

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**

csna*

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



Module 12

Fatigue in IBD

Table of contents



Learning objectives	Page 4
Section 1 – Fatigue in IBD patients.....	Page 5
Section 2 – Assessment and management of fatigue in IBD.....	Page 12
Section 3 – Self-assessment quiz.....	Page 17
References.....	Page 26

Learning objectives



After completing Module 12 you will be able to:

- Define fatigue in patients with IBD and explain its impact on quality of life
- List the many potential causes of fatigue in patients with IBD
- Describe different aspects in which fatigue is experienced by the IBD patient
- Summarize current methods of assessing and managing fatigue in the IBD patient





IBD nurse
fellowship
PROGRAM

csSna⁺
Canadian Society of Gastroenterology Nurses & Associates
Soci t  canadienne de soins infirmiers en gastroent rologie et coloproctologie



Section 1

Fatigue in IBD patients



How are fatigue and IBD related?

- Inflammatory bowel disease (IBD) can lead to severe, debilitating fatigue which may significantly impair one's quality of life (QoL)
 - Fatigue may be described as a persistent, overwhelming sense of tiredness, weakness or exhaustion resulting in a decreased capacity for physical and/or mental work
 - Is typically unrelieved by adequate sleep or rest
- Patients with chronic diseases including IBD describe their fatigue differently and qualitatively of greater severity than that typically depicted by healthy populations
 - It can exist as a unique entity and not merely a component of psychological comorbidity or 'illness behaviour'
 - Diagnostic criteria for fatigue have been proposed in cancer patients, but are yet to be widely adopted or validated
- Fatigue is one of the leading concerns for people with IBD
 - Prevalence ranges from 41% – 48% when IBD is in remission, to 86% when it is active

Factors influencing fatigue

- Several factors contribute to fatigue in IBD, including:
 - Disease activity
 - Perceived stress
 - Depressive coping
 - Gender (more common in females)
 - Psychological well-being
- Fatigue severity correlates with disease severity (severity of symptoms), and therapy resulting in reduced disease activity concomitantly reduces the degree of fatigue
 - Fatigued IBD patients show impaired physical fitness and physical activity compared with non-fatigued IBD patients
- Management strategies focusing on fatigue are lacking and intervention studies are scarce
- Psychological interventions for patients with IBD have previously been applied for multiple goals, such as improving QoL, decreasing depression and decreasing flares



Potential factors influencing fatigue in IBD

Factors	Proposed mechanism or examples
Active inflammatory disease (direct)	Pro-inflammatory cytokine-mediated
Anemia (+/- iron deficiency)	
Endocrine causes: <ul style="list-style-type: none"> • Hypothyroidism • Testosterone deficiency/hypogonadism • Adrenocortical insufficiency (primary/secondary) • Hypoglycemia • Growth hormone/IGF-1 deficiency 	Secondary to corticosteroid therapy
Infections: <ul style="list-style-type: none"> • Viral (e.g., EBV, CMV, hepatitis, HIV, other) • Bacterial (e.g., tuberculosis, Q fever) • Other (parasitic, Lyme disease, Rickettsia, etc.) 	
Iron deficiency without anemia	
Medical comorbidities (other)	Celiac disease
Medication (IBD therapies or other)	e.g., azathioprine, methotrexate

Potential factors influencing fatigue in IBD

Factors	Proposed mechanism or examples
Miscellaneous	e.g., abnormal illness behavior, chronic fatigue and pain syndromes, fibromyalgia
Neurological-related: <ul style="list-style-type: none"> Psychological stress 	Altered neurotransmission (e.g., serotonin), defective CRH release
Nutrition related: <ul style="list-style-type: none"> Micronutrient or macronutrient deficiency Excessive delivery of short-chain carbohydrates to the distal small bowel and colon 	Malabsorption, inflammation-related, post-ileojejunal resection
Physiological	e.g., overwork, shift work, care of newborn, jet lag, bereavement
Poor sleep quality: <ul style="list-style-type: none"> Caffeine/alcohol/CNS stimulant use Life stressors/psychological comorbidity IBD-related (pain, nocturnal diarrhea) Obstructive sleep apnea/other medical cause Sedentary lifestyle (lack of exercise) Poor sleep behavior 	Direct inflammation-mediated sleep disturbance



