Diet and Nutrition in Inflammatory Bowel Disease

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Speaker Disclosures

GI on Demand-Consultant

(virtual platform between American College of Gastroenterology/Gastro Girl)

On the Menu

- Know the role foods may potentially play with pathogenesis and disease activity in IBD.
- Understand the contributors to malnutrition in IBD.
- Learn practical applications of WHAT and HOW to eat to restore fiber as a focus and build trust with foods again.

Case: Ulcerative Colitis in Active Disease

A 27 year old South Asian malnourished male with UC since 2008.

- + proctosigmoiditis of 30 cm in 2014, along with C-diff, with s/p fecal transplant.
- + ileitis in terminal ileum in 2015.
- Now, with colitis from rectum to transverse colon, inflammatory pseudo-polyps in rectum, hemorrhoids, and osteopenia (by dual x ray absorptiometry).

Case: Anthropometrics

He reports a weight loss of 32 lb. unintentionally over eight months.

- Current Weight: 113 lb.
- Height: 73 inches
- Weight Change: 22% in eight months (nutritionally significant)
- Ideal Weight: 184 lb. +/- 10%
- Usual Body Weight: 145 lb.
- BMI: 15 (underweight)
- Goal: 160 lb.

Case: Symptoms

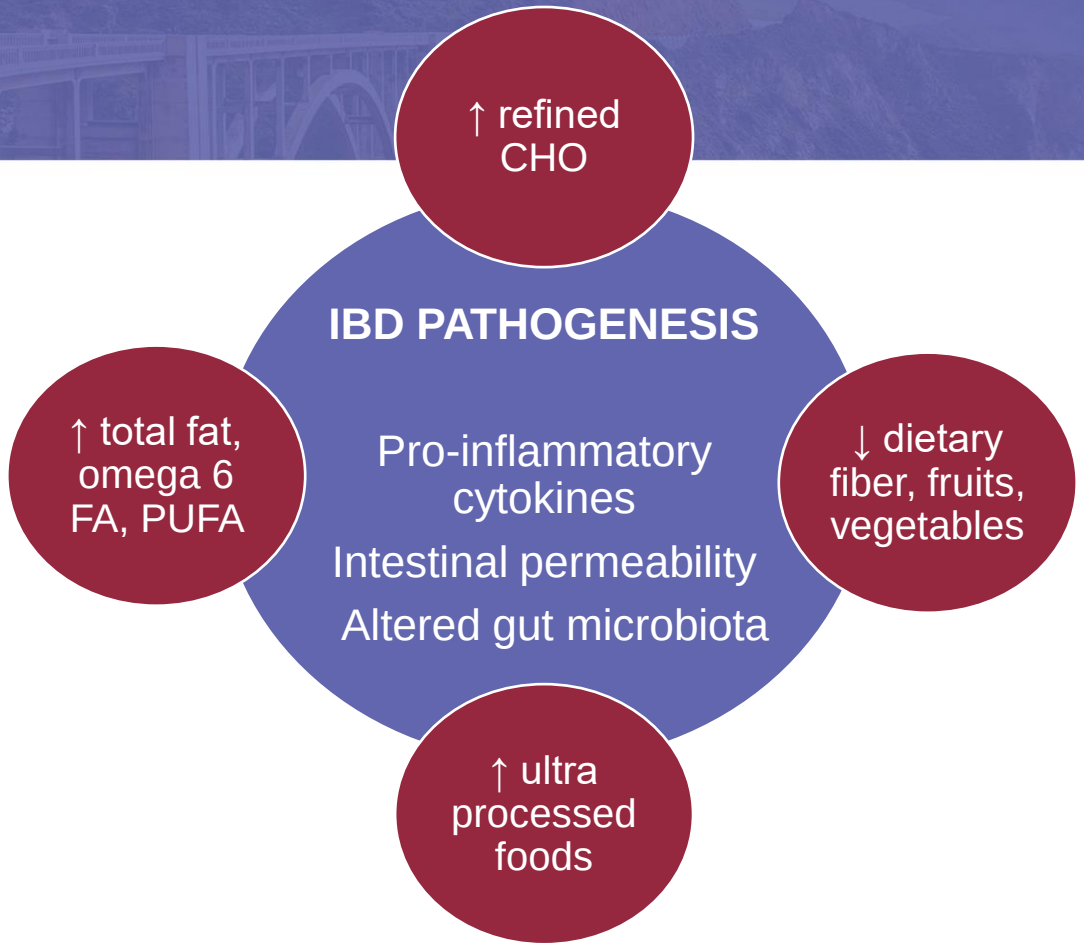
- + pain with having bowel movements.
- + sensation of incomplete evacuation along with straining.
- + urgency.
- + gas, bloating, and cramping worse with meals.
- + 5-7 bowel movements (soft) in a 24 hour period.
- + symptoms worse with stress.

