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# Gut-Brain Connection Series

An Introduction to the 5R Functional Medicine Approach

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# What we'll cover today...

- ✔ **Intro to the Gastrointestinal system**
- ✔ **The Pillars of GI Health**
- ✔ **Why the Pillars Fail**
- ✔ **Rebuilding the Pillars: The 5R Functional Medicine Approach**



# Introduction to the Gastrointestinal System



# What is your gut trying to tell you?

95+ million Americans with digestive problems

- ✔ IBS—cramping, pain, diarrhea & constipation
- ✔ Heartburn, reflux
- ✔ Indigestion & bloating



“Over 95 million Americans experience some kind of digestive problem. Over 10 million people are hospitalized each year for care of gastrointestinal problems and the total health care costs exceed \$40 billion annually.”

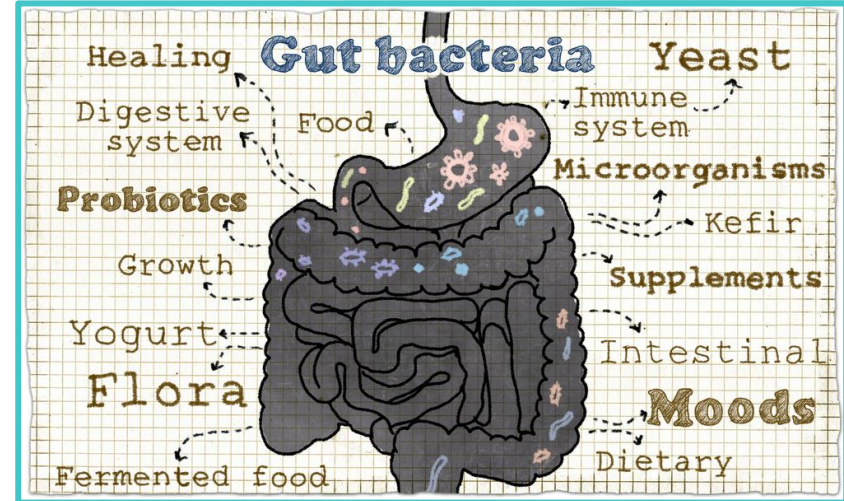
-American College of Gastroenterology





# Introduction to the GI System

- ✔ Extracts the appropriate nutrients we need to thrive
- ✔ Maintains an appropriate balance of helpful and harmful microbes
- ✔ Acts as a conduit for waste removal
- ✔ Prevents entrance of harmful substances into the body



# The Industrial Revolution and the Unintended Modern GI Experiment

- ✔ Refined sugar and flour became affordable
- ✔ Frozen, packaged, microwavable, globally shipped
- ✔ Additives: preservatives, dyes, artificial flavors and sweeteners
- ✔ Stress, poor air and water quality



# The Connection of the GI System and the Rest of the Body

- ✔ **Brain** - Stress, Anxiety, Depression & Insomnia
- ✔ **Skin** - Acne, Rosacea, Eczema and Psoriasis
- ✔ **Thyroid** - Grave's Disease, Hashimoto's Thyroiditis, Weight Fluctuations
- ✔ **Liver** - NAFLD, Toxic Burden
- ✔ **Immune System** - Frequent colds, Autoimmune disease, Allergies, Asthma and Inflammation
- ✔ **Cardiometabolic** - CAD, Increased visceral fat, Diabetes
- ✔ **Overall Health** - Migraines, Fatigue, Obesity, Nutrient Malabsorption



**Heal the gut first.**



# The Pillars of GI Health



# The Pillars of GI Health

1. Digestion
2. Elimination
3. Microbial Balance
4. Barrier Function



# Digestion



# Steps to Proper Digestion & Absorption of Nutrients

Proper Nutrient Intake →

Intracellular Signaling →

Neural, Hormonal and Paracrine Factors →

Production of Digestive Secretions (HCl, Bile, Enzymes and Mucus)