Patient perception of fatigue

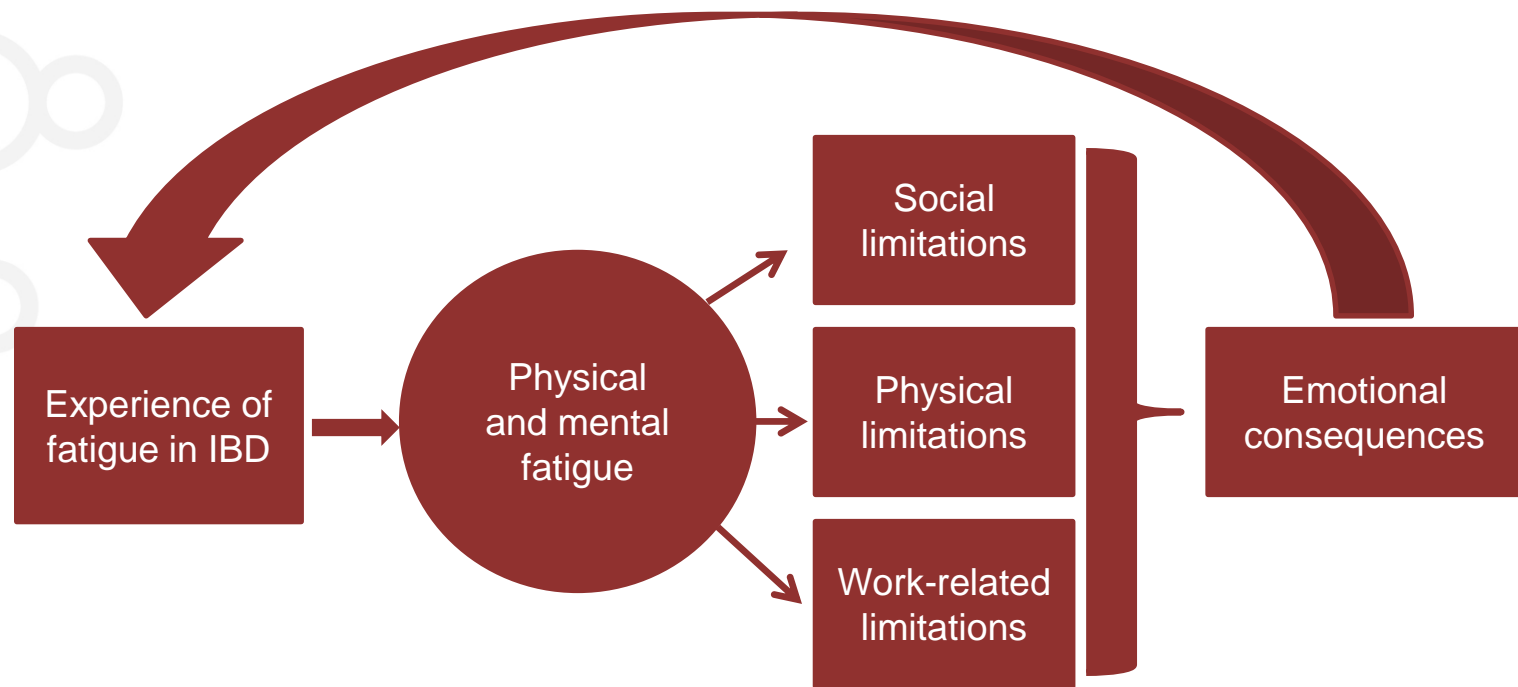
- There are both objective and subjective aspects of fatigue, which may be either dependent or independent of one another
- Some patients may exhibit one component alone, or a combination of all three components

Multidimensional components of fatigue

Dimension	Subjective component	Objective component
Physical	Weakness, perceived inability to initiate or complete tasks, tiredness	Measurable decrease in physical activity and/or performance with repeated or prolonged activity
Cognitive	Difficulty concentrating and/or thinking clearly	Measurable decrease in cognitive function or performance (e.g., memory) with repeated/prolonged testing
Affective	Decreased motivation, low mood, no energy	Not applicable

Involvement of fatigue in IBD

- The experience of fatigue begins with physical and mental symptoms, which leads to social, physical, and work-related limitations
- These limitations may cause some emotional consequences like worrying and anxiety





Section 2

Assessment and management of fatigue in IBD



Assessing fatigue in patients with IBD

SECTION I – Fatigue Assessment Scale

This section of the questionnaire will identify fatigue, its severity, frequency and duration.

Sometimes people with inflammatory bowel disease feel fatigued. The term 'fatigue' is used throughout the questionnaire. Fatigue has been defined as a sense of continuing tiredness, with periods of sudden and overwhelming lack of energy or feeling of exhaustion that is not relieved following rest or sleep.