Case: Medications and Supplements

- + ustekinumab every 8 weeks.
- + calcium 378 mg once daily.
- + vitamin D3 at 50,000 international units once weekly.
- + L glutamine 1000 mg once daily.
- No laxatives, fiber, spice, or herb supplements.

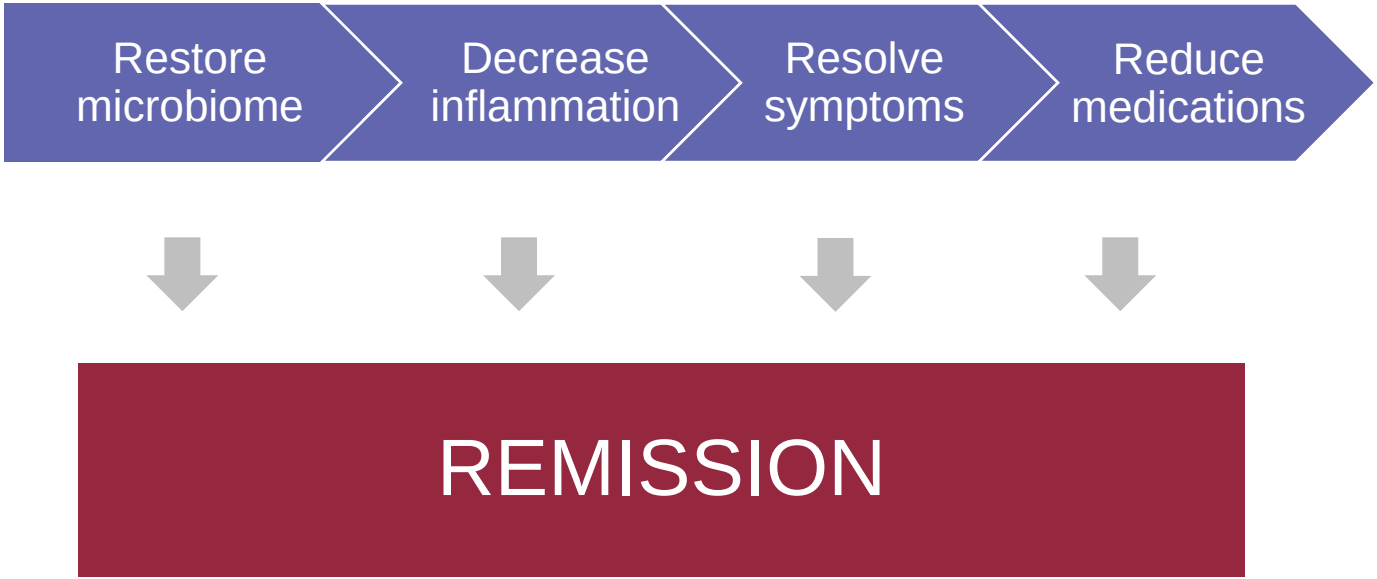
Case: Food and Nutrition History

- + vegan (no meat, poultry, eggs, or dairy)
- + gluten free (no wheat, barley, rye, and malt).
- + only white rice as the grain.
- + soy-based yogurt once daily.
- + only apple, raw cucumber, cooked zucchini for fruits and vegetables.
- + only legume is dal (lentil).
- + liquid diet: 3 bottles of Owyn and Kate Farms Komplete (each).
- + one meal only in the evening: dal, cooked vegetable, and white rice.
- + fear of adding foods, especially of fiber, due to pain.
- Lives with his mother, who does all the grocery shopping and cooking.



