholecystojejunostomy and gastrojejunostomy.

Estimated Nutrient Needs

Source	Kcal Requirements	Protein Requirements	Fluid Requirements
Facility Standards	1580-1880 kcal/day	60-70 gm protein/ day	1580-1880 ml/day
Evidence Analysis Library	1445 kcal/day	No Recommendation	No Recommendation
Nutrition Care Manual	1880 kcal/day	55 – 70 gm pro/ day	1880 ml/day or 2448-2856 ml/day

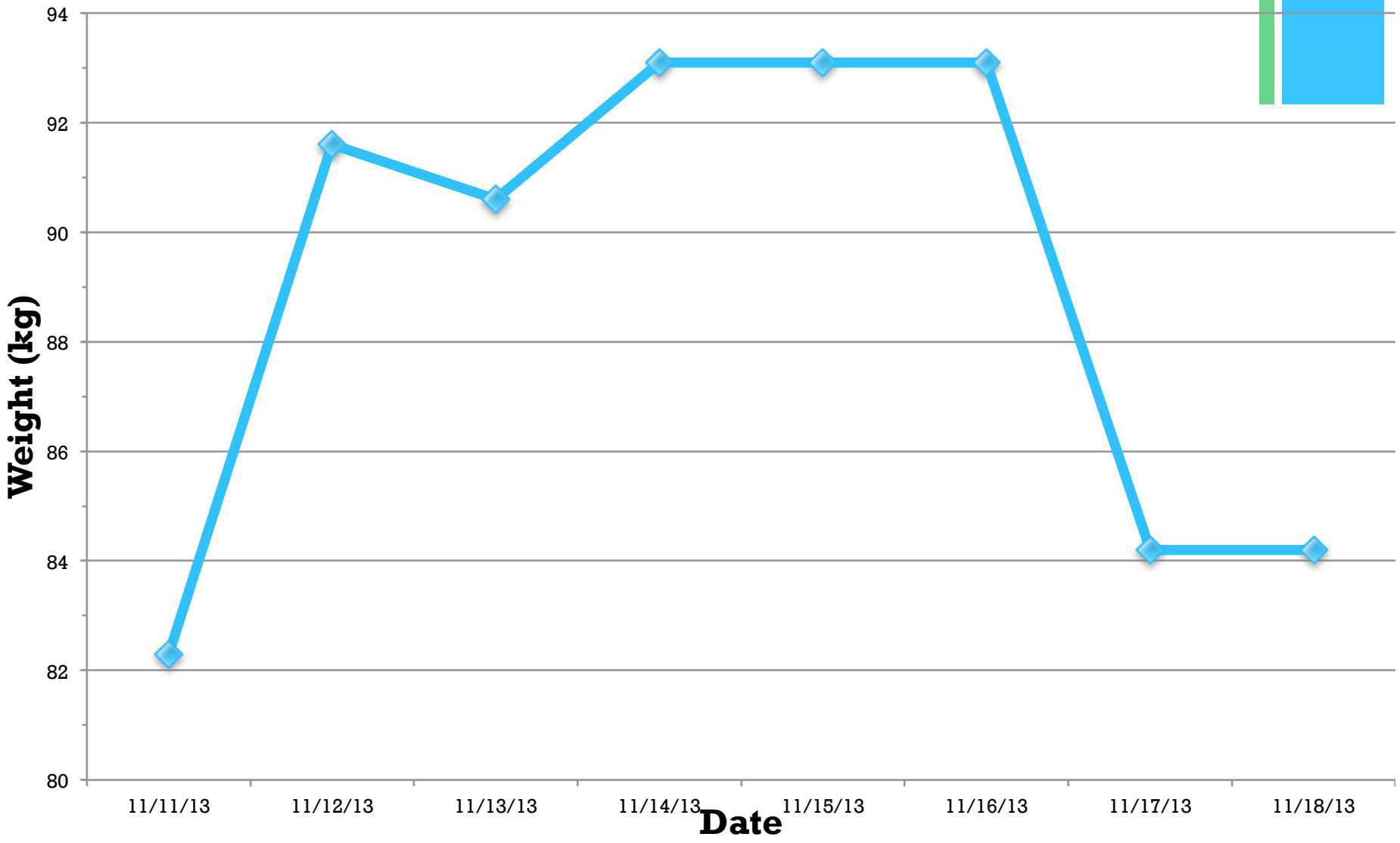
Nutrition Intervention

- Food &/or Nutrient Delivery:
  - ND-1.3: Recommend advancing diet beyond NPO/clear liquids by POD 5. Pt likely not meeting estimated needs on clear diet alone.
  - ND-1.2: Recommend low fiber, cardiac, CHO controlled diet in 6 small meals per day once PO diet initiated.
- Nutrition Education:
  - GI diet: Diet recommendations post-GI surgery/post gastric surgery discussed and handout given to patient (11/14/13)
  - DM: E-1.5: CHO-Counting and sick days DM education provided (11/15/13)
- Coordination of Care: Collaboration with Other Providers- RC-1.4
  - Doctor to advance patient's diet
  - Nursing to monitor intake of food/fluid at meals
  - Recommend optimal glucose control for wound healing

Nutrition Monitoring and Evaluation

- AD-1.1.2: Weight
- FH-1.1.1.1: PO Intake/Tolerance
- BD-1.2, 1.4, 1.5 Nutrition-Related Labs
- PD-1.1.5: GI Function
- FH-1.2.2.2 Advancement of Diet