→ Motility → Digestion → Absorption

**Alteration in any one of these areas →**

**breakdown in digestive and absorptive process**

**→ GI dysfunction and systemic disease**





# The Modern Urban Diet (MUD) meets the GI Tract

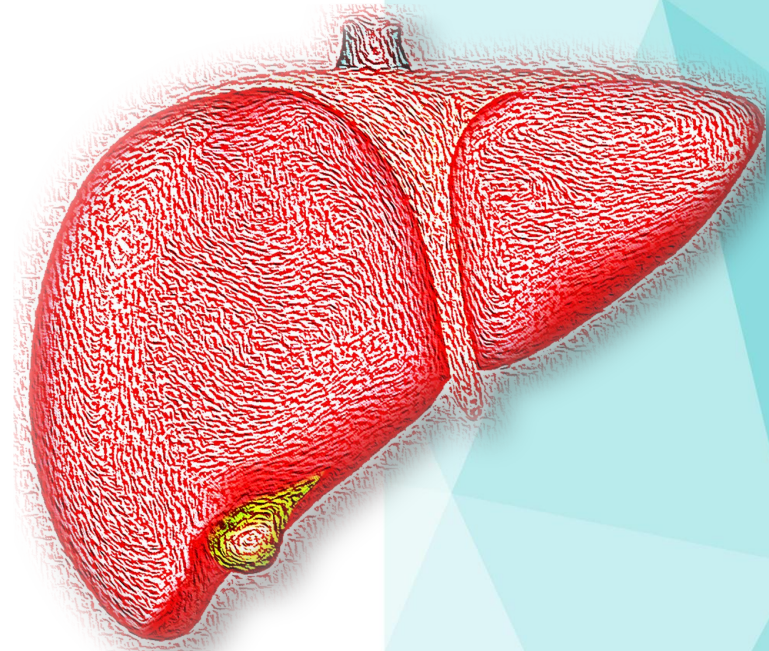


# Elimination and Detoxification



# Liver

- Filters the blood
- Stores glucose for energy
- Breaks down steroid hormones
- Produces and secretes bile
- Major role in detoxification



# Colon

- Removes water, nutrients, and electrolytes from partially digested food
- Rids the body of waste and toxins in the form of stool
- Central location of the microbiome



# Microbial Balance



# The gut microbiome represents one of the most metabolically active systems within the human body!

- Blood sugar control, appetite and metabolism
- Synthesizes hormones and neurotransmitters
- Cholesterol and amino acid metabolism
- Short chain fatty acid production (e.g. butyrate for colon cell energy)
- Vitamin synthesis and assimilation
- Regulates immune function
- Prevents overgrowth of harmful organisms
- Regulates bowel motility
- Influences bowel structural integrity



# Barrier Function



Barrier functions of the gut represent one of the most important interfaces between a person and the external environment.





