

Rethinking Nutrition in IBS and IBD: Evidence-informed care for real-world patients

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Objectives

- Explore how nutrition's role in IBS and IBD care is shifting from restriction to regulation.
- Understand how integrating diet, psychology, and gastroenterology can improve outcomes.
- Learn to translate clinical nutrition evidence based practices into practical, real-world strategies for your patients.
- Discover ways to support patients in rebuilding food confidence and reducing symptom anxiety.
- See how multidisciplinary teams can collaborate effectively to deliver cohesive care.



Defining IBS

Defining IBS

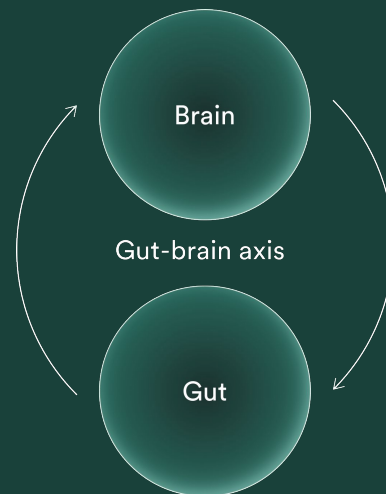
- **Clinically:** Irregular bowel habits and abdominal pain (Rome IV criteria)
 - Symptoms present ≥ 1 day/wk in the last 3 months (on average) *with ≥ 2 of the following:*
 - Abdominal pain related to defecation (worsening or improving)
 - Associated with change in stool frequency (increased or decreased)
 - Associated with change in stool consistency/form (Bristol stool scale)
 - IBS subtypes (constipation, diarrhea, mixed, undefined)
- **Pathophysiologically:** chronic disorder of gut-brain interaction (DGBI) best explained by the Gut-Brain Axis (GBA)
- **Can be relapsing and remitting**



Defining IBS – Gut-Brain Axis (GBA)

Constant communication through nerves, hormones, and immune signals — shaping digestion, mood, and pain perception.

- Bidirectional communication between the CNS and enteric nervous system via:
 - Neural (nerve-based) — via the autonomic and enteric nervous systems
 - Endocrine (hormone-based) — via stress hormones, gut peptides, etc.
 - Immune (cytokine-based) — via inflammation and barrier function
 - *microbiome interacts at all of these levels
- Send signals regarding
 - Motility
 - Secretion of gastrointestinal fluids
 - Immune activity and inflammation
 - Pain and visceral sensation
 - Mood and stress responses
- Influenced by combination of factors including genetics, physiological and psychological responses to stress, diet, age, geographical origin, infections, and use of antibiotics



Take home: IBS is sensory amplification due to **gut-brain dysregulation**, not damage or inflammation

Defining IBS - IBS threshold

Triggers:

Alcohol: Stimulates motility and irritates the gut lining

Caffeine: Increases gut contractions

High-fat or fried foods: Delays gastric emptying, triggers bile acids

High-sugar or ultra-processed foods:

Fermentation, dysbiosis

Stress and anxiety: Activates sympathetic response, changes to vagus nerve

Poor sleep: Increases cortisol, reduces pain tolerance

Skipping meals / irregular eating: Alters motility and hormone rhythms



Gas, bloating, pain,
diarrhea/
constipation

Defining IBS - IBS threshold

How can we raise the threshold?

Alcohol
Caffeine
High-fat or fried foods
High-sugar or
ultra-processed foods

Better sleep
Stress management
Fiber tolerance training
Consistent meal timing
Movement
Microbiome diversity
Gut directed hypnotherapy (Nerva)

Key takeaway: IBS is about how the gut processes input, not just what input it gets.

Healthy balanced diet + lifestyle



Nutrition in IBS — Regulation Over Restriction

Nutrition in IBS — Traditional IBS Dietary Advice

UpToDate - Traditional IBS Dietary Advice

Meal planning

- Eat at regular mealtimes
- Avoid missing meals or leaving long gaps between eating
- Prioritize smaller, more frequent meals
- **Eat when you are relaxed and CHEW WELL (step away from your computer for 20 minutes to eat during the workday)**

Foods to limit/avoid

- Gas-producing foods (eg, beans, onions, cabbage, etc)
- High-fat foods, including fried foods
- Lactose-containing foods (eg, dairy) (No higher incidence of lactose intolerance in IBS, BUT someone with lactose intolerance AND IBS likely to be more symptomatic)
- Insoluble fiber (eg, wheat bran, brown rice, nonstarchy fruits and vegetables)
- Any personal IBS triggers

Foods and supplements to increase soluble fiber intake

- Psyllium husk fiber **(start with 3-5 g in evening ~45 min-1 hour before bed)**
- Oat bran, barley, legumes **(however caution with legumes, best to add in gradually as symptoms improve)**

Liquids

- Stay well hydrated
- Reduce intake of alcohol, caffeine, and carbonated beverages

Nutrition in IBS — Traditional IBS Dietary Advice

UpToDate: Foods commonly associated with gas and bloating

Milk and dairy products

Cheese (may/may not relate to lactose), ice cream, milk

Vegetables

Asparagus, broccoli, brussel sprouts, cabbage, cauliflower, celery, corn, cucumber, kohlrabi, leeks, onions, parsnips, potatoes, radishes, rutabaga, turnips

Fruits

Apples, apricots, bananas, peaches, pears, prunes, raisins

Whole grains

Bagels, bran/bran cereal, pretzels, wheat and oats, wheat germ

Legumes

Baked beans, beans, lima beans, peas, soybeans

Fatty foods

Fried foods, pork* * Pork is associated with foul-smelling gas.

Liquids

Beer, carbonated beverages, carbonated medications

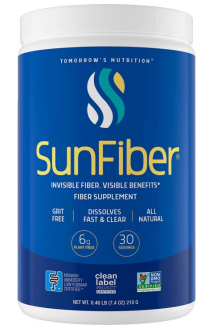
Miscellaneous

Artificial sweeteners, chewing gum (sugar alcohols are HUGE for some. End in “-ol” like erythritol, sorbitol, xylitol)

Nutrition in IBS

Soluble fiber supplements

- Psyllium husk fiber = wonder drug
- If mild constipation: start with 2-3 doses Miralax daily in PM for 2-3 days (or until you've have a few "good" BM).
- If really constipated: bigger clean out with Miralax or Golytely
- THEN start on fiber supplement, take in EVENINGS



*Sunfiber is not psyllium husk, it is from the guar plant. May be better tolerated if sensitive to gas/bloating from psyllium husk

Nutrition in IBS — Low-FODMAP diet

Low-FODMAP diet – reserve this for patients that do not get adequate relief with traditional dietary advice

- Low FODMAP diet:
 - Diet low in fermentable oligo-, di-, and monosaccharides and polyols
 - FODMAPs are short-chain carbohydrates that are poorly absorbed in the small intestine. Instead, they stay osmotically active in the intestinal lumen, where they are rapidly fermented, resulting in luminal distension, increased intestinal permeability, and symptoms of abdominal bloating and pain.
 - Numerous studies show improvement in global symptom scores compared to placebo. May have higher efficacy in IBS-D
- NOT a long-term solution. Can help give “rest” from symptoms, allows time to work on GBA
- Can help identify triggers

Characteristics and sources of common FODMAPs

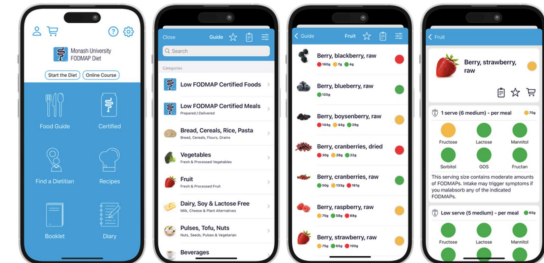
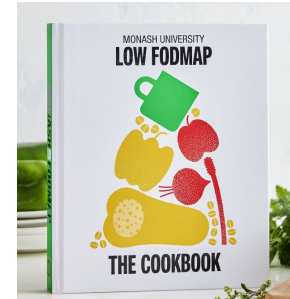
	Word that corresponds to letter in acronym	Compounds in this category	Foods that contain these compounds
F	Fermentable		
O	Oligosaccharides	Fructans, galacto-oligosaccharides	Wheat, barley, rye, onion, leek, white part of spring onion, garlic, shallots, artichokes, beetroot, fennel, peas, chicory, pistachio, cashews, legumes, lentils, and chickpeas
D	Disaccharides	Lactose	Milk, custard, ice cream, and yogurt
M	Monosaccharides	"Free fructose" (fructose in excess of glucose)	Apples, pears, mangoes, cherries, watermelon, asparagus, sugar snap peas, honey, high-fructose corn syrup
A	And		
P	Polyols	Sorbitol, mannitol, maltitol, and xylitol	Apples, pears, apricots, cherries, nectarines, peaches, plums, watermelon, mushrooms, cauliflower, artificially sweetened chewing gum and confectionery

FODMAPs: fermentable oligosaccharides, disaccharides, monosaccharides, and polyols.

