1. Purpose
   a. Nutrition Indicators
      • There are many disease states that may require a high-fiber diet for nutrition therapy.
      • A high-fiber diet accompanied with increased fluid intake will help ease constipation, bloating, diarrhea, and other gastrointestinal distress associated with a variety of conditions.
      • This overview will focus on a high-fiber diet as a means to treat symptoms associated with irritable bowel syndrome (IBS).
   b. Criteria to Assign the Diet
      • There are many symptoms associated with IBS and many different ways to help ease them including high-fiber, low-fiber, low-fat, and limiting caffeine, mint and acidic, spicy, fried, or greasy foods in addition to many others. In order to specifically assign a high-fiber diet as part of the nutrition therapy for IBS, the individual must have symptoms in which regulation of bowel movements is needed, other dietary changes have not been successful, or if the individual currently consumes a low-fiber diet.
   c. Rationale for Diet
      • Fiber promotes regular bowel movements by adding bulk to stools to ease diarrhea while at the same time keeping stools moist and soft to prevent constipation because fiber absorbs water. Fiber gives the muscles in the gut “something to push on” making it easier to eliminate stools.

2. Population
   a. Overview
      • IBS is the most common gastrointestinal complaint in the United States and Canada. Prevalence worldwide ranges from 1% to 20% and prevalence in North America is near 7%.
      • IBS affects women more often than men.
      • IBS occurs frequently before age 50.
   b. Disease Process
      • The specific disease process or cause of IBS is largely unknown.
      • IBS is known as a “functional disorder” characterized by abdominal pain or discomfort that occurs in association with altered bowel habits over a period of at least three months. The diagnosis of IBS is made after ruling out all other possible organic causes of the patient’s symptoms.
      • Pathophysiology of IBS is complex, but current research is focusing on multiple factors to be considered as involved in producing the symptoms of IBS.
        o Abnormal motility of the gastrointestinal tract due to alterations in the nervous system that control the gut.
        o Increased sensitivity to stimulation of the gastrointestinal tract.
        o Abnormal cellular responses to certain nutrients or food sensitivity.
        o Altered immune response stimulated by altered microbial environment or small intestinal bacterial overgrowth (SIBO).
   c. Biochemical and Nutrient Needs
      • No specific biochemical or nutrient needs.
3. General Guidelines
   a. Nutrition Rx
      • Slowly increase the amount of daily fiber intake from current intake based on usual diet or 24-hour recall to 25 to 35 grams per day.
      • Drink at least 8 cups of water per day in order to help the body process the increased amounts of fiber without discomfort.
   b. Adequacy of Nutrition Rx
      • This Rx is adequate for all individuals unless their symptoms are aggravated or heightened by a high fiber diet. In this case, the individual may need a medium or low fiber diet.
   c. Goals
      • 8 cups of water each day.
      • 25 to 35 grams of dietary fiber each day.
   d. Does it Meet DRI
      • DRI of fiber intake for women is 25 grams per day and DRI of fiber intake for men is 35 grams per day.
      • Initially, the diet does not meet the DRI due to the fact that fiber intake is gradually increased and initial menu may contain low levels of fiber like 8 grams per day, for example. However, the goal amount of fiber that will be reached at the end of the nutrition therapy regimen does in fact meet the DRI.

4. Education Material
   a. Nutrition Therapy
      • Nutrition therapy focuses on interventions for the individual patient’s specific symptoms and their response to specific food triggers.
      • A high-fiber diet is often helpful for patients, but not all.
      • Other diet interventions include:
         o Removing lactose from the diet
         o Following an exclusion diet where all possible symptom-causing foods are removed and added back in one at a time
         o Excluding foods contributing to fermentable oligosaccharides disaccharides, monosaccharides, and polyols (collectively called FODMAPs)
         o Increasing consumption of probiotics
      • Diet intervention depends on the individual and how their symptoms react to certain foods and substances in foods.
   b. Ideas for Compliance
      • Slowly increase the amount of fiber in the diet. For example, start at 8.5 grams per day for two weeks, then 13.5 grams per day for the next two weeks, then 15 grams per day for the following two weeks, and finally 25 grams or more per day from that point forward (for a woman).
      • Provide online or phone application resources to track daily food and fiber intake.
      • Provide lists of high-fiber foods and help with identification of foods that client/patient likes and could add into their daily food routine.
      • Suggest specific tips for adding more fiber into the diet such as replacing some of the refined white flour with whole wheat flour in recipes, adding beans and peas
to casseroles or soups, using brown rice in place of white rice, and eating potatoes and other fruits and vegetables with the skin or peels on.

5. Sample Menu
   a. Foods Recommended
      • Foods high in fiber:
        o Whole grains and cereals
        o Beans, peas, and lentils
        o Fresh fruits and vegetables with the peel or skin if possible
        o Nuts and seeds
        o Foods listed as having at least 4 g dietary fiber per serving
   b. Foods to Avoid
      • Foods low in fiber:
        o Refined grains and cereals
        o Fruit juices with no pulp
        o Fruits and vegetables with no skin
   c. Example of a meal plan

<table>
<thead>
<tr>
<th></th>
<th>Breakfast</th>
<th>Snack</th>
<th>Lunch</th>
<th>Dinner</th>
<th>Snack</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>½ cup orange juice, with pulp</td>
<td>1 cup plain yogurt</td>
<td>8 whole wheat crackers</td>
<td>½ cup fresh berries</td>
<td>2 tablespoons almonds</td>
</tr>
<tr>
<td></td>
<td>½ cup raisin bran</td>
<td>2 cups water</td>
<td>½ cup kidney beans</td>
<td>2 ounces sliced chicken</td>
<td>1 cup hot chocolate</td>
</tr>
<tr>
<td></td>
<td>1 cup coffee</td>
<td></td>
<td>½ cup soy crumble</td>
<td>1 cup brown rice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 cup fat-free milk</td>
<td></td>
<td>1 apple, with skin</td>
<td>2 cups mixed fresh vegetables</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 cups water</td>
<td>1 cup hot tea</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>1 ½ cups chili made with beans</td>
<td>1 ounce tofu</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>2 tablespoons shredded cheese</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


6. Websites
   a. Organizations with Websites
      - The Academy of Nutrition & Dietetics Nutrition Care Manual
        - https://www.nutritioncaremanual.org/?CFID=2387590&CFTOKEN=4a19
          cbd3db6db8a0-ADDC718B-A08C-6B96-62999F85E9182D9B&jsessionid=A1EDA1F51745638A1BC7A10BFBD
          C1BED.XM5
        - Irritable Bowel Syndrome (IBS) Nutrition Therapy
        - High-Fiber Nutrition Therapy
      - American Society of Colon & Rectal Surgeons
        - http://www.fascrs.org/patients/conditions/irritable_bowel_syndrome/
      - International Foundation for Functional Gastrointestinal Disorders
        - http://www.aboutibs.org/
      - Mayo Clinic
        - http://www.mayoclinic.org/diseases-conditions/irritable-bowel-syndrome/basics/definition/con-20024578
   b. Government Websites
      - U.S. Department of Health and Human Services

7. References
   a. Journal articles references


