Faculty Introduction

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Today’s Objectives

• Describe the importance of diet and nutrition in inflammatory bowel diseases (IBD)
• Review the effects of IBD and IBD medications on digestion and nutrients
  – Share data on the role of diet in IBD development and relapse
• Explain special diets for IBD

Today’s Objectives (cont.)

• Discuss popular diets and IBD
• Review general healthy eating principles
• Review suggestions for diet during a flare
• Discuss eating outside your home at holidays and gatherings
Importance of Diet and Nutrition in Inflammatory Bowel Diseases

Importance of Diet and Nutrition

- Diet and nutrition are important parts of IBD management
- *Diet* is the actual food that is consumed
  - “What you eat”
- *Nutrition* refers to properly absorbing food and staying healthy
  - “How you eat”
- Incorporating good nutrition into your diet is essential
Why is Diet Important?

- IBD is thought to arise from a combination of genetic, immune system, environmental causes, and alteration of the gut bacteria
  - *Reasonable to think that food/diet may play a role*

- Eating can cause significant symptoms in patients with IBD
- Fear, lack of response, or dissatisfaction with current conventional medical or surgical therapies leads to searching for alternate "natural" or complementary options
- Unfortunately, the role of diet is very complicated
  - No consistent evidence that any specific foods cause IBD or cause flares of disease
Why is Diet Important?

- 15.6% of patients feel that diet causes IBD
- 40% of patients believe that certain foods cause flares
- Nearly one-half of patients with IBD report that IBD changes the pleasure of eating
- About two-thirds of patients report not eating certain foods they usually like to eat to prevent flares


Role of Diet

- No evidence that diet can cause or cure IBD
- IBD is not related to food allergy but symptoms may be worsened by food intolerance
- Proper diet may:
  - Improve symptoms of IBD
  - Enable healing
  - Give sense of control over IBD management
- Diet should be individualized for each IBD patient, as food intolerances vary
Diet Research

• Studies on the relationship between diet, nutrition, and IBD are limited
• Most studies are small, resulting in anecdotal outcomes
• Diet may have an impact on disease, but research has been inadequate to show how this takes place
  – Effects on immune system?
  – Changes in gut bacteria?


Diet Research: Diet and IBD Development

• 2011 systematic review of diet and IBD
• Fats and meats
  – High intake associated with increased risk of IBD
• Fiber and fruits
  – High intake associated with reduced risk of CD
• Vegetables
  – High intake associated with reduced risk of UC
• Take home points
  – Limitations with this review (different studies, retrospective)
  – Not necessarily particular foods, but components common to many foods may have a role
  – Studies did not explore role of diet on current disease activity

Diet Research: Food and Flares

• Within the large internet-based study: CCFA Partners
  – Food frequency questionnaires were used to measure eating patterns
  – Open-ended questions were asked about foods that improved or worsened IBD symptoms
• Foods that more frequently improved symptoms
  – Yogurt, rice, bananas
• Foods that worsened symptoms
  – Non-leafy vegetables, spicy foods, fruit, nuts, leafy vegetables, fried foods, milk, red meat, soda, popcorn, dairy, alcohol, high-fiber foods, corn, fatty foods, seeds, coffee, and beans
• Take home points/limitations: self-reported, likely related to intolerances, no measures of inflammation


Principles of Good Nutrition

• Maintaining good nutrition is key to:
  – Medications being more effective
  – Healing, immunity, and energy levels
  – Preventing or minimizing gastrointestinal symptoms and normalizing bowel function
Importance of Nutrition

- Patients with IBD are at risk of malnourishment
  - Loss of appetite (due to nausea, abdominal pain)
  - Chronic disease tends to increase calorie needs of the body
  - Poor digestion and absorption of nutrients (Crohn’s disease, in particular)
  - Consequences of certain IBD medications which can waste particular nutrients

The Digestive System

- Digestion is the process by which food is converted into substances that can be absorbed by the body
- Body absorbs nutrients from food to function properly
- Most absorption occurs in small intestine
- Watery food residue and undigested secretions pass into large intestine where water is reabsorbed
- Solid, undigested food mixes with bacteria living in the large intestine to form bowel movements
Effects of IBD on Digestion

- Ulcerative colitis (UC)
  - Small intestine works normally
  - Inflamed colon causes urgency and does not reabsorb water properly, resulting in diarrhea

- Crohn’s disease (CD)
  - Inflamed small intestine is less able to fully digest and absorb nutrients (malnutrition)
  - Incompletely digested foods that travel through colon may also cause diarrhea

