

Welcome to the IBD Nurse Fellowship Program!



The program consists of 13 modules:

- Module 1 – Ulcerative Colitis
- Module 2 – Crohn's Disease
- Module 3 – Ulcerative Colitis vs. Crohn's Disease
- Module 4 – Management of Ulcerative Colitis
- Module 5 – Management of Crohn's Disease
- Module 6 – IBD and Surgery
- Module 7 – Medication Adherence in IBD
- Module 8 – Health Promotion and Maintenance in IBD
- Module 9 – Nutrition and IBD
- Module 10 – Extra-intestinal Manifestations of IBD
- Module 11 – Anemia in IBD
- Module 12 – Fatigue in IBD
- Module 13 – Anxiety and Depression in IBD

Each module is divided into sections, all of which are listed in the Table of Contents. The Table of Contents allows you to click on the page numbers to navigate to each section. Each page has a Home Button on the bottom right-hand corner that will take you back to the Table of Contents.

The learning objectives are at the beginning and end of each module. Before completing the module, you will have the opportunity to take a self-directed quiz, which will test your knowledge on several of the key concepts and takeaways from the module. It is recommended that you take the quiz and accomplish all of the learning objectives before moving on to the next module.



**IBD nurse
fellowship
PROGRAM**

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Canadian Society of Gastroenterology Nurses & Associates
Société canadienne des infirmières et infirmiers en gastroentérologie et maladies associées



Module 9

Nutrition and IBD

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Learning objectives



After completing Module 9 you will be able to:

- Summarize the common beliefs that patients with inflammatory bowel disease (IBD) have regarding their diet, and explain the realities of maintaining a healthy diet
- Outline different dietary approaches during remission and flare-ups
- List different diet modifications that can be made in an effort to improve gastrointestinal symptoms
- Describe the considerations that are involved in creating a customized nutritional plan for individual patients





Section 1

Nutritional considerations in IBD



Food from the patient's perspective

- Many patients believe their diet was one of the factors that lead to their inflammatory bowel disease (IBD) and are confused about whether they need to restrict their diet or remove foods
- As a result, many patients research diets on the Internet for IBD and become even more confused about what steps they should make to improve their diet
- Common questions and comments from patients include:
 - “Are there certain foods that caused my IBD?”
 - “I don’t want eat anything because I might make the flare-up worse or cause a flare-up!”
 - “What foods are currently causing my symptoms?”
 - “The Internet says I need to eliminate certain foods and food groups, including gluten, dairy, red meat and artificial sweeteners, or follow a special diet – but I don’t want to!”
 - “The health food store gave me a list of supplements to take and they are really expensive – do I need to take them?”



Nutrition assessment

- A nutrition assessment will help to establish the patient's history, current medical health status, dietary habits, lifestyle habits, and knowledge and outlook on IBD
- Registered Dietitians (RD) are professionals qualified to assess and evaluate nutritional status, and provide recommendations for preventing and treating disease
- A nutrition assessment should include the following:
 - Medical and surgical history
 - Social and family history
 - Biochemical data, medical tests and procedures – including lab work and surgical procedures
 - Anthropometrics (especially weight trends) – including current weight, usual weight, estimated dry weight, height, BMI, ideal weight, weight changes, and weight management diets attempted (e.g. Atkins, Weight Watchers, etc)
 - Physical exam findings (especially bowel movements) – including changes in appetite/smell/taste, early satiety, dysphagia/difficulty swallowing, oral health issues, feeding difficulties, nausea, vomiting, diarrhea, constipation, dehydration, edema/ascites, fat/muscle wasting, and wounds/pressure ulcers
 - Food and nutrient history – including a diet recall or food journal of current/past/future intake, and who cooks and grocery shops in the home
 - Food restrictions, allergies, and intolerances
 - Physical activity – including activity level (light, moderate, or intense) and frequency
 - Knowledge/beliefs/attitudes of the patient – how ready is the individual for change?



Estimating dietary needs

- Dietary needs will vary from person-to-person and nutritional approaches should be customized to each individual
 - Individualized diets depend on the diagnosis, the location of the disease and status of the disease (remission vs flare-up)
- Key nutrients of focus may include:

**Calories
(energy)**

Fluid

Macronutrients

- Carbohydrate
- Protein
- Fat

Micronutrients

- Iron
- Folate
- Calcium
- Vitamin B12
- Vitamin D





Section 2

Nutritional approaches and management



Healthy diet

- A healthy diet should include foods from all 4 food groups:
 - Vegetables and fruit
 - Grain products
 - Milk and alternatives
 - Meat and alternatives
- Fluids are necessary to work in conjunction with fibre to regulate bowel movements
- Certain foods are more difficult to digest than others, such as:
 - Foods containing insoluble fibre (skins of fruit, whole wheat, grains and brown/wild rice)
 - Seeds and nuts
 - Raw fruits, raw veggies and salad
- A thorough understanding of the types of fibres that are soluble and insoluble will aid patients in balancing their diet

