

Casual Friday Series

When Healthy Foods Stress The Body

A functional look at ferments, histamine, and
metabolic resilience

A BIOGENETIX CLINICAL PRESENTATION
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Why Are Patients Reacting to Foods?

- Sourdough, kombucha, kefir, probiotic sodas, and fermented vegetables are now widely seen as “healthy upgrades” or health halo foods
- These foods have moved from niche wellness products into mainstream staples
- Yet patients may still report:
 - bloating
 - headaches
 - skin flares
 - fatigue
 - blood sugar instability

A healthy reputation does not guarantee a healthy response.

These foods have a strong health halo right now. Patients are adding them because they expect improvement, but in practice many still feel worse.



Resilience Determines Response

Same food → different patient outcomes

Depends on:

- gut resilience
- histamine resilience
- metabolic resilience
- detox/drainage resilience

It's not just the food — it's the system receiving it.

Two patients can eat the same food and get opposite outcomes. The variable is not always the food itself. The variable is the resilience of the person eating it.



Gut-microbiota-targeted diets modulate human immune status

PMID: 34256014 PMCID: [PMC9020749](#) DOI: [10.1016/j.cell.2021.06.019](#) 

Diet modulates the gut microbiome, which in turn can impact the immune system. Here, we determined how two microbiota-targeted dietary interventions, plant-based fiber and fermented foods, influence the human microbiome and immune system in healthy adults. Using a 17-week randomized, prospective study (n = 18/arm) combined with -omics measurements of microbiome and host, including extensive immune profiling, we found diet-specific effects. The high-fiber diet increased microbiome-encoded glycan-degrading carbohydrate active enzymes (CAZymes) despite stable microbial community diversity. Although cytokine response score (primary outcome) was unchanged, three distinct immunological trajectories in high-fiber consumers corresponded to baseline microbiota diversity. Alternatively, the high-fermented-food diet steadily increased microbiota diversity and decreased inflammatory markers. The data highlight how coupling dietary interventions to deep and longitudinal immune and microbiome profiling can provide individualized and population-wide insight. Fermented foods may be valuable in countering the decreased microbiome diversity and increased inflammation pervasive in industrialized society.



Ferments Can Help - But Not Universally

What we get from this article:

- Fermented food diets increased microbiome diversity
- 19 inflammatory proteins decreased, including IL-6

Important Observation:

Benefits occurred in selected individuals—not universally.

Ferments can be therapeutic—but only when the terrain is ready.



Histamine and histamine intolerance

PMID: 17490952 DOI: [10.1093/ajcn/85.5.1185](https://doi.org/10.1093/ajcn/85.5.1185) 

Histamine intolerance results from a disequilibrium of accumulated histamine and the capacity for histamine degradation. Histamine is a biogenic amine that occurs to various degrees in many foods. In healthy persons, dietary histamine can be rapidly detoxified by amine oxidases, whereas persons with low amine oxidase activity are at risk of histamine toxicity. Diamine oxidase (DAO) is the main enzyme for the metabolism of ingested histamine. It has been proposed that DAO, when functioning as a secretory protein, may be responsible for scavenging extracellular histamine after mediator release. Conversely, histamine N-methyltransferase, the other important enzyme inactivating histamine, is a cytosolic protein that can convert histamine only in the intracellular space of cells. An impaired histamine degradation based on reduced DAO activity and the resulting histamine excess may cause numerous symptoms mimicking an allergic reaction. The ingestion of histamine-rich food or of alcohol or drugs that release histamine or block DAO may provoke diarrhea, headache, rhinoconjunctival symptoms, asthma, hypotension, arrhythmia, urticaria, pruritus, flushing, and other conditions in patients with histamine intolerance. Symptoms can be reduced by a histamine-free diet or be eliminated by antihistamines. However, because of the multifaceted nature of the symptoms, the existence of histamine intolerance has been underestimated, and further studies based on double-blind, placebo-controlled provocations are needed. In patients in whom the abovementioned symptoms are triggered by the corresponding substances and who have a negative diagnosis of allergy or internal disorders, histamine intolerance should be considered as an underlying pathomechanism.