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Nutrition in IBS — Low-FODMAP diet

- Basics of the diet
 - **Step 1:** Eliminate high-FODMAP foods x4-6 weeks
 - If symptoms IMPROVED, then move on to reintroduction phase
 - If NO IMPROVEMENT, no need to do reintroduction phase
 - **Step 2:** gradual reintroduction of high-FODMAP foods x6-8 weeks
 - Typically, one high-FODMAP food is reintroduced.
 - Allow for 3 days before reintroducing another new food
 - Could also try modified low-FODMAP (cutting out fructans and galacto-oligosaccharides only)
 - Not yet validated
- Best to have dietitian help with this, however another great option is **Monash University Low-FODMAP App (\$7.99)**, also cookbook available (\$44.95)



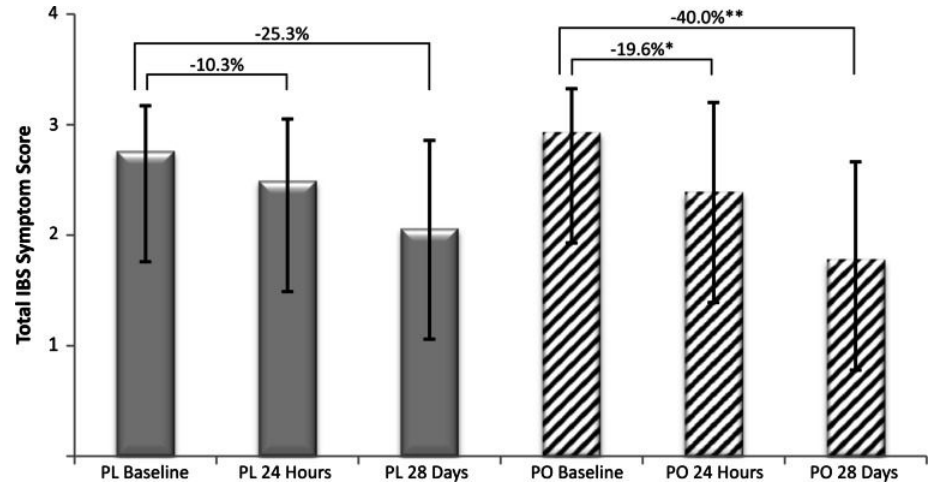
What supplements may have a benefit in IBS?

Enteric coated peppermint oil for IBS - IBSREST

- The Irritable Bowel Syndrome Reduction Evaluation and Safety Trial (IBSREST) evaluated efficacy of triple-coated microspheres of highly purified **peppermint oil** (IBgard) **vs placebo** in **patients with IBS** for symptom reduction
- **MoA:** active ingredient, **l-menthol** provides **smooth muscle calcium channel antagonism**
 - Additionally normalization of orocecal transit time, carminative effects, kappa opioid agonism, anti-infective and anti-inflammatory effects, and serotonergic (5HT)
- 4-week, randomized, double-blind, placebo-controlled clinical trial of peppermint oil vs placebo
 - N=72 patients with IBS-M and IBS-D
 - Treatment was **PO 180 mg TID x4 weeks**
 - **primary endpoint = change from baseline in the Total IBS Symptom Score** (TISS) after 4 weeks of treatment
 - Total IBS Symptom Score (TISS): mean intensity and frequency score for each of the 8 IBS symptoms (abdominal pain or discomfort, bloating or distension, pain at evacuation, urgency of BM, constipation, diarrhea, mucus or gas, sense of incomplete evacuation) summed and divided by 8

Enteric coated peppermint oil for IBS - IBSREST

- After 4 weeks primary endpoint met with statistical significance (**decrease in total IBS symptom score**)
 - Also seen after 24 hours
- Treatment-emergent adverse events: total of 6 patients reported (2 in PO 4 in placebo)
 - flatulence, dyspepsia, and GERD



Enteric coated peppermint oil for IBS



2 capsules = 180 mg peppermint oil
96 capsules = \$59.88



2 softgels = 362 mg (also
contains ginger oil and fennel oil)
90 softgels = \$18

Nutrition in Inflammatory Bowel Disease (IBD)

Defining IBD

- **Inflammatory bowel disease (IBD):** is a chronic, immune-mediated disease of the gastrointestinal tract characterized by inflammation, ulceration, and tissue damage, with a relapsing–remitting course.
 - The two main types are **Crohn's disease** and **ulcerative colitis**.
 - **Ulcerative colitis:**
 - only affects the colon
 - limited to mucosal layer
 - usually involves the rectum, and can extend to more proximal portions of the colon in a continuous fashion
 - **Crohn's disease:**
 - anywhere from mouth to anus (primarily small bowel and colon)
 - all 4 layers of GI tract (transmural inflammation)
 - skip areas of involvement (ie, segments of normal-appearing bowel interrupted by areas of disease).
 - can lead to fibrosis, strictures, fistulas
- Etiology of IBD remains largely unknown, it involves a complex interaction between the genetic, environmental or microbial factors and the immune responses.

INFLAMMATORY BOWEL DISEASE (IBD) CHRONIC INFLAMMATION & ULCERATION

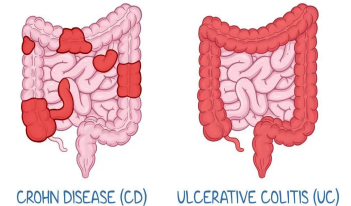
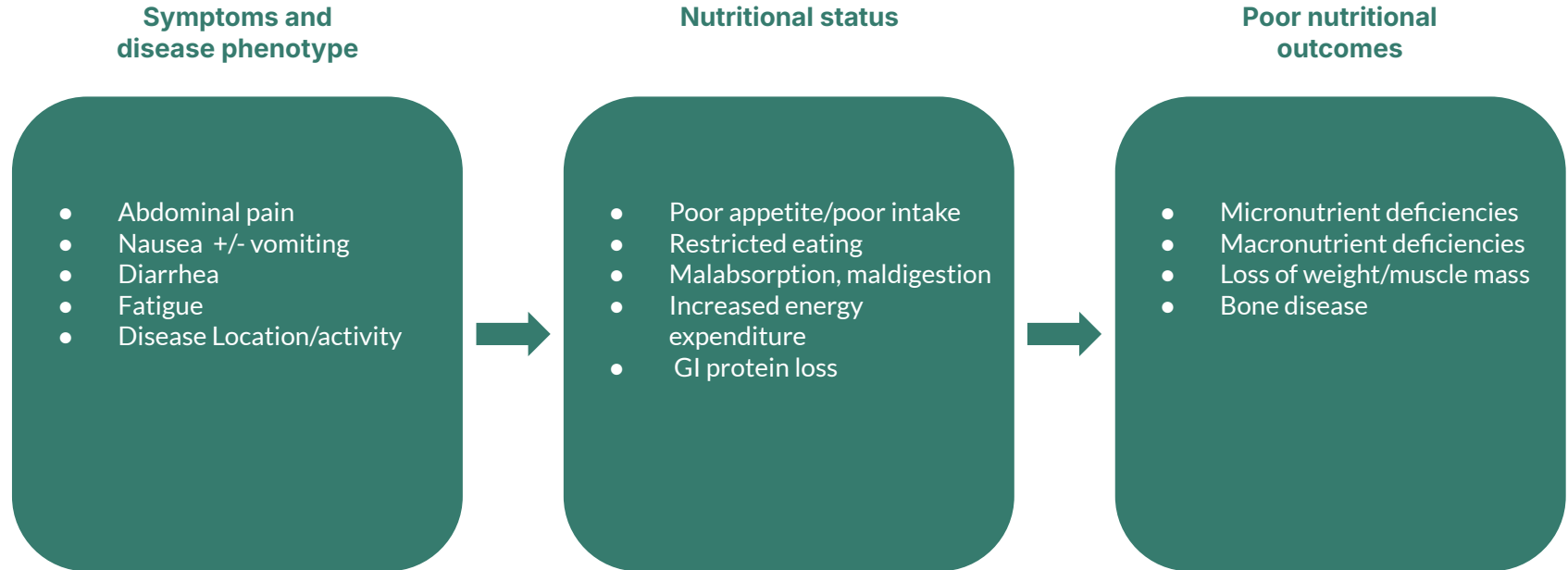


