

# Intestinal Permeability / Gut Barrier Support Protocol

Clinical support for promoting healthy gut barrier integrity and a healthy inflammatory response through evidence-based lifestyle, dietary, and nutrient interventions.\*

## Pathophysiology

**Intestinal permeability (IP)** is a state of **compromised gut barrier integrity** perpetuated by both **endogenous and exogenous stressors** such as diet, nutrient deficiencies/insufficiencies, lifestyle, gut microbiome imbalances, and immune dysregulation.<sup>1-3</sup> The impaired gut barrier function can be characterized by the dysregulation of **tight junction proteins**, the degradation of the **mucosal layer**, increased **paracellular transport**, **enterocyte apoptosis**, and/or **transcellular permeability**.<sup>3</sup> The compromised barrier allows macromolecules, pathogens, and other microorganisms to enter the submucosa through the epithelial layer, which triggers a **pro-inflammatory immune response** within the **gut-associated lymphoid tissue (GALT)**.<sup>3</sup>

**Symptom** presentation varies by type and severity, but may include food sensitivities or intolerances, heightened histamine responses, and irregularities in gastrointestinal (GI) function, such as abdominal distension or bowel fluctuations. **Extraintestinal manifestations** may also be present, particularly affecting the skin, headaches, and sinus congestion. Although the **precise etiology** remains unclear, current evidence suggests a **multifactorial origin** involving environmental triggers, microbiome dysbiosis, genetic susceptibility, and immune dysfunction.<sup>4</sup>

## Diagnostic Biomarkers and Clinical Indicators

- **Clinical diagnosis of IP** is based on a combination of **clinical features** and **biomarkers**.
  - Clinical features: visceral hypersensitivity, bowel irregularity, abdominal distention, nutrient deficiencies/insufficiencies, food sensitivities or intolerances
  - Extraintestinal: dermatological, headaches, sinus pain/congestion
- **Designs for Health GI Spotlight™** - microbial stool assay.
  - Gut Microbiome Balance: commensal and opportunistic microbes
  - Immune responses: secretory IgA, anti-gliadin IgA
  - Inflammation: lipopolysaccharides (LPS) from Gram-negative organisms
  - Intestinal Barrier Function: zonulin
- **Lactulose-Mannitol Test**<sup>5</sup>
  - Altered levels may indicate impaired gut barrier function.
- **Essential Fatty Acids (EFA) Analysis**<sup>6</sup>
  - Assessing omega-3/omega-6 ratios promotes clinical efforts in establishing a healthy immune and inflammatory response.
- **Comprehensive IgG Food Sensitivity and IgE Food Allergy Test**<sup>7, 8</sup>
  - IgG antibodies are often associated with increased IP.
  - IgE antibodies indicate true food allergies.
  - Assessing both can help guide individualized dietary and clinical interventions.

## Diet and Nutritional Considerations

- **Eliminate dietary factors** that may further exacerbate a hyperpermeable gut barrier state (alcohol, gluten, casein, and other antigenic proteins).<sup>2,9</sup>
- **Consider a broader Elimination Diet** to remove other common antigenic proteins, such as soy, corn, and eggs, for 21 days before reintroducing them individually.
- **Ensure adequate intake of calories, protein, and fats** with a GI-supportive dietary protocol to ease digestive burden until permeability is resolved.<sup>3</sup>
- **Incorporate nutrient-dense foods** that support a **healthy gut mucosal lining**.
  - **Examples:** vegetable and bone broths, mucilaginous foods (okra, slippery elm, marshmallow root), and foods rich in omega-3 fatty acids, probiotics, polyphenols, and high in fiber (soluble and insoluble).<sup>1,2,9-11</sup>
  - Choose **organic foods when possible** to minimize pesticide exposure. Animal studies show pesticide residues on conventional produce can disrupt the intestinal barrier.<sup>12</sup>
- Address **nutrient deficiencies** due to malabsorption or inflammatory status.
  - **Nutrients of concern:**
    - Vitamins: A, B1, B2, B3, B6, B12, D, E, and K<sup>9,13</sup>
    - Minerals: Calcium, iodine, magnesium, phosphorus, and potassium<sup>13</sup>
    - Omega-3 Fatty Acids<sup>6</sup>

## Lifestyle Interventions

- Promote **stress management** techniques to promote vagal tone and a healthy gut-brain axis, such as meditation, breathing exercises, and biofeedback.<sup>14</sup>
- **Encourage consistent sleep routines** to support immune and inflammatory balance.<sup>15</sup>
- **Recommend regular physical activity** (e.g., walking, yoga, dancing) that is both enjoyable and achievable for the patient.<sup>16,17</sup>
- **Advise limiting or eliminating alcohol and caffeine intake** based on individual tolerance.<sup>9,18,19</sup>
- Instruct patients to use the **Well World® Condition and Elimination Tracker** to identify and monitor symptoms, dietary triggers, and bowel movements.

