

NUTRIENTS AND IMMUNE SYSTEM SUPPORT

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IMMUNE FUNCTION AND YOUR GUT

- Gut is home to 100 trillion microorganisms
 - 10x more bacteria than all the human cells in entire body
 - ~3-4 lbs of bacteria!
 - 250 million neurons – MORE than in the brain
- Considered the “second brain”
- Promotes healthy GI function
 - Protection from infection
 - Makes up majority of immune system (~70%)
 - GALT
 - Regulation of metabolism

GUT FLORA

- Established at birth
 - In birth canal & breast milk
 - Colonize very rapidly in infancy
- A child who is not breastfed will likely never have normal levels of GI flora
 - Need to find a way to add probiotics/cultured foods on ongoing basis

CONT'D.

- Modern lifestyle contributes to unhealthy gut flora
 - Antibiotics & medications
 - Refined CHO, sugar, processed food
 - Wheat & industrial seed oils
 - Chronic stress
 - Chronic infections
- Antibiotics = especially harmful to gut flora
 - Not recovered after antibiotic use
 - Need probiotics, raw vegetables, or raw milk/kefir

LEAKY GUT

- When intestinal barrier becomes permeable
- Barrier determines reactivity/tolerance to toxic substances
 - Breach of the barrier causes immune response
 - i.e., gluten
 - Can affect other organs & tissues besides the gut
 - Skeleton, pancreas, kidneys, liver, brain
- Thus, can manifest as other conditions
 - Eczema, thyroid conditions, rheumatoid arthritis, etc.

DIGESTIVE DISTRESS & GUT HEALTH

- Low stomach acid
- Decreased enzyme production
- Intestinal inflammation

CHRONIC GUT INFLAMMATION

- Intestinal Inflammation
 - Not really a problem, until it becomes *chronic*
- Numerous causes of chronic gut inflammation
 - Gut infections (i.e., parasites)
 - Autoimmune diseases (i.e., Colitis, Crohn's)
 - Western diet
 - Environmental toxins (i.e., pesticides)

AVERAGE AMERICAN DIET IMPAIRS IMMUNE SYSTEM

- Deficient in
 - Zinc
 - Iron
- And low intakes of
 - Vitamin A, C, and D

DIET RECOMMENDATIONS

- Easier-to-digest foods
 - Braised meats, stews/soups, slow-cooked foods
- Nutrient-dense foods - For replenishment
 - Refined foods contribute to nutrient-poor diet
- “Superfoods”
 - Cod liver oil
 - Fermented vegetables/probiotics
 - Liver
 - Bone broth

ALSO...

- Vitamin A & D
 - Immune system modulator
 - Maintain integrity of mucosal lining
- Vitamin C
 - Antioxidant
 - Anti-inflammatory
- Glycine
 - Bone broth, gelatin

CONT'D.

- Omega-3 Fats
 - Anti-inflammatory
- Selenium
 - Antioxidant
- Soluble fiber
 - Gets converted to beneficial bacteria
- Zinc
 - Antioxidant
 - Blocks coronavirus from multiplying in throat & nasal passages

CONT'D.

- L-Glutamine
 - Healing of epithelial cells lining small intestine
- Licorice root
 - Repair of mucosal lining
- Quercetin
 - Antioxidant

AVOID (OR BE CAUTIOUS)

- Gluten
- Gut-Irritants
 - Grains, legumes, dairy, 'nightshade' vegetables
- Alcohol, Caffeine, Chocolate
- Pain Medications
 - Aspirin, acetaminophen, ibuprofen, corticosteroids
- Antacids
- High-Intensity Exercise (for some)
 - Stress response/high cortisol levels could result

A WORD ABOUT SEROTONIN

- Neurotransmitter
- Associated with the brain & mood functioning
 - Depression, anxiety, insomnia
- 95% of all serotonin is in gut!