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When Ferments Become a Histamine Stressor

- Fermented foods are high in histamine, tyramine, and other biogenic amines
- Histamine intolerance reflects imbalance between histamine load and degradation capacity
- Common symptoms:
 - headaches
 - flushing
 - anxiety
 - skin reactions

The issue is often not the food alone — it's impaired clearance.

If the client's bucket is already full, healthy ferments can become symptom triggers. This is where resilience starts to matter clinically.



Kombucha, Kefir and Probiotic Drinks

Same Category, Different Stressors

- **Kombucha**
 - Histamine-rich
 - Often contains residual sugar
 - Acidity may irritate sensitive GI systems
- **Kefir**
 - Often better tolerated
 - Different microbial strains
 - Dairy proteins may still create problems in some patients
- **Probiotic drinks / sodas**
 - Marketed as gut-supportive
 - May have low true microbial potency
 - Can still add sugar load

These products are marketed similarly, but they do not behave the same physiologically.



Post-Antibiotic Gut Mucosal Microbiome Reconstitution Is Impaired by Probiotics and Improved by Autologous FMT

PMID: 30193113 DOI: [10.1016/j.cell.2018.08.047](https://doi.org/10.1016/j.cell.2018.08.047) 

Probiotics are widely prescribed for prevention of antibiotics-associated dysbiosis and related adverse effects. However, probiotic impact on post-antibiotic reconstitution of the gut mucosal host-microbiome niche remains elusive. We invasively examined the effects of multi-strain probiotics or autologous fecal microbiome transplantation (aFMT) on post-antibiotic reconstitution of the murine and human mucosal microbiome niche. Contrary to homeostasis, antibiotic perturbation enhanced probiotics colonization in the human mucosa but only mildly improved colonization in mice. Compared to spontaneous post-antibiotic recovery, probiotics induced a markedly delayed and persistently incomplete indigenous stool/mucosal microbiome reconstitution and host transcriptome recovery toward homeostatic configuration, while aFMT induced a rapid and near-complete recovery within days of administration. In vitro, *Lactobacillus*-secreted soluble factors contributed to probiotics-induced microbiome inhibition. Collectively, potential post-antibiotic probiotic benefits may be offset by a compromised gut mucosal recovery, highlighting a need of developing aFMT or personalized probiotic approaches achieving mucosal protection without compromising microbiome recolonization in the antibiotics-perturbed host.



Kombucha, Kefir and Probiotic Drinks

Research Notes:

- Probiotic colonization is highly individualized
- Host microbiome and immune environment matter
- Some may even see a delay in recolonization

This is why I would not lump all ferments together. Kombucha, kefir, and probiotic beverages may all sit in the same aisle, but they create very different kinds of stress and impact.



Sourdough is Not a Free Pass

- **Sourdough fermentation may:**
 - Reduce phytates
 - Improve digestibility
 - Partially degrade gluten peptides
- **But sourdough still:**
 - Contains residual gluten proteins
 - Drives glucose response
 - Stimulates insulin demand
 - May trigger immune signaling in susceptible patients

Improved digestibility does not equal metabolic neutrality.

Sourdough may be modified bread, but it is still bread. It may be better tolerated in some cases, but it is not consequence-free.



Why Sourdough Still Matters Metabolically

Modern grain products may contribute to:

- Blood sugar volatility
- Insulin signaling burden
- Gluten/WGA immune stimulation
- Agricultural residue exposure
- Cumulative inflammatory load

Food impact is shaped by total inflammatory burden — not just its health reputation.

This is no longer just a digestion conversation. For many patients, grain exposure carries metabolic, immune, and environmental burden all at once.



