Nutrition Management for Pancreatic Cancer

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September 6th, 2014

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Nutrition Therapy Goals

• Prevent or reverse poor nutrition
• Maintain dose and schedule of cancer treatments
• Manage symptoms
• Maintain or improve weight and strength
• Maximize quality of life
Role of the Pancreas

• Produce enzymes to help digest food to be transported in blood stream
• Produce insulin to help transfer glucose from the blood to the cells where it is used for energy.

Common Side Effects

• Diarrhea
• Pancreatic exocrine insufficiency
• Glucose intolerance, diabetes
• Nausea and/or vomiting
• Loss of appetite, weight loss
Common Side Effects (continued)

- Taste changes
- Early satiety
- Pain with eating
- Fatigue
- Constipation
- Dumping syndrome

Symptoms of Pancreatic Exocrine Insufficiency

- Feelings of indigestion
- Cramping after meals
- Large amounts of gas
- Foul smelling gas or stools
- Floating stools or greasy/fatty stools
- Frequent stools
- Loose stools/diarrhea
- Unexplained weight loss
How to Optimize Enzymes:

• Take at the beginning and throughout the meal/snack
• Don’t take at the same time as antacids or iron supplements
• If prescribed by your doctor, take acid reducing medication daily.

The Right Enzyme and how much to take

• Find the brand and the dose that works for you and stick with it.
• Start:
  – Meals: 20,000-40,000 units of lipase per meal
  – Snacks: 10,000-20,000 units of lipase per snack
Enzyme Dosage: Titration

• Increase until pancreatic insufficiency symptoms are minimized/eliminated

• Maximum: 2500 units of lipase per kilogram per meal (or 10000 units of lipase per kilogram per day)

What does that really mean?

• 60 kg (130 lb) woman
• Max daily dose = weight x 10,000 L.U.

60 x 10000 = 600,000 lipase units/day =

48 capsules Creon 12,000

Or 60 capsules Zenpep 10,000
Pancreatic Enzymes: Side effects of too many

- Constipation (most common)
- Nausea
- Abdominal Cramps
- Diarrhea

(Careful not to confuse with symptoms of inadequate enzyme use or chemotherapy or radiation treatment.)

Bowel Management
Diarrhea

• Work closely with medical team (multiple causes of diarrhea):
  – Treatment Induced
  – Lactose Intolerance
  – Bacterial Overgrowth
  – Pancreatic/Digestive Insufficiency
  – Dumping syndrome (after Whipple or gastric bypass)

Nutrition Therapy for Diarrhea
Independent of cause

Limit or avoid:
• Lactose (or add lactase)
• Insoluble fiber
• Foods sweetened with sugar alcohol
• Sugar sweetened beverages
Nutrition Therapy for Diarrhea
Independent of cause

Increase:
• Soluble fiber
• Fluids

Probiotics for Diarrhea

• Sources of probiotics:
  – Foods
  – Dietary Supplements
Lactose Intolerance

• May be temporary
• May be able to tolerate low lactose foods
• Provide lactase enzymes prior to a meal—avoid limiting diet

Dumping: symptoms

• Flushing
• Sweating
• Feeling of low blood sugar
• Loose BM

Generally occur within 2 hours of eating.
Dumping

- Limit portion sizes
- Drink liquids between meals
- Avoid foods high in sugar
- Avoid hot liquids
- Add soluble fiber, guar gum

Constipation

- Hot fluids
- Include high fiber foods
- Limit gas forming foods, carbonated beverages, straws, chewing gum
Nutrition Tips for Other Side Effects

Nausea/Vomiting

• Eliminate offending odors
• Dry crackers/toast
• Avoid overly sweet, greasy/fried, or highly spiced foods
• Use room temp foods
• Oral care
• Eliminate stress
• Medication

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Taste Changes

- Rinse mouth
- Metallic taste: use plastic utensils and serving ware
- Enhance dull taste use tart flavors
- Try new foods or foods previously disliked
- Zinc (discuss with medical team)

Poor Appetite

- Eat small amounts frequently
- Schedule meals/snacks
- Use liquid supplements/smoothies
- Light exercise
- Alcoholic beverage before meal
- May benefit from medication

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Early Satiety

- Alleviate gas and bloating
- Liquids between meals
- Small servings, more often
- Limit high fat or fried foods
- High fiber foods may be problematic
- Medications

