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SUBJECT: No More Heartburn

by Jackie Burgess

Just in time for the holidays and overindulgence comes helpful information from a book by Sherry A. Rogers, MD that is all about one of our favorite topics.

Title: ***No More Heartburn – Stop the Pain in 30 days – Naturally***
Subtitle: The Safe, Effective way to prevent and heal chronic gastrointestinal disorders

I'm going to be posting relevant clips separately and segmentally from this book since this topic is so very important to afibbers who find GERD and related symptoms to be so influential in the initiation of AF. This first is on my favorite remedy for stomach irritation or heartburn and even GERD. It brings relief fast and is also healing.

Part 1 - DGL (deglycyrrhizinated licorice)

I'm quoting directly from the book (pp 95 –96). She references statements with just the name of the key researcher in parentheses.

"If you never used DGL for stomach disorders, you've missed out on a centuries-old, non-prescription, non-toxic therapy proven to heal ulcers and gastritis. To begin with, DGL has cut the rate of gastritis caused by aspirin in half (Dehpour). So why don't rheumatologists recommend it for patients for whom they prescribe a lifetime of gastritis-causing NSAIDS? NSAIDs (nonsteroidal anti-inflammatory drugs like Motrin, Advil and Aleve) are a major cause of gastritis Instead they prescribe additional drugs like H2-blockers (Tagamet, Zantac), Prilosec, Cytotec or Sucralfate that can be as much as eight times more expensive, cause side effects and are guaranteed to eventually damage your health.

On the other hand, since DGL speeds healing and has a long history of doing so, it should be an essential part of all drug programs for the stomach. For over 35 years, major medical journals have published researching proving its effectiveness to be superior, even to the currently prescribed stomach medications (Doll, Lewis, Horwich, Morgan, Kassir, Turpie). For example, fewer patients experience relapse or recurrence of ulcers when on DGL compared to Tagamet or antacids (Kassir) or Xantac (Glick). Ron reason DGL can outperform prescription drugs is that it makes stomach cells produce more of their protective and healing mucus (Baker, Tarnawski, VanMarle) – a feat no medication can match.

DGL also improves the immunity of the stomach cells through enhancing the production of secretin (Takeuchi), which no medication can match as well. This effect is so powerful that it enhances the killing of the virus that causes cold sores or aphthous ulcers (Das), protects liver cells from dying from hepatitis (Yoshikawa), and inhibits other virus growth (Pompei) even HIV, the AIDS virus (Ito). If that were not superlative potency with protection and no bad side

effects rolled intone, it has many other uses, from stopping cholesterol from forming inside arteries (Fuhrman) to being an anti-arthritis aid (Tangri).

DGL does the opposite of drugs. Rather than turn off normal function, it promotes it. Increasing the production of healing mucus and revving up the immune system of stomach cells is only part of its benefits. Because of its anti-inflammatory and antioxidant properties, DGL stimulates many avenues simultaneously that promote resistance to damage and speed up healing if damage has occurred.

The rate of recurrence of ulcers within a year now stands at 80 percent. This should not surprise you—medicine rarely searches for the underlying correctable cause. But because DGL is healing in multiple ways, it has only one-third the recurrence rate of standard prescribed drugs (Morgan). With the knowledge that you are gaining here, you should be able to reduce that number to zero.

My favorite source is Rhizinate (380 mg. of 4:1 deglycyrrhizinated licorice root extract and 50 mg. Glycine). It comes with or without fructose as a sweetener (PhytoPharmica). Two tablets should be thoroughly chewed twenty minutes before meals. Use for two to four months.

Because DGL also promotes the release of salivary compounds that stimulate growth and regeneration of stomach and intestinal cells (Bardhan 1978, Multicentre Trial 1973), it is most effective when mixed with saliva."

End of direct quote.

I found out about DGL years ago through Michael Murray, ND and have used when needed, Enzymatic Therapy DGL and Natural Factors DGL. Both were formulated by Michael Murray, ND.

I suggest using the formula without the fructose as the natural sugar alcohol sweetener, Mannitol and the Dextrose taste just fine. Read the ingredient labels before you purchase.

Just remember it is not just any form of licorice. It has to be the DGL form because this one does not elevate blood pressure.

Here's more on the topic from Dr. Murray http://www.doctormurray.com/articles/pdfs/DGL.pdf

Hans' iHerb carries both Enzymatic Therapy and Natural Factors DGL but you have to type in the brand name along with DGL for some reason as it doesn't automatically list all brands on one page…at least it didn't for me.

Part 2 - Digestive Issues & Health

GASTRO-ESOPHAGEAL REFLUX DISEASE (GERD)

There is no question that digestive ailments influence overall health.

A recent government report indicates hospitalizations due to chronic acid reflux increased sharply from 1998 to 2005. The report by the Agency for Healthcare Research and Quality found that hospitalizations for complications of gastroesophageal reflux disease, or GERD, increased 103 percent during that time frame. GERD happens when stomach acid backs up in the esophagus causing chronic heartburn.

Hospitalizations for GERD in children also increased - 42 percent for those under age 2 and 84 percent for children 2 to 17. http://www.cleveland.com/news/plaindealer/index.ssf?/base/news/1199352836197300.xml&coll=2

GERD is only one manifestation of a digestive dysfunction. The symptoms for GERD often manifest obscurely, leading some individuals to be treated for the wrong symptom. Some, in a long list of reflux symptoms, follow and may be slightly different in each individual.

Bloating and gas after meals, burning in the stomach or up farther in the esophagus (heartburn), persistent cough,

hoarseness, feeling of a lump in the throat, feeling of extended fullness, nausea, belching, burping, gas, flatulence, rippling, gurgling sensations, pain in the chest or around the heart or even in the back between the shoulder blades, undigested food, persistent/chronic difficulty swallowing and even erosion of tooth enamel, diarrhea and constipation. Some or all can be part of the digestive process that is malfunctioning.

While some symptoms can be mild, it is important to determine the cause because when linked to GERD, the risk for esophageal erosions is high and with erosion, the concern is then for esophageal adenocarcinoma. The introductory referenced report indicates a 195% rise in this cancer in patients hospitalized with acid reflux. Barrett's esophagus or esophagitis can be a precursor to this cancer. Lung damage can also occur from the reflux acid.

http://www.aafp.org/afp/20040501/2113.html (good photo of Barrett's esophagus and other detail)
http://www.medhelp.org/Medical-Dictionary/Terms/2/8756.htm (diagram of location stomach and esophagus)

CAUSES OF HEARTBURN/GERD

As with symptoms, there are numerous suspects as the cause of GERD and some go unrecognized as a solution.

Obesity ranks high on the list of contributory causes and the relationship should be obvious. Adipose tissue in the abdomen crowds the stomach so that food isn't able to settle down totally into the stomach area or pouch, but additionally, along with obesity comes overeating and both, individually or collectively, can cause the contents of the stomach to be pushed up into the area of the lower esophageal sphincter (LES)...the valve that keeps stomach contents from flowing upward or back into the esophagus again.

However, not everyone with GERD is obese. Many people do, however, overeat. Lying down after a meal often promotes reflux of stomach acid as does eating or drinking too late and going to bed. That night cap to relax before bedtime can have an adverse affect because alcohol relaxes the LES and allows acid from the stomach to flow back. GERD is prevalent in those harboring H. Pylori in the stomach. Candida overgrowth contributes to digestive ailments. Lack of stomach acid is well acknowledged to contribute to reflux along with those who have overproduction of acid from ulcers or rebound from long-term use of OTC antacids or Rx acid blockers.

From her book, No More Heartburn, Sherry Rogers, MD, offers this on Hiatus Hernia, GERD, Acid Heartburn, Reflux Esophagitis: pp131-132 (Quoting and paraphrasing)

"The symptoms of these conditions, all of which are similar, can range from nausea, chest pain, chest burning to a feeling of fullness or of undigested food. Because they can mimic a heart attack, always be cautious and rule out that first. Sometimes coughing or asthma at night will be the only symptom of reflux.

The diaphragm is a thick, flat muscle that separates the lungs from the gut. There is a small hole in the diaphragm that the esophagus slips through. Sometimes, being over-weight or with heavy lifting, the muscles around the hold can be torn. If enough damage occurs, the opening become sloppy and a corner of the stomach slides up into the lung area. If trapped there, it can cause such sever paints you would swear you were having a heart attack.

Another problem arises when the stomach partly slides up into the lung side of the diaphragm. To do this, the valve between the stomach and the esophagus has to tear loose from its connection. With the loss of the muscular attachment and control, the valve becomes loose or sloppy. Now the strong acid from the stomach and even some of the undigested food can slide up into the esophagus. Since the delicate lining of the esophagus was never meant to tolerate acid, it burns. Since the esophagus passes right in front of the heart, no wonder this is called 'heartburn'.

If the valve is leaky, then elevating the bed to prevent backwash during sleep is recommended. Also avoid large meals which help to stretch the valve and do not eat for three hours before going to bed.

She also comments that in addition to GERG, Gastritis, heartburn, esophagitis, nonulcer dyspepsia (NUD) and acid indigestion are similar in their effects. With minor variations, they make your gut feel lousy. Symptoms can overlap with hiatus hernia or in gallbladder disease. These symptoms can include a dull ache, uncomfortable fullness, the feeling everything you've eaten is sitting there and ballooning. Or it can be an overt burning or pain or both with or without nausea and vomiting.

Food allergy or overload (glutinous overeating and eating processed foods) is the most common causes. "

[Remember as you read this, irritation/inflammation of the vagus nerve which enervates the heart, diaphragm and stomach can contribute to the onset of afib. Many afibbers have GERD- type related symptoms of heartburn etc. prior to the onset of afib.]

Part 3 – GERD & Digestive Ailments

Part 3 continues the examination of what conditions might manifest as a digestive ailment or disorder. The following emphasizes how many varied symptoms and manifestations can be traced to digestive dysfunction. A large spectrum of potential causes must be professionally evaluated. Testing becomes very important as opposed to jumping to the conclusion that an acid-suppressing drug is needed. Various tests rule out pathogens such as Candida, parasites, leaky gut, allergies and metabolic disturbances. Sorry it is so lengthy, but I wanted to give examples from several experts to support that it is a complex consideration.

In forthcoming sections, we will cover testing and remedies that will also include a section on probiotics, but because this is complex, the overview is important to include as much of the whole picture as possible with consideration to space.

Excerpts and quotes from publications by these experts on digestive health appear throughout the following text. I highly recommend any and all of the books as essential reading for anyone suffering from digestive ailments not only because they can trigger afib but because they are so important to overall health. (See bios at the end)

Robert Blaich, D.C.
Russell L. Blaylock, MD (Blaylock Wellness Letter)
David M. Brady ND, DC, CCN, DACBN
Elizabeth Lipski PhD, CCN (Digestive Wellness)
Trent W. Nichols, MD (Optimal Digestion)
David Perlmutter, MD, FACN (The Better Brain Book)
Sherry A Rogers, MD (No More Heartburn)

CAUSES OF HEARTBURN, GERD OR REFLUX SYMPTOMS

There is currently an epidemic of digestive illness in this country. An epidemic that can be traced to the foods we eat and the way we live. One-third to one-half of all adults suffer from some sort of digestive problem and faulty digestion is directly responsible for a vast array of other ailments - everything from bad breath, ulcers, heartburn, and constipation - to colitis, diverticulitis and irritable bowel syndrome. Disorders that are caused indirectly by this problem include arthritis, chronic fatigue syndrome, fibromyalgia and migraine headaches. (Lipski)

Billions of dollars are spent on OTC remedies, which often bring only temporary relief or none at all for the symptoms of indigestion, bloating, heartburn, diarrhea and constipation.(Blaylock)

The commercials tell us the minute there is pain or a problem take Advil, Motrin, Nuprin - all very caustic on the gut lining and have negative effects on production of various eicosanoids that are protective to the gut lining. (Brady)

Additionally, many prescription drugs as well as OTC remedies like aspirin and NSAIDS for pain also cause serious GI burning, nausea, diarrhea, cramps, gas, bloating but also bleeding. Coffee and caffeine contribute to gastritis and depression, especially when one becomes addicted to caffeine. Coffee/caffeine addicts are easily identified the first thing in the morning by that mandatory caffeine fix or at 4 p.m. to avoid a migraine or depressive slump. The extra acidity tears up the stomach and it's not just from coffee but soft drinks, tea, cola, chocolate, Anacin, Excedrin, NoDoz. (Rogers)

Acid reflux can bring on heartburn, damage to the lower esophagus, difficulty swallowing, unexplained coughing, the

feeling of having a lump in the throat and even cancer of the esophagus. In severe cases, intense scarring can result and even perforation into the chest — which can be fatal.(Blaylock)

Aging increases the incidence of digestive disorders but now larger numbers of younger people are affected – even pre-teens. Dr. Blaylock attributes this to the results of inadequate nutrition, excessively bad diet and exposure to a number of harmful food additives and toxins. Many of the digestive problems linked to aging are the result of a hydrochloric acid shortage. Ironically, acid loss can actually boost the risk of acid reflux.(Blaylock)

The whole digestive dysfunction issue is much more than just heartburn pain. The GI tract (which extends from the mouth and nose to the anus) is the largest component of the immune system. A malfunctioning digestive system leads to poor health. Many chronic disease conditions can be traced to a poorly functioning digestive/immune system. Gastritis, ulcers, acid reflux, bacterial infection, inflammation and the potential for cancer can all be linked to stomach illness.(Blaylock)

Since stomach acid functions as a first-line of defense mechanism, natural lack of stomach acid or use of prescribed a id blockers opens the door for pathogens. Many are food-borne. As an example, the severity of impact E.coli has on infants and the elderly can be directly linked to the lack of fully functioning, protective stomach acid production. Pathogens can flourish in the stomach and can infect the lungs resulting in pneumonia as well.
http://www.fda.gov/fdac/reprints/dinguest.html
http://www.cfsan.fda.gov/~dms/seniorsb.html

[The immune system connection will be discussed in a subsequent segment.]