Image © Osmosis/Elsevier. "Inflammatory Bowel Disease". Available from: https://www.osmosis.org/learn/Inflammatory_Bowel_Disease

How IBD can affect nutritional outcomes



Macronutrient deficiencies

- IBD patients are at increased risk for malnutrition (diarrhea, food avoidance due to symptoms, increased energy needs)
 - Ask about weight changes and monitor weight at every visit
- May have increased energy needs and protein needs with more acute disease activity/inflammation
 - Increased protein needs with inflammation - may be up to 1.2-1.5 gm/kg/d
 - 1 gm/kg/d protein when in remission
 - protein needs may differ in kidney disease

Micronutrient deficiencies

Micronutrients

- Can be affected by disease location and extent of activity
- Can be affected by medications (methotrexate, sulfasalazine, thiopurines)

Labs, imaging

- CBC - iron stores
- Ferritin, serum iron, TIBC, transferrin saturation
- CMP and electrolytes
- 25-hydroxyvitamin D (especially with excessive steroid use)
- Vitamin B12
- Folate - can be affected by sulfasalazine, methotrexate
- ADEK - if more ileal disease/resection
- Zinc - ostomies, fistulas, or profuse diarrhea >8 watery stools daily, ostomy output >1500 mL/day
 - Less common selenium and copper
- DEXA scan (BMI <18.5, excessive steroid use = >3 months of steroids in a 12 month timeframe)
- CRP, fecal calprotectin (for assessing inflammation)

UpToDate. Nutrition and dietary management for adults with inflammatory bowel disease.

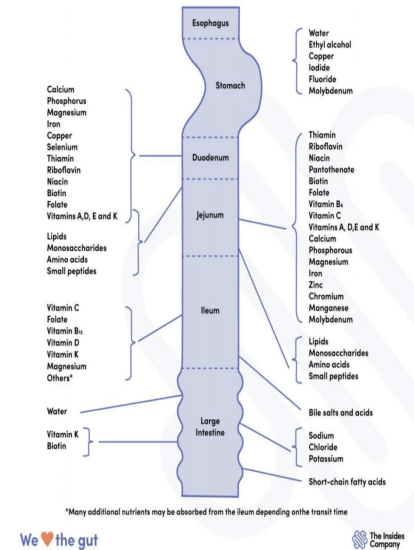
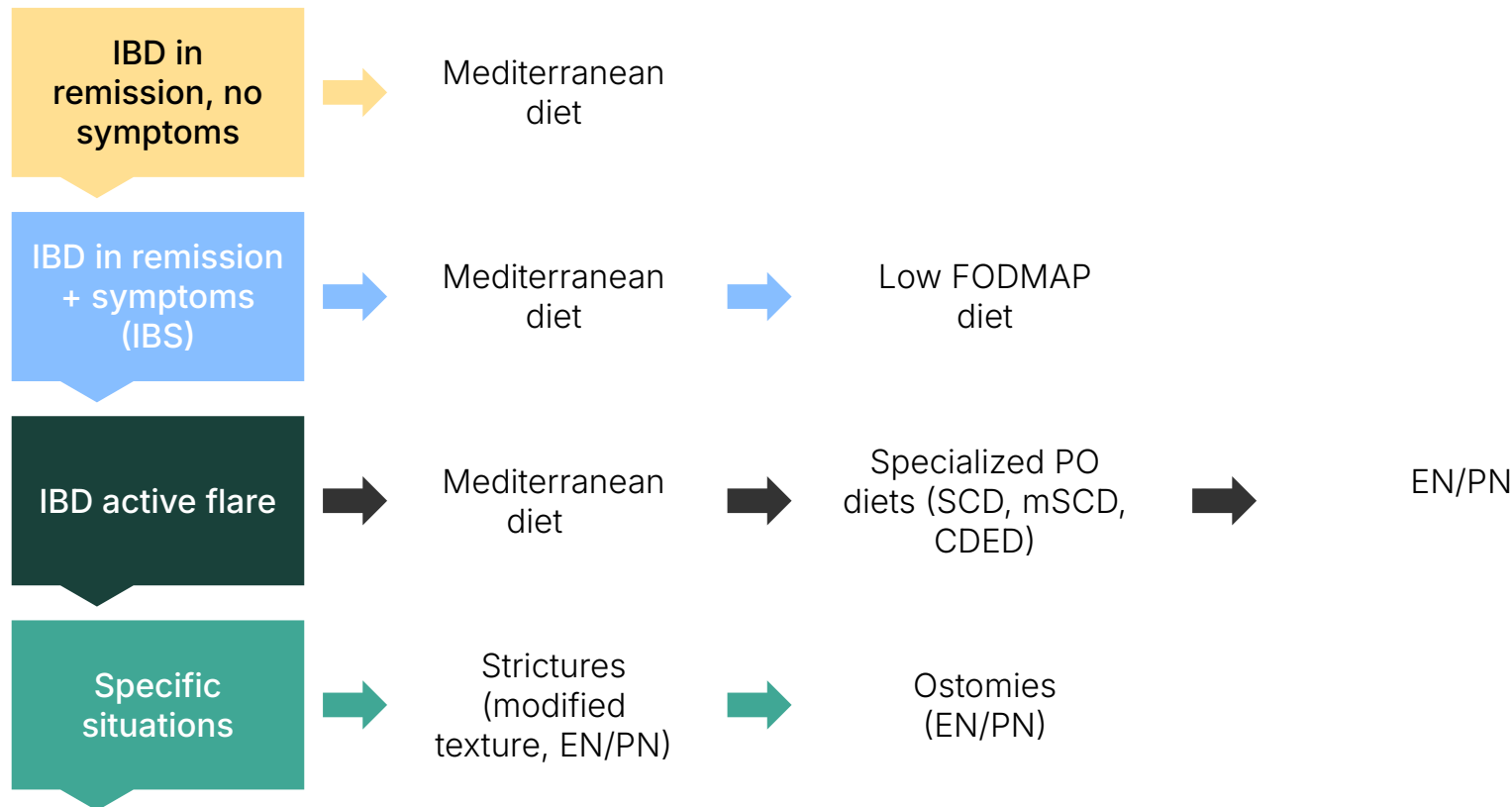