Glyphosate, pathways to modern diseases III: Manganese, neurological diseases, and associated pathologies

PMCID: PMC4392553 PMID: [25883837](#)

Manganese (Mn) is an often overlooked but important nutrient, required in small amounts for multiple essential functions in the body. A recent study on cows fed genetically modified Roundup[®]-Ready feed revealed a severe depletion of serum Mn. Glyphosate, the active ingredient in Roundup[®], has also been shown to severely deplete Mn levels in plants. Here, we investigate the impact of Mn on physiology, and its association with gut dysbiosis as well as neuropathologies such as autism, Alzheimer's disease (AD), depression, anxiety syndrome, Parkinson's disease (PD), and prion diseases. Glutamate overexpression in the brain in association with autism, AD, and other neurological diseases can be explained by Mn deficiency. Mn superoxide dismutase protects mitochondria from oxidative damage, and mitochondrial dysfunction is a key feature of autism and Alzheimer's. Chondroitin sulfate synthesis depends on Mn, and its deficiency leads to osteoporosis and osteomalacia. Lactobacillus, depleted in autism, depend critically on Mn for antioxidant protection. Lactobacillus probiotics can treat anxiety, which is a comorbidity of autism and chronic fatigue syndrome. Reduced gut Lactobacillus leads to overgrowth of the pathogen, Salmonella, which is resistant to glyphosate toxicity, and Mn plays a role here as well. Sperm motility depends on Mn, and this may partially explain increased rates of infertility and birth defects. We further reason that, under conditions of adequate Mn in the diet, glyphosate, through its disruption of bile acid homeostasis, ironically promotes toxic accumulation of Mn in the brainstem, leading to conditions such as PD and prion diseases.

Healthy Foods, Same Toxic Environment

For metabolically fragile patients, the issue is cumulative burden: glycemic load, immune activation, and environmental exposure all layered together.

A resilient system may tolerate this well—a compromised one often cannot.



Real Problem is Reduced Resilience

Low resilience creates exaggerated responses:

- Histamine overload
- Dysbiotic flare-ups
- Blood sugar instability
- Inflammatory signaling

Functional Root Causes:

- Impaired drainage
- Gut barrier dysfunction
- Chronic inflammation
- Insulin resistance