The Hyperacidity Myth pp. 25-28. (No More Heartburn – Rogers)

" We eat a large conglomeration of foods. Sherry Rogers MD questions if our stomachs are meant for this much overindulgence since we often eat as if there is no tomorrow. She says "when a large bolus of food arrives in the stomach, if it contains chemical preservatives foreign to the body, if there has been insufficient chewing providing predigestion, or if there are insufficient enzymes to process the mass, it can just sit there with fermentation or bacterial action as the result. As the gasses rise,
they get trapped in and distend the esophagus, mimicking chest pain. The tension and pull of the overloaded stomach stresses the gastroesophageal valve to the point where it is pulled open.

The overstretched valve not only allows gasses up into the esophagus, but allows a back surge or reflux of stomach acid (and perhaps some stomach contents), into the esophagus as well."

The stomach is meant to tolerate strong acid but the esophagus is not and is very sensitive to acid. When gases, reflux acid or even undigested food particles slide back up into the esophagus, even a tiny amount is perceived by the delicate esophageal tissue as way too much.

The burning sensation in the esophagus can be interpreted as an upset stomach or a stomach with too much acid. The reality is quite different. Often there is too little stomach acid to complete the oversized job of digestion.

She says: taking an antacid or other medication to inhibit the secretion of stomach acid makes no sense….. Except for the companies that produce the pill or liquid.

She criticizes Tums as being touted as a good antacid and also a good source of calcium and says, the calcium in Tums is the carbonate form or chalk and in order for that to help, it needs acid to work but we know that calcium carbonate is the least absorbable form of calcium so it doesn't provide much as a calcium supplement. What is known, she says (according to medical studies) is that with antacids use or even milk to 'sop up' acid, the body compensates or rebounds and send out extra acid the next time. (Rogers)

It is important to rule out food allergy and Candida since these are often the real culprits even if a hiatus hernia is indicated on X-ray. Once those are eliminated, patients usually don't have to elevate the bed for relief. (Rogers)

Some people think peppermint is helpful and it is antispasmodic so muscles of the GI tract relax which generally is

good. But adding peppermint after a meal will ensure reflux into the esophagus because it relaxes the lower esophageal sphincter muscle (LES) and allows food to flow back. During digestion the LES needs to remain closed.(Blaylock)

Acid reducing or buffering products OTC products like Tums, Maalox or Rolaids actual may worsen the condition as calcium stimulates acid release and there is often a rebound when too much buffer enters the stomach which results in more stomach acid.(Blaylock)

Carbonated drinks contribute to GERD. The carbonation increases pressure within the stomach forcing acid into the lower esophagus. (Blaylock)

Many studies have shown that GERD and gastritis cause intensified free-radical production in the stomach lining and esophagus. One more problem is inflammation in the lower part of the stomach (pyloric gastritis), which slows the emptying of its contents, causing acid to back up into the esophagus. It is important to understand that symptoms are not always noticed and often by the time there is discomfort, some damage is already done. Over time, the constant injury to the lower esophagus can result in the development of a cancer that has a very high mortality. Smoking and drinking alcohol to excess can dramatically increase this risk. (Blaylock)

Helicobacter pylori – ulcers – Current Thinking

The role of H.pylori often is a significant factor in GERD. This was not always thought to be the case.

(Brady) “Back in the early 80’s, the rule of thumb was that ulcers were really found in the Type A personality: - driven, under a lot of stress, produce too much stomach acid and they burned a hole in the stomach.

Although stress plays a role along with NSAIDs and aspirin and erosive type medications, we now know that H.pylori is the pathogen prevalent in people who have ulcers. Thanks to Barry Marshall, an Australian gastroenterologist and his in-house research where he experimented on himself and who proved that if exposed to enough H.pylori, one can get the disease. You can pass it along to your family as he did; and it can cause ulcers.

From his findings, they were the first to develop a triple-therapy pharmaceutical drug approach to treating H.pylori: an acid suppressor – proton pump inhibitor like Nexium, Protonics, Acifex, and a broad-spectrum antibiotic, usually two – either amoxicillin, clarithromycin, or metronidazole depending on resistance patterns.

Even with two heavy-dose antibiotics and an acid suppressor, it’s hard to kill. Plus there is the complication of taking two broad-spectrum antibiotics for a couple of weeks at a time and all that entails with destroying the normal bowel flora.

Now we know that about 30 – 75% (depending on the study) of the total population in study groups have the infection. It’s been identified in saliva, dental scrapings and feces. But it is most found attached to gastric epithelial cells…especially in the antrum of the stomach. The stomach is a very hostile environment – highly acidic – so it is a hardy, tough bug just to live where it does. There is evidence to show there are strains that are pathogenic and cause ulcers and other strains that are not as pathogenic.

Different people react differently to H.pylori; some can be infected and it doesn’t bother them; others are sensitive to it and develop ulcerations. In some studies in duodenal patients, up to 100% are infected with H.pylori; in gastric ulcers about 80% in most studies and lesser associations with gastritis.

How it creates ulceration – the organism actually produces an enzyme known as urease which breaks down urea into ammonia and carbon dioxide. The ammonia produced in the process stimulates gastrin secretion which in turn causes excess production of hydrochloric acid or stomach acid which can lead to gastritis and then ulceration, mucosal atrophy and intestinal dysplasia. There is an increased risk of stomach cancer in long-term H.pylori infection and also a risk of mucosa-associated lymphatic tissue lymphomas of the stomach.

Dr. Blaylock concurs that infections involving this germ cause a loss of stomach acid and an eventual shrinking of the stomach lining (gastric atrophy). This in turn causes the cells lining the stomach to begin their transformation into pre-

cancerous cells (metaplasia). He says, curing the infection often leads to the return of stomach acidity.

The germ also depletes the stomach's levels of vitamin C, which is critical for iron absorption and protection against stomach cancer. He says H. pylori infection boosts the risk of getting stomach cancer by 600%. Smoking, alcohol abuse, a poor diet (devoid of fruits and vegetables) and low vitamin C intake all dramatically elevate this risk.

We must also consider the finding that bacterial overgrowth in the stomach (the result of a reduction in stomach acid) also amplifies the cancer risk posed by nitrites and nitrates in processed foods. Hot dogs, other packaged meats (such as bologna, ham, turkey, sausage, etc.) and some canned foods are packed with these additives. (Blaylock)

It is important to rule out H.pylori infection in cases of ongoing GI disturbance.

[Testing and natural therapies will be discussed in future segments]

DIGESTIVE ISSUES IN GENERAL (Brady)

Besides the outright GERD symptom, as mentioned previously, many chronic ailments can be traced to a Gastro-Intestinal (GI) source.

People with chronic illnesses and a multitude of symptoms, problems and complaints often have a gut ailment which can be from toxins, auto immune issues, food allergies, fatigue-related disorders, dermatological problems-- just a few examples of what conditions go back to the gut.

The whole functional medicine paradigm to focus on gastro-intestinal health as a core foundational issue in health holds true along with HPA axis and stress physiology. Many times these are very interrelated.
Stress physiology affects the gut in significant ways leading to downstream chronic disease.

People with chronic problems and multiple complaints usually including fatigue or lack of vitality – things that would indicate toxicity and need of detox problems often are related to gut since it is the biggest source of toxic exposure.

People with dermatological (skin problem)-- eczema or some unknown-- immediately suspect gut problems we always look at the gut. Any form of atopy or allergy-related diseases including asthma relates to intestinal function.

In people who have a lot of reactions to foods or being pan-allergic to foods – look at the gut.

Inflammatory arthritis and autoimmune thyroiditis – alert us to looking at the intestinal tract. There is reason for that and we have to find out what is driving it.

Dr. Brady says, "It's a no brainer when a patient complains of diarrhea, constipation, cramping ulcer pain but quite another when there are GI imbalances and problems exist without any overt GI symptoms. So it becomes important to know the various GI symptoms that are often triggered by the gut or have an enteropathic origin and even if the patient doesn't think they have gut issues, you must look there. Around the late 1800 – Mechnikoff, the great Russian biologist and 1908 Nobel laureate scientist, said 'death begins in the colon'.

Classic example would be with inflammatory arthritis (RA) and the patient is taking tons of NSAIDs and doing things that are bad for the gut without knowing that the genesis of the inflammatory quasi auto-immune disorder issues actually lie in the gut and they are not being addressed like that by conventional rheumatology or conventional medicine, in general. This connection is not new science and there is strong science behind it indicating the relationship. Back as far as the 50's enteropathic spondyloarthropathies were mentioned – inflammatory disorders of the joints or other areas of the body that original in the gut.

With the majority of the body's lymphatic tissue in the gut, it makes sense to consider the connection. There is over a hundred million nerve cells in the small intestine alone which is roughly equal to that of the spinal cord. So there is a tremendous amount of neurological tissue in the gut and, in fact, the gut is the only organ or system in the body that has its own independently working nervous system - the Enteric Nervous System which is influenced by the Central Nervous System but does not depend on the CNS for its general function. When the CNS does influence it, it is usually

in a negative way – it gets in the way and creates irritable bowel syndrome.

Every neurotransmitter ever detected in the brain has also been found in the gut and often at much higher levels. 95% of serotonin in the human body is not in the brain and cerebrospinal fluid but rather in the GI tract. So when you consider that alone – tremendous amount of neurological tissue, its own nervous system, high levels of neurotransmitters, it's really indicative of how important the gut is in the surveillance of body function and the body is dedicating tremendous resources to surveillance in the GI tract.

Stool testing becomes very important in determining what's going on in the GI tract and along with that comes organic acid testing to assess markers that are directly related to intestinal function.

It is commonly agreed that the average American has gut dysfunction. Why?

Three areas will be examined.
1. Food Stream
2. Stress
3. Physical/functional aspects of diaphragm and LES

1. Food stream

Junk food which Dr. Rogers identifies as C-R-A-P (Cigarettes, Coffee, Refined Sugars, Alcohol, Aspirin, Pop and Processed Foods) operate in the body as triggers to produce more acid as the stomach struggles to digest them. She says that if people eliminated all the difficult-to-digest CRAP, most digestive issues would be eliminated. Especially when the stomach is very irritated and the person continues to consume, it's like pouring alcohol on an open wound. Drinking orange juice and other citrus on an empty morning stomach can bring pain all day. (Rogers)

(Brady) We have a population that eats mostly processed foods and foods of convenience which are full of chemicals and lack fiber.

Fiber is very very important if in nothing else but to physically debride the gut – to scrape off all the junk from the mucosal lining and that's not done when the diet is soft, processed foods. We see in other cultures – Africa, South America, Polynesia, South Pacific- the ones that are studied - these cultures are eating more of a hunter-gatherer Paleolithic raw whole food diet. They don't have hemorrhoids, colon cancer, or appendicitis, (which is the most common acute abdominal surgery done in the US). They eat a tremendous amount of more fiber than we do and they have a bowel transit time of about half of ours in the US.

With long transit times, we retain the toxic fecal material that contains a lot of detrimental components and we retain for twice the amount of time than that of healthier people.

From Rogers: The Dangers of Unseen Additives: The Great Medical Mimics p. 37

Quote: "What you don't know won't hurt you." I don't know where that phrase originated, but it appears to be an appropriate slogan for food manufacturers. Each day millions of Americans devour foods loaded with chemicals whose names they don't recognize – and wouldn't have the foggiest notion of what they mean. ...more alarming is that most of these additives are capable of creating symptoms that mimic diseases. In a society where disease usually equates to a deficiency of some prescribed drug, this can initiate the downward spiral of symptom-->drug-->side effect, new symptom-->worsening of the old symptom, and –since the cause is still not looked for – a new drug-->new symptom, etc.

Let's look at the onslaught. Routinely-used food chemicals include coloring agents, preservatives, antioxidants, stabilizers, gelifiers, binder, thickeners, flavoring agents, taste enhancers, sweeteners, yeast and enzymes used for hydrogenation, catalysts, cooling by contact, extraction by solvents, lubrication, propulsive agents, resin ion exchangers and unmolding agents. In an era of increasingly informed consumers, it is strange that the vast majority still eat foods that contain chemicals that they have never heard of. Then too, what is not on the label may outrank what is – like heavy metal toxicity from aluminum cooking vats or pesticides used for storage and shipping of raw materials.

The gut was designed for absorbing nutrients from nutritious food and not foreign chemicals. “

Abbreviated list of chemicals and additives and how that adversely affect the gut and add to the detoxification pathway burden:

• Additives contain food particles that may be allergenic to that individual – example – Simplesse used in cream-based desserts and salad dressings as a fat replacement has the allergenicity of its milk and egg proteins.

• Prescription and OTC drugs nearly all have predominating gut side effects

• Chemical additives – MSG decreases plasma cholinesterase – critical enzyme in nerve chemistry and can mimic side effects of pesticide poisoning. The resulting massive histamine release can also cause symptoms like migraine or paresthesias, chest pain mimicking a heart attack, depression or brain fog and commonly, epigastric pain in the pit of the stomach.

• Tyramine, naturally occurring amino acid in foods – mysterious gut pain as well. Even low-doses of tyramine can cause stomach pain and massive histamine release causing headaches, hypertensive crisis, stroke or death especially in those genetically predisposed to a reaction or are on specific prescribed antidepressants.

(Rogers: “Since we live in a society where discovering the cause is rarely emphasized, but drugs are frequently prescribed to suppress symptoms, the real cause here is often missed.”)

•Antioxidants in foods such as sodium nitrate in hot dogs, vanillin in cream, BHT and BHA in boxed cereals… can cause stomach pain by inhibiting the enzyme that normally metabolizes histamines. If not metabolized, food histamines back up and cause a myriad of GI symptoms including heartburn, nausea, indigestion, pain, gas, bloating, diarrhea or constipation.