Please answer all the questions. The possible answers to the questions are:

Score from 0 – 4 with 0 = No fatigue 4 = Severe fatigue

1) What is your fatigue level right NOW

> 0 1 2 3 4 Please Choose

2) What was your HIGHEST fatigue level in the past two weeks

> 0 1 2 3 4 Please Choose

3) What was your LOWEST fatigue level in the past two weeks

> 0 1 2 3 4 Please Choose

4) What was your AVERAGE fatigue level in the past two weeks

> 0 1 2 3 4 Please Choose

The possible answers to this question are:

0 = None of the time 1 = Some of the time 2 = Often 3 = Most of the time 4 = All of the time

5) How much of your waking time have you felt fatigued in the past two weeks

> 0 1 2 3 4 Please Choose

SUBMIT QUESTIONNAIRE

RESULTS:

WHAT DOES YOUR SCORE MEAN?

0	You do not have Fatigue
1-10	You have slight to moderate Fatigue and we suggest you seek medical advice
11-20	You have severe Fatigue and we suggest you seek medical advice

IF YOU SELECTED ANSWERS BETWEEN 1 TO 4 IN ANY OF THE ABOVE QUESTIONS IN SECTION I PLEASE CONTINUE AND FILL IN SECTION II

Section 1 of the IBD-F patient assessment scale

IBD, inflammatory bowel disease.
Czuber-Dochan et al., 2014 (A).

- The IBD-Fatigue (IBD-F) scale is a fatigue scale specific to the needs and experiences of people with IBD
- The scale can be used by patients and practitioners to assess the severity and impact of fatigue in people with IBD
- The questionnaire has 3 sections:
 - 5 questions assessing frequency and severity of fatigue
 - 30 questions rating the experience and impact of fatigue
 - A free-text section asking for patient comments and additional issues related to fatigue

Access the Fatigue in IBD Assessment Questionnaire from the National Association for Colitis and Crohn's Disease at:
<http://www.fatigueinibd.co.uk/questionnaire/>



Healthcare professional perception of fatigue

- Fatigue is poorly understood by healthcare professionals (HCPs), who find it a difficult and frustrating symptom to understand
 - Many expressed frustration at not being able to provide more help and support
 - A gap has been identified in the knowledge and understanding of the complexity of IBD fatigue and the full impact that IBD fatigue has on people's lives
- Barriers to caring for IBD patients with fatigue:
 - Lack of information regarding the concept of fatigue
 - Few assessment and management options
 - Financial and resource issues with overstretched healthcare services not being able to accommodate 'new' problems
- More research-generated evidence is needed to enhance the understanding of the concept and the factors associated with IBD fatigue

To enable HCPs to provide better quality care to people with IBD affected by fatigue, there is a need for more options for assessment and management of this complicated and poorly understood clinical symptom



Clinical assessment and management of fatigue in IBD patients

Clinical re-assessment of fatigued patient:

- History/examination
- Exclude minimally active disease (endoscopic, radiology, fecal & blood markers)
- Consider effects of fatigue-inducing medications (e.g., thiopurines, steroids, CNS depressants, etc)

If evidence of active disease:

- Ensure medication adherence and optimize current therapy
- Escalate medical therapy
- Consider surgical resection

Exclude anemia/iron deficiency:

- Transfuse blood if Hb < 80 g/L
- Total dose iron infusion if Ferritin < 100 µg/L
- Consider erythropoietin for recurrent anemia of chronic disease

Exclude micronutrient deficiency:

- Dietician macro/micronutrient assessment
- Assess and replace Vitamin D/B12 & (total body stores), Mg, Zinc, selenium

Exclude other medical comorbidities:

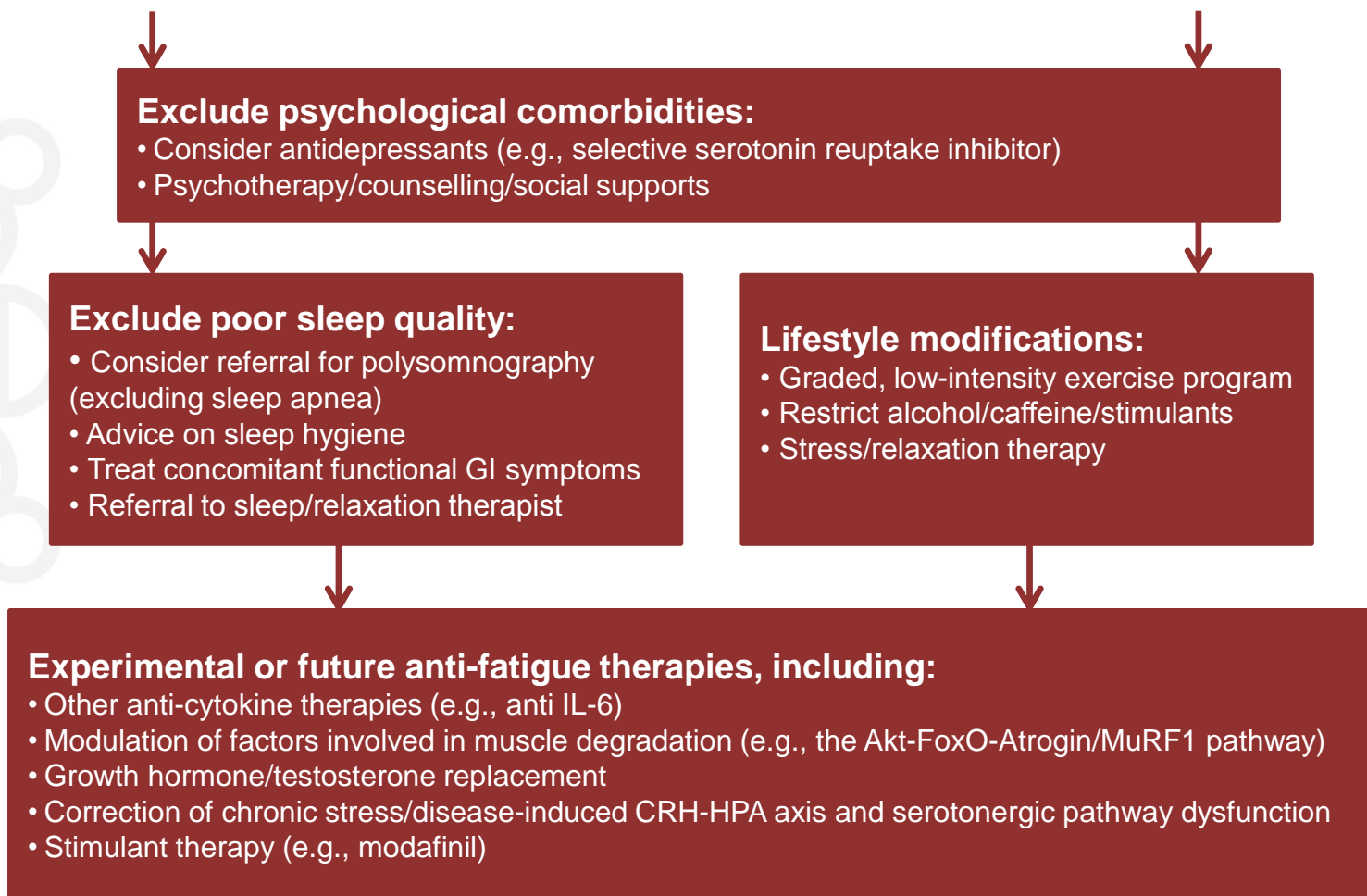
- Endocrine: Hypothyroid, hypoadrenal, hypogonadism (in males), diabetes mellitus
- Renal/cardiac/respiratory/hepatic dysfunction
- Neurological disorder (e.g., dementia, myasthenia gravis, multiple sclerosis)
- Other autoimmune diseases (e.g., lupus [drug-induced or SLE], hepatitis/PSC, celiac disease)
- Occult infection (e.g., Epstein-Barr virus, cytomegalovirus, viral hepatitis, tuberculosis, Lyme, etc)

-----Flow chart continues on next page-----

CNS, central nervous system; Hb, hemoglobin; Mg, magnesium; PSC, primary sclerosing cholangitis; SLE, systemic lupus erythematosus.
Van Langenberg and Gibson, 2010



Clinical assessment and management of fatigue in IBD patients





Section 3

Self-assessment quiz



Self-assessment quiz



- 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 24
- The answer key provides the rationale for each answer and indicates where the correct answer can be found in the module



Question 1

Which of the following facts regarding fatigue in IBD is correct?

- a) Fatigued IBD patients show impaired physical fitness and physical activity compared with non-fatigued IBD patients
- b) Fatigue severity correlates with disease severity
- c) Therapy resulting in reduced disease activity concomitantly reduces the degree of fatigue
- d) All of the above

Question 2

Which of the following is not a factor that potentially influences fatigue in IBD?