Liquid Nutritional Drinks

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- Home made smoothies
  - Mix in blender
    - Liquid: juice, yogurt, milk, soymilk, etc
    - Fruit and/or cooked vegetables
    - Protein: protein powder, tofu, cottage cheese
Pain with Eating

- Avoid high fiber foods
- Chew food well
- Take pain medication proactively
- Avoid constipation

Excessive gas

- Optimize pancreatic enzymes
- Use simethicone (Gas-X) liberally
- Consider Bean-O
- Avoid gas-producing foods:
  - Broccoli, cauliflower, cabbage
  - Onions
  - Beans
  - Carbonated beverages (beer, soda)
- Avoid chewing gum
- Avoid drinking through straws
What to Eat?

General Nutrition Tips

• Eat small frequent meals (6-8/day)
• Plan meals/snacks the day before
• Get plenty of fluids
• Limit use/portions of fat containing foods
• Choose nutrient dense foods
• Be active

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Protein

- Poultry, fish, meat
- Beans, peas, lentils
- Nuts and seeds
- Eggs
- Yogurt, milk, cheese
- Vegetarian alternatives: soy milk, tofu, veggie burgers, protein powders, etc.

Complex Carbohydrate

- Bread, pasta, rice, cereal, etc
- Fruits
- Vegetables
- Dairy products
Fat (as tolerated)

- Nuts and seeds
- Avocado
- Olives
- Oil: canola, olive, peanut

Other fats to use sparingly:
- Butter, stick margarine, hydrogenated oils (or foods that use these as ingredients)

Fluids

Most patients require 6 to 12 cups per day of non-alcoholic fluid per day to maintain adequate hydration. (8 oz. = 1 cup)

- Water
- Juice (100%)
- Milk or dairy alternatives
- Gelatin
- Tea
- Sports drinks
- Broth
- Gelatin
Glucose Intolerance/Diabetes

- Medication
- Customize diet
- Limit refined carbohydrates
- Eat carbs in combination with protein, fiber, and fats

After treatment/surgery complete:
- Carbohydrate controlled diet
- Use high fiber carb foods as tolerated

Supplements and Special Diets
If diet inadequate-

- “One a day” multiple vitamin and mineral supplement
- Calcium with vitamin D
- Fish oil/Omega-3

Resources

- ConsumerLab: independent product testing
  www.consumerlab.com
- The National Institutes of Health Office of Dietary Supplements-
- M.D. Anderson Complementary/Integrative Medicine Education Resources-
  www.mdanderson.org/departments/cimer
Eating Long Term: after all treatment complete

Plant based diet
• 2 ½ cups (at least) of fruits and vegetables per day.
  – Even better: 3 ½ - 4 ½ cups per day.
  – If raw vegetables hard to digest, use cooked or juiced
• Healthy Fats
• Fish
• Limit red meat

After All Treatment Completed

• Be active
• Take enzymes
• Take acid reducing medication (if prescribed by your surgeon).
• Follow with primary doctor for diabetes management and bone health.
“Super Foods”

- Citrus
- Apples
- Parsley
- Grapes
- Turmeric
- Peanuts
- Berries
- Soy*
- Red wine*

* If history of breast or ovarian cancer discuss with dietitian or doctor first

Finding a Dietitian

- How to Find a Registered Dietitian:
  - Request a consult at your cancer center
  - Commission on Dietetic Registration
    - Search: List of Board Certified Specialists in Oncology Nutrition by State- [www.cdrnet.org](http://www.cdrnet.org)
  - Contact the Pancreatic Cancer Action Network (PanCAN)
  - Contact The Academy of Nutrition and Dietetics [www.eatright.org](http://www.eatright.org)
Cookbooks

- Betty Crocker’s Living With Cancer Cookbook (2011)
- What to Eat During Cancer Treatment: 100 Great-Tasting, Family-Friendly Recipes to Help You Cope (2009) by Jeanne Besser
- The Cancer-fighting Kitchen: Nourishing, Big-Flavor Recipes for Cancer Treatment and Recovery (2009) by Rebecca Katz
- One Bite at a Time (2009) by Rebecca Katz
- The New American Plate Cookbook: Recipes for a Healthy Weight and a Healthy Life (2005) by The American Institute for Cancer Research

Acknowledgements

Pancreatic Cancer Multidisciplinary Team
The University of Texas M.D. Anderson Cancer Center