•Nicotine can cause increased acid production. (Nichols)

•Alcohol is a direct irritant to the GI mucosa. It commonly causes gastritis, liver damage and all types of inflammatory problems in the GI tract (Nichols)

•Caffeine increases acid production. As an irritant it can cause gastritis and ulcers. (Nichols)

•Consider that the body also has to work overtime to detoxify each chemical additive using up important nutrients that then are not available to help prevent environmental chemicals from causing genetic changes that initiate cancer, promote depression or retard healing of the gut.

•Research shows that food additives destroy any remaining nutrients that happen to remain in processed foods. Example: sulfur dioxide in dried fruit can inactivate thiamin and folic acid. Thiamin is also destroyed in baked goods or foods packaged in aluminum.

•Pesticides - food and environmentally, act as irritants to the gut and overburden the detox pathway.

Unhealthy food and ingredients

•Cereal contains dead, processed, bleached, enriched, broken grains, sugars, synthetic vitamins, chemical additives, dyes and hydrogenated trans fatty acid oils – usually soybean oil - and because it is such a popular mainstay in American diets, it has a profound influence on accelerating disease.

•Sugar in any form in packaged foods often also contain trans fatty acids which help premature deterioration of cell membranes where hormone receptors lie. This contributes to insulin resistance which can cause anything from poor healing of gut tissues to cravings, obesity and chronic fatigue.

A great problem with sugars is that over time as we age or with gut infections and gut medications, we stop making the

disaccharidase enzymes that break down or metabolize sugar. Sugar causes fermentation. This results in bloating, indigestion, and major gut disturbance. In contrast, honey is a monosaccharide and does not cause the digestive problems that table sugar does.

Sugar supports the infestation and overgrowth of the pathogens – yeast, certain bacteria and parasites (Nichols)

Hidden Food Allergies Cause Gut Reactions

* Milk is top of the list of suspected causes of GI symptoms.
In sensitive individuals-- chief cause of nasal congestion and recurrent ear and sinus infections. Prevalent in irritable bowel syndrome IBS. Lactose intolerance predominates in those born with a deficiency of the enzyme lactase that breaks down milk sugar… symptoms gas, bloating, pain, mucus, diarrhea – immediate or hours later. Some have only a partial enzyme deficiency so can tolerate yogurts and cheese.

* Wheat and gluten in sensitive individuals will also produce gas, bloating, indigestion, mucus, depression pain and serious destruction of the gut lining – as seen in Celiac disease where gut linings are destroyed.

* The gluten sensitivity not only is of concern for gut issues, but can cause significant neurological problems including telltale white lesions in the brain similar to that damage seen in patients with multiple sclerosis, as well as memory loss and confusion. Cognitive or nerve problems can be caused or aggravated by gluten sensitivities. Over time, gluten sensitivities can lead to severe malnourishment and nutrient deficiencies that can start the cascade of other conditions – elevated homocysteine, weakened antioxidant defenses which when combined with inflammation become toxic to the body. People with untreated gluten intolerance are not only prone to develop neurological symptoms but are at higher risk of osteoporosis, RA, lymphoma and other autoimmune problems. (Perlmutter)

Additionally, there are other food sensitivities or intolerances that cause GI symptoms of gas, bloating, pain etc. that will not be addressed specifically here.

Part 4 will include Stress, Physical/functional aspect of the diaphragm and LES, Other Influential Gut Pathogens and more, if not too lengthy.

RESOURCES: THE EXPERTS

Robert Blaich, D.C.
Dr. Blaich is a chiropractic physician and an internationally recognized natural healthcare expert, both as a physician and a teacher. His experience in Complementary and Alternative Medicine (CAM) spans thirty years. Following pre-medical education he pursued a Doctor of Chiropractic degree, and became fascinated with a discipline and holistic approach to healthcare called Applied Kinesiology (AK). This system, based on doctor-patient interactive assessment of functional problems, challenges the physician to look at each patient as a biochemically unique individual. The orientation is to evaluate and treat the person who has the symptom, rather than treating the symptom itself.

Dr. Blaich has been a Health and Human Performance Consultant to world-class, Olympic and professional athletes, CEOs, and health care practitioners. He has worked with people who went on to win Olympic gold medals, the Tour de France, the Ironman, the Indianapolis 500, the Sebring 12-Hour Race, and the Superbowl. He has also worked with author Sydney Sheldon and musician Jackson Browne to help them perform at their highest levels. He is not anti-drug; he is pro-health.

Dr. Blaich is a unique generalist in the field of holistic health care, and his practice is truly a family practice. He consults with and treats patients from all over the world, who have a wide variety of health complaints and interests in improving their performance. Many people with difficult problems have improved through his approach of working to identify what is not functioning properly in their bodies and lifestyles and then going about working to restore and maintain the normal function that was lost. To schedule an appointment or consultation, call his office at 303-399-5117
http://www.yourinnerpharmacy.com/index.html
At 55 years old, Dr. Blaich maintains a successful health care practice, teaches seminars, and participates in many sports. He and his family reside in Denver, CO.

Russell L. Blaylock, M.D. not only compiles and edits the Blaylock Wellness Report, he is also a nationally recognized board-certified neurosurgeon, health practitioner, author and lecturer.

He attended the Louisiana State University School of Medicine in New Orleans and completed his internship and neurosurgical residency at the Medical University of South Carolina in Charleston, S.C. For over a quarter of a century, he practiced in the demanding field of neurosurgery in addition to having a nutritional practice. He recently retired from his neurosurgical duties to devote his full attention to nutritional studies and research. Dr. Blaylock has authored three books on nutrition and wellness: Excitotoxins: The Taste That Kills (1994, 1998), Health and Nutrition Secrets That Can Save Your Life and his most recent book: Natural Strategies for The Cancer Patient

An in-demand guest for radio and television programs, he lectures extensively to both lay and professional medical audiences on a variety of nutrition-related subjects. Dr. Blaylock is a member of the international board of the World Natural Health Organization and is the 2004 recipient of the Integrity in Science Award granted by the Weston A. Price Foundation. He serves on the editorial staff of the Journal of the American Nutraceutical Association and is the associate editor of the Journal of American Physicians and Surgeons, official publication of the Association of American Physicians and Surgeons.

He previously served as Clinical Assistant Professor of Neurosurgery at the University of Mississippi Medical Center in Jackson, MS, and is currently a visiting professor of biology at the Belhaven College, also in Jackson.
Russell L. Blaylock, MD http://www.russellblaylockmd.com
Reference: Blaylock Wellness Report October 2005 – Stomach Health www.Newsmax.com $48/year

David M. Brady ND, DC, CCN, DACBN
Latest book: " Healthy Revolution: What You Really Need to Know to Stay Healthy in a Sick World"
http://healthyrevolution.info/hr/

Before Dr. Brady entered the field of medicine, he was a graduate BSEE
and was employed by McDonnell Douglas Aerospace Corporation before starting his clinical education at Texas Chiropractic College where he graduated as Valedictorian of his graduating class in 1991. Dr. Brady is a licensed Naturopathic Physician, a Board Certified Clinical Nutritionist, and a Diplomate of the American Clinical Board of Nutrition.

He is presently the Director of the Human Nutrition Institute and an Assistant Professor of Clinical Sciences at the University of Bridgeport (Connecticut, USA). Dr. Brady is the Chief Medical Officer of Designs for Health, Inc. a nutritional supplement and nutraceutical manufacturer for nutritional professionals. He has been a leading nutritional product formulator and clinical consultant to some of the most innovative nutraceutical companies and clinical laboratories in the country. Dr. Brady also maintains a private practice at The Center for the Healing Arts in Orange, CT, where he specializes in "Functional and Metabolic Medicine".
http://mybbi.org/338/?form_585.userid=28&form_44.replyids=1&form_48.replyids=
Reference: DFH Teleconferences on Digestive Illness & Gut Dysfunction

Liz Lipski, PhD, CCN
Dr. Lipski holds a doctorate in Clinical Nutrition from the Union Institute in Cincinnati, OH. She is also certified by the Clinical Nutrition Certification Board. Dr. Lipski has been working in the field of holistic and complementary medicine for over 25 years.

The author of Digestive Wellness, Digestive Wellness for Children, and Leaky Gut Syndrome, she's also the Director of Doctoral Studies at Hawthorn University, the nutrition editor for Pilates Style Magazine, and a member of the Board of Directors for the National Association of Nutrition Professionals. Dr. Lipski is the founder of Access to Health Experts, a web-based holistic health membership site, and Innovative Healing, a web site offering the latest information on integrative healthcare. She is nationally known for her expertise in the fields of nutrition, integrative health, and digestive and auto-immune conditions.

Title: Digestive Wellness

Elizabeth Lipski, PhD, CCN
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Optimal Digestion – New Strategies for Achieving Digestive Health

Edited by Trent W. Nichols M.D. and Nancy Faass, MSW, MPH, the author team includes Elson Haas, M.D., Richard Kunin, M.D., Efrem Korngold, Lac, OMD, Michael Rosenbaum, M.D., and Martin Rossman, M.D. All are experts of integrative medicine and published authors, contributing information in their specialties.

Written by a team of medical experts, Optimal Digestion offers new ideas and information based on years of experience by doctors dealing with chronic digestive disorders, including heartburn, colitis, Crohn's disease, diverticulitis, irritable bowel syndrome, and many more. This guide provides a comprehensive understanding of the newest patient-centered approach to healing, combining the best of mainstream and alternative treatments. Because this approach focuses on the individual rather than the illness, treatment is based on your unique makeup. Optimal Digestion will help you create an individual healing program using diet, nutrients, medications, exercise, rest, and stress reduction

David Perlmutter, MD, FACN, is a Board-Certified Neurologist and Fellow of the American College of Nutrition who received his M.D. degree from the University of Miami School of Medicine where he was awarded the Leonard G. Rowntree Research Award. After completing residency training in Neurology, also at the University of Miami, Dr. Perlmutter entered private practice in Naples, Florida where he serves as Medical Director of the Perlmutter Health Center and the Perlmutter Hyperbaric Center.

Dr. Perlmutter serves as Adjunct Instructor at the Institute for Functional Medicine in Gig Harbor, Washington, and has contributed extensively to the world medical literature with publications appearing in such journals as The Journal of Neurosurgery, The Southern Medical Journal, Journal of Applied Nutrition, and Archives of Neurology. He is the author of: BrainRecovery.com - Powerful Therapy for Challenging Brain Disorders, The Better Brain Book, and Raise a Smarter Child By Kindergarten, and is recognized internationally as a leader in the field of nutritional influences in neurological disorders.

Dr. Perlmutter was awarded the 2002 Linus Pauling Award for his pioneering work in innovative approaches to neurological disorders. In addition, he received the 2002 Denham Harmon Award from the American College for the Advancement in Medicine for his work in advancing the understanding of free radical biochemistry in neurological diseases and is the recipient of the 2006 National Nutritional Foods Association Clinician of the Year Award.

Dr. Permutter's Health Center is located in Naples. FL where he treats neurological and digestive disorders through preventive medicine and nutrition.

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Sherry A. Rogers, MD, ABFP, ABEM, FACAAI, FACN, is a Diplomate of the American Board of Family Practice and of the American Board of Environmental Medicine. She is a Fellow of the American College of Allergy, Asthma and Immunology and of the American College of Nutrition. Dr. Rogers lectures worldwide and teaches advanced courses for physicians. She developed the Formaldehyde Spot Test and has published her mold research in Annals of Allergy. Her chemical testing methods have been published in the National Institutes of Health journal Environmental Health Perspectives. Sherry Rogers has been in professional practice in Syracuse, New York for about 30 years. She has been the environmental editor for Internal Medicine World Report. Dr Rogers has published a number of scientific articles and authored 12 books including Detoxify or Die, Pain Free, Wellness Against All Odds, You Are What You Ate, The Cure Is In the Kitchen, and Recovery. Sherry Rogers is the editor of the TOTAL WELLNESS newsletter.

Dr. Sherry Rogers says: "You have been brainwashed into believing that the diagnosis given to your condition, a mere label, is the end of the line. But nothing could be further (and more dangerously) from the truth. In fact, the name or label that has been given to your collection of symptoms is totally inconsequential. The only thing that matters is what has caused the symptoms…

…If you are serious about healing, then brace yourself for a crash course in curing whatever ails you. I'll take you step-by-step through the most important paradigm shift of your life…the secret is in getting your body so chemically unloaded and nutrient primed, that it heals itself."

No More Heartburn – Stop the Pain in 30 days – Naturally
Subtitle: The Safe, Effective way to prevent and heal chronic gastrointestinal disorders
Author: Sherry A. Rogers, MD

www.nutrition4health.org

Part 4 – Stress and Digestion

Part 4 continues the examination of why the average American has gut dysfunction.

Three areas will be examined.
1. Food Stream (Part 3)
2. Stress
3. Physical/functional aspects of diaphragm and LES

This is such a huge topic with so many influencing factors. The following just skims the surface, but it doesn't take much imagination to connect the dots to associate stress to digestive ailments or expand on that to see how gut disturbances can influence atrial fibrillation.

Dr. Brady says that the majority of people visiting his office for treatment have some form of digestive complaint.

We know Type A's are typically stressed out individuals and are high achievers. We also know the typical afibber can relate to being Type A - Those who are over-stressed, overbooked, living on the edge of life in the fast lane and who become 'stuck' in the sympathetic nervous system (SNS).

Prolonged activation of the stress response creates many chronic degenerative symptoms that accelerate aging. (Lipski)

2. The Impact of Stress on the Digestive System

Following is a very brief review – excerpts mostly from Dr. Robert Blaich's book, "Your Inner Pharmacy" and comments from others referenced in Part 3.

