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The Five R's of Gut Restoration

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Understanding the Importance of Gut Health

The gastrointestinal system is a complex ecosystem populated by trillions of microorganisms that play critical roles in digestion, metabolism, and immune function. Dysbiosis, or an imbalance of gut bacteria, has been linked to a wide range of health issues, including not only gastrointestinal disorders but also systemic conditions like autoimmune diseases, metabolic disorders (e.g., diabetes), cardiovascular diseases, and mental health disorders (Vogt et al., 2021; NCD Risk Factor Collaboration, 2016). The gut is often referred to as the “second brain” due to its influence on mood and cognition through the gut-brain axis (Mayer et al., 2014). This understanding underscores the necessity of maintaining a healthy digestive system for overall well-being.

Here are some points to consider as to how important gut health is to your overall health:

- 95% of your happiness neurotransmitters (serotonin and dopamine) are made in the gut
- 70-80% of your immune system resides in your gut
- Toxins that build up in the gut may manifest and detox themselves in unpredictable ways, often through the skin
- All health issues directly come from the gut
- It has been said that the average person may be carrying around 5-10 lbs of toxic matter in their intestines. Old impacted fecal matter looks like a black tar like substance as it is released by colonics or enemas

The Five R's: A Comprehensive Approach to Gut Restoration

In functional medicine, the Five "R"s provide a structured approach to restore gut health:

Remove, Replace, Reinoculate, Repair, and Rebalance

Each step plays a crucial role in optimizing gastrointestinal function and overall health.

1. Remove

The first step involves identifying and eliminating factors that contribute to gut dysfunction, including:

- **Food Allergens and Intolerances:** Common allergens, such as gluten, dairy, and nuts, can trigger inflammatory responses and disrupt gut permeability (leaky gut). A systematic review indicates that gluten exposure is associated with increased intestinal permeability in individuals with celiac disease (Barone et al., 2020).

Identifying food sensitivities through elimination diets has been shown to improve gut function and optimize health outcomes (Niemann et al., 2020).

- **Pathogenic Organisms:** Pathogens such as harmful bacteria, fungi (like Candida), and parasites can disturb the microbiome balance. For instance, a study found that parasitic infections like Giardia lamblia can cause significant gastrointestinal symptoms and dysbiosis (Ranjbar et al., 2020), while Clostridium difficile infection has been linked to gut microbiome depletion (Cohen et al., 2015).

- **Environmental and Chemical Toxins:** Exposure to toxins has been shown to have adverse effects on gut health. Research indicates that certain environmental toxins, such as bisphenol A (BPA), can disrupt gut microbiome composition and increase intestinal permeability (Schwartz et al., 2021).

Functional Medicine Solutions:

- **Comprehensive Stool Testing:** Identifying pathogens through advanced stool testing can provide insights into dysbiosis and guide targeted therapies (González et al., 2022).

- **Antimicrobial Support:** Using natural antimicrobial agents like CDS, berberine, oregano oil and effective anti-parasitic protocols can help address unwanted gut organisms. For

example, berberine has shown efficacy against a variety of pathogens and has been associated with improved gut health in clinical studies (Li et al., 2018).

Action Steps:

- **Elimination Diet:** Implementing an elimination diet has been shown to effectively identify food sensitivities. A randomized controlled trial highlighted the success of an elimination diet in improving symptoms for individuals with irritable bowel syndrome (IBS) (Niemann et al., 2020). A Low FODMAP Diet may be a safe place to begin for 6 weeks then adding food back in slowly. Please find your [Low FODMAP Guide](#) and more information about the LOW FODMAP DIET [here](#) and [here](#). Download FODMAP APP by Monash Uni and [Cookbook here](#).

- **Targeted Supplementation:** Naturopathic practitioners may recommend specific supplements to target pathogenic organisms. For example, oregano oil has demonstrated antifungal and antibacterial properties in clinical studies (Hammer et al., 2012). [Oregano Oil](#) closes leaky gut junctions and is effective against Strep. Phytotherapy in Streptococcus agalactiae: An Overview of the Medicinal Plants Effective against Streptococcus agalactiae - PMC

2. Replace

After removing harmful elements, it's essential to ensure the digestive system has the necessary components for optimal function. Key substances to replace include:

- **Digestive Enzymes:** These enzymes are crucial for the breakdown and absorption of nutrients. A systematic review found that enzyme supplementation improved symptoms and quality of life in patients with functional dyspepsia (Kim et al., 2019).