Dietary approaches according to disease status

During remission:

- A well-balanced diet with adequate hydration is recommended when a patient is in remission and symptoms are under control
- There is no need to avoid any food or follow a restrictive diet
- Attempt to reintroduce foods previously eliminated
- Patients should be monitored for iron deficiency anemia



During a flare-up:

- Modifying the diet can help to control symptoms such as bloating, diarrhea and abdominal pain
- In some cases of Crohn's disease enteral nutrition therapy may be considered
 - Polymeric formulas are as effective as elemental or semi-elemental and are considered the formula of choice
 - Parenteral nutrition shows no advantage over enteral nutrition, therefore should be restricted to clients with a contraindication to or intolerance to enteral nutrition
- For active ulcerative colitis enteral or parenteral nutrition does not exert a positive effect on inflammatory activity



Dietary approaches during flare-ups

- There are multiple dietary approaches that patients can follow to help alleviate symptoms and prevent flare-ups:
 1. Identify food triggers by keeping a food and symptom journal
 - Monitor symptoms such as abdominal cramps, bloating, diarrhea
 - Determine if they are correlated with consumption of certain foods
 - Identify foods that trigger symptoms
 - Attempt to temporarily reduce or eliminate trigger foods from diet until flare-up subsides
 2. Avoid alcohol, sugar, fructose, caffeine, greasy foods
 - Simple sugars, fructose and artificial sweeteners can increase gas and diarrhea because they are poorly absorbed in the GI tract
 3. Eat smaller meals every 2 to 3 hours or 5 to 6 small meals per day
 - Smaller meals are easier to digest
 - Food may be better tolerated throughout the day when breakfast is the main meal
 4. Focus on protein, as requirements may be higher due to losses related to inflammation
 - Protein sources can include meat, eggs, nut butters, cheese, Greek yogurt and cottage cheese
 5. Add soluble fibre and reduce insoluble fibre, which may lead to diarrhea and irritation of the GI tract



Managing bowel function and gastrointestinal intolerance symptoms

- Decrease stool frequency
 - Increase soluble fibre
 - Reduce simple sugars, fructose, sugar alcohols, and caffeine
 - Restrict lactose
 - Eat smaller meals every 2 to 3 hours
 - Avoid drinking fluids with meals
- Improve stool consistency
 - Increase soluble fibre and water
- Minimize GI intolerance symptoms (gas, bloating, cramping, pain, obstruction risk)
 - Plan regular snacks and meals
 - Eat less foods that cause flatulence
 - Avoid smoking, chewing gum, and using straws when consuming carbonated beverages
 - Increase physical activity



Understanding fibres

- Soluble fibre
 - Absorbs water and develops a gel-like consistency as it moves through the gut
 - The absorption of water helps to slow the passage of stool, resulting in increased absorption of nutrients and a lessening of diarrhea because the stool is more formed
 - Soluble fibre is fermented in the colon by healthy bacteria
 - Good sources include oatmeal, oat bran, barley, psyllium, legumes (peas, beans, lentils), apples, strawberries and citrus fruits
- Insoluble fibre
 - Does not dissolve in water
 - Draws water into the gastrointestinal tract and makes the contents move more quickly through the system
 - Bulks up stool and relieves constipation
 - Minimal fermentation by healthy bacteria
 - Peeling, cooking and blending insoluble fibre foods may improve tolerance
 - Sources include wheat bran, whole grain foods, nuts, vegetables, fruits, legumes (peas, beans, lentils), seeds and ancient grains



Managing hydration and electrolyte balance

- Increased fluid loss in the stool increases the likelihood of dehydration
- Patients who have diarrhea for more than 1 day may take an oral rehydration solution like Pedialyte[®] or Gastrolyte[®] to rehydrate faster
- Caffeinated beverages and alcohol can lead to greater losses of urine
 - Dark colas (Pepsi, Coke, root beer) and some clear drinks (Mountain Dew)
 - Energy drinks and guarana
 - Coffee and tea (including green tea)
 - Hot chocolate
 - Over-the-counter medications and flu remedies
- Sugar-rich fluids cause fluid to shift into the intestine from the tissues which can lead to watery stool
 - Patients should drink water or milk, dilute juices and reduced-sugar sports drinks at a slow pace
- Sodium and potassium regulate fluid in the body and may be at an increased loss if the patient has diarrhea