Hou J K, Abraham B, & El-Serag H. Dietary intake and risk of developing inflammatory bowel disease: a systematic review of the literature. *American Journal of Gastroenterology*. 2011. *106*(4), 563-573.

Why Is Diet of Interest in IBD?



CLAIM

A decrease in residue/fiber will reduce passage of stool antigens through inflamed bowel. To reduce frequency of stools for comfort.

Low Residue Diet	Evidence	Low Fiber Diet
Residue is any food that causes an increase in stool or refers to stool. The diet restricts fiber and non-fiber foods (e.g., dairy).	In CD: in 71 active adult patients, no difference was seen in outcomes between a low fiber diet and a normal diet. In UC: minimal studies.	Fiber is the indigestible part of plant based foods. The diet restricts only fiber.

Shah N D. Low residue vs. low fiber diets in inflammatory bowel disease: evidence to support vs. habit?. *Practical Gastroenterology*. 2015. *39*(7), 48-57.

What Diet to Follow in IBD?

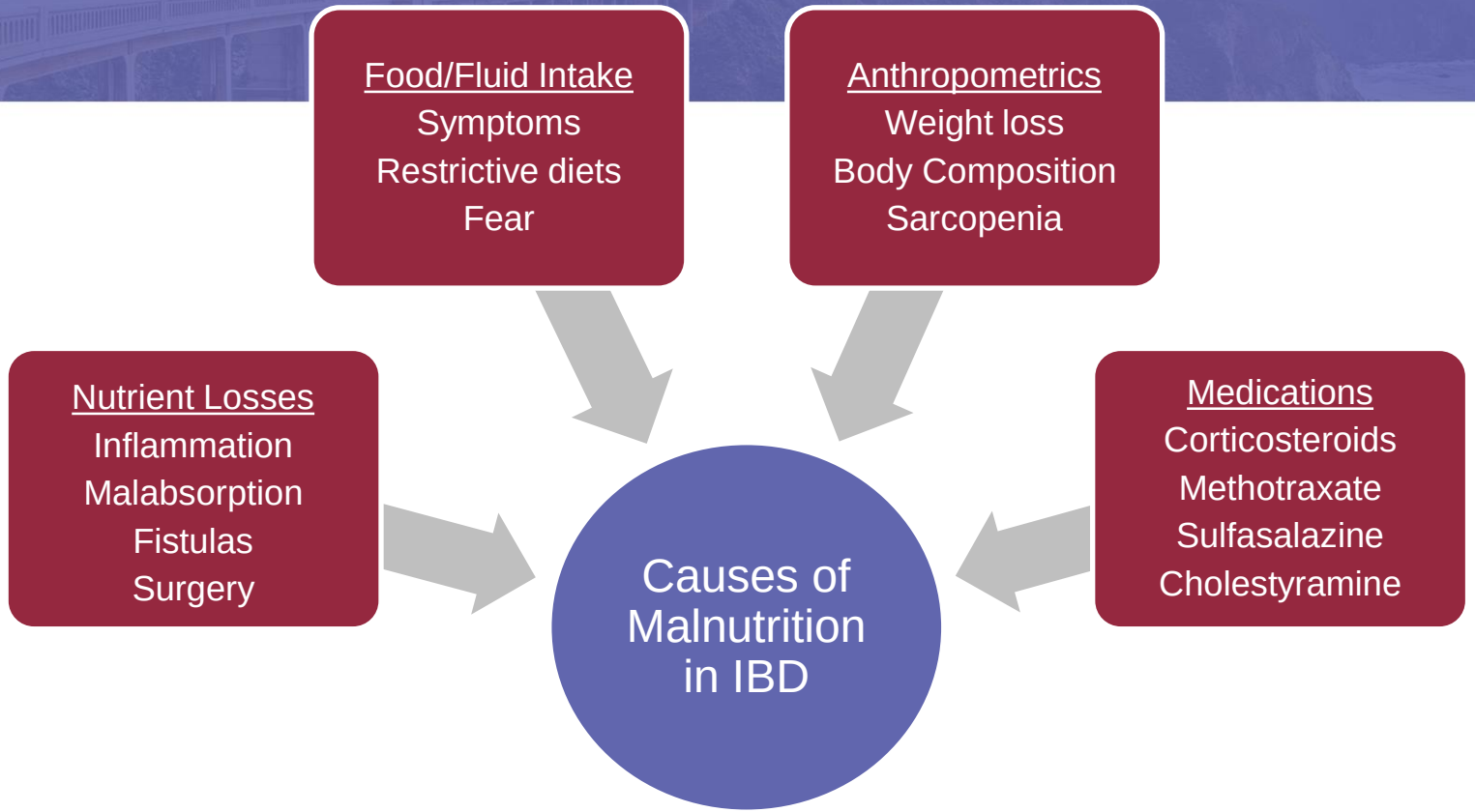
Low Residue Diet?	Low Fiber Diet?	High Fiber Diet?
Dairy Free Diet?	Lactose Free Diet?	Crohn's Disease Exclusion Diet?
Specific Carbohydrate Diet?	Low FODMAP Diet?	Autoimmune Protocol Diet?
*Gluten Free Diet?	IBD-AID Diet?	Mediterranean Diet?