Factors Contributing to Malnutrition in IBD

- Malabsorption due to active disease or bowel resection
- GI losses such as diarrhea or vomiting
- Medications (Prednisone, Sulfasalazine)
- Inadequate intake due to lack of appetite or food aversions
- Increased nutrient requirements
Importance of a GI/Dietitian Team

• Can work together to identify factors associated with nutrient loss and recommend replacement
• Optimizing nutrition can improve healing, particularly after surgery
• Nutrition changes are complementary to medical therapies that treat the underlying inflammation
• Unfortunately, limited access to dietitians specializing in IBD in some areas and limited time in GI visits to address nutrition

Nutrient Deficiencies

<table>
<thead>
<tr>
<th>Ulcerative Colitis</th>
<th>Crohn’s disease</th>
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<tbody>
<tr>
<td><strong>Nutrient</strong></td>
<td><strong>Risk Factor</strong></td>
</tr>
<tr>
<td>Folate</td>
<td>Sulphasalazine</td>
</tr>
<tr>
<td>Calcium</td>
<td>Prednisone</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>Reduced intake, lack of sunlight</td>
</tr>
<tr>
<td>Magnesium</td>
<td>Diarrhea, tacrolimus, or cyclosporine</td>
</tr>
<tr>
<td>Iron</td>
<td>GI bleeding</td>
</tr>
<tr>
<td>Potassium</td>
<td>Diarrhea, vomiting</td>
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Research on Vitamin D

• Higher levels of Vitamin D are associated with a reduced risk of development of Crohn’s disease
• Vitamin D deficiency is common in IBD and is independently associated with lower quality of life and greater disease activity in Crohn’s disease
• In a small randomized trial, oral vitamin D replacement reduced the risk of relapse in Crohn’s from 29% to 13% (p=0.06)


Is There a Special Diet for IBD?

• NO, THERE ARE NOT SPECIAL DIETS FOR IBD
  – However, based on your type of IBD, dietary modifications can help with symptoms
• Several diets advertised specifically for managing IBD
• Many claims are supported by small numbers of subjects
• Most have not been proven scientifically and benefits have not been seen in formal studies
• Talk to your doctor about your questions
### Is There a Special Diet for IBD?

<table>
<thead>
<tr>
<th>Diet</th>
<th>Proposed Approach and Description</th>
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<tr>
<td>Elimination diet</td>
<td>Keep a food or symptoms diary over several weeks as various foods are “eliminated”, removes food intolerances</td>
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<tr>
<td>Low-fiber with low-residue diet</td>
<td>Minimizes the intake of foods that add bulk residue to stool (raw fruits, vegetables, seeds, nuts)</td>
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<td></td>
<td>Often used in patients with strictures or during flares</td>
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<tr>
<td>Total bowel rest</td>
<td>Period of complete bowel rest (during which patients are nourished with fluids delivered intravenously) may decrease inflammation and has been effective in CD or in patients with fistulas</td>
</tr>
<tr>
<td>Elemental diet</td>
<td>Limits carbohydrate intake to reduce microbes that might contribute to symptoms</td>
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<tr>
<td>Gluten free diet</td>
<td>Excludes grains that contain the protein gluten; used with coexisting disorders, such as celiac disease. In irritable bowel syndrome (IBS), gluten can increase intestinal permeability and diarrhea in patients with genetic markers (HLA-DQ 2/8+)</td>
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### Key Messages: Diet

<table>
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<tr>
<th>Diet cannot</th>
<th>Diet can</th>
<th>Diet should be</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Prevent IBD • Provide sustainable disease control</td>
<td>• Help symptoms while disease is being treated in other ways</td>
<td>• Individualized based on – Which disease you have (CD vs UC) – What part of intestine is affected – Disease activity (remission vs flare) – Targeted nutrient support based on disease location or medications</td>
</tr>
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Nutrition Support Therapy

- Additional supplementation may be necessary during the disease course if weight loss, oral intake issues, surgery, obstruction, severe inflammation
- Liquid nutritional supplements
  - PediaSure®, Ensure®, Boost®, Boost® Kid Essentials
- Enteral nutrition
  - Nutrient-rich liquid formula administered through
    - Nasogastric tube (NG tube): from nose to stomach
    - Gastrostomy tube (G-tube): from abdominal wall to stomach
- Parenteral nutrition
  - Delivered through catheter placed into large blood vessel
  - Requires specialized training to administer

IBD Management: Overall Picture

- IBD treated through a variety of treatment approaches
- Good nutrition does not replace conventional medical and surgical therapies for IBD
- Complementary approaches can help with symptom relief
  - Dietary modifications and supplements
  - Stress management
  - Exercise
Dietary Management of Inflammatory Bowel Diseases