Preventing malnutrition

- Malnutrition occurs when there is a lack of nutrients provided to the body
- Rapid or unintentional weight loss is a common indicator
- Malnutrition risk factors:
 - Inadequate intake of nutrients, caused by anorexia, loss of appetite, or gastrointestinal intolerance
 - Food intolerances such as high-fibre foods and dairy products (lactose)
 - Side effects of some medications (either IBD related or non-IBD related)
 - Dietary eliminations caused by food phobias or diet experimentation
 - Increased nutrient requirements caused by higher metabolic rate or increased growth requirements
 - Malabsorption of nutrients and increased losses (diarrhea, fistula, blood loss)
- Treatment of malnutrition includes:
 - Diet modification counseling
 - Supplementation (nutrition support, liquid calorie supplements, vitamin and mineral supplements)





Section 3

Diets and supplementation



Elimination (exclusion) diets

- In some instances, elimination of a certain food may be warranted to calm symptoms in the GI tract
- The potential side effects and risks should be evaluated for each patient
- A timeline should be set for evaluating and ending the dietary elimination
- Exclusion diets do not necessarily mean healthier
- Potential side effects and risks include:
 - Nutrient deficiencies
 - Weight loss
 - Malnutrition
 - Food phobias or obsessions
 - Loss of enjoyment of eating
 - Psychological danger



Examples of elimination diets

- **Gluten-free diet:** gluten is a general name for the storage proteins found in wheat, barley, rye and related cereal grains (triticale, spelt, kamut)
- **Low-FODMAP diet:** elimination of foods containing small carbohydrate molecules that may trigger symptoms such as abdominal pain, cramping, bloating, excess gas, constipation and/or diarrhea
 - After trial elimination, high FODMAP foods are added back one at a time into the diet in small amounts to identify foods that could be symptom 'triggers'
- **Low residue diet:** decreased fibre-rich, whole grain products
- **Other restrictions possible:** dairy foods, red meat, yeast, refined sugars

FODMAP-containing foods include:

- Fructose (fruits, honey, high fructose corn syrup)
- Lactose (dairy)
- Fructans (wheat, garlic, onion, inulin)
- Galactans (legumes)
- Polyols (sweeteners, stone fruits)



Lactose-restricted diets

Lactose is the sugar found naturally in milk and milk products

- Some people may have an intolerance to lactose, which may be temporary and does not worsen inflammatory bowel disease (IBD)
 - Milk and milk alternatives may be temporarily restricted during a flare-up
 - May cause symptoms such as gas, cramping, bloating and diarrhea
 - If reduction of lactose in the diet does not improve symptoms, lactose-containing foods can be added back into the diet
- If a true milk allergy leading to an immune-mediated response is present then all dairy products must be avoided
- Tips for managing lactose in the diet include:
 - Spreading milk products out during the day in small quantities
 - Taking small amounts of milk products with meals and snacks to improve tolerance
 - Adding the lactase enzyme found in Lactaid pills or drops
 - Lowering lactose or eating lactose-free alternatives (Lactaid milk, soy or rice milk, cheese, cottage cheese, yogurt with probiotics)
 - Gradually increasing the amount of lactose in the diet so the gut can adjust to higher lactose amounts



Children and adolescents with Crohn's disease

- Due to dietary restrictions, children and adolescents with Crohn's disease may experience:
 - Growth retardation
 - Decreased muscle mass
 - Osteopenia
 - Anemia
- Considerations for this population include:
 - Modestly higher energy requirements
 - Increased calcium and Vitamin D intake
 - Identify cause of anemia (iron, folate, Vitamin B12)





Section 4

Case study



Patient profile: Stewart



- Stewart is a 58 year old male with inflammatory bowel disease (IBD)
- He has eliminated gluten, red meat, and dairy products due to research on the Internet
- He has lost 5.5kg (12lb) unintentionally in the past month due to diet restrictions

Body characteristics

- Current weight: 90kg (198lb)
- Usual weight: 95.5kg (210lb)
- Height: 182.9cm (6')
- BMI: 27

Physical exam findings:

- 1 BM per day
- No cramping, bloating, blood in stool, diarrhea, constipation
- Feeling fatigued

Medical tests and procedures:

- Iron studies, ferritin, albumin, Vitamin B12, CRP normal
- Magnesium slightly high

Medications or vitamins/minerals:

- Vitamin D 1000IU
- Pantoloc
- Pentasa
- Budesonide

Food nutrition history

- Stewart is tracking food intake in a journal that monitors what causes his gastrointestinal symptoms

Meals:

- No breakfast or lunch
- Supper well rounded:
 - Protein
 - Carbohydrate
 - Vegetables – onions and mushrooms cause bloating

Snacks:

- Leftovers
- 'Junk food'
- Fruit
- Cheese

Fluids:

- Tea with sweetener and milk
- 2-3 cups almond milk
- Aloe Vera juice (3 bottles per week)
- Water
- Social alcohol
- Has eliminated coffee for 6 weeks

Case approach

1

Estimation of needs

- Energy: 2250kcal
- Protein: 72g
- Fluid: 2700ml
- Calcium: 1500mg elemental
- Vitamin D: 1000IU

2

Implementation of customized nutrition plan

3

Planned follow-up in one month to review:

- Bowel movements
- GI side effects with different foods
- Weight maintenance

After considering Stewart's profile, what would you work on with Stewart for a nutrition plan?