Regarding basic adrenal functions and related to the saber-tooth-tiger effect…

Many baby boomers are ex-adrenaline junkies – people who lived in the fast lane for too many years. As they age, they are starting to have many similar problems. When the "tiger" attacks the body or when any form of immediate stress occurs, in the fight-or-flight response, the sympathetic nervous system (SNS) fires, releasing adrenal hormones to create survival mechanisms including: elevated blood pressure and blood sugar, increased heart rate, dilated pupils, opened up airways (bronchodilation). Normal digestion and even intestinal peristalsis is stopped to allow the body to focus on survival. And the parasympathetic nervous system (PNS), which regulates day-to-day activities like slowing the heart rate and stimulating digestion, is inhibited.

An estimated 90% of all visits to all types of doctors are for stress-related illnesses and these are all caused by some

variation of this imbalance of the nervous system and adrenal function.(Blaich)

Dr. Hans Seyle, a pioneer in the field of stress research, referred to three stages through which the adrenal glands progress when frequently and repeatedly activated by stress. These stages, called General Adaptation Syndrome include: the initial response, (Alarm Stage) and is the classic fight-or-flight response that brings on the adrenaline rush.

Seyle observed that animals continuously and repeatedly stressed went into the (next) Resistance Stage. If under prolonged stress, the Resistance Stage may last years or even decades during which several changes occur in the body. One is enlargement of the outer layer of the adrenal glands (cortex) where hormones are produced that control general balance – blood sugar levels, inflammation and even secondary sex characteristics.(Blaich)

During the Resistance Stage of repeated stress, Dr. Seyle's lab animals developed intestinal and stomach ulcers and weakened immune systems.(Blaich) In humans, this translates to the enormous increase in digestive problems including heartburn, GERD, IBS, chronic illness and fatigue we see today.(Lipski)

Then at some point, the body can no longer maintain the increased production of these hormones to meet continued, ongoing stress and the adrenals reach the Exhaustion Stage(adrenal burnout), wherein the body can no longer regulate its own vital functions.(Blaich)

Chronic disease develops gradually as a result of dysfunction. One doesn't just "get" GERD, diabetes, heart disease or cancer… they are each preceded by years of dysfunction of the body involving gradual deterioration of normal function over time. (Blaich)

It's easy to understand how it would be common to develop digestive problems during the resistance stage since continued activation of the SNS by ongoing bouts of stress puts the body into survival mode. Normal digestive processes are inhibited while the body tries to service the current crisis. As the crisis continues on and on, the normal production of digestive enzymes continues to be "shut off" or greatly reduced. The consequence then, of eating heavier foods like proteins that require more enzymes (and the enzymes aren't there) is the resulting discomfort of bloating, gas and heartburn.(Blaich)

Unfortunately, rather than looking at the cause of these common digestive disorders, we are programmed to take an antacid or medication for 'immediate' relief of symptoms. This is often temporary and rarely corrects the imbalance in the nervous system that is limiting normal digestion in the first place.(Blaich)

There is correlation in studies with Irritable Bowel Syndrome and Post Traumatic Stress Disorder from the neurological and hormonal picture seen in PTSD. Often cortisol is abnormal (often even low) and it's not just burned out adrenals but they are getting a secondary adaptation overdrive of catecholamine. So they are in a fight-or-flight stage all the time – neurologically -- and it affects the Enteric Nervous System as well. We know serotonin is a major player in the ENS. These patients often have too much catecholamine and too little serotonin,.particularly serotonergic activity in the ENS. It can be difficult to balance out those problems. (Brady)

We know that cortisol and stress hormones act very negatively on the intestine particularly the immune surveillance by directly decreasing secretary IgA thereby allowing greater antigen penetration through the gut wall and creating the common problem of pan-allergy to foods.

The more antigenic and toxic exposure through the intestinal tract, the higher the burden on the body-- not only the immune system, but the liver in hepatic detoxification. (Brady)

Julia Ross (The Mood Cure, The Diet Cure) says that "No matter how much stress we endure, we have just two little glands to fight it for us…the adrenal glands." In periods of prolonged stress, we go into adrenal overdrive and the adrenals can get stuck in the 'on' position. The chemicals released by the adrenals in the fight-or-flight stage are adrenaline and cortisol. Adrenaline is needed for the short blasts – if we are threatened by a mugger or an angry boss and cortisol bolsters us in the long-lasting stresses – like flu or a divorce.

In this state of adrenal alarm, other systems try to compensate. The thyroid may turn down its hormonal activity in an attempt to reverse adrenal overdrive and make us tired and heavy as metabolism eventually slows. DHEA and other

adrenal hormones can also alter functions as adrenals become depleted. We don't relax and rest to allow for repair and rebound. So we get sick more often or have trouble sleeping. By the time, the second stage arrives, we are running low on cortisol as well and feel tired sick and stressed too often. In the third stage, we are quite low most of the day in cortisol, DHEA, thyroid and other hormones like testosterone, estrogen and progesterone and we are almost always tired and can't cope even with minor stress well at all.

SYMPTOMS OF ADRENAL EXHAUSTION:

+ Sensitivity to exhaust fumes, smoke, smog, petrochemicals
+ Inability to tolerate much exercise or feel worse after exercising
+ Depression or rapid mood swings
+ Dark circles under the eyes
+ Dizziness upon standing
+ Lack of metal alertness
+ Tendency to catch cols easily with weather changes
+ Headaches, particularly migraines, along with insomnia
+ Breathing difficulties
+ Edema (water retention)
+ Trouble falling asleep or staying asleep
+ Feeling of not being refreshed after sleeping
+ Feeling tired all the time
+ Feeling of being mentally and emotionally overstressed
+ Low blood sugar symptoms
+ Need for caffeine (coffee, tea, others) to get going in the morning
+ Low tolerance of loud noises and/or strong odors
+ Tendency to startle easily, panic
+ Food or respiratory allergies
+ Recurrent, chronic infections, such as yeast infections
+ Lightheadedness
+ Low tolerance for alcohol, caffeine and other drugs
+ Fainting
+ Tendency to get a second wind (high energy) late at night
+ Low blood pressure
+ Haven't felt your best in a long time
+ Eyes sensitive to bright light
+ Feelings of being weak or shaky
+ Constant fatigue and muscular weakness
+ Sweating or wetness of hands and feet caused by nervousness or mood swings
+ Ability, at times, to relieve paranoia and depression by eating
+ Frequent heart palpitations
+ Chronic heartburn
+ Vague indigestion o abdominal pain
+ Alternating constipation and diarrhea
+ Infrequent urination
+ Cravings for sweets or alcohol
+ Lack of thirst
+ Clenching or grinding of teeth especially at night
+ Chronic pain in lower neck and upper back
+ Inability to concentrate and/or confusion usually along with clumsiness, ADD and ADHD
+ Chronic breathing disorder, particularly asthma
+ An excessively low cholesterol level (below 150 mg/dl)
+ Bouts of severe infection.

Source: (pp. 46-49 *The Diet Cure*)
http://www.moodcure.com/schedule2.html
http://www.moodcure.com/julia.html

[Can you recognize some of your own symptoms here?]

Dr. Rogers notes that in the fight-or-flight stage, most of the blood in the body is shunted to muscles and the heart and among results, the secretion of digestive juices slows to a halt since blood is pulled from the digestive tract.

On the other hand, she says the parasympathetic nervous system energizes the glands, promotes healing, repair and aids digestion. So you must relax after a stressful day before eating so you can reap the benefits of the PNS.

Stress reduction and a peaceful meal time without stress obviously become very important. A concerted effort must be made to make mealtime unstressful to ensure proper digestion and an effort must be made to take time to eat peacefully, quietly and properly. Tall order in today's rushed workplace with busy schedules, traveling, limited food selections and choices.

Dr. Rogers offers suggestions:

1. Eat your meals in a stress free-tranquil environment. Make sure mealtime is peaceful as digestion begins in the head. Eliminate TV, unpleasant discussions, violent videos etc.

2. Chew each mouthful at least 10 to 50 times. [In a previous post, I relayed the advice that we should chew food until it becomes a watery slurry without adding any liquid to make it that watery consistency.]

If your dentition is preventing you from chewing adequately, take steps to correct that problem. She says a common problem with stomach acid starts because people are in such a hurry they don't chew adequately. The saliva produced in the mouth is the first (and very important step) toward breaking down food so it can be properly digested.

3. Some people observe food combining that successfully eliminates gas and bloating as well as weight loss. Simple premise… Cut back on eating many dissimilar foods at one sitting. If starches and proteins are eaten with fruits, they require longer digestion times. Fruit doesn't need much digestion time, and while it waits for the other foods to break down, gas and bloating is created as the fermentation begins quickly with fruit. She adds that food combining can be intensely limiting and there is little scientific evidence that it is totally effective.

Gas and bloating comes from fermentation action between gut bacteria, gut yeasts. When gases distend the gut wall, they cause painful bloating, cramps, uncomfortable fullness and indigestion. They can also turn toxic to tissues and nerves and cause an inflammatory reaction that impairs the normal peristaltic wave action initiated by gut nerves to propel food along which adds constipation to bloating and cramps.
She says – pure food is the key to good digestion which leaves out junk foods, additives or foods ground, crushed, mashed or otherwise mutilated by some machine.

Addressing the stress issue is critical. (Rogers)

She says, "Never underestimate how intimately the gut is tied to the brain. In fact, the brain and emotions are as much a stimulant to the gut as any food, bug, ulcer or cancer. And the opposite is also true: The gut can stimulate other parts of the body. Be that as it may, never forget that you have absolute control over how threatening you perceive anything to be and how extensively you are going to allow it to affect your GI tract function."

In 1996, Michael Gershon, MD, wrote The Second Brain- (Your Gut Has A Mind of Its Own) The Scientific Basis of Gut Instinct and a Groundbreaking New Understanding of Nervous Disorders of the Stomach and Intestines. (Harper Publishing) It's a well done book that explains how the Enteric Nervous System functions and influences overall health – and especially gut disturbances.

He says: "95% of all serotonin in the body is in the gut where it triggers digestion. Nerve cells in the gut also use serotonin to signal back to the brain. This information can train us not to eat certain foods by communicating pain, gas and other terrible feelings."

[Think about it … not producing stomach acid… eating foods with chemicals, additives, bad fats, sometimes allergenic

foods… and no digestive enzymes to help deal with it.]

It's not difficult to visualize a connection between stress and poor digestion, absorption, and assimilation.

So from there, we can also visualize a cascade of detrimental functional sequences that begin with food choices, the impact of stress on how what is consumed will be handled by the body and what systems depend on this handling. Key to this is the immune function that is largely the function of the small intestine and this will be covered in the probiotics section in a forthcoming segment.

3. The Diaphragm - Stress, LES & Hiatal Hernia

The nervous system normally controls stomach acid production and the
parasympathetics stimulate stomach acid production through the vagus nerve, the 10th cranial nerve from the brain that enervates the stomach, diaphragm and heart with signals. Malfunctions or distortions can mean the wrong messages get to the stomach and produce too much or too little stomach acid. (Blaich)

In his chiropractic treatment, Dr. Blaich always evaluates the balance and function of the parasympathetic nervous system and since the vagus passes through the skull and down along the vertebrae of the upper neck, he makes sure the bones are properly aligned and don't impinge on the nerve. Often, he finds that once the normal function of the vagus is restored, stomach acid production returns to normal.

On a physical/functional level, the diaphragm is highly important and influential in digestive health. Dr. Blaich says he considers it second only to the heart as the most important muscle in the body. It not only increases oxygen levels in the brain and body, it also pumps the acupuncture energy that flows through the meridian system.

It is the barrier that normally keeps acid in the stomach by the function of the diaphragm, the muscle that separates the chest and abdominal cavities. It contains the esophageal sphincter – the barrier 'valve' between the stomach and esophagus (often called the Lower Esophageal Sphincter or LES). The tone of the diaphragm muscle and the LES maintains the barrier and keeps stomach acid out of the esophagus. Therefore, if there is a problem of acid reflux, it makes sense to consider the muscles may not be functioning properly.(Blaich)

Medical textbooks note that hiatal hernia symptoms such as acid reflux result from muscle laxity or weakness around the esophageal sphincter. Often, people respond to correcting the dysfunction of the diaphragm muscle by a visceral manipulation that pulls down the stomach that is otherwise being pushed up through the opening into the esophagus. Correcting a dysfunctioning muscle makes sense. It's non-invasive, holistic and can impact a patient's life in broader ways than just solving the mechanical problem. What doesn't make sense is the standard first-line of treatment that millions receive for this problem, which is to take medications to reduce acid production. It makes no sense to assume that everyone with heartburn and reflux has excess acid production. On the contrary, many of these people don't have too much acid. The problem is that the acid is in the wrong place – up in the esophagus where it doesn't belong. So rather than a chemical problem of producing too much acid, it is likely to be a mechanical problem with a muscle that can be corrected.(Blaich)

We often talk about not sitting scrunched at the computer for or slouched in a chair for long period of time as it can be a trigger for afib. Dr. Blaich observes that as we age, our shoulders and upper back become increasingly hunched over… called thoracic kyphosis. When hunched over, you can't take a deep breath and your stomach is compressed up into your diaphragm putting extra pressure on the LES and "challenging its ability to keep the contents in your stomach and out of your esophagus." He says if you eat a large meal while hunched over, your full and expanded stomach which is compressed by your position, has nowhere to go but up into your diaphragm. If the diaphragm and LES are weak, the upward pressure of the stomach can force a portion of the stomach or its contents into the esophagus, causing gastric reflux and even a hiatal hernia.

So from a functional point of view, it's easy to understand how poor posture, a full stomach and a weak diaphragm muscle can create gastric reflux. These are all correctable by motivation, discipline and manipulation along with stretching and breathing exercises to activate the diaphragm.