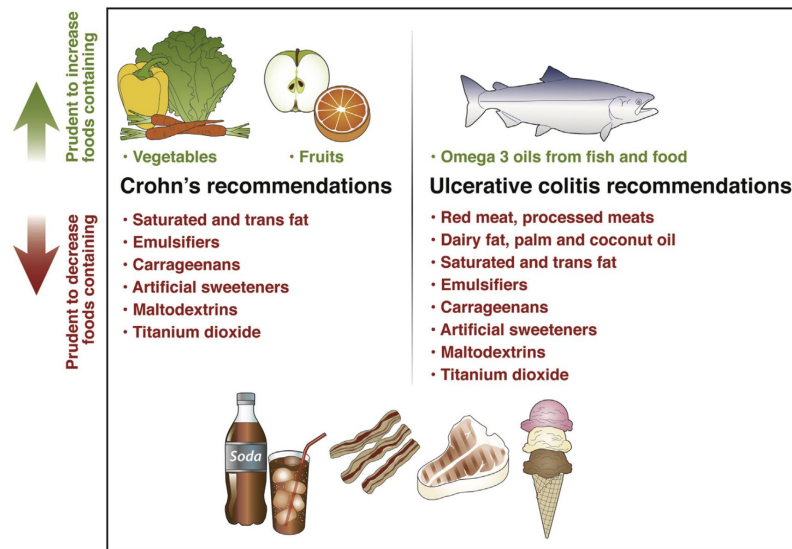
Photo:
<https://www.theinsides.co/blog/nutrient-absorption-in-the-gastro-intestinal-system>

What diet is right for my patient?



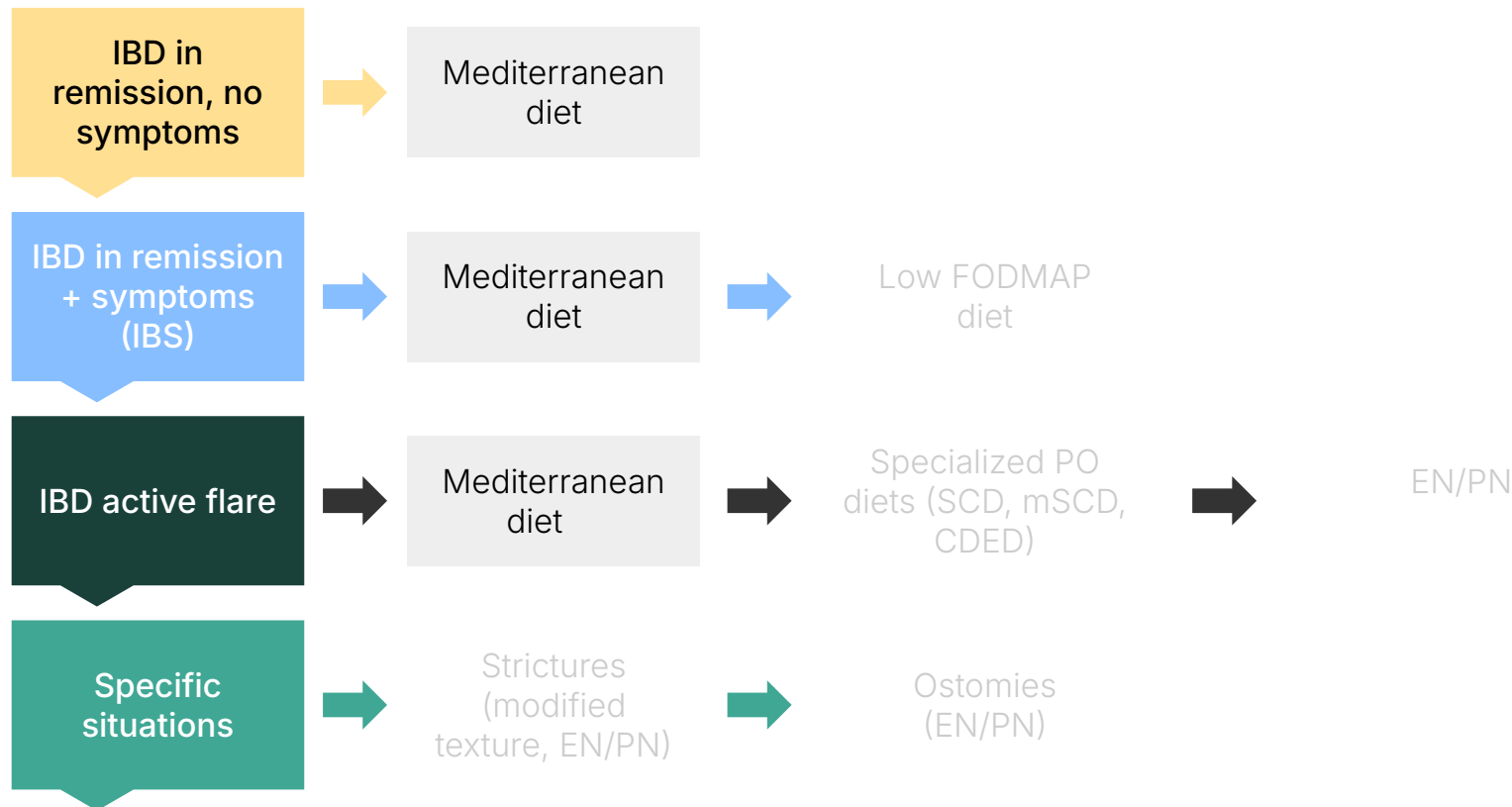
IOBD Guidelines

- International Organization for the Study of Inflammatory Bowel Disease (IOIBD) put together evidence-based recommendations of potentially beneficial or harmful dietary components.
- **Crohn's: Increase** fruits/veggies (in the absence of symptomatic strictures)
- **UC: Increase** natural sources of omega-3 FA (salmon, sardines, chia seeds, hemp seeds, edamame)
- **Avoid:** processed foods, emulsifiers, carrageenans, artificial sweeteners and some specific preservatives listed
- Not enough evidence to make recommendations based on gluten, poultry, alcohol, refined sugar
- Persistent symptoms despite no active inflammation: low FODMAP, lactose-free



What diets can we use and
when are they appropriate?

What diet is right for my patient?



Mediterranean diet

- Previously IBD recommendations more focus on low fiber/low residue diet
- Now more emphasis on variety of fruits and veggies that includes plenty of soluble fiber
- Recent study showed in adults with mild-moderate CD a mediterranean and SCD diet had similar efficacy in achieving symptomatic remission and calprotectin response (DINE-CD)
- Also health benefits for CVD, metabolic syndrome, cancer