Weights During Admission

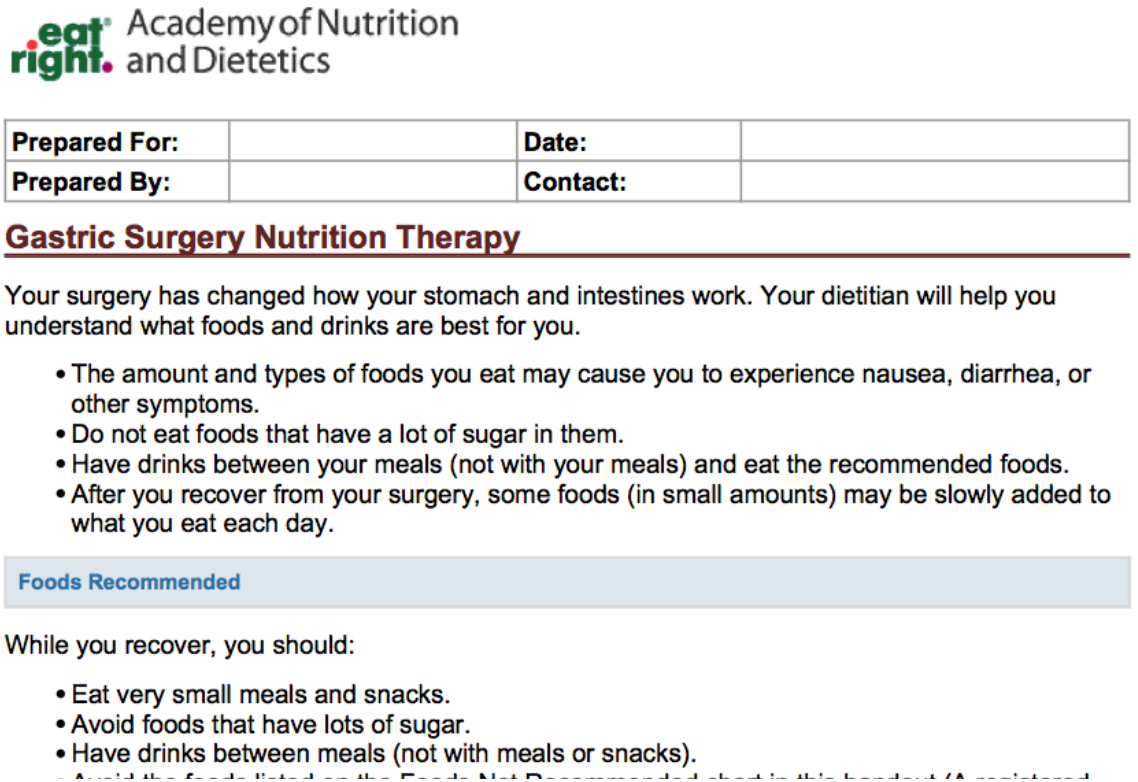


Nutrition Monitoring and Evaluation

Date	Diet	Breakfast	Lunch	Dinner
11/11/13	NPO Pt received D5 ½ NaCl with KCl 20 mEq Continuous Infusion @ 120 ml/hr- this provided 489.6 kcal/day			
11/12/13	NPO Except For Sips with Medications			
11/13/13				
11/13/13	Clear Liquid Diet Sips Only			
11/14/13	Clear Liquid Diet			
11/14/13	Clear Liquid Diet- Sips Only Pt received D5 ½ NaCl Continuous Infusion @ 120 ml/hr from 11/14-11/16- this provided 489.6 kcal/day (1,468.8 kcal over three days)			
11/15/13				
11/16/13				
11/16/13	Cardiac, Carbohydrate Controlled Standard Diet, small frequent meals	100%		
11/17/13		100%	100%	
11/18/13		25%	50%	
Average Intake		75%	75%	

Nutrition Follow-Ups

- 11/14/13:
  - GI diet: Diet recommendations post-GI surgery/post gastric surgery discussed and handout given to patient



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Prepared For:		**Date:**	
Prepared By:		**Contact:**	

Gastric Surgery Nutrition Therapy

Your surgery has changed how your stomach and intestines work. Your dietitian will help you understand what foods and drinks are best for you.

- The amount and types of foods you eat may cause you to experience nausea, diarrhea, or other symptoms.
- Do not eat foods that have a lot of sugar in them.
- Have drinks between your meals (not with your meals) and eat the recommended foods.
- After you recover from your surgery, some foods (in small amounts) may be slowly added to what you eat each day.