# Supplement Protocol

Supplementation amounts are based on a 150-pound healthy adult and may be adjusted according to body weight. Practitioners should individualize protocol use by selecting some or all listed products, determining timing of introduction (i.e., all at once or staggered), and guiding duration based on clinical judgment, patient presentation, complaints, and biomarkers.

Product	Amount and Duration	Formula Highlights
<b>GI Revive®</b>	1 scoop in water per day, or 7 capsules per day  3 months; reevaluate biomarkers, signs, and symptoms	<ul style="list-style-type: none"> <li>• 15-in-1 formula featuring specific nutrients and botanicals for comprehensive intestinal barrier support, as well as promoting bowel regularity*</li> <li>• Supports healthy intestinal function by coating and soothing the GI lining and promoting the body's natural GI repair process*</li> <li>• Delivered in capsule or powdered form, sweetened with stevia leaf and monk fruit extract, and can be mixed into any beverage or functional food powder</li> </ul>
<b>IgGI Shield™</b>	1 scoop in water per day, or 4 capsules per day  3 months; reevaluate biomarkers, signs, and symptoms	<ul style="list-style-type: none"> <li>• Synergistic formula to help maintain a healthy gut lining, help remove toxins and microbes, and fortify the mucus layer*</li> <li>• Combines ImmunoLin® and N-acetyl-D-glucosamine (NAG) to support gut and immune health*</li> <li>• ImmunoLin® is a dairy-free, serum-derived bovine immunoglobulin (SBI) concentrate, and is the only purified source of immunoglobulin G (IgG) available as a dietary supplement</li> </ul>
<b>Anaerostipes Probiotic</b>	1 capsule per day on an empty stomach  3 months; reevaluate biomarkers, signs, and symptoms	<ul style="list-style-type: none"> <li>• Live, once-daily, next-generation probiotic preclinically shown to promote direct butyrate production in the lower GI tract for targeted support*</li> <li>• Delivers <i>Anaerostipes</i> to the gut to help promote butyrate production, gut barrier function, microbiome diversity, daily GI comfort, healthy digestion, and mealtime confidence*</li> <li>• Features a delayed-release technology for optimal survivability to the lower GI tract</li> </ul>
<b>Tri-Butyryn Supreme™</b>	2 softgels per day in the evening  3 months; reevaluate biomarkers, signs, and symptoms	<ul style="list-style-type: none"> <li>• Further supports healthy butyrate status by providing 300 mg of tributyrin per serving*</li> <li>• Butyrate is a short-chain fatty acid that fuels intestinal cells, supports a healthy gut barrier, and promotes digestive comfort and immune health*</li> <li>• Features a unique fusion of three butyrate molecules bound to glycerol, which has the ability to make it to the colon compared to sodium butyrate*</li> </ul>

Optional Support	
<b>Complete Commensal Probiotic™</b>	<p>If stool testing shows low commensal strains, consider <b>Complete Commensal Probiotic™</b>.* This is the first and only, single super donor-sourced blend of five native anaerobic keystone commensals — designed to re-colonize, cross-feed, and restore microbiome balance from the foundation up.* It delivers the broadest spectrum of keystone commensals available,** made possible by the most advanced anaerobic technology designed to provide a highly cooperative combination of live, oxygen-sensitive strains. <b>Take 1 capsule per day on an empty stomach.</b></p> <p><small>* Keystone commensal strains based on the HACK index. 8x comparison based on five keystone strains (up to 24% combined abundance) vs. single-strain <i>Akkermansia</i> products (~3%). Percentages reflect typical abundance in healthy adult microbiomes per published research. Individual colonization varies.</small></p>
<b>SPM Supreme™</b>	<p>Features three specialized pro-resolving mediators (SPMs) and omega-3 fatty acids to promote a normal inflammatory response and the body's normal healing process.* If seeking further support, take <b>2 softgels per day of SPM Supreme™ with a meal.</b></p>

This information is provided as a medical and scientific educational resource for the use of physicians and other licensed health-care practitioners ("Practitioners"). This information is intended for Practitioners to use as a basis for determining whether to recommend these products to their patients. All recommendations regarding protocols, dosing, prescribing and/or usage instructions should be tailored to the individual needs of the patient considering their medical history and concomitant therapies. This information is not intended for use by consumers.

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/api/library-assets/literature-reference---intestinal-permeability-gut-barrier-support-protocol-references>

Dosing recommendations are given for typical use based on an average 150-pound healthy adult. Health-care practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage. Any product containing botanical substances has the potential for causing individual sensitivities; appropriate monitoring, including liver function tests (LFT), is recommended.

For considerations regarding herb-drug and nutrient-drug interactions, please refer to reliable, evidence-based resources such as the Natural Medicine Database or Stargrove MB, Treasure J, McKee DL. *Herb, Nutrient, and Drug Interactions: Clinical Implications and Therapeutic Strategies*. Mosby-Elsevier; 2008.

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