Popular Diets: Sorting Fact from Fiction

- No specific diet has been proven to control symptoms of IBD
- Many options exist and are promoted on the internet but...
  - Few well-controlled published studies
  - Can be difficult and complicated to follow
  - Potentially risky – restrictions may lead to poor growth, poor healing, and/or nutrient deficiencies
  - May actually worsen symptoms
The Specific Carbohydrate Diet™

• Problems and Inconsistencies
  – Very restrictive!
  – Difficult and time consuming to follow
  – Excluding starchy vegetables and grains eliminates dietary sources of short-chain fatty acids
    • Short-chain fatty acids (SCFA) are the preferred fuel source for colon cells
    • Boosting amount of SCFA in large intestine may actually decrease symptoms of IBD
  – Allowed foods include legumes known to contain certain carbohydrates that are not digested well

The Low FODMAP Diet

• Dietary approach to minimizing symptoms associated with irritable bowel syndrome (IBS)
  – F = Fermentable
  – O = Oligosaccharides
  – D = Disaccharides
  – M = Monosaccharide; A = and
  – P = Polyols
• May be helpful in reducing gas and bloating
• Requires careful label reading
• Planning with an RD can result in a nutritionally complete diet
High Protein Diets

• Atkins™
  – Emphasizes meat, eggs, cheese – sources of saturated fat and protein
  – Limits grains, fruits, vegetables, dairy products
  – Problems
    • Electrolyte abnormalities, dehydration, problems concentrating, bad breath, constipation
    • Diets high in red meat have been associated with an increased risk of prostate and colon cancers
    • Lack of fiber and other nutrients may increase risk for heart disease, stroke, diverticulitis, cancer

• South Beach Diet®
  – Healthier version of Atkins because it limits disease-causing saturated fats
  – However, also limits nutrient-dense foods like carrots, watermelon, bananas, and pineapple
  – Menus average ~1200 calories per day
    • Difficult to meet vitamin and mineral needs and unlikely to meet calorie needs

• Paleo Diet
  – Eliminates refined sugar, dairy, legumes, and grains
  – Allows meat, fish, poultry, fruits, and vegetables
Weight Watchers

• Overall a sound approach for weight loss
• Focuses on increasing nutrient-dense/low-calorie foods and portion control
• Does not take into account specific needs and tolerances of those with IBD
• If trying to lose weight, work with a dietitian to ensure a healthy weight loss pace and adequate nutrient intake

Bottom Line on Popular Diets

• Diets like the Specific Carbohydrate Diet, Atkins, and the Paleo Diet may be supported by testimonials but not by well-controlled scientific studies
• Some diets may be worth a try BUT…
  – Discuss it with your physician or a dietitian to make sure that the diet is safe and nutritionally complete
  – Do not abandon conventional treatment!
What does a healthy diet look like?

Fruits and Vegetables

- It's colorful
  - Color ensures a wide variety of antioxidants (vitamin A and C) and phytochemicals
  - Aim for 5-9 servings of fruits and vegetables per day
  - 1 serving = small piece of fruit, ½ cup of applesauce, 12 cherries, ½ cooked/1 cup raw vegetables
  - Cooked and peeled may be better tolerated
Grains

- Grains are a source of carbohydrates, your body’s preferred energy source
- Also a source of fiber, B vitamins, iron, magnesium, and selenium
- Look for breads, cereals, and crackers with ingredient lists that have “whole” as the first word
- 3-5 grams of fiber/serving is adequate
  - Greater amounts may be more likely to cause abdominal cramping or bloating
- May need to modify grain choices during or after a flare

Lean Protein

- Your body uses protein to build new tissue during growth and healing, and to synthesize enzymes and blood components
- Good sources of B vitamins, iron, vitamin E, essential fatty acids, magnesium, and phosphorus
- Food sources are eggs, beef or pork tenderloin, lean ground beef, poultry without the skin, fish, hard cheeses (often lower in lactose), Greek yogurt, nut butters
Low-Fat Dairy

• Important source of calcium, vitamin D, phosphorus, potassium, protein

• Foods sources
  – Skim or 1% milk (lactose free if intolerant)
  – Other low-lactose options include most hard cheeses, yogurt, kefir, cottage cheese, ricotta cheese
  – Alternate milk options: soymilk, almond milk, rice milk

• Choose 3 servings per day
  – 1 serving = 1 cup of milk or yogurt

Practical Recommendations

• Calories
  – Eat to maintain weight or increase calories by 250-500 cal/day for weight gain

• Protein
  – Divide weight (in lbs) in half. Aim for that amount of protein (grams/day).