further studies are warranted

What is Malnutrition?

Unintentional weight loss
Insufficient intake of calories
Loss of muscle mass
Loss of subcutaneous fat
Changes in physical activity and strength

Screening tools available.



Scaldaferri F, Pizzoferrato M, Lopetuso L R, Musca T, Ingravalle F, Sicignano L L, ... & Gasbarrini A. Nutrition and IBD: malnutrition and/or sarcopenia? A practical guide. *Gastroenterology research and practice*. 2017.

Impact of Malnutrition in IBD

- 65-75% in CD and 18-62% in UC.
- Up to 85% with CD awaiting surgery are malnourished.
- A risk factor for complications in surgery.
- Micronutrient deficiencies co-exist with malnutrition (e.g., vitamin D/B6/B12, folic acid, calcium, iron, magnesium, zinc).
- ↑ inpatient length/total cost of the hospital stay.

Nguyen G C, Munsell M, & Harris M L. Nationwide prevalence and prognostic significance of clinically diagnosable protein-calorie malnutrition in hospitalized inflammatory bowel disease patients. *Inflammatory bowel diseases*. 2008. *14*(8), 1105-1111.

Food Avoidance Patterns in IBD

- Patients may change their diet based on beliefs/fears that specific foods will worsen or resolve their symptoms.
- A prevalence of food avoidance (28–89%) and restrictive eating (41–93%) and is a contributor to malnutrition.
- Food avoidance $\rightarrow\rightarrow\rightarrow$ Avoidant/Restrictive Food Intake Disorder (ARFID).
  - + lack of interest in eating, avoidance of sensory aspects of food, and/or fear of consequences with foods.
  - No concerns with body image or weight status.

Screening tools available.

Day A S, Yao C K, Costello S P, Andrews J M, & Bryant R V. Food avoidance, restrictive eating behaviour and association with quality of life in adults with inflammatory bowel disease: A systematic scoping review. *Appetite.* 2021. *167*, 105650.

Spotlight: Fiber Studies

Crohn's Disease

In a prospective study, 1619 patients in remission with CD and UC completed an internet survey.

Results: those with CD that had the highest quartile for fiber intake were 40% less likely to flare at the 6 month follow-up. In UC, no link between fiber intake and flares.

Ulcerative Colitis

In a cross-over study, 17 patients in remission followed either a low fat, high fiber diet or a standard American diet for the first 4 weeks, a two week washout period, and then switched.

Results: those followed the ↓ fat/↑ fiber diet had a ↓ in CRP levels (3.23 mg/L at baseline to 2.51 mg/L) and ↓ intestinal dysbiosis through evaluation of fecal samples.

