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Antibiotic Resistance and Your Immune System

Microflora Balance Helps Immunity

Healthy microflora lives on the gut mucosa or gut wall, which is only one cell thick. This human microflora weighs 3lbs. and can be thought of as “an extra organ”. These microflora feed the gut wall beneficial bacterial nutrients that the flora creates from the foods we eat, especially soluble fibre, protein, glucose, and healthy fats. Our gut wall uses these beneficial bacterial nutrients to transfer the food we eat from the digestive tract into our blood stream. This food is then routed to the liver, via the blood, to be sorted and used. The gut wall must guard against infections, toxins and mutagenic materials coming from the outside environment through the digestive tract entering into the blood stream. Not only does the microflora guard against infection it also:

1. Synthesizes the B vitamins: B12, folic acid, biotin, and riboflavin.
2. Synthesizes vitamin K.
3. Feeds the cells of the gut wall.
4. Detoxifies heavy metals.
5. Digests soy foods and release anti-cancer nutrients.
6. Releases anti-cancer nutrients from fruit.

Gut Function Helps Immunity

There are many natural checks and balances in the defense system of the gut:

1. Normal flora prevents the attachment of undesirable microbes.
2. Gastric juices should be acidic enough to break down proteins and also kill off unwanted microbes. Many people, however, are deficient in these normal acids from poor diets and lack of chewing.
3. Digestive enzymes kill off the saprophytic microbes. These are the microbes that grow off dead matter. However, many people are deficient in enzymes because of unhealthy eating habits and excess stress.
4. Peristalsis, which is the natural muscle movement in the gut wall, prevents unwanted microorganisms from attaching to the gut wall, but only when the growth rate of the microbe is slower than the transit time of the bowel contents. Constipation slows down the transit time of the food moving through the gut. When this happens the microorganisms have time to grow. Transit time should be 24-36 hours. Frequency of bowel movements should be 1-3 per day. Test your transit time by eating a meal of beets or corn noting the time from eating to eliminating this food in the bowel movement.
5. The mucosal surface of the intestines regenerates very quickly. The small intestine can replicate in 48 hours and the large intestine within 12 days.
6. Humans produce 10 litres of mucous every day! Mucous acts as a lubricant to allow passage of gut contents. It also contains mucins, which bind microbial cells and clump them together for the immune system to clean up. Mucins also help detoxify heavy metals and block harmful bacteria from attaching to the epithelial cells.

Lymph System Drainage Helps Immunity

Our lymph system is a major part of the immune system. Part of its function is to drain metabolic debris and toxins away from the cells. Eighty percent (80%) of the lymph channel system is wrapped around the small intestine to safeguard against any potential toxins or microbes entering the body through this avenue. This factor makes the small intestines the most important immune organ in the body ready to respond to attack at any time. Penetration of the small intestine

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mucosal barrier activates the immune response. The route of penetration could be through the lymph, the blood or between the surfaces of the cell of the mucosa. Healthy intestinal flora assures good immune defense so this does not happen.

Antibiotic Resistance Impairs Immunity

Resistance to antibiotics actually begins in the digestive tract (gut). When you take an antibiotic it makes its way to the small intestine and wipes out the normal microflora, which helps maintain normal digestive and immune function. The antibiotic then is absorbed into the blood and permeates the rest of the body, including the large intestine via the blood stream. Intestinal flora normally regrows within 48 hours after taking the last antibiotic. Without normal flora being re-introduced, the flora that regrows can be antibiotic resistant and the immune system cannot regain normal function. A probiotic (commonly called acidophilus) containing microflora compatible with the human body must be given when antibiotics are used to assist in preventing antibiotic resistance. The probiotic must be taken during and at least 21 days after antibiotic use.

Factors promoting acceleration of antibiotic resistance:

1. Over prescribing of antibiotics by physicians.
2. Prescribing for viral self-limiting diseases.
3. Poor patient compliance of taking the antibiotics as directed.
4. Use of antibiotics in animal feed to prevent infection and to promote growth (about 80% of all antibiotics are used in agriculture).
5. Availability of antibiotics over the counter in many countries.
6. Increased overseas travel.

Disease Prevention Enhances Immunity

Giving lactobacillus and acidophilus probiotics to an infant when introducing foods and formula will greatly prevent food intolerances. This application is also beneficial in autoimmune diseases such as: multiple sclerosis, Type 1 diabetes, rheumatoid arthritis, psoriasis, air borne allergies, food intolerances in adults, increased risk of cancer with aging and hospitalization, excessive stress, optimizing the effects of vaccinations, irritable bowel syndrome, Chron's disease, decreasing cholesterol, vaginal infections.

The main causes of micro flora imbalance are:

1. Use of antibiotics (2 prescriptions over 6-12 months of antibiotics decrease 99% of the normal flora).
2. Gut infection or diarrhea.
3. Surgery of the gastrointestinal tract.
4. Starvation/anorexia.

Various nutrients can assist in optimizing gut immunity. The anti-microbial activity in allicin (from garlic) and cinnamon bark oil is very high. Echinacea although not an anti-microbial stimulates cell mediated immunity. Bromelain has anti-inflammatory properties and when given with a natural probiotic assists in the absorption of the probiotic. All acidophilus products and gut wall helpers work best when taken with food. The quality of probiotics (lactobacillus acidophilus) is quite variable. Be sure to use a human-compatible strain that has a guaranteed strength with a date. Ask your naturopathic doctor for the type that best suits your family members' needs.