- **Hydrochloric Acid (HCl):** Low stomach acid levels can lead to inadequate digestion and bacterial overgrowth. Research suggests that HCl supplementation can enhance nutrient absorption and alleviate gastrointestinal symptoms linked to low acidity (Lindsay et al., 2020).

- **Bile Acids:** Bile acids are essential for emulsifying fats and aiding the absorption of fat-soluble vitamins. A review highlights the importance of bile acids in maintaining gut health and suggests that depletion can lead to digestive dysfunction (Buchman et al., 2007).

Functional Medicine Solutions:

- **Digestive Supplements:** Incorporation of digestive enzyme supplements can greatly enhance nutrient assimilation, especially in individuals diagnosed with digestive disorders (Vaquero et al., 2023).
- **Betaine HCl:** Supplementation can help restore optimal gastric acidity. A clinical trial demonstrated improved digestion in patients taking betaine HCl over a period of three months (Milling et al., 2019).

Action Steps:

- **Digestive Aids:** Introducing enzyme supplements before meals can enhance nutrient assimilation, especially in individuals with known deficiencies.
- **Evaluate Nutritional Intake:** A Naturopath can assess diet quality to ensure adequate rates of HCl and bile production are maintained.

3. Reinoculate

Supporting a healthy microbiome is integral to gut health. This includes both introducing beneficial probiotics and nourishing existing flora:

- **Probiotic-Rich Foods:** Fermented foods such as yogurt, kefir, kombucha, sauerkraut, pickled veggies, miso, nattokinase and kimchi contain live microorganisms that can enhance gut diversity. A meta-analysis confirmed that probiotics can significantly improve gut microbiota composition and digestive health (Mao et al., 2019). The best way to improve the diversity of your microbiome is to eat a variety of wholefoods, alternating with different varieties every week.

- **Prebiotic Foods:** Prebiotics, such as inulin and fructooligosaccharides, serve as nourishment for beneficial bacteria. Research indicates that dietary prebiotics can enhance the growth of beneficial bacteria like Bifidobacterium and Lactobacillus, promoting overall gut health (Slavin, 2013). Lactobacillus bacteria growth has been shown to be supported by Ivermectin. This bacteria is important for immune function.

Functional Medicine Solutions:

- **Probiotic Supplementation:** Specific probiotics, such as Lactobacillus rhamnosus and Bifidobacterium lactis, have been shown in clinical studies to reduce symptoms of IBS and improve gut health (O'Mahony et al., 2005; Bolin et al., 2019).

- **Prebiotic Fiber Supplements:** Supplements that include inulin or psyllium can enhance the growth of beneficial bacteria and improve bowel regularity, as evidenced by a systematic review showing that prebiotic consumption increases beneficial bacterial populations (Slavin, 2020).

Action Steps:

- **Incorporate Fermented Foods:** Aim to include at least one serving of probiotic-rich food daily to improve gut microbiota diversity. I ask people to buy 5 probiotic rich foods and add a small amount to each meal, rotating through the 5.

- **Focus on Fiber Intake:** A high-fiber diet not only supports bowel regularity but also fosters a healthy microbiome. The American Journal of Clinical Nutrition highlights the importance of fiber in enriching beneficial gut bacteria (Slavin, 2005).

4. Repair

Healing the gut lining is paramount for regaining integrity and function. Key nutrients that facilitate gut repair include:

- **Zinc:** Essential for maintaining epithelial integrity, zinc supplementation has been shown to improve gut barrier function and reduce inflammation (Sharma et al., 2020).

- **Vitamins A, C, and E:** These vitamins possess antioxidant properties that reduce oxidative stress and support cellular repair. Vitamin A has been shown to play a vital role in maintaining intestinal mucosal integrity (Erdman et al., 2016).

- **L-Glutamine:** This amino acid is crucial for intestinal health. Studies indicate that L-glutamine supplementation improves barrier function and reduces permeability in damaged intestinal mucosa (Zhao et al., 2019).