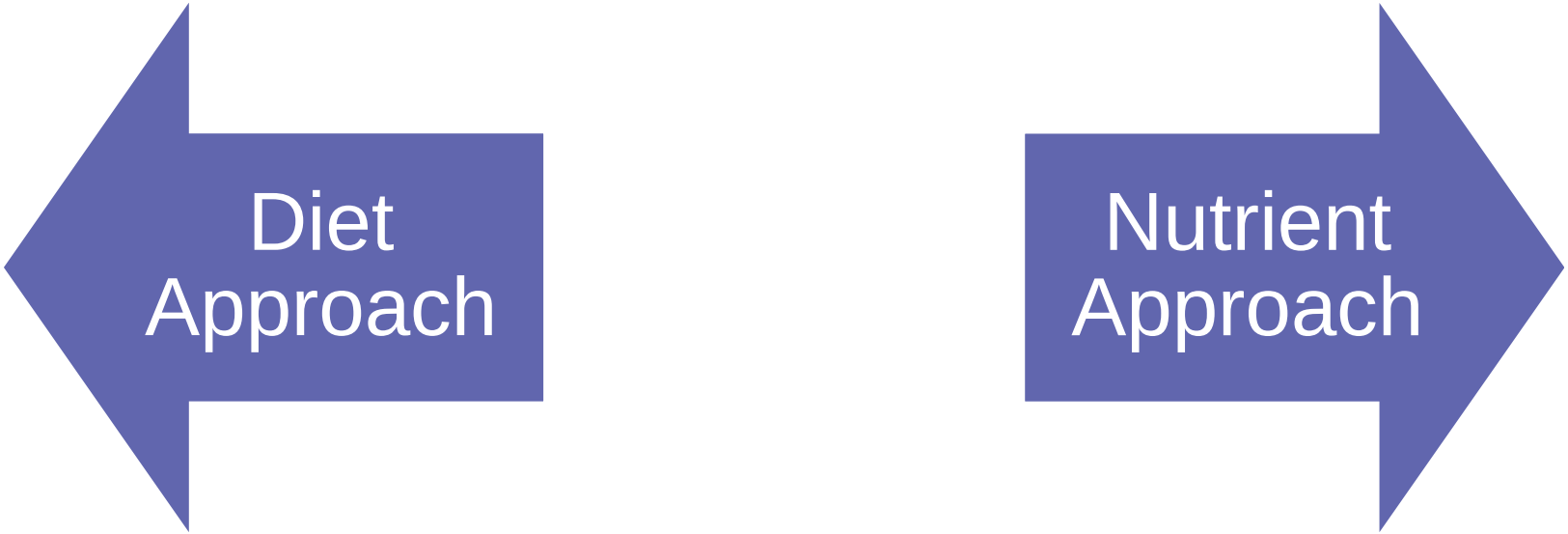
Further studies are warranted.

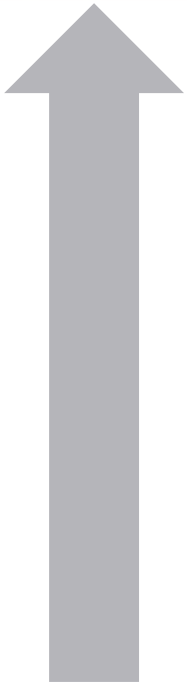
Brotherton C S, Martin C A, Long M D, Kappelman M D, & Sandler R S. Avoidance of fiber is associated with greater risk of Crohn's disease flare in a 6-month period. *Clinical Gastroenterology and Hepatology.* 2016. *14*(8), 1130-113;

Fritsch J, Garces L, Quintero M A, Pignac-Kobinger J, Santander A M, Fernández I, ... & Abreu M T. Low-fat, high-fiber diet reduces markers of inflammation and dysbiosis and improves quality of life in patients with ulcerative colitis. *Clinical Gastroenterology and Hepatology*. 2021. *19*(6), 1189-1199.

