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## WHY ALL THE EMPHASIS ON DIGESTION?

By Dr. Robin Bernhoft, MD, FACS, DABEM, FAAEM

As a liver surgeon, Dr Bernhoft always considered the liver to be the "seat of the soul." So much goes on in the liver – processing of food, filtering the blood, removal of toxins, fighting against infection – that it is probably the only organ which could never be replaced by a machine. But the intestines are equally important. The gut contains as many nerves as the central nervous system and as many immune cells as the rest of the body put together. The surface area of the small intestine, alone, is roughly equal in size to a tennis court. It has more solid contact with external reality (in the form of the pounds of material we ingest each day) than any other part of the body.

The small intestine's job is a very big one. It is responsible for letting useable parts of the food and drink we consume into our bodies, but also for keeping out things we don't want. It does that by maintaining integrity at the cellular level. In order for a food component, toxin, virus or bacterium to get into the bloodstream via the gut, it has to go through the cells lining the gut (enterocytes), or through the "tight junctions" between enterocytes.

As long as the tight junctions stay tight, things function reasonably well. Bad stuff is kept out of the bloodstream. (Materials in the gut are as exterior to the body as substances in contact with the skin. We are like giant donuts, protected from our environment by barriers – on the outside by our skin barrier and inside by our gut barrier.) But if the tight junctions break down and become leaky (so-called "leaky gut" or "intestinal permeability" in the trade), as can happen following excessive antibiotic use, ingestion of toxic chemicals or metals (including low doses of toxins adding up over time), or various types of infection, people get sick. Various inappropriate materials (partially-digested food, viruses and other pathogenic bugs or chemicals) can be absorbed into the blood stream, and cause problems.

When these foreign materials invade the blood stream, bad things happen. The immune system sees them as foreign, and attacks. Sometimes the foreign material looks to the immune system like cells elsewhere in the body – e.g., pancreas, thyroid, joint cartilage, myelin – causing the immune cells to attack those cells. This can produce Type One Diabetes, allergies, arthritis, odd neurological and psychiatric symptoms and a host of other problems including chronic fatigue and irritable bowel syndrome.

Once the gut becomes leaky, it tends to remain so without treatment.

Treatment involves removing irritating foods and materials from the diet, administration of amino acids which help the gut lining cells heal, repletion of favorable bacteria (probiotics) and their preferred foodstuffs (prebiotics). Sometimes it is necessary to kill yeasts, fermenting bacteria or parasites. Sometimes it may require complete bowel rest with elemental or IV nutrition, but healing can be accomplished.

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Once the gut regains its integrity, many other problems will often right themselves spontaneously, or with a little help. Restoration of gut integrity is often required as a prerequisite for other treatments – removal of heavy metals, balancing of hormones, relief of allergies – to be done safely and effectively.

That's why we put so much emphasis on digestion.