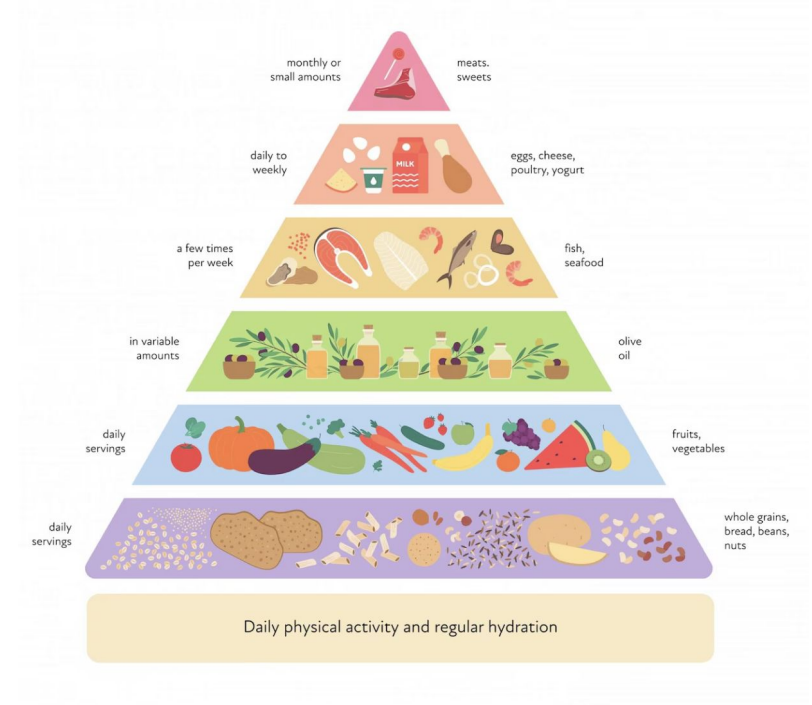
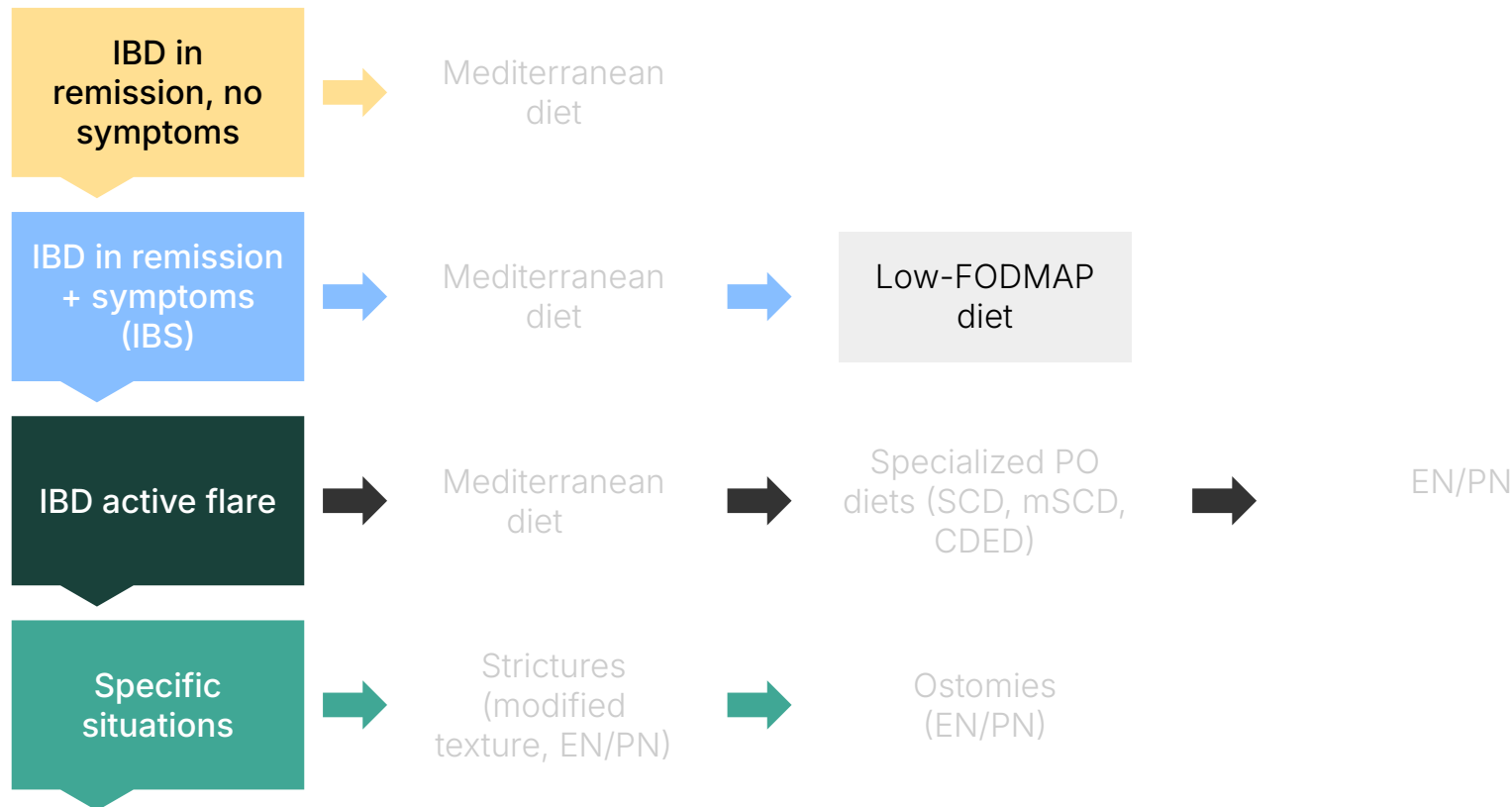


Photo: image from:
<https://abcnews.go.com/GMA/Wellness/mediterranean-diet-ranked-best-diet/story?id=95983625>

What diet is right for my patient?



Low FODMAP diet

- Can decrease symptoms and improve QoL but does not decrease inflammation in IBD
- Not recommended long-term
 - Can decrease amount of certain bacteria that can be associated with endoscopic and clinical remission in IBD
 - Can decreased short-chain fatty acids like butyrate (key nutrient for gut epithelial health)
 - Recommended to follow low FODMAP for 2-6 weeks, then reintroduction phase which can take 6-8 weeks to complete.
- Monash University for low FODMAP info (Great App for patients!)

Foods suitable on a low-fodmap diet

fruit	vegetables	grain foods	milk products	other
fruit banana, blueberry, boysenberry, cantaloupe, cranberry, durian, grape, grapefruit, honeydew melon, kiwifruit, lemon, lime, mandarin, orange, passionfruit, pawpaw, raspberry, rhubarb, rockmelon, star anise, strawberry, tangelo <small>Note: if fruit is dried, eat in small quantities</small>	vegetables asparagus, bamboo shoots, bean shoots, bok choy, carrot, celery, choko, choy sum, eggplant, endive, ginger, green beans, lettuce, olives, parsnip, potato, pumpkin, red capsicum (bell pepper), silver beet, spinach, squash, sweet potato, taro, tomato, turnip, yam, zucchini herbs basil, chili, coriander, ginger, lemongrass, marjoram, mint, oregano, parsley, rosemary, thyme	cereals gluten-free bread or cereal products bread 100% spelt bread rice oats polenta other arrowroot, millet, psyllium, quinoa, sorghum, tapioca	milk lactose-free milk*, oat milk*, rice milk*, soy milk* <small>*check for additives</small> cheeses hard cheeses, and brie and camembert yoghurt lactose-free varieties ice-cream substitutes gelato, sorbet butter substitutes olive oil	tofu sweeteners sugar* (sucrose), glucose, artificial sweeteners not ending in '-ol' honey substitutes golden syrup*, maple syrup*, molasses, treacle <small>*small quantities</small>

