

# Functional Nutrition Approaches to Gut Health

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## Topics Covered

1. Good Health Starts in the Gut
2. Microbiome Part 1
3. Microbiome Part 2
4. What Can Go Wrong
5. FODMAP Intolerance
6. GERD
7. Celiac Disease
8. Non-Celiac Gluten Sensitivity
9. Intestinal Permeability
10. IBD – Crohn’s and Colitis
11. IBS
12. SIBO
13. Candida
14. Gut Immune System
15. Stress Gut Brain Interactions
16. Histamine Intolerance
17. Functional GI Testing
18. Supplementation

## Curriculum Outline

1. Good Health Starts in the Gut
  - Overview
  - Associated Content
  - The Mouth, Esophagus, Stomach, Small Intestine, Large Intestine, Pancreas, Liver, Microbiota, Enteric Nervous System
  - Enzymatic Digestion and Absorption
  - Microbial Production of Nutrients
  - 5 R Program Introduction
  - Clinician Takeaways
2. Microbiome Part 1
  - Overview
  - The Microbiota in Infancy
  - Associated Content
  - The Microbiota’s Influence on Metabolism, Health, and Disease
  - Commensal, Symbiotic, Pathogenic
  - The Importance of Diversity
  - Probiotics
  - Prebiotics
  - Clinician Takeaways
3. Microbiome Part 2
  - Overview
  - Associated Content
  - Contributors to Dysbiosis
  - Bacterial Association with Medical Conditions, causative/preventive
  - Immune Regulation
  - Neurological/Gut-Brain Axis
  - Probiotic Supplementation- specific strains for specific conditions
  - Fecal Microbiota Transplant (FMT)
  - Impact of Diet
  - Clinician Takeaways

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## 4. What Can Go Wrong? Overview

- Overview:
  - FODMAP Intolerance
  - Gastroparesis
  - GERD
  - Celiac Disease
  - Non-Celiac Gluten Sensitivity
  - Increased Intestinal Permeability
  - IBD
  - IBS
- Contributing Factors
- Therapy
  - DIGIN
  - Testing
  - 5R- Remove, Replace, Reinoculate, Repair, Rebalance
- Clinician Takeaways

## 5. FODMAPs Intolerance

- Description
- Signs and Symptoms
- Contributing Factors
- FODMAP Foods/Hidden FODMAPs
- Testing
- Therapy
- 5 R Program for FODMAP Intolerance
- Low FODMAP Diet Overview
- Clinician Takeaways

## 6. GERD

- Description
- Signs and Symptoms
- Contributing Factors
- Testing
  - GERDQ
- Therapy
- Nutrition Therapy for GERD
- 5R Program for GERD
- Clinician Takeaways

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## 7. Celiac Disease

- Description
- Signs and Symptoms
- Contributing Factors
  - Genetic Susceptibility, Gliadin Environmental Factors, GI Permeability
- Testing
- Therapy
- Nutrition Therapy for Celiac Disease
- 5R Program for Celiac Disease
- Clinician Takeaways

## 8. Non-Celiac Gluten Sensitivity (NCGS)

- Description
- Gluten Related Disorders- NCGS, Celiac Disease, Wheat Allergy
- Associated Conditions
- Signs and Symptoms
- Clinical Manifestations of NCGS
- Contributing Factors
- Testing
- Therapy
- Nutrition Therapy for NCGS
- 5R Program for NCGS
- Clinician Takeaways

## 9. Intestinal Permeability

- Description
- Elements that Influence the Intestinal Barrier
- Tight Junctions
- Zonulin, Modulator of Intestinal Permeability
- Signs and Symptoms
- Associated Conditions
- Contributing Factors
- Testing
- Therapy for Leaky Gut
- Anti-Inflammatory Diet
- 5R Program for Leaky Gut
- Clinician Takeaways

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## 10. IBD Crohn's and Colitis