Customized nutrition plan

- Nutrition intervention:
 - Balance the use of correct calcium and Vitamin D supplements for bone health with steroid use
 - Stop Aloe Vera juice and determine if symptoms change
 - Add back in foods previously restricted that do not cause symptoms
 - Re-incorporate previously eliminated foods in small quantities to determine if symptoms are dose-dependent
- Dietary modifications
 - Breakfast daily containing soluble fibre (Stewart prefers oatmeal and Shreddies with bran buds)
 - Make lunches the night before
- Patient counseling
 - Discuss the differences in diet for remission verses flare-up
 - Continue food journaling and tracking symptoms from foods



Self-learning resources

- Regulatory bodies:
 - Canadian Digestive Health Foundation
 - Canadian Celiac Association
 - Crohn's and Colitis Canada
- Health services:
 - Stanford Hospital and Clinics Digestive Health Centre Nutrition Services
 - University of Saskatchewan Multidisciplinary Inflammatory Bowel Disease Clinic
- Publications:
 - Crohn's and Colitis Diet Guide Second Edition by Dr. A Hillary Steinhart and Julie Cepo



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Section 5

Self-assessment quiz



Self-assessment quiz



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- Now that you have reviewed the module content, you have the opportunity to test your knowledge and understanding of the material by completing a self-assessment
- The assessment consists of 5 multiple choice questions
- Please attempt each question before looking at the answer key, which is located on page 35
- The answer key provides the rationale for each answer and indicates where the correct answer can be found in the module



Question 1

A nutrition assessment should include which of the following measurements?

- a) Anthropometrics
- b) Food allergies and intolerances
- c) Patient beliefs and attitude
- d) All of the above



Question 2

Which of the following dietary approaches according to disease status is correct?

- a) During remission, patients do not need to be monitored for iron deficiency anemia
- b) During a flare-up, patients should reintroduce foods previously eliminated
- c) During remission, there is no need to avoid any food or follow a restrictive diet
- d) During a flare-up, modifying the diet does little to help control symptoms

Question 3

Which of the following dietary approaches can patients follow to help alleviate symptoms and prevent flare-ups?

- a) Avoid alcohol, sugar, fructose, caffeine, greasy foods
- b) Reduce the intake of soluble fibre and increase consumption of insoluble fibre
- c) Eat smaller meals every 2 to 3 hours or 5 to 6 small meals per day
- d) Both a) and c)

Question 4

Which of the following interventions may exacerbate gastrointestinal intolerance symptoms?

- a) Consuming carbonated beverages
- b) Planning regular snacks and meals and eating less foods that cause flatulence
- c) Avoiding smoking and chewing gum
- d) Increasing physical activity



Question 5

Which type of elimination diet recommends excluding honey, wheat, garlic, legumes and stone fruits?

- a) Lactose-restricted
- b) Low-FODMAP
- c) Gluten-free
- d) Low residue

Answer key

1. **The correct answer is d.** Anthropometrics, food allergies, food intolerances, as well as patient beliefs and patient attitudes should all be collected during a nutritional assessment. See page 7 for more information on this topic.
2. **The correct answer is c.** During remission, there is no need to avoid any food or follow a restrictive diet. See page 11 for more information on this topic.
3. **The correct answer is d.** Avoiding items such alcohol, sugar, fructose, caffeine, greasy foods and eating smaller meals every 2 to 3 hours or 5 to 6 small meals per day can help to alleviate symptoms and prevent flare-ups. See page 12 for more information on this topic.
4. **The correct answer is a.** Consuming carbonated beverages can worsen gastrointestinal intolerance symptoms. See page 13 for more information on this topic.
5. **The correct answer is b.** A low-FODMAP diet recommends excluding numerous foods, including honey, wheat, garlic, legumes and stone fruits. See page 19 for more information on this topic.



Congratulations!



You have completed the 9th module of the program.

Based on what you learned in Module 9, you should be able to:

- Summarize the common beliefs that patients with inflammatory bowel disease (IBD) have regarding their diet, and explain the realities of maintaining a healthy diet
- Outline different dietary approaches during remission and flare-ups
- List different diet modifications that can be made in an effort to improve gastrointestinal symptoms
- Describe the considerations that are involved in creating a customized nutritional plan for individual patients

If you have answered the quiz questions correctly and achieved the learning objectives, you are ready to move on to Module 10, which will focus on the extra-intestinal manifestations of IBD.



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