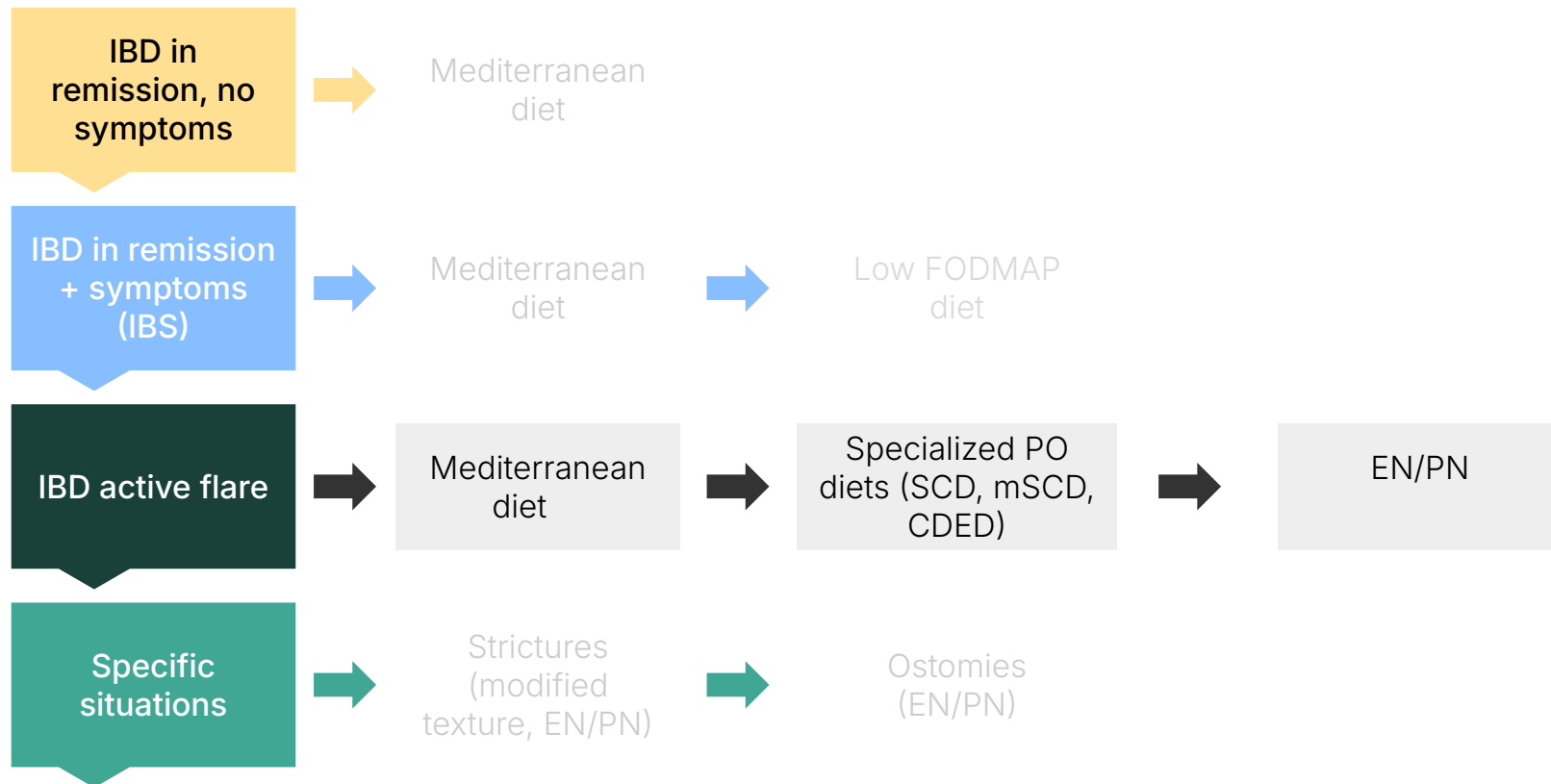
Eliminate foods containing fodmaps

excess fructose	lactose	fructans	galactans	polyols
fruit apple, mango, nashi, pear, tinned fruit in natural juice, watermelon sweeteners fructose, high fructose corn syrup large total fructose dose concentrated fruit sources, large serves of fruit, dried fruit, fruit juice honey corn syrup, fruitana	milk milk from cows, goats or sheep, custard, ice cream, yoghurt cheeses soft unripened cheeses eg cottage, cream, mascarpone, ricotta	vegetables artichoke, asparagus, beetroot, broccoli, brussels sprouts, cabbage, fennel, garlic, leek, olive, onion (all), shallots, spring onion cereals wheat and rye, in large amounts eg bread, crackers, cookies, couscous, pasta fruit custard apple, persimmon, watermelon miscellaneous chicory, dandelion, inulin, psyllio	legumes baked beans, chickpeas, kidney beans, lentils, soy beans galactans cauliflower, green capsicum (bell pepper), mushroom, sweet corn	fruit apple, apricot, avocado, blackberry, cherry, longan, lychee, nashi, nectarine, peach, pear, plum, prune, watermelon vegetables cauliflower, green capsicum (bell pepper), mushroom, sweet corn sweeteners sorbitol (420), mannitol (421), isomalt (953), maltitol (965), xylitol (967)

IBS Self Help and Support Group - www.ibsgroup.org

Image: <https://www.ganjlilc.com/low-fodmap-diets-and-ibs-do-they-work/>

What diet is right for my patient?



Specific Carbohydrate Diet (SCD)

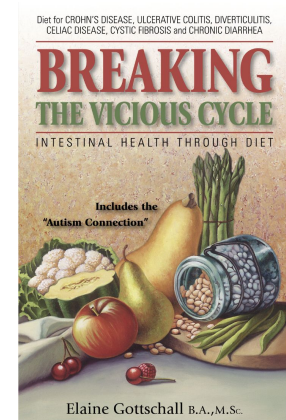
- Simple CHO > complex CHO
- Readily absorbed, requires less digestion
- Undigested complex CHO → substrate for pro-inflammatory bacterial species → increase gut permeability → gas, bloating, inflammation..etc

Emphasis on

- Unprocessed meats, eggs
- Minimal lactose: aged cheeses, fully fermented yogurt (Kefir)
- Most nuts/seeds
- Certain legumes (lentils, split peas)
- Some fresh fruits and vegetables

Avoidance of

- All grains (rice, corn, wheat, etc)
- Sweeteners (except honey)
- Dairy (other than those listed)
- Starchy vegetables (potatoes, yams)
- Certain legumes (chickpea, soybeans)
- Artificial sweeteners, additives, emulsifiers
- Processed foods



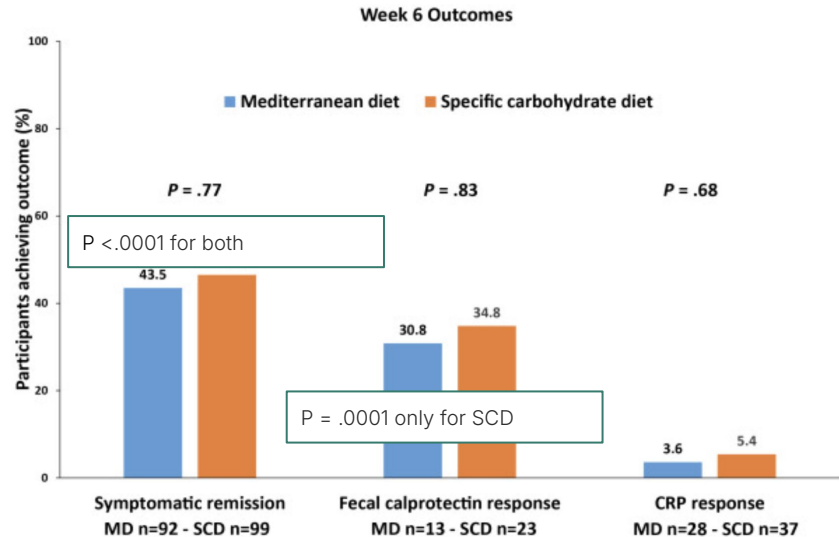
<https://healthygut.com/about-the-scd-diet/>

DINE-CD: RCT of Specific Carbohydrate Diet (SCD) vs. Mediterranean (MED) Diet

- **Goal:** compare the efficacy of the Specific Carbohydrate Diet (SCD) to the Mediterranean diet (MD) as treatment for Crohn's disease with mild to moderate symptoms.
- Adults with active **CD with mild-moderate symptoms** (sCDAI 176-399)
- **Randomized 1:1 to SCD or MD x12 weeks**
 - First 6 weeks food provided
 - Second 6 weeks patients supplied their own food
- Also stable on medications (54-60% of participants were on biologics)
- **Primary outcome** = symptomatic remission at week 6 (sCDAI <150 in the absence of initiation or increase of any CD medications)
- **Secondary outcomes**
 - Fecal calprotectin <250 µg/g and >50% reduction from screening among those with baseline FC >250 µg/g
 - hsCRP <5 mg/L and >50% reduction from screening among those with baseline hsCRP >5 mg/L

DINE-CD: RCT of Specific Carbohydrate Diet (SCD) vs. Mediterranean (MED) Diet

- 191 patient included in efficacy analysis
- **Primary outcome** (sCDAI <150)
 - 44-47% participants with symptom remission
 - No significant difference between the two diets
- **Secondary outcomes**
 - 30-35% participants with FC improvement
 - No change in CRP (but not very elevated to begin with)
- 12 week outcomes show similar symptomatic response. No significant difference with calprotectin and CRP.
- **Take home:** Both diets similar efficacy in symptomatic remission and some improvement in biomarkers, MD may be more favorable given less restrictive