He says he sees more and more diaphragm-related problem in younger people as a sedentary lifestyle become more habitual. The diaphragm, like any other muscle, needs exercise to be healthy.

Stress can adversely affect the diaphragm. When stressed, you naturally tighten up, breath less deeply and often feel tightness in the chest. He reminds people to breathe deeply during stressful times or when working intensely in a stationary position (ie, hunched/scrunched at the computer).

Emotional traumas and stresses have a tightening effect on the diaphragm. The LES is controlled by the autonomic nervous system and the sympathetic nerves tighten the sphincters while the parasympathetic nerves relax them. When you are exhausted from constant stress, the body may not be able to maintain the normal tone of the sphincters which can predispose to gastric reflux. He treats with nutritional support to rebuild exhausted parts and functions of the body as well as mechanical adjustments.(Blaich)

This concludes this segment on the examination of a few more influencing factors that impact digestive dysfunction. It's an extremely cursory report because of space constraints. The list of stress symptoms serves as a stark reminder of how all encompassing the insults can be to total-body, optimal functioning. We are a web of interconnecting biochemical reactions all working to function as one whole symphony. When even one player is off key, the result is less than perfect harmony.

It is small wonder that gut symptoms can be a significant sign of underlying imbalances and abnormalities.

Following segments will focus on more influences and will include:
Leaky Gut Syndrome, Pathogens, Candida and Parasites…all part of digestive dysfunction. The Immune System and Probiotics will follow and concluding will be Testing and Treatments – both pharmaceutical and natural remedies.

Part 5 – Leaky Gut Syndrome

In the preceding segments, we've learned that if the gut isn't healthy, many other symptoms of un-wellness occur. While it's possible to cure gut symptoms, if other symptoms still remain, then the suspected culprit is leaky gut syndrome. LGS increases the likelihood that a food allergy or other harmful immune reactions will occur.

Leaky gut syndrome (LGS), is termed medically as hyper-permeability or increased intestinal permeability. Once again, this a complex topic and there is no one single cause.

"Unfortunately, only in the last decade has anyone recognized the concept of a leaky gut. And still, most doctors have never heard of it – but it's a concept that could well explain the evolution of most food allergies." (Blaylock)

LGS is typically caused by months and years of food allergies, undigested food particles, Candida or anything that causes inflammation of the gut lining. And, it can start after only one round of a powerful antibiotic. We can link afib triggers to many digestive disturbances and inflammation or sensitivities to foods, chemicals and even Candida overgrowth so leaky gut is an important consideration.

The concept of LGS is easy to understand.

The small intestine (duodenum) functions in two ways:
1. Absorbs nutrients from food
2. Acts as a protective barrier to microbes or large food particles (potential allergens) to keep them out of the blood stream

The digestive tract is naturally porous but selectively so. The cellular barrier opens to allow nutrients to pass through and keeps out anything harmful to the body…or that's the way it should work. Leaky gut occurs when the pore-like structure (the barrier) becomes damaged by inflammation or pathogens and then toxins, large food molecules, bad bacteria can cross the barrier and enter the whole body via the blood stream to cause illness or symptoms of illness and compromise liver function from the tremendous burden added to detoxification pathways.

The digestive tract is 25 – 35 feet in length (from mouth to anus) and its function is to turn the food we eat into microscopic nutrient particles that cells can use for energy, maintenance and repair. “What is absorbed and assimilated into our bodies – actually becomes our bodies.”(Lipski)

Dr. Brady explains that if the whole small intestine (duodenum) averaging 15 – 20 feet long, were opened up and every wrinkle flattened out --even the little villi-- the surface would cover about the size of a tennis court. Graphic visual. These villi are millions of little finger-like projections inside the intestinal walls. The barrier is only the thickness of an eyelid. Many factors cause this lining to become compromised such as stress, foods, chemicals, medications, alcohol, Candida overgrowth.

This large surface is exposed continually to foods, microbes, irritants, chemicals and toxins and it is a highly important surveillance and defense mechanism for our immune system.

Previously, it was noted that there is over a hundred million nerve cells in the small intestine alone which is roughly equal to that of the spinal cord.

Dr. Blaylock notes that 70-80% of the functioning immune system is within the GI tract in a system called gut-associated lymphoid tissue (GALT). These cells and that of the respiratory system secrete the anti called IgA which protects us from harmful invaders and also regulates the tolerance system to various substances ingested. When we examine the immune system segment, this surveillance system will be reviewed.

The focus here is to emphasize the hugely important role of the GI system to keep our entire body healthy and functioning optimally. Along with the liver, this is a very large and important task.

How leaky gut might begin: An otherwise healthy person takes an antibiotic for a sore throat. The antibiotic not only goes to the throat but the entire system killing beneficial bacteria in the GI tract. The typical Candida response to this scenario is just one example. But in this case, the Candida grows uninhibited in large numbers, inflames the intestinal lining and causes LGS. (Rogers)

[Candida will always be found as part of the gut population. It’s when the numbers become unbalanced that it becomes harmful or pathogenic. Antibiotic use sets the stage for Candida and other opportunistic bacteria and fungi to proliferate and become harmful.]

A single course of antibiotics kills 90% of the beneficial gut flora (friendly bacteria) and a second or continued course will kill 99%.(Lippman) This is why people in the hospital for intestinal surgery who are given prophylactic doses of antibiotics often end up with the dreaded C. difficile. [of course, no one thinks to also give them probiotics]

“ When large food particles leak across the intestinal lining, the person may develop new food allergies and have symptoms of arthritis, headache or asthma. Or may begin to experience bloating, pain alternating diarrhea and constipation which is often labeled IBS or spastic colon. But in reality, Dr. Rogers says it is a cover-up for the honest answer traditional medicine usually avoids “we don’t have a clue as to why you have gas, bloating and indigestion…and we never look for environmental and nutritional causes because we don’t believe in causes like food allergies or Candida nor have we heard of leaky gut.” (Rogers)

When the intestinal mucus layer is weakened and bacteria and fungi pass into the bloodstream and throughout the body, they can colonize in other parts of the body (called bacterial translocation). This happens when there is a disruption of the balance of normal gut flora which results in bacterial overgrowth or decreased immune function. This can occur with surgery or in feeding tube use in hospitals and this translocation can result in organ failure. People with LGS and arthritis have been found to harbor Blastocystis hominis in the synovial fluid of joints. (Lipski) [This will be covered more in the Immune and Probiotic segment later on because it involves the production of the immune complex secretary IgA and the antibody response to antigens.]

What causes gut inflammation that leads to LGS?
These lists are extensive and serve to illustrate how many conditions can either cause or are associated with LGS. (Lipski, Rogers, Saputo, Blaylock, Lippman)

ADD, ADHD
Aging
AIDS
Alcoholism
Allergic disorders
Ankylosing spondylitis
Arthritis/inflammatory joint disease
Asthma
Autism
Burns
Cancer
Celiac disease
Chemotherapy
Chronic Fatigue Syndrome
Chronic Hepatitis
Chronic infections
Compromised liver function
Chronic stress
Crohn's disease
Cystic Fibrosis
Cystic acne
Diabetes
Dysbiosis
Eczema
Endotoxemia
Environmental Illness
Food allergies or sensitivities
Giardia and other parasites
H2 Blockers
HIV positive
Hives
Hypoglycemia
Inflammatory bowel disease
Inadequate digestive enzymes
Intensive illness
Intestinal infections
Irritable bowel syndrome
Joint and collagen problems
Liver dysfunction
Lupus erythmatosis
Malabsorption
Multiple chemical sensitivities NSAIDs (aspirin, Motrin etc)
Nutritional deficiencies/malnutrition
Pancreatitis
Pancreatic insufficiency
Physical injury, trauma
Primary Biliary cirrhosis
Psoriasis
Radiation therapy
Reiters syndrome
Rheumatoid arthritis
Schizophrenia
Shock or anaphylaxis
Skin disorders ranging from urticaria to acne and dermatitis
Systemic Lupus erythematosus
Thermal injury

Trauma
Toxic shock syndrome
Ulcerative colitis

Dr. Lippman says anything can cause any symptom.

Many conditions exacerbate LGS and flare-ups often mimic symptoms of exposure to certain foods

Symptoms Associated with or caused by Leaky Gut Syndrome (Lipski)

Abdominal pain or bloating
Aggressive behavior
Anxiety
Asthma, hayfever, airborne allergies
Bed wetting
Bloating
Chronic joint pain
Chronic muscle pain, swelling
Confusion
Constipation/diarrhea
Fatigue and Malaise
Fevers of unknown origin
Fuzzy thinking, poor memory
Gas/flatulence
Indigestion
Migraines
Mood swings
Nasal congestion
Nervousness
Poor exercise tolerance
Poor immunity
Poor memory
Recurrent bladder infections
Recurrent vaginal infections
Shortness of breath
Skin rashes, eczema, hives
Toxic feelings

The bottom line is… when the bowel lining is damaged by (something that causes) inflammation, the nutrients that need to be transported into cells by nutrient carrier proteins can't get there because of damage to the carrier proteins. The result is malabsorption; you take in the nutrients, but they can't be absorbed. So in addition to food and chemical allergies and immune diseases, the leaky-gut victim may develop mineral and vitamin deficiencies in spite of taking adequate supplemental levels and it is these nutritional deficiencies that can proceed to cause any disease we might face in a lifetime. (Rogers)

Leo Galland M.D. FACN, estimates that leaky-syndrome plays a role in 70 % of people with chronic fatigue syndrome, eight out of 10 aspirin or ibuprofen users, most alcoholics, and anyone who is hospitalized. Galland also believes parasites that can lead to leaky-gut syndrome may lurk in most municipal water systems.

Digestive problems can cause illness anywhere in the body. Research suggests that degradation of the gastrointestinal environment is one of the primary points at which health is lost. The toxins known to be associated with GI dysfunction are frequently absorbed and distributed to other parts of the body and place a burden on the liver and immune system. (Nichols)

A classic chart showing the resulting dysfunction of organ systems will typically include a diagram that starts at the top with Leaky Gut and then will have arrows descending down the chart to these pathways and implications:

Leaky Gut ->Toxins -> liver burden + compromised liver detoxification->Toxins + oxidative stress-> altered function or structures of the body's organ system -> muscles + bones, immunity, glands, nervous system, heart, reproduction (Nichols)

Relevancy to AF, LGS
After the gut is inflamed and carrier protein damaged so malabsorption and nutrient deficiencies occur… meaning slower healing of gut tissue and one example: Magnesium deficiency = induced angina or gut spasms. (Rogers)

[another afib connection – Mg deficiency = arrhythmia]

Without going into each cause, second segment of LGS (Part 6) will review in a bit more detail some everyday, common influences that can cause LGS since we all can relate to these examples.

1. Use of antibiotics and prevalence of Candida albicans infection (yeast)

2. Food, Poor Choices and Chemical Additives and, Environmental Sensitivities and Chemicals found in commonly used personal care.

3. Also will be a brief discussion on parasites infection which is much more common these days than we think.

Added to the experts list for resource references:

Cathie Lippman, MD, has practiced Environmental and Preventive Medicine in Beverly Hills for 20 years. Environmental Medicine regards illness as possibly being a result of sensitivities to foods or chemicals or some other aspect of the environment. To screen for these sensitivities, Dr. Lippman evaluates each patient with an FDA-registered device that non-invasively assesses whether food, inhalant, or chemical sensitivities may be issues for the person. In addition, it allows her to screen for infections, toxicities, and nutritional deficiencies that may also contribute to the person's symptoms.

Dr. Lippman received her M.D. in 1973 from the University of Chicago Pritzker School of Medicine. After a pediatric internship at LA County-USC Medical Center, she studied Adult and Child Psychiatry at UCLA and was Board Certified in each specialty in 1980. Dr. Lippman became dissatisfied with the limitations of a purely psychiatric focus. She changed her practice from psychiatry to alternative medicine in order to address the whole individual.

Dr. Lippman's extensive knowledge and understanding of the whole person, including psychological, nutritional, and physiological influences, as well as environmental factors, make her uniquely qualified to examine how these various influences affect the patient. Her special approach enables her to prioritize the actions one should take to regain health. Dr. Lippman often recommends that patients do laboratory studies to confirm the presence and severity of infections, toxicities or deficiencies. She then makes recommendations for change in diet as well as employing homeopathics, nutritional supplements, and/or herbs to effect the desired changes. (Source: Designs for Health Clinical Rounds Teleconference)

Leo Galland, MD, FACN has received international recognition as a leader in the field of Nutritional Medicine for the past 20 years. A board-certified internist, Dr. Galland is a Fellow of the American College of Physicians and the American College of Nutrition, an Honorary Professor of the International College of Nutrition, and the author of more than 30 scientific articles and textbook chapters, including an invited chapter on Functional Foods in the Encyclopedia of Human Nutrition, 2nd Edition (Elsevier 2005). He has also written two highly acclaimed popular books, Superimmunity for Kids (Dell 1989) and Power Healing (Random House 1997), and has created Drug-Nutrient Workshop.

Dr. Galland received his education at Harvard University and the New York University School of Medicine and trained in internal medicine at the N.Y.U.-Bellevue Medical Center. He has held faculty positions at New York University, Rockefeller University, the Albert Einstein College of Medicine, the State University of New York at Stony Brook, and the University of Connecticut. In addition to a full-time private practice in New York City, Dr. Galland has been

committed to educating physicians and other health professionals in the scientific application of nutrition to clinical practice. In 2000, he received the Linus Pauling Award from the Institute of Functional Medicine for formulating key concepts underlying the discipline of Functional Medicine.

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Part 6 – Leaky Gut Syndrome (cont'd…..)

