Diagnostic Solutions laboratory

WEBINAR NOTES
COMMON DYSBIOSIS PATTERNS

Understanding Common Dysbiosis Patterns with GI-MAP™

Presented September 19, 2018, by Tom Fabian, PhD, CNTP

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INSUFFICIENCY DYSBIOSIS

Insufficiency dysbiosis is characterized by low levels of beneficial bacteria that provide critical support for healthy intestinal and immune function. Insufficient levels of beneficial bacteria may result in an elevated risk of intestinal infections, increased intestinal permeability, decreased protective factors such as secretory IgA, and increased inflammation.

MARKERS CHARACTERIZING INSUFFICIENCY DYSBIOSIS	
Normal Bacterial Flora: *(low levels)*	Bacteroides fragilis Bifidobacterium spp. Enterococcus spp. Escherichia spp. Lactobacillus spp.
Phyla Microbiota: *(low levels)*	Bacteroidetes Firmicutes
Associated Intestinal Health Markers:	Secretory IgA *(often low to very low levels)* Anti-gliadin IgA *(often elevated)* Zonulin *(sometimes elevated)*

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INFLAMMATORY DYSBIOSIS

Inflammatory dysbiosis is characterized by moderate to high levels of certain pathogens, normal microbiota, and opportunistic microbes that promote inflammation and increased intestinal permeability. Many pro-inflammatory microbes are gram-negative bacteria that belong to the Proteobacteria phylum and produce a form of lipopolysaccharide *(LPS)* that is a potent activator of inflammatory responses.

MARKERS CHARACTERIZING INFLAMMATORY DYSBIOSIS	
Pathogens *(low to high levels)*	Campylobacter C. difficile Pathogenic E. coli Salmonella Vibrio cholerae Yersinia enterocolitica Giardia
Normal Flora (high levels)	Escherichia spp. Enterobacter spp.
Opportunistic Bacteria, Yeast and Protozoa *(moderate to high levels)*	Morganella spp. Pseudomonas spp. Pseudomonas aeroginosa Citrobacter spp. Citrobacter freundii Klebsiella spp. Klebsiella pneumoniae Proteus spp. Proteus mirabilis Candida spp. Candida albicans Parasitic protozoa
Associated Intestinal Health Markers:	Secretory IgA *(often low levels, but sometimes elevated)* Calprotectin *(often elevated, but sometimes very low levels)* Zonulin *(may be elevated in some cases)*

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DIGESTIVE DYSFUNCTION DYSBIOSIS

Dysbiosis associated with digestive dysfunction is very common, and is often due to low stomach acid (hypochlorhydria), insufficient bile acids, poor digestion *(pancreatic insufficiency or brush border enzyme deficiency)*, reduced absorption, and altered gastrointestinal motility. Altered digestion and motility can result in imbalances in the microbiome, characterized by overgrowth of certain species.

MARKERS ASSOCIATED WITH DIGESTIVE DYSFUNCTION	
Pathogens *(low to high levels)*	Most types, especially if multiple pathogens are present
H. pylori *(moderate to high levels)*	Helicobacter pylori *(with or without virulence factors)*
Normal Flora *(high levels)*	Enterococcus Lactobacillus Clostridium
Phyla Microbiota *(high levels)*	Bacteroidetes and/or Firmicutes
Opportunistic Bacteria, Yeast and Parasites *(moderate to high levels)*	Bacillus spp. Enterococcus faecalis Enterococcus faecium Morganella spp. Staphylococcus spp. Staphylococcus aureus Streptococcus spp. Klebsiella pneumoniae Prevotella copri Candida spp. Candida albicans Parasitic Protozoa
Associated Intestinal Health Markers:	Elastase-1 *(often low to moderately low levels)* Steatocrit *(sometimes elevated)*
Associated Symptoms & Conditions:	Excessive gas and bloating Stomach or abdominal discomfort Feeling of fullness after a meal Heartburn, gastroesophageal reflux Constipation or diarrhea Small intestinal bacterial overgrowth *(SIBO)* Food sensitivities and intolerances