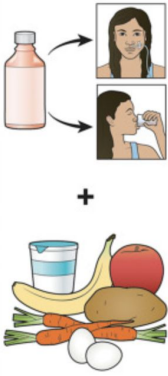


Modified Specific Carbohydrate diet (mSCD)

- Five additional foods
 - oats, organic rice, sweet potatoes, Grade A maple syrup, 100% unsweetened cocoa in certain allowable quantities
- RCT (2020) SCD vs mSCD vs whole foods diet
 - n=18, pediatric patients, mild-moderate CD, 12 weeks
 - 10 completed study, all achieved clinical remission, improved CRP
 - More exclusionary diets with greater decrease in CRP

Crohn's Disease Exclusion Diet (CDED) + PEN

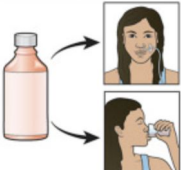
- **Whole foods + PEN**
- **Goal:** limit foods that are believed to negatively impact intestinal microbiome, intestinal barrier function, or induce colonic inflammation
- **Emphasis on** high-quality lean protein, resistant starch, and moderate fiber, while **avoiding** high fat, dairy, high sugar, artificial additives, and emulsifiers
- Clinical trials have shown **remission rates in children and adults similar to that of exclusive EN**

PEN	Partial Enteral Nutrition (by mouth or feeding tube)		
	<ul style="list-style-type: none"> • Generally prescribed via oral route but can be offered via feeding tube • Total of 50%–80% calorie goal • Products are consumed in combination with food (either ad libitum or modified diet as in CDED) 		
	Phase 1 (week 1–6) <ul style="list-style-type: none"> • 50% calories via oral supplements • 1 serving fresh chicken, 2 eggs • 2 potatoes (peeled, cooked, cooled) • 2 bananas, 1 apple (peeled) • Additional allowed foods: rice & small amounts of low taurine fish • Restricted foods: red meat, high taurine seafood, alcohol 		
	Phase 2 (week 7–12) <ul style="list-style-type: none"> • 25% calories via oral supplements • 1 serving fresh chicken, 2 eggs • 2 potatoes (peeled, cooked, cooled) • 2 bananas, 1 apple • Additional allowed foods: rice & small amounts of low taurine fish, gradually increased variety of fruits, starches, vegetables in Phases 2 and 3 • Restricted foods: red meat, high taurine seafood, alcohol 		
	Phase 3 (week 13+) <ul style="list-style-type: none"> • 25% calories via oral supplements • No required foods • Encouraged to follow Phase 2 on weekdays and liberalize diet on weekends • Advances to full fat yogurt • Permanent restrictions: soft drinks, processed meats, emulsifiers, gums 		

Exclusive Enteral Nutrition (EEN)

Summary of data

- **100% of calories consumed as enteral supplements** via oral OR tube feeding.
- Can provide mucosal healing.
- Typically done for **6-8 weeks**.
- Can be offered as first-line treatment prior to steroids in pediatric patients with CD (achieving clinical remission rates similar to corticosteroids, 60-80% after ~6-12 weeks)
- More difficult in adults due to adherence
- Goal is to use it to induce remission, then liberalize diet
- Could making your own smoothies work too?

EEN	Exclusive Enteral Nutrition (by mouth or feeding tube)
	<ul style="list-style-type: none">• Generally prescribed via oral route but can be offered via feeding tube• No other food via oral means is allowed• 100% caloric intake is consumed via oral supplement and/or polymeric enteral support product• Oral nutrition supplements should be calorically appropriate and meet estimated needs for protein• Does <u>not</u> need to be an elemental formula, okay to use intact protein formulas

Are the EN formulas aligned with the IBD nutrition guidelines?

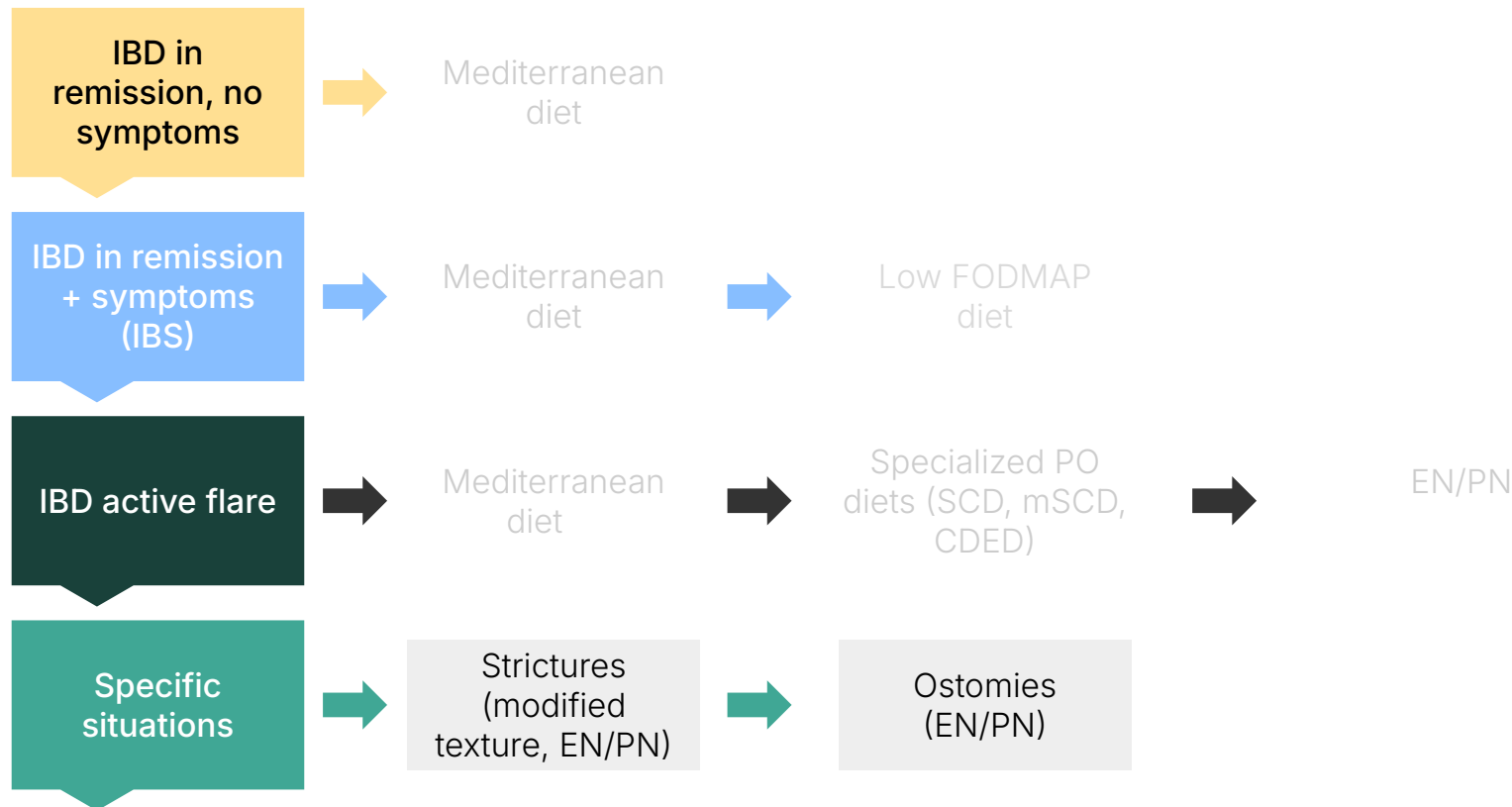
CORN SYRUP, CASEIN (FROM MILK), SUGAR (SUCROSE), MILK FAT, MEDIUM CHAIN TRIGLYCERIDES, CORN OIL, SOYA LECITHIN, VITAMINS AND MINERALS: POTASSIUM CITRATE, CALCIUM PHOSPHATE, SODIUM CITRATE, CALCIUM CARBONATE, MAGNESIUM CHLORIDE, POTASSIUM HYDROXIDE, POTASSIUM CHLORIDE, SODIUM ASCORBATE, CHOLINE BITARTRATE, FERROUS SULPHATE, DL-ALPHA TOCOPHERYL ACETATE, ZINC SULPHATE, MAGNESIUM OXIDE, NICOTINAMIDE, CALCIUM PANTOTHENATE, MANGANESE SULPHATE, PYRIDOXINE HYDROCHLORIDE, THIAMINE HYDROCHLORIDE, COPPER SULPHATE, RETINYL ACETATE, RIBOFLAVIN, FOLIC ACID, SODIUM MOLYBDATE, POTASSIUM IODIDE, CHROMIUM CHLORIDE, PHYLLIOQUINONE, SODIUM SELENATE, BIOTIN, CHOLECALCIFEROL, CYANOCOBALAMIN