# Why the Pillars Fail





# Stress





# Diet





# Medications



# Food Allergies, Intolerances and Sensitivities

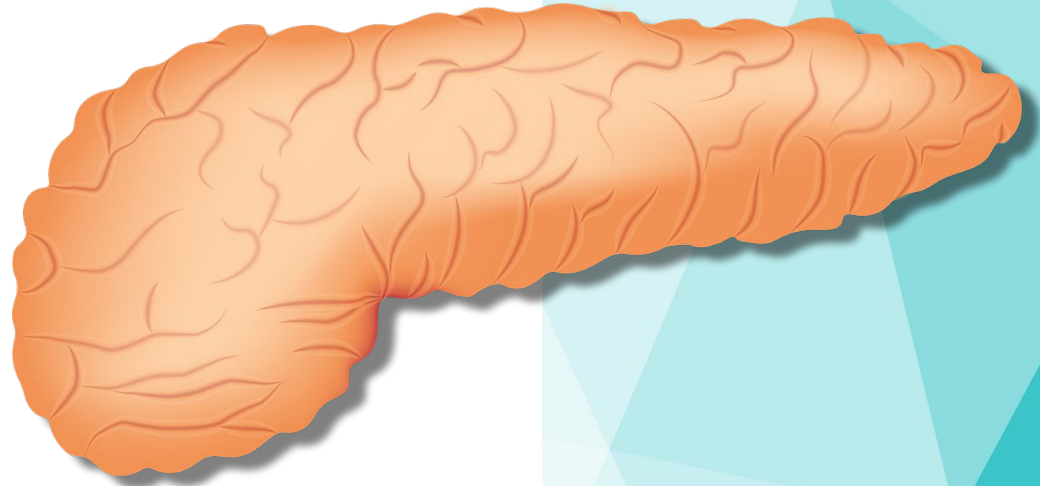




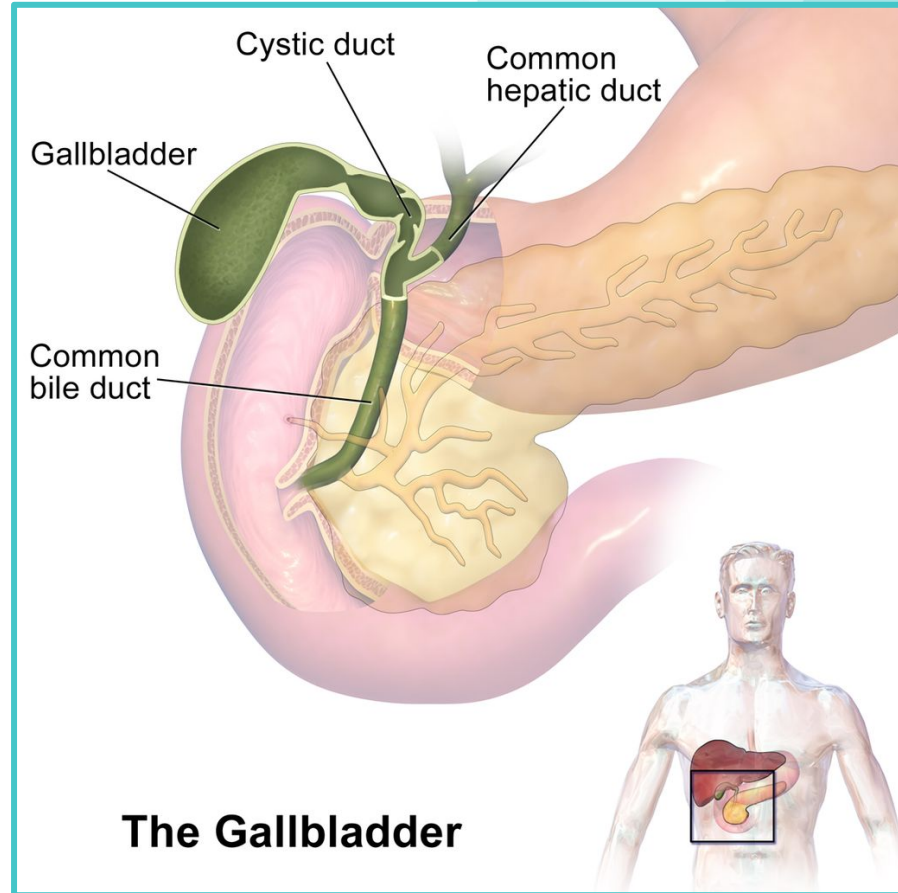
# Hypochlorhydria



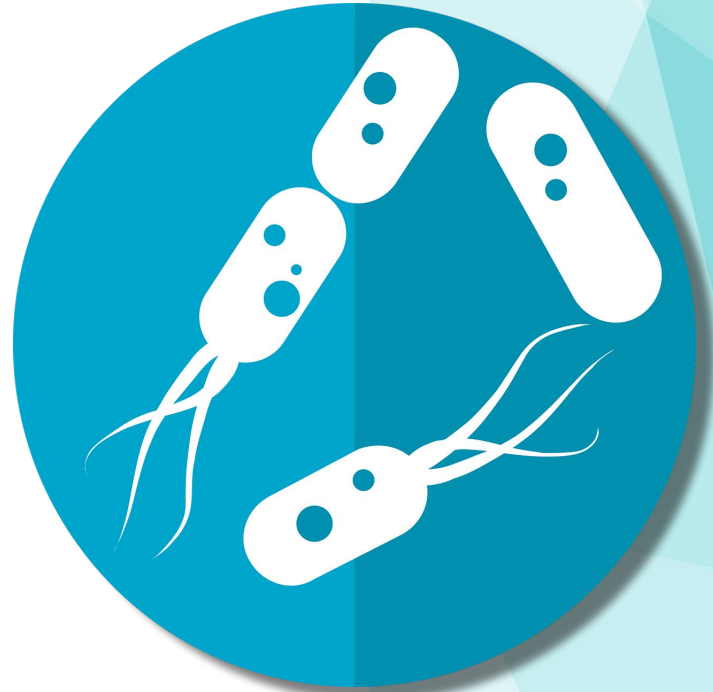
# **Pancreatic Insufficiency**



# Bile Insufficiency



# Dysbiosis



# Intestinal Permeability

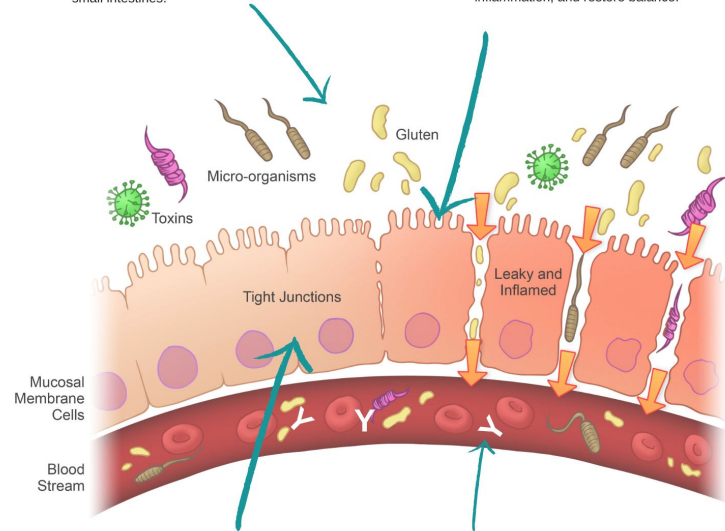
## Healing Your Leaky Gut

### Digestive Enzymes

Ensures proper pH for proper breakdown of protein and fat to provide complete digestion and elimination in stomach and small intestines.

### High dose probiotics

100 cfu of six bacterial strains that activate over 1700 genes that help the integrity of the gut lining, lower inflammation, and restore balance.



### Vitamin D3 10,000

Helps maintain gut epithelium by tightening the leaky junctions. Also upregulates genetic expression of immune boosting cytokines.

### Immunoglobulins

Binds microbes and toxins before they can overactivate your immune system. This helps reset immune tolerance.