Antibiotic Use

Dysbiosis is the term used to describe the disorder where the normal balance of friendly or helpful gut bacteria (intestinal flora) becomes overwhelmed by harmful microbes. Typically all bacteria live in a symbiotic state – living together in mutual harmony – or symbiosis. Tests indicate many microbes show up in the digestive tract but don't belong there and they can produce chemicals that are poisons to surrounding cells and to the person they live in. These microbes are not as virulent as some like Salmonella, but cause chronic, undiagnosed, deep-seated problems. (Lipski)

The most common cause of dysbiosis is use of prescription and OTC medications. Antibiotics quickly change the balance of intestinal microbes (flora). They kill both good and harmful bacteria throughout the entire GI system including mouth, vagina and skin. (Lipski)

A single round of antibiotic kills 90% of beneficial bacteria; an extended or second round kills 99% - (Lippman)

Published research indicates dysbiosis as a contributing cause in rheumatoid arthritis, autoimmune illness, B12 deficiency, chronic fatigue, cystic acne, the early stages of colon and breast cancer, eczema, food allergy/sensitivity, inflammatory bowel disease, irritable bowel syndrome, multiple sclerosis, psoriasis, Sjögren's, syndrome and steatorrhea. These problems were previously unrecognized as having a microbial component. (Lipski)

Beneficial gut bacteria supply vitamin B12, detoxify estrogen and other carcinogens, prevent overgrowth of harmful bacteria, viruses and fungi and aid in the digestion of fiber. Basically, they keep the 'house' in order. (Blaylock) [more on this in the Probiotics segment]

Candida

Candiasis is a fungal or yeast infection or overgrowth of normally present fungi, but kept in check by friendly gut bacteria. Candida is most likely to flourish with antibiotic use – especially with powerful drugs or longer term treatment. Candida fungi produce acid protease, which cleaves secretory IgA from intestinal mucous membrane which allows the fungi to anchor and colonize there. The toxins fungi produce are easily absorbed into the blood stream and affect immune system function, hormone balance and even thought processes. As the Candida invade the intestinal walls, they destroy cells and create gaps or holes which enables partially-digested food molecules to pass through the intestinal barrier. As a result, the antibody system is activated so the next time those foods are eaten, there will be a sensitivity reaction to foods or food substances or the environment. (Lipski)

Candida infections can be triggered by birth control pills, steroid medications and alcoholic beverages.

<u>Most common symptoms of Candida overgrowth</u>
Abdominal bloating
Anxiety
Constipation/diarrhea or both

Depression
Environmental sensitivities
Fatigue
Feeling worse on damp or muggy days or in moldy places
Food sensitivities
Fuzzy thinking
Insomnia
Low blood sugar
Mood swings
PMS
Recurring vaginal or bladder infections
Ringing in ears
Sensitivities to perfume, cigarettes or fabric odors.

Although these symptoms are the most prevalent, Candida can masquerade in a diverse set of health problems. (Lipski)

What often isn't known about Candida infections is they often accompany parasitic infections as the parasites drain energy on the system and allow Candida to flourish. Candida is often a factor in ADD and Autism in children from overuse of antibiotics and sugar in the diet. The formation of abnormal organic acids are neurotoxic.

Parasites

We don't have to travel out of the country these days to become infected with parasites. Dr. Lippman says, in many ways, this is a third world country because we have immigrants from all over and they bring to us whatever they picked up in their own country. When they work in restaurants, there is no guarantee about how well they wash their hands and it is not at all uncommon for people to get a parasite just from going to their local restaurant…even in major, large cities so we get them here in the US just as much as any other country. She comments that very often parasites aren't a consideration in GI dysfunction but they should be.

It's also easy to pick up parasites from pets and also very common to pick up parasites from raw fish in sushi. (Lippman)

Dr. Lipski notes that back in 1978, a report from the CDC found that 1 out of every 6 randomly selected people had one or more parasites. Today, 30 years later we certainly would find more prevalence. In fact Dr.Lipski says parasites have become pandemic for many reasons… including contaminated water supplies, day care centers, ease of international travel, increased immigration, pets and sexual revolution. She says, contrary to popular belief, having parasites isn't a reflection of cleanliness.

Common symptoms are abdominal pain, allergy, anemia, bloating, blood stools, chronic fatigue , constipation, coughing, diarrhea, gas, granulomas, irritate bowel, itching, joint and muscle aches, nervousness, pain, poor immune response, rashes, sleep disturbances, teeth grinding, unexplained fever and unexplained weight loss.

Parasites are difficult to detect, but fortunately a number of the labs now detect by doing an antigen/antibody test for the parasites themselves because on slides the parasites themselves may be missed. Metametrix now looks for DNA strands in stool samples to detect presence parasites which is much more accurate. However, one negative stool test should not be relied upon as being absolute or conclusive.

Specific Microbes (Optimal Wellness)

Amoebic Dysentery – Entamoeba hystolytica infection can affect the colon, liver and other organs. Symptoms include diarrhea or constipation, cramps, gas and bloating. While prevalent in South America and Mexico, upwards of 5% of the US population is infected by amoebas.

Giardia lamblia can cause diarrhea, cramps, bloating. Prevalent in patients with a history of drinking untreated water from camp sites, lakes, rivers… and is difficult to diagnose. Dr. Nichols says Giardia is the parasite treated most

frequently in his practice in Pennsylvania. It is pandemic worldwide because water supplies frequently contain giardia, especially in wilderness areas.

Cryptosporidia – becoming much more prevalent in the US – causes diarrhea. Transmitted through water and animal hosts including reptiles and birds. Prevalent in AIDS patients.

Blastocystis – intestinal protozoa. Patients may not have symptoms but can test positive. Symptoms range from diarrhea or severe constipation, weight loss, cramping, flatulence or bloating. Previously considered non-pathogenic; but is now known to be two different strains and one is believe to be quite virulent.

Garry Gordon MD, says:

"Let's stop being so sensitive to many foods and let's get more use out of our foods and supplements. Let's optimize your flora.

A recent news release about food poisoning and potential long term adverse effects take DYSBIOSIS to a level where I believe we are all going to need to learn more. http://www.mercurynews.com/healthandscience/ci_8034366

I think whether we blame it on food poisoning 10 years ago or just Dysbiosis, many of us have needless irritable bowel, reactive arthritis, and renal failure etc. from the toxins released by many of the pathogens that will be found in competent stool analysis today, if we could afford in-depth anaerobic stool analysis. Experts state that there are at least 700 strains of organisms found in the mouth alone and some state that they do not even have names for many found growing there and in the intestine." www.gordonresearch.com

Also see:
http://www.lef.org/protocols/gastrointestinal/gastroesophageal_reflux_01.htm

Food, Poor Food Choices and Environmental Sensitivities (Lipski, Nichols, Blaylock)

Poor food choices contribute to an imbalance of intestinal flora and pH or degree of acidity or alkalinity of cells. An intestinal tract that is too alkaline promotes dysbiosis. Low fiber diets cause prolonged transit time allowing toxic digestive by-products to concentrate and irritate gut tissue. Processed foods are typically low in fiber and have high levels of food additives, sugar and restructured fats. All promote inflammation of the GI tract. Even foods normally thought as healthy can be irritating to the gut lining…ie, milk can be highly irritating to people with lactose intolerance.

Food sensitivities and leaky gut exist in a chicken and egg relationship.
Whether intestinal damage initiated the problem or foods irritated the intestine, they continue to multiply the damage. People eventually become more easily sensitized to food remnants and the gut becomes progressively more inflamed.

True food allergies only affect a small portion of the population but food sensitivities are common. Food allergies that cause an immediate reaction trigger type IgE antibodies (remember this by associating E for "immediate" reaction). The reaction causes release of cytokines and histamines and typically result in closing of the throat, hives, itching, respiratory distress, runny nose, skin rash or hives and sometimes severe reactions of asthma and anaphylactic shock. These reactions are typically tested and diagnosed by the skin patch tests (not always reliable or conclusive) and RAST blood testing. These IgE foods are typically shellfish – crab, lobster or shrimp – nuts…peanuts especially and cinnamon. IgE represents about 10% of allergies and are typically inherited responses

However, food sensitivities called delayed hypersensitivity reactions, will have delayed responses from several hours to several days…long after eating the offending food so a connection may be relatively difficult to determine. With leaky gut, food particles enter the blood stream via the damaged membrane and the body recognizes them as foreign substances (antigens) and triggers an immune reaction or response. The liver also recognizes the foreign antigens as toxins and begins breaking them down. Continuing to eat foods to which we are sensitive creates a vicious cycle and increases intestinal permeability and the tendency to develop more food sensitivities. Prolonged insults will overwhelm the liver's ability to eliminate the food antigens.

The IgG response (gradual) accounts for about 90% of all delayed allergic responses and may or may not be genetic.

While almost any food can cause a reaction, the most common are wheat/gluten/gliaden (the proteins in grain), corn, beef, dairy products, eggs, pork, citrus fruits, corn, soy, cheese, coffee and even chocolate.

Wheat is known to cause typically long delays in response – as long as two days after the food is eaten… but as you could project, eating wheat/gluten, many times a day every day would prolong an ongoing reaction that manifests in illness.

Food colorings, additives, preservatives, and pesticides found in both food, water and OTC products add to the sensitivity burden.

Patients report that certain items irritate the bowel and aggravate their condition – including high fat foods, coffee (even decaf) carbonated drinks and alcohol. (Blaylock)

If you have a tendency toward sensitivities, as a general principle, it's better to cook your food as raw food is more allergenic than cooked. Cooked apples (applesauce) are less allergenic than raw apples. The same is true for Tomato sauce as opposed to fresh tomatoes. (Nichols)

Food Additives

Food colorings, additives, preservatives and pesticides found in both food, water and OTC products add to the sensitivity burden.

Carrageenan, a common food additive made from seaweed, is known to produce intense inflammation – even in small doses. It is found in baked goods, ice cream and breads. It tends to worsen all bowel conditions including IBS and can also dramatically stimulate cancer growth. (Blaylock)

MSG and similar food additives can powerfully stimulate the bowel muscles resulting in diarrhea and cramping. Sensitivity to MSG is heightened when the bowel is inflamed from IBS, Crohn's or ulcerative colitis. With IBS, it is critical to avoid carrageenan, soy products and MSG or similar products to avoid more inflammation and colon spasms.

Mast cells in the intestinal walls play a major role in intestinal disease. Glutamate (MSG etc.) stimulates these cells to release histamine which intensifies bowel inflammation and damage. (Blaylock)

Presently, there are over 3,000 flavors and dyes being used in packaged foods. Of particular concern is the presence of high levels of glutamate in the form of MSG, caseinate, hydrolyzed proteins and soy proteins. In children consuming these packaged foods, this has been shown to cause abnormal development of the brain and other problems including asthma. MSG exposure early in life can lead to gross obesity in childhood. (Blaylock)

For adults, the first step would be to diagnose the problem by testing for food antigens and spices. [This will be reviewed in the testing section.]

SUMMARY

Q. *Why is leaky gut such an important consideration? (Rogers)*

A. Because leaky gut causes a cascade of untreatable symptoms.

• When the gut is inflamed it does not secrete digestive enzymes to digest foods properly or absorb nutrients from foods properly. The result can be indigestion with gas and bloating called irritable bowel syndrome (IBS) by the GI specialist. When large food particles are absorbed, food allergies and new symptoms are created (IBS, ulcers, gallbladder disease, arthritis fibromyalgia). Dr. Rogers says IBS is typically leaky gut in disguise.

• When the gut is inflamed, carrier proteins are damaged so malabsorption and nutrients deficiencies occur. This slows down the ability of the gut to heal and can cause any number of symptoms (magnesium deficiency-induced angina or gut spasms, chromium deficiency-induced high cholesterol or sugar cravings, zinc deficiency-induced prostatitis or lack

of gastric acid formation).

• Detoxification pathways lining the gut are compromised, chemical sensitivity can arise. Further – the leakage overburdens the liver so the body is less able to handle everyday chemicals in food, water and air. Then, many foods can cause symptoms that never did before because the gut's detoxification system is unable to cope with the hundreds of chemical additives dyes, colorings, preservatives and pesticides common to our foods.

• When the but lining is inflamed, the protective coating of gut antibodies can be lost and with less secretary IGA, the body become more vulnerable to infections in the intestines from bacteria, yeast, viruses etc and worse – they can become resistant to treatment. The more antibiotics prescribed, the more resistant they become and as more unwanted bugs grow, the gut becomes more inflamed and leaky… the major cause of so many "incurable" diseases.

• There are hundreds of species of bacteria and yeast in the intestine and with gut inflammation, these can translocate and set up infection anywhere in the body including the brain. This is often the cause of infections in teeth, gums, bones, prostate, bladder and sinuses.

• When antibodies form, the food antigens that leak across the gut wall can sometimes resemble the natural antigens on tissues. This is what happens when we hear the body "attacks" itself like in auto-immune diseases like Lupus, MS, RA, myocarditis dermatomyositis, iritis and thyroiditis… and the numbers are growing "mysteriously incurable auto-immune diseases".

Dr. Rogers' point is that we can see how the sick get sicker when patients are prescribed drugs that mask the real cause of the symptoms. She says they end up being a victim on the fast road to multiple illnesses when in reality, most IBS is really LGS in disguise and totally curable.

From the book *Optimal Wellness* which is a compilation of articles written by experts in the GI field:

Genetics - Adding to the genetic factor in permeability, Len Saputo, MD, writes that observations imply a genetic predisposition to leaky gut but not all individuals will go on to inherit or manifest.

Mental disorders – he says elevated toxins leaking into the system via hyperpermeability are seen to cause a range of symptoms from spaciness to brain fog to attention deficit disorder. Many children with ADHD have increased permeability and in the extreme form, can cause disorientation resembling autism or schizophrenia. In some cases, these are also linked to specific food sensitivities such as gluten intolerance. They find that if a number of stressors can produce a toxic load on the system that seems to affect neurotransmitter production and specific allergies that may directly affect the nervous system as well.