Purified Water, Hydrolyzed Pea Protein*, Brown Rice Syrup Solids*, Agave Syrup*, High Linoleic Sunflower Oil*, Medium Chain Triglycerides (MCT from Coconut*), **Contains 1.5% or Less of:** Vanilla Extract*, Natural Flavor*, Agave Inulin*, Flaxseed Oil*, Pea Starch*, Locust Bean Gum*, Rosemary Extract*, Sunflower Lecithin*, **Spectra™ Phytonutrient Blend*** (Extracts and Concentrates from: Broccoli*, CoffeeBerry®, Green Tea*, Turmeric*, Kale*, Broccoli Sprout*, Acai*, Cinnamon*, Garlic*, Tomato*, Blueberry*, Carrot*, Beet*, Raspberry*, Spinach*, Tart Cherry*, Blackberry*), **Vitamins and Minerals** (Choline Bitartrate, Magnesium Chloride, Sodium Chloride, Tricalcium Phosphate, Sodium Ascorbate, Calcium Carbonate, Dimagnesium Phosphate, Potassium Chloride, Dipotassium Phosphate, DL-Alpha-Tocopheryl Acetate, Beta Carotene, Calcium Pantothenate, Cholecalciferol [Vitamin D3], Ferric Pyrophosphate, Niacinamide, Sodium Molybdate, Vitamin A Palmitate, Zinc Oxide, Biotin, Chromium Picolinate, Copper Sulfate, Cyanocobalamin [Vitamin B12], Folic Acid, Manganese Sulfate, Phylloquinone, Potassium Iodide, Pyridoxine Hydrochloride, Riboflavin, Sodium Selenite, Thiamine Hydrochloride), L-Cysteine, L-Carnitine, Taurine, L-Tryptophan. ***Organic**

Ingredients:

FILTERED WATER, PEA PROTEIN, NATURAL FLAVORS, ORGANIC ALKALIZED COCOA, ORGANIC HIGH OLEIC SUNFLOWER OIL, SUNFLOWER LECITHIN, TRISODIUM PHOSPHATE, TRIPOTASSIUM CITRATE, MONK FRUIT EXTRACT, GELLAN GUM, REB M (STEVIA EXTRACT), **ORGAIN ORGANIC FRUIT & VEGETABLE POWDER BLEND™** (ORGANIC APPLE FIBER, ORGANIC ACAI, ORGANIC BEET, ORGANIC KALE, ORGANIC RASPBERRY, ORGANIC SPINACH, ORGANIC TOMATO, ORGANIC BANANA, ORGANIC BLUEBERRY, ORGANIC CARROT), SEA SALT.

What diet is right for my patient?



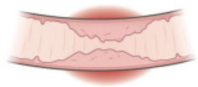
Specific situations

Symptomatic strictures

- Prior emphasis on avoiding fiber
- Now recommending OK to eat fruits/veggies BUT modify the texture (chew thoroughly, cook well, puree, blend)
- If severe may need EN/PN
- Small study showed in some patients EEN was able to achieve symptomatic remission, clinical remission and even radiologic remission in strictures after 12 weeks
- Another study of patients receiving EEN prior to surgery allowed 25% of patients to avoid need for surgery and also better post-op recovery for those that did receive EEN

High-output ostomies, intestinal fistulas, abscesses, short bowel syndromes, planned surgeries

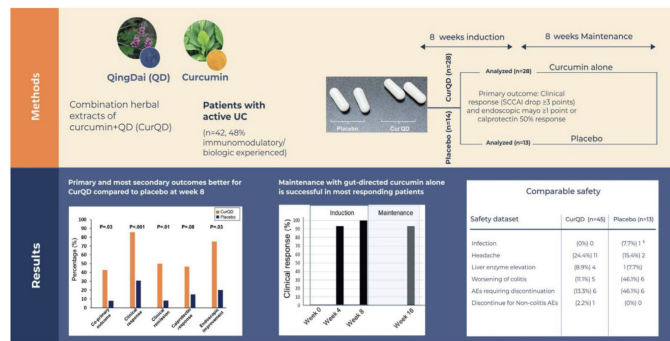
- May benefit from temporary PN

 <p>Stricture IBD</p>	<table><tr><td data-bbox="1130 562 1381 720"><p>✓</p><ul style="list-style-type: none">• Soluble fiber• Cooked/steamed• Peeled• Mashed/blended vegetables• Chew well</td><td data-bbox="1381 562 1609 720"><p>✗</p><ul style="list-style-type: none">• Roughage (indigestible fiber)• Unpeeled apples• Broccoli• Lettuce• Corn</td></tr></table>	<p>✓</p> <ul style="list-style-type: none">• Soluble fiber• Cooked/steamed• Peeled• Mashed/blended vegetables• Chew well	<p>✗</p> <ul style="list-style-type: none">• Roughage (indigestible fiber)• Unpeeled apples• Broccoli• Lettuce• Corn
<p>✓</p> <ul style="list-style-type: none">• Soluble fiber• Cooked/steamed• Peeled• Mashed/blended vegetables• Chew well	<p>✗</p> <ul style="list-style-type: none">• Roughage (indigestible fiber)• Unpeeled apples• Broccoli• Lettuce• Corn		

What supplements may have a benefit in IBD?

Supplements in IBD

- **Probiotics** - **Visbiome** has data on benefit of using their product in **UC for ileal-pouch management**
- **Curcumin-QingDai** combination as treatment for **moderate-severe UC**



Curcumin-QingDai Combination for Patients With Active Ulcerative Colitis: A Randomized, Double-Blinded, Placebo-Controlled Trial



CurQD® Protocol RED



CurQD® Protocol ORANGE

Summary

Nutrition in IBS

- Focus on understanding GBA with your patient
- Educate on IBS threshold (lifestyle triggers usually > dietary triggers)
 - Raise your threshold by lifestyle management (improving stress, sleep, mealtime as a priority, gut directed hypnotherapy, etc)
- Traditional IBS dietary advice is often enough if we can manage the IBS threshold
- Soluble fiber supplements = wonder drug
- Low-FODMAP diet may help with symptom rest and identifying triggers, not meant to be a long-term diet
- Enteric coated peppermint oil capsules may be helpful for IBS symptoms

Nutrition in IBD

- IBD patients at risk for malnutrition and micronutrient deficiencies both due to symptoms and disease activity
- Many diets available for patients with IBD
 - Mediterranean diet is least restrictive and appropriate for nearly all IBD patients
 - Consider low FODMAP diet for patients with IBD in remission if having IBS symptoms
 - More specialized exclusionary diets (SCD, CDED, modified textures, EN, PN) can be helpful for patients with active IBD flare, stricture, ostomies etc
- We have data that shows that these diets have the potential for improvement/remission of symptoms, decrease in biomarkers, and endoscopic improvements
- Many supplements marketed to patients with GI issues. Review the data. Sometimes less is more.

Questions?

Thank you all for listening and for your participation

Contact: mbinder@arizonadigestivehealth.com

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