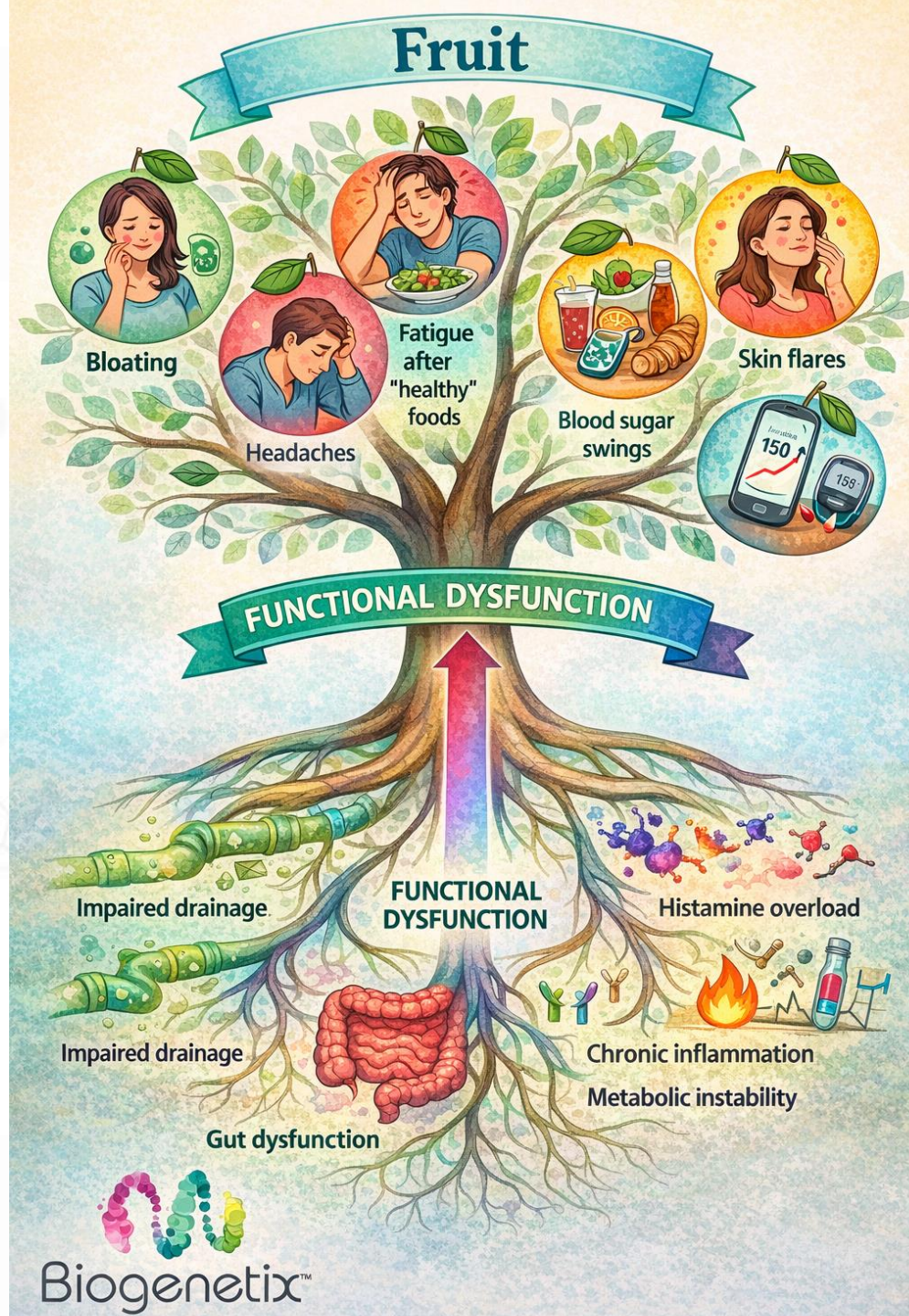
When resilience is low, even healthy foods become stressors.

We're back to the main point now. The food may reveal the problem, but the deeper issue is reduced resilience



Symptoms are feedback,
not random events.

When a patient reacts to
healthy foods, I do not see
that as random intolerance.
I see it as physiology
giving us information.”



What to Look For Clinically

Look for patterns in:

- Fasting insulin
- CRP
- Homocysteine
- Liver enzymes
- CBC inflammatory trends

Normal labs may still hide poor resilience patterns.

Many of these patients have labs that look acceptable at first glance. The real value comes from pattern recognition.



Change the Conversation

- **Avoid:**
 - “Stop eating that forever.”
- **Instead try things like:**
 - “Let’s rebuild things first.”
 - “We need to lay the foundation first.”

Food removal is temporary; resilience rebuilding is the long-term strategy.

This changes patient psychology. We are not taking foods away as punishment. We are rebuilding tolerance with intention.



Build Resilience in Phases

1. Reduce overwhelm temporarily
2. Restore drainage pathways
3. Stabilize blood sugar
4. Repair gut integrity
5. Reintroduce ferments strategically

The goal is to build tolerance — not create permanent restriction.

The strategy is not to fear these foods forever. It is to rebuild the system so the patient can handle the physiological response.