# Toxic Burden



# What's your toxic burden?



# **Rebuilding the Pillars: The 5R Functional Medicine Approach**





# Conventional Wisdom?

- ✔ Side effects or lack of effectiveness
- ✔ May not address the root cause
- ✔ Can lead to future problems
- ✔ Real issue is still there
- ✔ Just a temporary band-aid
- ✔ Safety issues often a concern as well



# Remove: Promote Elimination and Detoxification



# Replace: Promote Digestion and Absorption



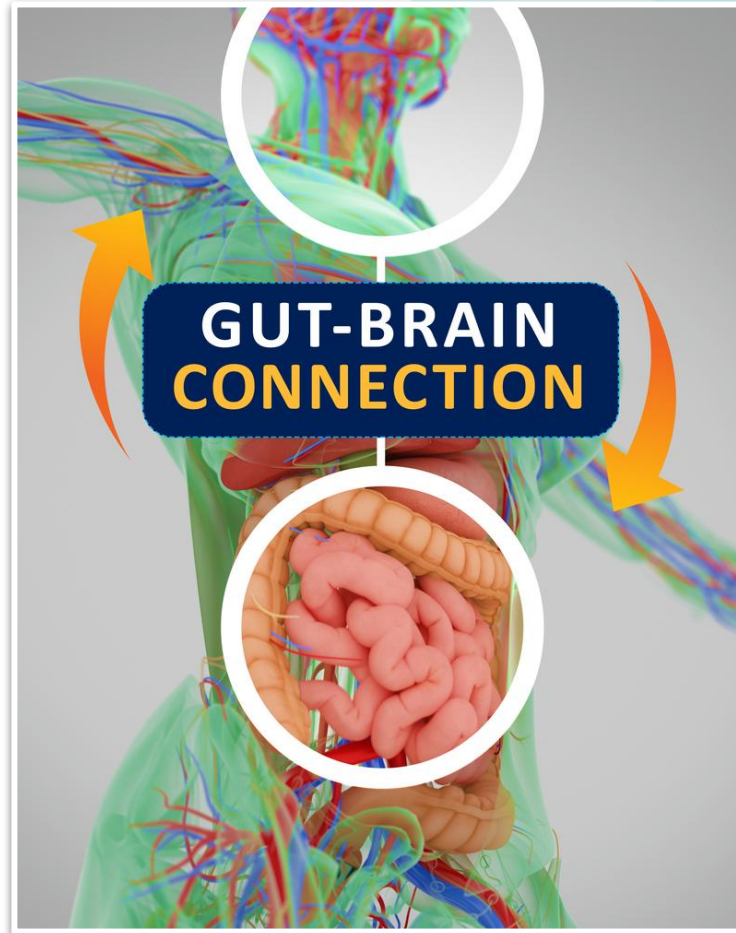
# Re-Inoculate: Reestablish Microbial Balance



# Repair: Intestinal Barrier Function



# Rebalance: HPA-Gut/Brain Function



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## Soul Care Groups

Soul care groups offer a sacred space for healing, especially for those struggling with stress, anxiety and depression. We intentionally come together for contemplation, for sharing our stories, for deep, empathetic listening, for Bible study and more.





# THANK YOU!

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