**OPTIMIZE YOUR MICROBIOME: Support the balance of good bugs in your body**

Research continues to point to the importance of the microbiome on our overall state of health. It influences not only our digestion, but also our metabolism, brain and nervous system, immune system, hormones, and our risk of many common chronic degenerative diseases.  The first 3-5 years of life are decisive in how our gut microbiota defines its unique “fingerprint”.  This unique fingerprint will then decide how our microbiome expresses itself for the remainder of our lives. Taking steps to optimize our gut microbiota maybe one of the most important things we can to to improve our overall level of health.

**Factors that Have an Adverse Effect on the Gut Microbiome**

The cumulative and inter-generational effect of a disrupted microbiota passed from grandmother to mother to child caused by an accumulation of any of the factors as follows:

An imbalanced maternal microbiota, and the maternal use of antibiotics

Being born C-Section and having been formula-fed as an infant

Being raised in an overly "sanitized" environment

Indoor living, lack of contact with the outdoors

A diet high in processed foods such as sugar, flour products and industrial seed oils

Food additives, artificial sweeteners, artificial food colourings and food preservatives

GMOs: corn, soy, canola, cottonseed; meat/eggs/dairy from animals fed these grains

Pesticide residues in foods (ie glyphosate has been shown to have antibiotic activity)

Antibiotics - those prescribed and those found in the animal feed chain

“Disinfectant” chemicals: Chlorine in our water supply, hand sanitizers, Microban

Antacids and Proton Pump Inhibitors (PPIs)

Anti-inflammatory drugs, aspirin, ibuprofen, naproxyn etc

**Toxicity Encourages the Proliferation of a Unhealthy Microbiota**

We are now starting to understand that one of the most significant contributors to the growth of an imbalanced microbiome is the level of toxicity of our tissues. The accumulation of toxins in our environment is now being echoed in our bodies. Certain microbes are drawn to this “garbage dump” of our bodies and find it to be a comfortable haven in which to live and proliferate.

**Probiotics and their role in Health**

Taking probiotics has health benefits - primarily that of strengthening and regulating immune system function and strengthening gut integrity. Your best source of probiotics comes from naturally-fermented foods.  Learn to make your own fermented foods. These are best made from highest quality vegetables grown on soil that is microbially robust and nutritionally balanced. In addition to lactic acid and bifidus strains of bacteria, many other strains of bacteria are proving to be benefial to our health. Microbial diversity is paramount to a healthy microbiota. A high diversity of species creates a healthy ecosystem, which increases resistance to disease.

Soil-based organisms are important to microbiome health. Historically, much of our exposure to beneficial microbes occurred through our contact with an environment that was teaming with microbes originating in a healthy balanced soil. This is largely lacking in the modern world due to mainstream agricultural practices.

**Can't I just take a probiotic supplement and be done with it?**

Taking probiotics does not necessarily increase the total amount of good bugs in your gut over the long haul, rather is has an effect on physiology and gut health for the duration of treatment.

Instead of depending on taking probiotics to heal our gut, we need to change the terrain within the body to alter the balance of our microbiota. We can do this by avoiding the foods, toxins and environmental factors that encourage the growth of unhealthy bugs. Another important way to change the terrain of the gut is to provide the beneficial microbes with their preferred fuel source, allowing them to proliferate with ease and make your gut their preferred residence.

**Prebiotics**

Prebiotics are substances that feed the beneficial microbes in the gut. When someone's gut is very out of balance, taking prebiotics may cause increased digestive symptoms such as gas and bloating. This varies with the individual and the type of prebiotic used. If this does not let up by lowering the dose, the underlying gut imbalance should be addressed. The goal is to include the widest range of prebiotics possible in the diet in order to feed the widest range of beneficial gut micro-organisms. The best way to do this is to include a diet high in fruits and vegetables including root vegetables, nuts and seeds; include also properly prepared grains and legumes if tolerated. In addition to a diet high in these plant foods, you may want to include some particular supplemental sources of prebiotics as listed below. Keep the range of prebiotics as wide as possible.  If you are having trouble with any of these additions to your diet, it may indicate an underlying gut imbalance that needs to be addressed.

The most common types of Prebiotics include soluble fiber, inulin, beta-glucan, and resistant starch. Soluble fiber is found in abundance in fruits and vegetables, nuts and seeds, grains and legumes. Some of the best sources of soluble fiber include include flax seeds, peas, beans, lentils, berries, citrus peel, brussels sprouts, avocadoes, sweet potatoes, winter squash, and oats. Supplemental sources of soluble fiber includes things like psyllium husk, acacia gum, partially hydrolyzed guar gum, glucomamman and citrus pectin.

Inulin is found in high levels in certain root vegetables such as jersusalem artichokes, burdock and the onion family (leeks, onions and garlic). It is also found in the chicory family (endive and dandelion), asparagus, oats and some legumes. A common supplemental form of inulin is FOS or fructo-oligosaccharides.

Resistant starch is found in raw potatoes, raw green bananas and green plantain or “cooked and cooled” potatoes, oats, yams, cassava, peas, legumes and rice. Supplemental sources include unmodified potato starch, or the flour made from green plantains or green bananas.

Beta-glucan is found primarily in mushroom, seaweed and oats.

Polyphenol and flavonoids found in various berries, grapes and other plant foods are considered prebiotics, as are a few unusual categories of foods. These include things glycans and glycolipids found in collagen, cartilage and gelatin; and chitin/chitosan found in insects, worms, fungi and yeast.