- a) Obstructive sleep apnea and poor sleep behaviour
- b) Anemia (\pm iron deficiency)
- c) Viral and/or bacterial infections
- d) None of the above

Question 3

According to the model proposed by Beck and colleagues (2013), the experience of fatigue begins with physical and mental symptoms, which leads to which types of limitations?

- a) Cognitive, physical and relationship limitations
- b) Social, physical and relationship limitations
- c) Social, physical and work-related limitations
- d) Cognitive, physical and work-related limitations

Question 4

Which of the following are barriers to caring for IBD patients with fatigue?

- a) Few assessment and management options
- b) Financial and resource issues with overstretched healthcare services
- c) Lack of information regarding the concept of fatigue
- d) All of the above

Question 5

According to the assessment algorithm proposed by Van Langenberg and Gibson (2010), an evaluation of micronutrient deficiency should be completed after which other clinical assessment?

- a) Anemia and/or iron deficiency
- b) Psychological comorbidities
- c) Other medical comorbidities
- d) Experimental or future anti-fatigue therapies

Answer key

1. **The correct answer is d.** Fatigue severity correlates with disease severity, and therapy resulting in reduced disease activity concomitantly reduces the degree of fatigue. Fatigued IBD patients also show impaired physical fitness and physical activity compared with non-fatigued IBD patients. See page 7 for more information on this topic.
2. **The correct answer is d.** Obstructive sleep apnea, poor sleep behaviour, anemia (\pm iron deficiency), and viral/bacterial infections are all factors that potentially influence fatigue in IBD. See pages 8 & 9 for more information on this topic.
3. **The correct answer is c.** The model by Beck and colleagues (2013) proposes that the experience of fatigue begins with physical and mental symptoms, which leads to social, physical, and work-related limitations. See page 11 for more information on this topic.
4. **The correct answer is d.** Lack of information regarding the concept of fatigue, few assessment and management options, and financial and resource issues with overstretched healthcare services are all barriers to caring for IBD patients with fatigue. See page 14 for more information on this topic.
5. **The correct answer is a.** Micronutrient deficiency should be assessed after anemia and iron deficiency have been excluded. See pages 15 & 16 for more information on this topic.

Congratulations!



You have completed the 12th module of the program.

Based on what you learned in Module 12, you should be able to:

- Define fatigue in patients with IBD and explain its impact on quality of life
- List the many potential causes of fatigue in patients with IBD
- Describe different aspects in which fatigue is experienced by the IBD patient
- Summarize current methods of assessing and managing fatigue in the IBD patient

If you have answered the quiz questions correctly and achieved the learning objectives, you are ready to move on to the final module, Module 13, which will focus on anxiety and depression in IBD.



References



- Beck, A., Bager, P., Jensen, P. E., & Dahlerup, J. F. (2013). How fatigue is experienced and handled by female outpatients with inflammatory bowel disease. *Gastroenterology Research and Practice*, 2013. <http://doi.org/10.1155/2013/153818>
- Crohn's and Colitis UK. The first ever fatigue rating scale for IBD. Accessed: <http://www.fatigueinibd.co.uk/questionnaire/>
- Czuber-Dochan, W., Norton, C., Bassett, P., Berliner, S., Bredin, F., Darvell, M., Forbes A., Gay M., Nathan I., Ream E., Terry, H. (2014). Development and psychometric testing of inflammatory bowel disease fatigue (IBD-F) patient self-assessment scale. *Journal of Crohn's and Colitis*, 8(11), 1398–1406. <http://doi.org/10.1016/j.crohns.2014.04.013>
- Czuber-Dochan, W., Norton, C., Bredin, F., Darvell, M., Nathan, I., & Terry, H. (2014). Healthcare professionals' perceptions of fatigue experienced by people with IBD. *Journal of Crohn's and Colitis*, 8(8), 835–844. <http://doi.org/10.1016/j.crohns.2014.01.004>
- Czuber-Dochan, W., Ream, E., & Norton, C. (2013). Review article: Description and management of fatigue in inflammatory bowel disease. *Alimentary Pharmacology and Therapeutics*, 37(5), 505–516. <http://doi.org/10.1111/apt.12205>
- Van Langenberg, D. R., & Gibson, P. R. (2010). Systematic review: Fatigue in inflammatory bowel disease. *Alimentary Pharmacology and Therapeutics*, 32(2), 131–143. <http://doi.org/10.1111/j.1365-2036.2010.04347.x>
- Vogelaar, L., van den Berg-Emons, R., Bussmann, H., Rozenberg, R., Timman, R., & van der Woude, C. J. (2015). Physical fitness and physical activity in fatigued and non-fatigued inflammatory bowel