Dr. Saputo says the widespread frequency and critical importance of the leaky gut syndrome has been largely underrated. He notes that in a study that tested for LGS in an intensive care unit, all patients studied had LGS, regardless of the condition that originally brought them to intensive care.

He says because of the high frequency of incidence of LGS and the high incidence of chronic disease, testing for intestinal permeability is worthwhile whenever associated conditions are present and that skilled management of the syndrome will help alleviate the primary illness, regardless of its nature. (Nichols/Saputo)

Testing for leaky gut is most accurate but initially, assessing the function of small intestine by questionnaire gives an indication that assistance from a physician knowledgeable about LGS should be consulted.

In the case of a patient with pan-allergies, that is a list of 20 or more foods to which they are sensitive, then, Dr. Brady says, "always think Leaky Gut."

This concludes a very cursory examination of the highlights concerning LGS but it does serve to point out the complexities and obscurities. Anyone with one or more of the many associated symptoms would do well to investigate further.

Additional Source: *Leaky Gut Syndrome*, 1998; Elizabeth Lipski, MS, CCN

Part 7 – The Immune System

A healthy gastrointestinal (GI) system is directly related to overall health and the importance or relevancy of this cannot be over-emphasized, yet the significant contribution of the GI tract to increased toxic burden and chronic disease is often overlooked by conventional medicine.

Whether GI dysfunction comes from stress, microbial invaders, fungal overgrowth, toxins, chemicals, food additives, everyday use of body care products or manifestations of sensitivities that result from intestinal hyperpermeability, there is no denying that a compromised GI function can and does lead to varying degrees of ill-health.

Increased total toxic burden and sub-optimal detoxification capacity lead to fatigue, cognitive dysfunction and diagnostic labels such as fibromyalgia and chronic fatigue syndrome. Toxic burden can result in mitochondrial dysfunction and an inability to adequately produce energy

GI imbalances often exist without GI symptoms.

It was recently offered on the BB that a Google search for food allergy and atrial fibrillation yielded over 4,000 hits. Lest one doubt that there is a gut dysfunction connection to afib, a quick check confirms the potential.

A point of clarification is needed. Food allergies are typically those which create an immediate and dramatic response – as in the reaction to peanuts or shell fish. Food intolerances or sensitivities are often called 'allergies' but typically have various symptom manifestations over a wide time frame – a long as 48 hours after ingestion. Almost everyone has some degree of sensitivity to some food or chemical; many just don't realize it or make the connection – often because the response is delayed.

It is therefore important to recognize the impact of GI dysfunction on overall health from an immune system perspective, since in addition to facilitating the absorption of nutrient molecules, the GI tract is highly involved in the immune surveillance system. Autoimmune disorders, inflammatory arthritis and mucosal immunity are directly related to GI dysfunction.

The core issue here is if the immune surveillance system that functions primarily in the intestinal tract, is working overtime just to handle food sensitivities and food toxins, it leaves the body vulnerable to other microbial invaders and puts us at risk for serious health problems. It is of critical importance to manage all forms of gut dysfunction so the immune system can function optimally in our behalf.

"The gut is constantly under siege. We coexist with a vast population of microscopic armies consisting of viruses, bacteria, yeast and parasites that are literally trying to feed off us. The immune system is our major defense against this constant bombardment. The immune system must be dynamic and ever vigilant." (Rosenbaum/Optimal Wellness)

Once again, many great resource books are available on this very extensive topic. Recall the graphic visual – that the small intestine (duodenum), if stretched and flattened so every cell was side by side, it would measure about the size of a tennis court. Consider that 80% of the body's antibody-producing cells are located in the GI tract. Our digestive tract is the largest immune system in our body. Immunity in the gut is different from the immunity in the body, in general. and only until recently has it been appreciated that it is an entirely separate immune system considered the largest lymph organ in the body, larger than the thymus and all the other lymph nodes in our entire system. (Rosenbaum/Optimal Wellness)

An interesting discussion by Scott Anderson, MD, in "Optimal Digestion," observes five protective barriers that guard our health. Generally, we think of the stomach as first line of defense for killing bugs that enter the body via food, water and air or what we've picked up on our hands and delivered to our mouth and we become aware of the importance of stomach acid to kill hostiles as they enter our body. Lacking stomach acid, those hostile microbes pass through to the small intestine where they can get into the blood stream and cause a variety of disease symptoms and conditions. Many, are never related to bacteria that has "translocated" to an organ or joint.

However, Dr. Anderson observes that Intelligence is really the first protective barrier; and among the influences, he points out that we should exercise intelligence on behalf of our whole body. Eating smart. Making wise choices about when, how and where we eat and the dozens of other little decisions we make when buying, preparing and consuming food. Planning ahead; choosing a relaxing atmosphere for dining, consciously focusing on chewing during 'the food experience' and knowing the basics of nutrition. It's important to consider Intelligence as a key element of the protective mechanism.

He defines the second barrier of defense as Stomach Acid. His analogy is another graphic visual. He says, "Most of us don't even think about our stomach acid and when we do, we are more likely to think of it as a problem. But our body invests an enormous amount of energy to produce HCl. If we drew an energy map of our body, the energy used to create this acid would be comparable to Mt. Everest. While we're used to hearing about the dangers of stomach acid from infomercials on television, these gastric juices are actually an essential and vital protection to our digestion."

He goes on to review that stomach acid sterilizes food and destroys microbes. Stomach acid begins the process of protein digestion. Stomach acid facilitates the metabolizing of minerals and readies them for absorption. (He notes that a tip-off to doctors for low stomach acid is low minerals in lab tests). Stomach acid stimulates secretions from the pancreas that are essential to good digestion (insulin, enzymes and bicarbonate) which helps to digest fats (lipase) and proteins (protease), starch (amylase) and other enzymes for specialized functions.

The third barrier is our inner defense system – the Immune System

Fourth is what he called the Grand Central Station of our metabolism… the liver which processes and breaks down nutrients, filters and breaks down toxins that come in from the blood stream and synthesizes important blood components. The liver is the center for toxic cleanup. If forced to process too many toxins, an overload may occur and the impaired capacity can limit its ability to monitor incoming traffic and filter out harmful substances.

Fifth barrier – The friendly Intestinal Flora – also reviewed in the next segment.

A summary of the digestive system according to Dr. Anderson: (quote. p. 34 Optimal Digestion)

• In a cubic millimeter of the mucosal lining (smaller than the size of a grain of rice), there are 6 to 9 feet of nerve cell fibers.
• "Gut reactions" are transmitted by nerve impulses that travel through the gut in a matter of seconds.
• There are 10 times more bacterial cells within the gut than there are cells in our entire body
• Human cells are hundreds of times larger than bacterial cells.

The Immune System

The immunity in the gut is different from the immunity in the body, generally. This has not always been appreciated. It is considered the largest lymph organ of the body, larger than the thymus and all the other lymph nodes in the system. (Rosenbaum/Optimal Digestion)

This specialized lymph tissues is called GALT (gut-associated lymphoid tissue) by researchers. In general, it is a network that provides certain immune functions. The GALT consist of specialized colonies of cells in the gut lining called Peyer's patches and is also in lymphatic tissue in the appendix. The Peyer's patches house live plasma cells that manufacture our antibodies – immune artillery that protect us from invaders. Peyer's patches thus establish their importance in the immune surveillance of the intestinal lumen and in facilitating the generation of the immune response within the mucosa.

For this discussion, the focus is on secretory IgA (SIgA) – the antibody produced by these specialized intestinal mucosa cells and which are our first line of immune defense in the digestive tract. There are other immune defense protectors: B cells, Plasma cells, Memory Cells, T cells and the antibodies IgE, IgG, IgM.

Most of the specialized gut lymph tissue secreting SIgA is located at the juncture of the small and large intestine; some is in the appendix and all serve to protect the small intestine again migration of bacteria or parasites back up into the gut from the colon where there is a much greater concentration of microbes. This area is prone to more inflammation

with a greater potential for infection. Removal of the appendix or a section of the ileum decreases immune defense.
http://www.healthtoolsonline.com/flash-img/gisystem.swf

SUPPORTING IMMUNITY AND ANTIBODIES (Optimal Wellness pp 44-45)

What lowers our stores of precious secretory IgA?

• Any infection – even a tooth abscess
• Stress – any type
• Poor diet and low nutrient levels
• Malnutrition – children in third world countries have low SIgA and develop the cycle of diarrhea/loss of gut lining
• Aging

Key influences on the immune system:
1. Genetics
2. Inherited allergies
3. Nutrition
4. Stress
5. Lack of breast feeding
6. Age
7. Integrity of gut lining
8. Health of microflora
9. Presence of infection in gut or elsewhere

Research finds that nutrition affects the way your genetic makeup is expressed and can tip the balance toward good health. In other words, even if you have the genetic tendency, proper nutritional support can prevent that condition from ever manifesting.

Treatment note: Vitamin A is critical in replenishing the lining of the gut and maintaining the integrity of the mucosa. The most common vitamin deficiency in the world is vitamin A. Other nutrients that increase SIgA along with the vitamin A include: zinc, colostrum (can be used in people who are not dairy intolerant) and often, L-glutamine is helpful. Others use phosphatidyl choline, essential fatty acids, bioflavonoids, antioxidants like CoQ10, lipoic acid, glutathione, and ginkgo. Consume organic foods; minimize toxic exposure.

MALFUNCTIONING IMMUNE DEFENSE (Optimal Wellness p. 60)

1.The immune system can be so weakened it can't fight off common illnesses – as with cancer and AIDS, but also from everyday stress. (Immune Suppression)

2. Over-reactive or hyper-responsive to normal stimuli – asthma, migraine and food allergies/sensitivities. Hyper-reactions use up immune reserves and can also cause defensive immune responses that actually injure tissue. Circulating toxins can turn on a hyperactive immune response, leading to allergies, inflammation, pain and swelling. Toxins short-circuit the immune response resulting in infection.(Optimal Wellness p 125)

3. Malfunction causes autoimmune reaction – antibodies target our own tissue as in rheumatoid arthritis, lupus, Graves, Hashimoto's.

All can lead to dysbiosis. The goals in managing dysbiosis are to restore microflora, provide nutrients that will heal the intestinal mucosa, reduce toxic exposure and increase antibodies in the GI tract (SIgA).

TOXIC OVERLOAD EFFECTS (Optimal Digestion p. 129)

When the liver becomes overburdened because of chronic or persistent toxicity that overwhelms the detoxification pathways, many events occur in the liver as a result of overload:
• Increased oxidative stress from the liver's detoxification process
• Impaired carbohydrate metabolism

• Increased immune activity and production of biochemicals that promote inflammation
• Failure of Phase 1 Detoxification or accelerated Phase 1 which causes increased free radicals
• The bottleneck effect if Phase 2 Detox is slow.

And this leads to effects on cells and tissues:
- The body needs to put these toxic chemicals somewhere
- If the system can't excrete, it will store them
- Chemicals and pesticides are typically stored in fat
- Heavy metals will be stored in protein tissue – muscles, bones and cartilage (and fatty tissue –brain, liver plus kidney, spleen).

Eventually some toxins are re-released and stored again which means the liver has to cope with them again. The liver either detoxifies or recirculates. This can cause more damage as toxins move through the system and then are redeposited. Accumulated toxins cause cellular damage. This means it is critical to begin detoxifying by starting with first things first…which is the gut.

When toxins are circulated constantly, specific conditions such as arthritis, asthma and allergies can result and can be caused by compromise of the immune system – causing inflammation or aggravating existing conditions. Toxins stimulate the release of an immune response with biochemicals that can set in motion a full-blown reaction. Often, this relates to Leaky Gut Syndrome reviewed previously. This can pave the way for degenerative diseases such as cancer or autoimmune conditions.

Dr. Rogers observes:

• Detoxification pathways lining the gut are compromised; chemical sensitivity can arise. Further – the leakage overburdens the liver so the body is less able to handle everyday chemicals in food, water and air. Then, many foods can cause symptoms that never did before because the gut's detoxification system is unable to cope with the hundreds of chemical additives dyes, colorings, preservatives and pesticides common to our foods.

• When the gut lining is inflamed, the protective coating of gut antibodies can be lost and with less secretary IgA, the body become more vulnerable to infections in the intestines from bacteria, yeast, viruses etc and worse – they can become resistant to treatment. The more antibiotics prescribed, the more resistant they become and as more unwanted bugs grow, the gut becomes more inflamed and leaky… the major cause of so many "incurable" diseases.

Functional medicine MDs observe that colon cancer, Alzheimer's and osteoporosis are all linked by the process of inflammation, underwritten by an activated immune system. Diabetes, vascular disease, auto-immune disease, acne, depression, GERD, hypertension, ED, obesity and a growing list of other diseases are all underwritten by the same process. The immune system becomes activated when micro-organisms are too high. This happens with the hormonal decline that begins around age 27 and a high glycemic diet. (Mitchell)

Reiterating a previous segment:

Every neurotransmitter ever detected in the brain has also been found in the gut and often at much higher levels. 95% of serotonin in the human body is not in the brain and cerebrospinal fluid but rather in the GI tract. So when you consider that alone – tremendous amount of neurological tissue, it's own nervous system, high levels of neurotransmitters, it's really indicative of how important the gut is in the surveillance of body function and the body is dedicating tremendous resources to surveillance in the GI tract. (Brady)

We know that cortisol and stress hormones act very negatively on the intestine particularly the immune surveillance by directly decreasing Secretary IgA allowing greater antigen penetration through the gut and creating the common problem of pan-allergy to foods. More antigenic and toxic exposure through the intestinal tract puts a lot of burden on the body not only the immune system, but also the liver in hepatic detoxification. (Brady)

Dr. Brady observes that improved mucosal immunity and good secretory IgA, help directly to combat opportunistic microbes and lessens the occurrence of dysbiosis and less likely to have antigen penetration through the gut lining and the subsequent food sensitivities.