Do we want to use a formal diet?
(may or may not be appropriate based on evidence, status of diet, and ability to implement)

Do we want to focus on adding nutrients (e.g., fiber) that are missing from the diet?
(without a label of a diet, brings a focus on tolerable foods from each food group)





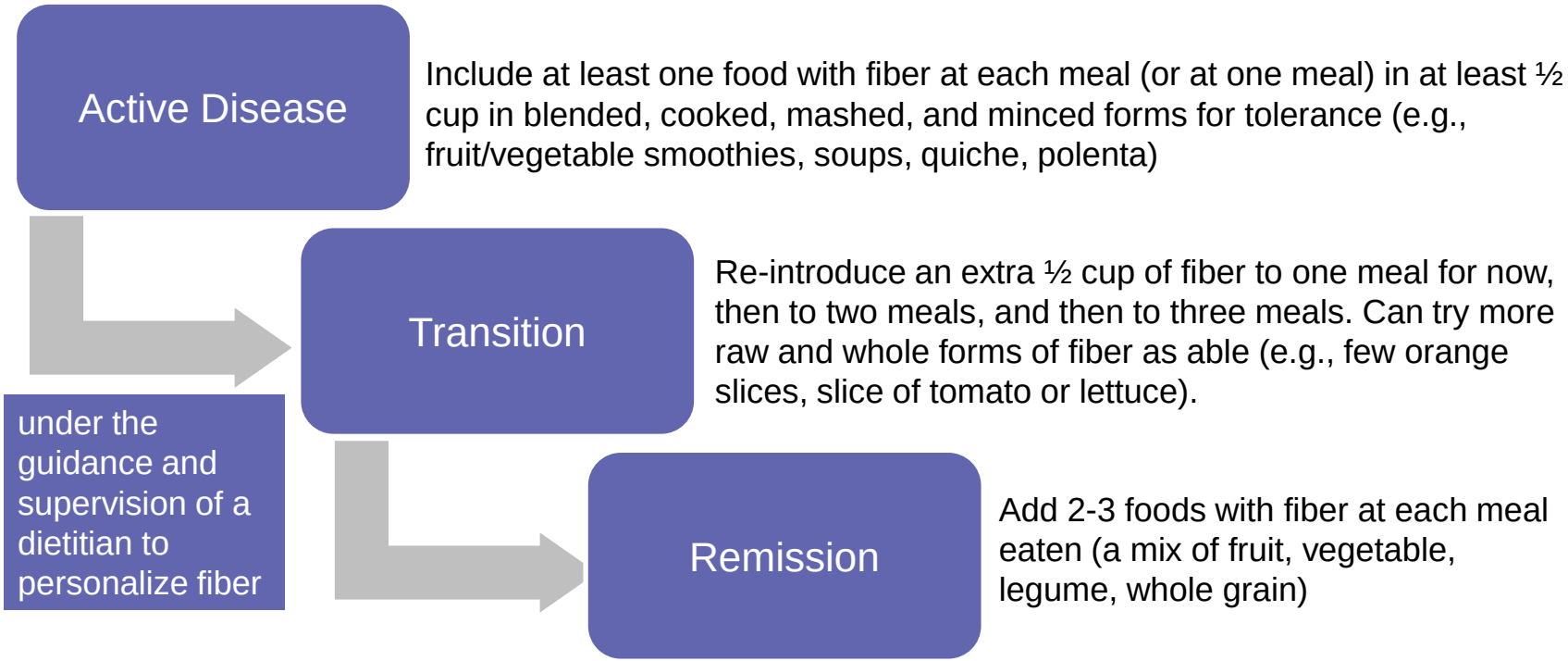
To address nutrition concerns…

must build trust with the diet…

with few foods at a time…

to move forward…

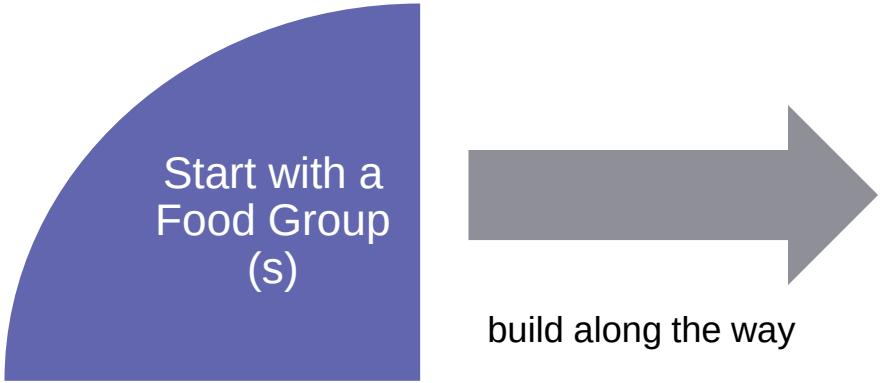
Diet Phases for Fiber



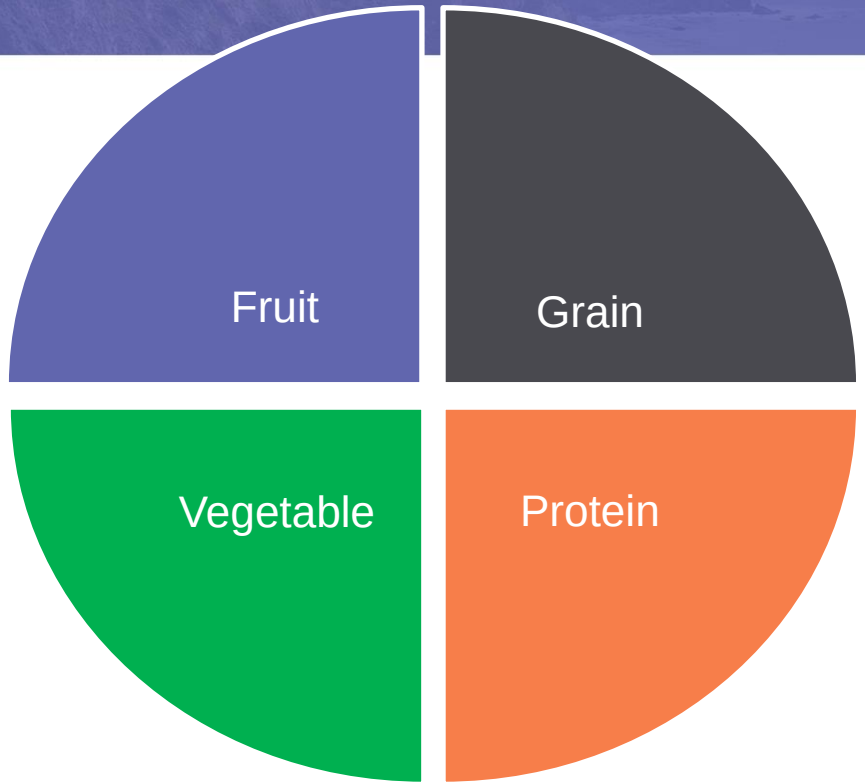
Case: Start With a Food Group(s)

Food Group	Portions/Frequency	Ideas
Add a fresh fruit or cooked vegetable	½ cup at one meal 3x/week	cantaloupe potatoes w/o skin blueberries squash w/o skin grapes
Add a grain (with gluten or gluten free)	½ cup or slice at one meal once a day	oatmeal pasta wheat bread

With patient input, not comfortable with adding dairy, smoothies, or more meals.
Kept all foods and fluids that the patient has deemed “safe”.
Drink all protein shakes (aim for at least three bottles in the day).



build along the way



Focus on additions (e.g., fiber) based on symptoms, preferences, lifestyle, culture, access, and culinary skills

GOAL: each meal

Practical Applications

- Although there are many diets proposed in the treatment of IBD, further studies are warranted on its claims and important to discuss risks and benefits with patients.
- Recognize contributors along with signs and symptoms of malnutrition that may require medical, nutrition, and psychosocial interventions.
- A starting point: + individual foods of fiber to build trust before doing meals of multiple foods with fiber! Know that types, portions, consistency, and frequency are key to tolerance.

Case: 1.5 Years Later

- 113 lb. >>>150 lb. in midst of active disease.
- + two meals/one snack with multiple food groups daily.
- + two bottles of Kate Farms 1.4 a day.
- Reports ↑ confidence with food-related decisions.
- + deep breathing exercises.
- Living in his own apartment.

Additions (sample) Woo hoo!

blended beans, roasted chickpeas, lentil soups, black-eyed peas, tofu, edamame, chapati, millet, rice noodles, chickpea pasta, wheat bread, quinoa, nut butter, walnuts, apple, avocado, banana, berries, olives, tangerine, asparagus, broccoli, garlic, onion, okra, kale, potato, pesto, radish, spinach