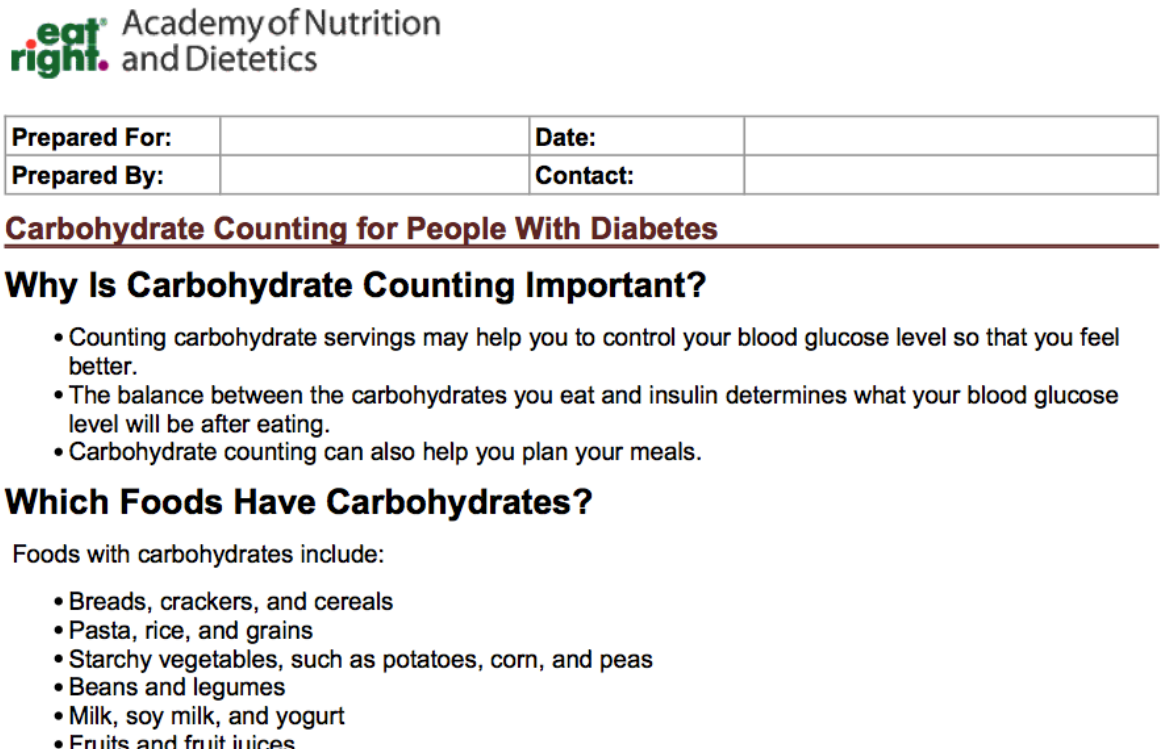
Foods Recommended

While you recover, you should:

- Eat very small meals and snacks.
- Avoid foods that have lots of sugar.
- Have drinks between meals (not with meals or snacks).

Nutrition Follow-Ups

- 11/15/13:
  - DM: E-1.5: CHO-Counting and sick days DM education provided



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Carbohydrate Counting for People With Diabetes

Why Is Carbohydrate Counting Important?

- Counting carbohydrate servings may help you to control your blood glucose level so that you feel better.
- The balance between the carbohydrates you eat and insulin determines what your blood glucose level will be after eating.
- Carbohydrate counting can also help you plan your meals.

Which Foods Have Carbohydrates?

Foods with carbohydrates include:

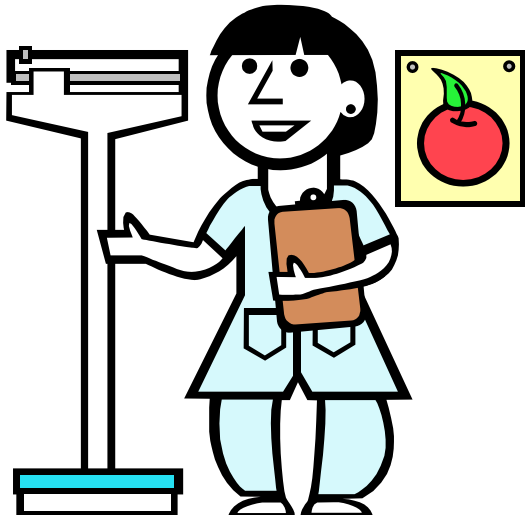
- Breads, crackers, and cereals
- Pasta, rice, and grains
- Starchy vegetables, such as potatoes, corn, and peas
- Beans and legumes
- Milk, soy milk, and yogurt
- Fruits and fruit juices

Where is she now? (as of 1/11/14)

- Outpatient Follow-Up, 11/26/13:
  - Tolerating a regular diet, eating 5 small meals per day, and continues Reglan.
  - Denies N/V; pt with BMs daily.
  - Patient reports 5 out of 10 incisional pain that she continues to manage with pain medication.
- ER Observation, 12/9/13:
  - Pain feels like pancreatitis.
  - Abdominal ultrasound reveals possible gallbladder stone.
  - Patient attributed abdominal pain to overeating.
- Outpatient Follow-Up, 12/27/13:
  - Denies similar episodes of abdominal pain since ER or pain similar prior to surgical intervention.
  - Tolerating regular diet, eating 2 large meals per day and some snacks, and continues Reglan.
  - Denies N/V; pt with BMs daily.

Implications to the Practice of Dietetics

- High Risk for Malnutrition
- Nutritional Complications
  - Maldigestion
  - Malabsorption,
  - Abdominal Pain
  - Vitamin Deficiency
  - Poor Bone Health
- RDs = Vital Component of Treatment



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QUESTIONS??