- Description
- Signs and Symptoms
- Characteristics and Complications
- Contributing Factors
  - Genetic Polymorphisms' Influence on Development and Exacerbation of IBD
  - Dietary Components
  - Medications Linked to Microscopic Colitis
- Microbiota and IBD
- Alterations in the Microbiome and Metabolome during IBD
- Intestinal Permeability in IBD
- Testing
- Therapy
- Nutrition for IBD
- 5R Program for IBD
- Clinician Takeaways

## 11. Irritable Bowel Syndrome

- Description
- Signs and Symptoms
- Rome IV Criteria for IBS diagnosis
  - IBS Subtype Criteria
  - Bristol Stool Form Scale
- Characteristics and Complications
- Potential Comorbidities
- Contributing Factors
- Gut-brain, Neuroendocrine, Neuroimmune Interactions
- Immune Activation and Inflammation
- Stress and IBS
- Diet and IBS
- FODMAPs
- GI Microbiota Composition in IBS
- Probiotic Therapy
- Testing
- Therapy
- Nutrition for IBS
- 5R Program for IBS
- Clinician Takeaways

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## 12. SIBO

- Description
- Signs and Symptoms
- Contributing Factors and Consequences
- Common comorbidities
  - IBS
- Testing
- Therapy
- Nutrition for SIBO, FODMAPs, SCD
- Antimicrobials
- 5 R Program for SIBO
- Clinician Takeaways

## 13. Candida

- Description
- Signs and Symptoms
- Contributing Factors and Consequences
- Testing
- Controlling Candida albicans Pharmaceuticals
  - Natural Anti-Fungals
- Nutrition for Candida Overgrowth
- 5 R Program for Candida
- Clinician Takeaways

## 14. Gut Immune System

- Overview
- The Innate and Adaptive Immune System
- MALT and GALT
- Microbiota and Immunity
- Inflammation and Immunity
- Nutrition and Immunity
- Clinician Takeaways

## 15. Stress and Gut-Brain Interactions

- Overview
- Associated Content
  - Stress
  - Neurotransmitter/Hormone effect on GI Tract
- Neuroendocrine Modulation of Stress
- Stress and GI Immune Function
- Stress and the Microbiota-Gut-Brain Axis
- Psychobiotics
- Functional Gastrointestinal Disorders and Stress
- Clinical Nutrition Intervention
- Therapy

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- Nutrients
- Stress Management
- Herbs and Plant Based Therapies
- Clinician Takeaways

## 16. Histamine Intolerance

- Description
- Roles of Histamine in the Body
- Histamine Intolerance (HIT)
  - DAO, HNMT
- Signs and Symptoms
- Contributing Factors and Consequences
- Histamine in Foods
- Histamine Production by Bacteria
- Endogenous Histamine
- Testing
- Therapy/Histamine Restricted Diet
- DAO Supplementation
- 5R Program for HIT
- Clinician Takeaways

## 17. Functional GI Testing

- Overview- GI Symptoms/Disorders Warranting Testing
- Indications for Colonoscopy or Imaging Studies
- Diarrhea/Categories of Diarrhea
- Dysbiosis
  - Tests, Rationale, Symptoms, Science and Supportive Data
- Specific Tests- Rationale, Symptoms, Science and Supportive Data
  - Breath Testing
  - Candida Overgrowth Testing
  - Celiac Disease Workup
  - Food Allergy Testing
  - Food Sensitivity Testing
  - GERD Workup, Gastric pH Test
  - IBD Workup
  - Intestinal Permeability Testing
  - IBS Workup/2016 Rome IV Criteria Nutrition Focused Physical Exam Organic Acids Testing
  - Stool Analysis
- Clinician Takeaways

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## 18. Supplementation

- Overview
- What are Nutrition Supplements?
- Why are Nutrition Supplements Needed?
- Who Needs Supplements?
- Regulation and Quality Control
  - CGMPs, Third Party Certification
- Nutrient Requirements and Guidelines
- Supplement Categories and Forms
- Choosing Nutritional Supplements
- Supplement Sources
- Magnesium Stearate
- Chelated Minerals and Mineral Absorption
- What to Include/What to Exclude
- FAQs by Patients Regarding Supplementation
- Clinician Takeaways
- 5R Supplementation Recommendations-Replace, Reinoculate, Repair