

Inflammatory Bowel Disease and Malnutrition in Pediatric Patients

Malnutrition in childhood Crohn's Disease (CD) is common at diagnosis and may persist despite treatment of the disease. In pediatric IBD, poor nutrition and chronic inflammation can impair growth velocity, increasing the risk of short stature in adulthood. Growth failure is a significant concern because it reflects the combined impact of ongoing inflammation, chronic malnutrition, and poor developmental outcomes. Not all stunting can be reversed.¹

- Malnutrition can result from decreased oral intake, food avoidance, medication effects, malabsorption, intestinal dysbiosis, altered anatomy from prior surgery, and increased nutritional needs from inflammation.¹
- Growth, bone health, and macronutrient and micronutrient stores are commonly affected.²
- Malnutrition leads to poor outcomes, including higher infection rates, longer hospital stays, prolonged recovery time after surgery, reduced quality of life, and increased costs.

Screening for Risk of Malnutrition

Malnutrition risk should be identified through nutrition screening by a physician, nurse, dietitian, or trained healthcare professional with a validated pediatric screening tool that assesses:

- Appetite/intake, or reduced intake due to pain
- BMI, wt/age, wt/length, and ht velocity
- Weight change/loss or visible underweight or overweight
- GI symptoms
- Medical conditions, diagnosis and severity of disease
- Pre-existing intervention or treatment

If a patient is identified as being at risk, a full nutrition assessment should be conducted by a registered dietitian or nutrition provider.

Nutrition Assessment

- Includes measurements of weight, height, and calculation of BMI. Reduced linear growth velocity may precede GI manifestations of IBD by months or even years. Criteria for defining growth failure include a height z-score ≤ -1.9 (adjusted for low midparental height), a height velocity z-score ≤ -2 , or a decline in height z-score of ≥ 2 . Factors affecting risk include malnutrition, treatment modality, and the extent and severity of intestinal inflammation.²
- Dietary intake assessment is critical to evaluate actual food intake, food access, food patterns, and restriction of certain foods.
- Evaluation of levels of key vitamins and minerals, including iron, zinc, magnesium, selenium, and calcium, thiamine, vitamins B₁₂ and D, and folate, all of which may be low, is also important.
- Once nutrition status is determined, dietary counseling is critical to prevent further decline and restore optimal nutrition status.

Nutrition Intervention

Nutrition intervention may include targeted vitamin and mineral supplementation, dietary modifications to avoid food triggers while increasing calories and protein, and oral nutrition supplements (ONS). Use of ONS is based on meeting nutrition needs by supplying macro- and

Encourage Your Patients/ Caregivers to Ask About Their Nutrition

Patients with IBD and their caregivers should ask their healthcare provider about their nutrition using the poster at right.

With IBD, note any change in eating patterns or intentional restriction of certain foods. Children are often afraid to eat certain foods that trigger IBD symptoms.

ASK ABOUT YOUR CHILD'S NUTRITION

It's Vital to Your Child's Health, Growth, and Development



DOES YOUR CHILD HAVE ANY OF THESE SIGNS?



TALK TO YOUR HEALTHCARE PROVIDER

micronutrients. Some of these nutrients and regimens may positively impact inflammation while preventing or treating malnutrition. They can be used during the various stages of disease, such as active disease, early or late remission, maintenance, or preoperatively.³ If malnutrition is severe or IBD limits adequate intake, tube feeding (enteral nutrition) or IV nutrition (parenteral nutrition) may be necessary. Ongoing follow-up is needed to ensure the therapies are working.

Specific nutrition support treatments that have shown efficacy in nutrition repletion and disease management:

- **ONS** containing high-calorie, high-protein, vitamins, minerals, and medium- or long-chain fatty acids.³ Some have more easily digested protein, lipids, and carbohydrates.
- **Crohn's Disease Exclusion Diet (plus partial EN)** should be considered as an alternative to exclusive EN in pediatric patients with mild to moderate CD to achieve remission.^{1,4} This is a comprehensive dietary approach designed to minimize or restrict the consumption of foods that could potentially harm the microbiome or disrupt intestinal barrier function. It is implemented through a three-phase process, supplemented with Partial Enteral Nutrition (PEN) derived from a formula, which gradually decreases over the course of treatment, with the final stage incorporating 25% of daily nutrition from PEN. The three phases are induction, reintroduction, and maintenance.⁵
- **Exclusive Enteral Nutrition (EEN)** consists of the exclusive intake of a nutritionally complete liquid formula as the sole source of nutrition, typically for a duration of 6–8 weeks, with the exclusion of all other foods and beverages except water.⁶ These therapies do not necessarily require an enteral access device for delivery but can be consumed by mouth.
- **Partial Enteral Nutrition (PEN)** has gained attention as an alternative to EEN, particularly for maintenance therapy and in adult patients for whom full adherence to EEN is often difficult.⁷ PEN typically provides 35–50% of daily caloric needs through a liquid formula, combined with a conventional or modified diet.⁸

A recent comprehensive literature review and a recent clinical practice update provide more detailed nutrition recommendations.^{4,8}

Key Takeaways

- Risk of malnutrition is common in IBD.
- Early screening, assessment, and treatment can help prevent complications and improve maintenance of remission, medical and surgical outcomes, and quality of life.
- ONS has been shown to help provide adequate nutrition when patients are unable to meet nutritional requirements by diet alone.

Additional Resources

American Society for Parenteral and Enteral Nutrition (ASPEN):

nutritioncare.org/En-Indications-GI-Diseases

American Gastroenterological Association:

bit.ly/4gJsbBi

Crohn's and Colitis Foundation: Diet and Nutrition Online Education:

bit.ly/3RebC66

GI Nutrition Foundation

ginutritionfoundation.org

References

1. Bischoff SC, Bager P, Escher J, et al. ESPEN guideline on clinical nutrition in inflammatory bowel disease. *Clin Nutr*. 2023;42(3):352-379.
2. Dorsey J, George D, Bobo E. Gastrointestinal Disease. In: *ASPEN Pediatric Nutrition Support Core Curriculum, Third Edition*. Corkins M (ed). 2025.
3. Sosio J, Zemanek M, Russell LA. Approach to malnutrition and oral nutrition therapy in adults with IBD: What to consider. *Nutrients*. 2026;18(2):204.
4. Hashash JG, Elkins J, Lewis JD, Binion DG. AGA clinical practice update on diet and nutritional therapies in patients with inflammatory bowel disease: expert review. *Gastroenterology*. 2024;166(3):521-532.
5. Crohn's & Colitis Dietitians. Crohn's disease exclusion diet. 2026. <https://crohnsandcolitisdietitians.com/crohns-disease-exclusion-diet/>
6. Mitrev N, Huang H, Hannah B, et al. Review of exclusive enteral therapy in adult Crohn's disease. *BMJ Open Gastroenterol*. 2021, 8, e000745.
7. González-Torres L, Moreno-Álvarez A, Fernández-Lorenzo AE, et al. The role of partial enteral nutrition for induction of remission in Crohn's disease: a systematic review of controlled trials. *Nutrients* 2022, 14, 5263.
8. Barberio B, Bertin L, Facchi S, et al. Dietary interventions and oral nutritional supplementation in inflammatory bowel disease: Current evidence and future directions. *Nutrients*. 2025; 17(11):1879.

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