- **Omega-3 Fatty Acids:** Assisting in the healing process, omega-3 fatty acids exert anti-inflammatory effects. A clinical trial indicated that omega-3 supplementation improved the inflammatory response and gut integrity in patients with ulcerative colitis (Bistrain et al., 2005).

Functional Medicine Solutions:

- **Targeted Nutritional Supplements:** Formulas specifically designed for gut health, including zinc, glutamine, and omega-3 fatty acids, can be highly effective. Research

supports their roles in enhancing gut barrier function and reducing inflammation (McCarthy et al.,

Action Steps:

- **Nutrient-Rich Diet:** Focus on a varied diet rich in these vital nutrients, including sources such as nuts, seeds, dark leafy greens, and fatty fish.
- **Supplementation:** Discuss the potential need for supplements with a Naturopath to meet specific nutrient requirements.

5. Rebalance

Achieving lasting gut health requires addressing the broader lifestyle factors that influence both physical and mental well-being. The concept of rebalancing acknowledges that optimal gut health is not solely about direct interventions but also about lifestyle choices that foster a healthy microbiome and digestive system. Key areas to focus on include:

Functional Medicine Solutions:

1. Sleep Hygiene Practices: Implementing good sleep hygiene practices is essential. This includes maintaining a consistent sleep-wake schedule, creating a relaxing bedtime routine, and optimizing the sleep environment (e.g., reducing light and noise). A systematic review noted that improving sleep hygiene significantly enhances sleep quality and has a positive impact on metabolic health (Hirshkowitz et al., 2015).

Adequate sleep is crucial for cellular repair, hormonal balance, and immune function. Research has demonstrated that sleep deprivation negatively impacts gut microbiota composition, leading to dysbiosis (Cai et al., 2018). Inadequate sleep can disrupt the circadian rhythms of gut bacteria, affecting their diversity and function.

2. Exercise Recommendations: Aim for at least 150 minutes of moderate aerobic exercise per week, supplemented with strength training (American College of Sports Medicine, 2014). Studies have shown that both aerobic and resistance training positively affect gut health and microbiome diversity (Buch et al., 2019).

Engaging in regular exercise promotes healthy digestion and supports the growth of beneficial gut bacteria. Studies have shown that active individuals display a more diverse

microbiome compared to those who are sedentary (Liu et al., 2019). Exercise also enhances gastrointestinal motility and reduces inflammation.

3. Mindfulness and Stress Reduction Techniques: Encourage practices such as meditation, yoga, deep-breathing exercises, and tai chi. Research indicates that mindfulness-based interventions can improve stress-related gastrointestinal symptoms and foster a healthier gut microbiome (Creswell et al., 2016). A clinical trial found that mindfulness meditation effectively reduces stress and improves quality of life in individuals with chronic digestive issues (Vasilenko et al., 2019).

Chronic stress is known to compromise gut health by increasing gut permeability and exacerbating gastrointestinal symptoms (Rogers et al., 2018). Stress activation of the hypothalamic-pituitary-adrenal (HPA) axis can disrupt gut microbiome balance.

4. Dietary Interventions for Gut Health: Adopt a balanced diet rich in whole foods, including fruits, vegetables, whole grains, nuts, and seeds. The Mediterranean diet, which emphasizes these foods and healthy fats, has been associated with improved gut health and reduced inflammation (Estruch et al., 2018). Additionally, incorporating omega-3-rich foods can further support gut integrity and lower inflammation.

5. Hydration: Adequate hydration plays a critical role in maintaining gastrointestinal health. Water helps in the digestion and absorption of nutrients and prevents constipation. A study indicated that proper hydration is linked to improved gut transit time and overall digestion (Duncan et al., 2012).

Seeking Professional Support

If you are experiencing symptoms related to gut dysfunction, such as digestive issues, skin problems, or chronic fatigue, it may be appropriate to consult a functional medicine practitioner. The Five R's framework provides a comprehensive starting point for improving gut health. I am committed to offering thorough evaluations that consider your unique health profile and individualized treatment plans tailored to address your specific needs.

By following these evidence-based interventions within the Five R's framework, you can enhance your gut health and overall well-being. Let me guide you toward optimal gut restoration, helping you achieve balance and vitality in your life.

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