Building Resilience with BioG

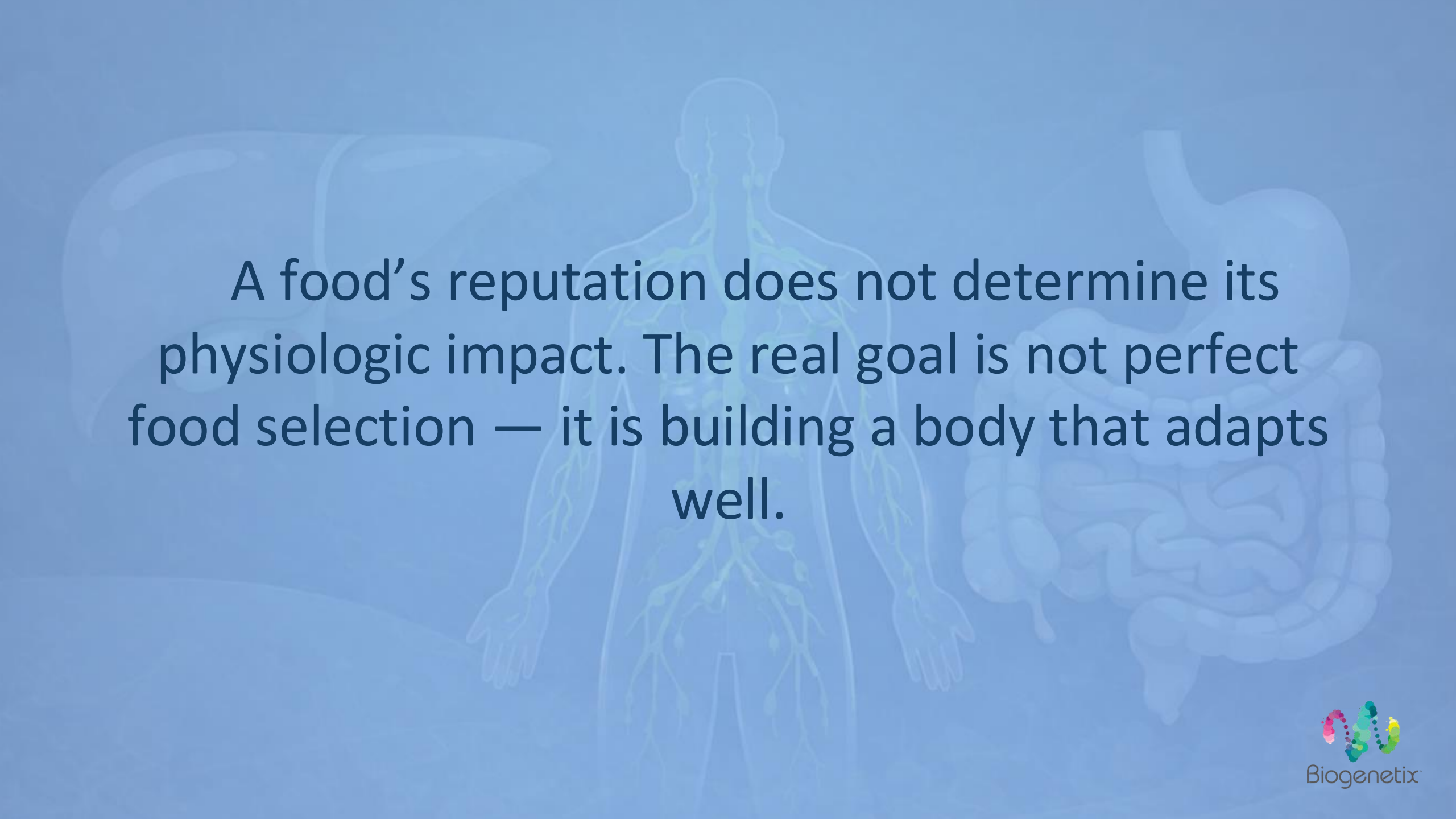


21 day MCP with Binder Pro



GI ResQ+ Bundle



The background features a light blue silhouette of a human figure with internal organs highlighted in a slightly darker shade. To the right of the human figure is a detailed, semi-transparent illustration of the human digestive system, including the stomach, liver, and intestines.

A food's reputation does not determine its physiologic impact. The real goal is not perfect food selection — it is building a body that adapts well.