• Fluids and Electrolytes
  – Divide weight (in lbs) in half. Aim for that amount of fluid (ounces/day).
  – Increase with diarrhea or after exercise
  – Replace electrolyte losses with Gatorade® or Powerade®
Practical Recommendations

- Take a daily multivitamin/mineral supplement
- Take a calcium and vitamin D supplement
  - 500 mg elemental calcium 3x a day
  - 800 IU vitamin D daily
- You may also need:
  - Monthly B12 injections (if significant ileal disease or removal, can also be nasally administered)
  - Folate (with sulfasalazine use)
- Discuss all supplement use with your physician

Other Nutrients to Include or Increase

- Omega 3 Fatty Acids
  - Increase your intake of fatty fish like salmon or tuna
  - Other food sources of omega 3’s: flaxseed oil, fortified foods
  - Omega 3 fatty acid supplement
    - Look for EPA and DHA content
    - These two should add up to 1-3 grams
Other Nutrients to Include or Increase

- Consider glutamine supplements during a flare
- Include food sources of probiotics (yogurt, kefir, miso soup) or a probiotic supplement daily

Potential Problem Foods

- Foods with added soluble fiber
- Artificial sweeteners and sugar alcohols
- Dairy products
- High-fat, greasy foods
- Spicy foods
- Cruciferous vegetables like broccoli, cauliflower, cabbage
Strategies for Managing Flares

- Limit insoluble fiber
- Avoid caffeine and alcohol
- Decrease concentrated sweets
- Smaller, more frequent meals
- Avoid nuts, seeds, and kernels, especially if you have strictures
- Lactose-free diet
- Low-fat diet if experiencing fat malabsorption

Strategies for Managing Flares

- High-calorie, high-protein nutritional supplements like Boost or Ensure
- Try making your own smoothie
  - Greek yogurt or kefir
  - Add fruits such as bananas, melon, pear, or even avocados
Foods to Include During or After a Flare

- Diluted juices
- Applesauce
- Canned fruit
- Oatmeal, cream of wheat
- Plain chicken, turkey, or fish
- Cooked eggs or egg substitute
- Mashed potatoes, rice, or noodles
- White bread

Enjoying Restaurant Meals

- Check menus online before you get to a restaurant and read descriptions carefully
- Ask for clarification of ingredients used and don’t be afraid to make special requests!
- Know your trigger foods
- Be a regular – choose restaurants and menu options you’ve enjoyed before
- Keep snacks on hand in case well-tolerated food options are limited
Enjoying Restaurant Meals

• Watch out for hidden fat
  – Smothered, tempura, aioli, creamed, alfredo, hollandaise, bure blanc, crispy
• Look for simply steamed or broiled seafood, or grilled chicken
• Ask for sauces and salad dressing on the side
• Divide the food on your plate in half and eat slowly

Enjoying Restaurant Meals

• Limit caffeinated beverages and alcohol
  – Both can irritate the GI tract and move food through more quickly
• Alcohol interacts with many medications
  – Discuss potential interactions with your physician and pharmacist
• Choose water, sparkling water, unsweetened green tea, diluted juice, non-alcoholic spritzers or a “mocktail”
Holidays and Celebrations

- Know your limits and attempt to stick to your normal eating habits as much as possible
- Keep portions of indulgences small and eat smaller, more frequent meals
- Keep track of new foods and symptoms
- Inform family and friends
- Bring a dish you know you can eat

Evaluating Nutrition Information

- Red Flags
  - Promises of a cure
  - Recommendations based on only one study
  - Lists of “good” and “bad” foods
  - Product or supplement pushing
- Consider the source
- Research the “expert’s” credentials
- Have the results been published in a peer-reviewed medical or scientific journal and replicated by other researchers?
Additional Resources

- Academy of Nutrition and Dietetics
  www.eatright.org
  - “Find a Registered Dietitian”
  - “Public” link for nutrition and health information
- Other resources for nutrition information
  - General healthy eating
    www.choosemyplate.gov
  - IBD-specific information
    www.ccfa.org
  - Online tool and iPhone app for tracking diet
    www.ccfa.org/gibuddy

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References


References (cont.)

Questions and Answers

To Complete the Program Evaluation
www.surveymonkey.com/s/nutrition-webcast

To Join CCFA Partners
www.ccfapartners.org

To Track Your Diet using GI Buddy
www.ccfa.org/gibuddy