Touching briefly on chemicals that burden the body…

We often don't even think beyond the food supply for intake of chemicals. Consider that chemicals are in municipally treated water; probably also in bottled water due to leaching of plastic during storage, and can be in spring or well water and of course, they're in the air we breathe… sometimes more than others.. Cosmetics and body-care products or shampoo and hair dye are loaded with chemicals considered toxins.

Sodium Lauryl Sulfate (SLS) or Sodium Laureth Sulfate (SLES) …SLS/SLES can be a mutagen – in sufficient amounts it is capable of changing the information in genetic material found in cells. SLS has been used in studies to induce mutations in bacteria. SLS is routinely used in clinical studies to irritate skin tissue. SLS corrodes hair follicles and impairs ability to grow hair. Carcinogenic nitrates can form when SLS interacts with other nitrogen bearing ingredients. SLS enters and maintains residual levels in the heart, liver, lungs and brain from skin contact. SLS denatures protein, impairs proper structural formation of young eyes – damage is permanent. SLS can damage the immune system; cause separation of skin layers and cause inflammation to the skin. Journal of the American College of Toxicology; Vol. 2, No. 7, 1983

The gut and liver have to work overtime to detoxify all those which we don't give a second thought to using…deodorant soaps, body lotions, deodorant, shampoo, hair spray, conditioners, sunscreen, insect repellent, makeup, lipstick, shaving cream, perfumes made from petroleum derivatives, laundry soap, dish soap, fabric softeners, air fresheners… think about all the potential toxins you touch in a day that are introduced to your body quickly and easily. Become a label reader… invest in a pocket-sized magnifier with a light. Don't buy chemicals; there are plenty of natural products out there that will spare your gut, liver and immune system from overwork and leave it to focus on the important task of fighting pathogenic invaders.

Part 8 - Probiotics

Probiotics – Another important link to health of the entire gastrointestinal tract.

Once again, this is not a minor topic and it is also one that can be of critical importance to you or someone in your family. There are hundreds of published research studies on probiotics; there are many, many books and there is an annual international 2-day symposium just on the topic of probiotics – the most recent celebrating 100 years of use

Again, this segment, just skims the surface to highlight the role of probiotics in the body and how they help maintain healthy intestinal function. They are an important part of our web of health; (afibbers and everyone) - all systems functioning in harmony. I've followed it with a separate post sharing a few of my own experiences because awareness is a key issue on this topic. Over the years, I've helped many, many people by directing them to probiotic use.

Exactly what are probiotics?

Introduction (1)

Pro = promoting and Biotic = life We want healthy life in the gut and the whole body.

This is really interesting when you think about it in the whole scheme of things.

The gastrointestinal tract of a normal fetus is sterile. At birth, this tract is colonized with bacteria depending initially on the type of birth. Vaginal births are colonized with the mother's bacteria; Caesarean infants' initial exposure is likely to be environmental microbes from the air, other infants, the parents and the nursing staff. Infants delivered by Caesarean may have primary gut flora disturbance for as up to six months. (Gronlund et al, 1999)

From birth and for the rest of our lives, gut flora is influenced by factors that change that our GI ecology – either enhanced by protective and good gut bacteria or influenced detrimentally by early use of antimicrobial agents, breast vs. bottle feeding, introducing food too early and a whole host of other influences that set us up for a lifetime of

reactions that can be traced back to influences on our early months of life.

The human gut contains 10 times more bacteria than all the human cells in the entire body.(1, 2) And, the adult intestinal tract houses about 100,000,000,000,000 (100 trillion) micro-organisms.(1, 3) In this enormous biomass are over 400 known diverse bacterial species which generate intense metabolic activity and are of key importance for human health.(1, 2) In addition to promoting normal gastrointestinal functions and providing protection from infection, the intestinal microflora also exert important effects on systemic metabolism and immune function.

Intestinal bacteria, also called flora and microbiotia are classified as “beneficial”, ”good”, healthy” or “friendly” versus pathogenic or harmful. Not all non-friendly flora are consistently pathogenic. If their numbers remain small relative to the number of beneficial bacteria, they typically remain harmless. As an example, Escherichia coli (E. coli) is a normal, common resident bacteria; some strains of E. coli are always benign; yet others can be extremely dangerous. As long as the dangerous strains of E. coli remain outnumbered in sufficient quantity by good intestinal bacteria, we stay healthy. The same is true of Candida albicans (yeast) overgrowth. It’s impossible to be 100% free of Candida and when significant numbers of beneficial bacteria are killed off (antibiotic use), Candida (fungi) have the opportunity to flourish. It’s not possible to eliminate all the harmful; the goal is to keep them very low in population. The experts say that a ratio of 85:15 is considered a healthy ideal.

Much has to do with host-resistance. That was the intent of Part 7 on the Immune System function. Probiotics are part of host-resistance capabilities. We have naturally-occurring probiotics in our GI tract but often, it becomes necessary to augment or supplement that supply to stay healthy.

In 2001, a consensus document of the International Life Sciences Institute Europe proposed a simple and now widely-accepted definition of probiotics as “viable microbial food supplements which beneficially influence the health of humans.”(1,4)

This post is about using probiotics in supplement form.

Probiotics

“Probiotics are beneficial living microorganisms that support healthy gastrointestinal and immune systems. Probiotics provide support for people with intestinal dysbiosis, irritable bowel syndrome, inflammatory bowel disease, malabsorption, lactose intolerance, increased mucosal permeability, diarrhea, constipation, allergic sinusitis, infectious gastroenteritis, food allergies, and children on the autism spectrum.

Using probiotic supplements preventively makes sense for the majority of people and the variety of diverse probiotic strains offers measures to inhibit the growth and control of pathogenic microbes that would otherwise compete for nutrient and adhesion sites.

Probiotics have been found to favorably modulate the immune system locally in the bowel mucosa, distantly at mucosa surfaces throughout the body and systemically. Probiotic microorganisms maintain and strengthen intestinal barrier function as well as regulate bowel motility. They promote normal colonic blood flow, produce essential nutrients for the colon mucosa, synthesize vitamin K and B vitamins, and facilitate nutrient and mineral absorption, especially calcium, magnesium and zinc. Probiotics degrade and detoxify carcinogenic enzymes and other molecules as well as hormones and drugs.

Probiotics have been clinically shown to support against respiratory and skin allergies by virtue of their immune effects systemically and at mucosal surfaces outside the bowel. Most strains effectively reduce lactose intolerance and many can degrade endogenous opioids. An emerging hypothesis suggests that probiotics may play an important, complementary role in detoxification protocols.” (1)

Everyone can benefit from taking a probiotic; even infants and children benefit at certain times. As we age, it becomes especially important to supplement with a good probiotic because just as is the case with diminishing production of other enzymes, friendly bacteria tend to die off and the unfriendly, harmful ones easily take over. It is often said that the use of probiotics means health of the entire GI tract and when the GI tract is populated with abundant, friendly flora, the whole body benefits.

While it's not surprising, it is fairly amazing (to me) that few physicians, unless nutritionally/holistically oriented, recommend probiotics. And, almost never do they recommend taking a probiotic when a course of antibiotics is prescribed. In children and the elderly, this can be devastating. Antibiotics kill everything – pathogens and good bacteria alike. Often, following a course of antibiotics, people suffer from diarrhea. In the elderly, is can be critical because of nutrient loss and important electrolytes. It's easy to see how it could become a vicious cycle.

There is hope, though, as sales results from 2005 were up 19.2% from the previous year – amounting to $243 million according to Nutrition Business Journal. People are becoming informed.

Benefits of Probiotics

1. Healthy bacteria balance
2. Enhanced nutrient absorption
3. Proper digestive function
4. Immune health.
5. Neutralize Hormones

As discussed in the Immune System segment, the GALT (tissue) produces one of the most important immune proteins or globulins, secretory IgA. Specific probiotic bacteria increase production of SIgA and this globulin protects the lining of the entire GI tract from our nose to our anus. (Blaylock)

Probiotics assist in the metabolism of hormones, particularly estrogens. Abnormal metabolism can produce powerful compounds that can cause breast and other cancers. Women with deficient or low numbers of probiotic organisms in their colon are at higher risk of breast cancer. Women who take antibiotics frequently are at higher risk for breast cancer for this very reason – antibiotics kill good bacteria. (Blaylock)

A welcome benefit of probiotics is reducing the harmful effects of cholesterol. Research of the Masai people of Africa found a very low incidence of heart disease despite a diet high in animal fat which typically raises cholesterol levels and increases atherosclerosis. The beneficial bacteria in fermented yogurt has been found to also help lower cholesterol in people who are not dairy intolerant; if so, a probiotic supplement is beneficial. (Plummer/Optimal Wellness)

It has also been shown possible to halve the incidence of allergy in at-risk infants through administration of L. rhamnosus GG to expecting mothers and subsequently to their infants during the first half-year of life. [J Nutr. 2007 Mar;137(3 Suppl 2):794S-7S]

Don't think that everyone knows of and thinks that probiotics are beneficial. A quick literature search will indicate there are many negative comments – as with any natural remedy but there is much more positive science behind the use than negative.

Dysbiosis

"Tens of millions of people suffer from "dysbiosis" and don't even know it. You may be one of them." (Blaylock)

Dysbiosis is one of the most common disorders of the digestive system where the balance between good and bad bacteria in the colon is disrupted.

<u>Dysbiosis is caused by</u>
Stress – causes changes in the mucous lining and creates environment less favorable to beneficial bacteria. Motility in the gut may slow down - allowing food to be colonized by different and possibly harmful microbes no longer held in check. Candida, E. coli and bacteroides are opportunistic and increase at these times. There is a whole field of study involving psycho-neuro-endocrine-immune function related to the profound effects of stress on our immune defenses and dysbiosis. (Plummer/Saputo/Optimal Wellness)

In addition to stress, parasites, fungus overgrowth (Candida/yeast), poor diet/food selections, antibiotic use, anything

that allows pathogenic micro-organisms to dominate the intestinal tract can cause dysbiosis.

Fermentation of undigested carbohydrates is a result of bad bacterial overgrowth in the colon and comes from impaired digestion. Symptoms are flatulence, diarrhea/constipation and fatigue. These people are usually intolerant to soluble fiber in high fiber foods which worsens the fermentation.

Poor food choices and poor digestion of meals that are high in fat and meat and low in fiber tend to lead to putrefactive dysbiosis. Bacteroidies, a normal gut bacteria, overgrows and produces toxic by-products that result in the overproduction of ammonia. This causes fecal matter in the colon to become more alkaline and the production of essential gut fuel (butyrate) fails. As a result, nutritional shortages occur throughout the digestive tract. Increased levels of bile acids build, increasing the risk of colon cancer, levels of estrogen elevate and increase risk of breast cancer. (Saputo/Optimal Wellness)

“Surprisingly, if you ask your doctor about dysbiosis, he/she may plead ignorance to the disorder (or brush it aside as irrelevant). Unfortunately, doctors contribute to this malady by over-prescribing antibiotics that kill off the good bacteria.” (Blaylock)

Poor ileocecal valve function can contribute to dysbiosis. The valve’s job is to keep waste matter in the colon without backflow into the small intestine. When this valve is stuck, either open or closed, dysbiotic problems can occur. Chiropractors can adjust the ileocecal valve to alleviate this problem. (Lipski/Digestive Wellness)

Low levels of stomach acid, (HCl) encourage bacterial overgrowth. Poor transit time in the intestinal tract also encourages proliferation of bacteria. For example, in 24 hours one E. coli bacterium produces nearly 5,000 identical bacteria. The longer they sit inside us, the greater their potential to colonize. (Lipski/Digestive Wellness)

There are four commonly recognized patters of dysbiosis: putrefaction, fermentation, deficiency and sensitization. Just one is covered here as an example.

Putrification Dysbiosis is the most common type and occurs when food is not well digested so it sits inside us and rots. Symptoms will be bloating, discomfort and indigestion. The typical American diet of high fat, high animal-protein, low fiber diet predisposes people to putrefaction. It causes an increase of bacteroides bacteria, a decrease in beneficial bifidobacteria and an increase in bile production. Bacteroides cause vitamin B 12 deficiency by uncoupling the B-12 from the intrinsic factor necessary for its use. Other bacteria normally make B12 directly for their own purpose, but it becomes too unavailable to us. Most common signs of B-12 deficiencies: depression, diarrhea, fatigue, memory loss, numbing of hands and feet, sleep disturbances, and weakness. B12 deficiency is common in older people due to low levels of stomach acid. Reduced or poor levels of bifidobacteria decrease resistance to infection and decrease production of B vitamins. Research links putrefaction dysbiosis with breast and colon cancer as bacterial enzymes change bile acids into 33 substances formed in the colon which are tumor promoters. Bacterial enzymes recreate estrogens that were already broken down. When these are reabsorbed into the blood stream, the risk of estrogen-dependent cancers rises. (Lipski/Digestive Wellness)

Declining levels of Bifidobacteria in the elderly allow accumulations of toxin-producing Clostridium species (C. difficile) which in addition to serious infections, have been implicated in colon cancer. Supplementing with Bifidobacteria will lower bowel levels of Clostridia and reduce concentrations of chemicals thought to promote cancer. (Galland/Power Healing)

<u>Dysbiosis symptoms can be acute or chronic and may seem unrelated to digestive issues</u>(Blaylock)
- Chronic indigestion
- Bloating, gas
- Alternating constipation and diarrhea
- Yeast (Candida) infection
- Jock-like itches and other skin rashes
- Gingivitis, halitosis,
- Bladder infections immune problems
- Even cancer, especially of the colon and breast.

Antibiotics impact probiotics (Blaylock)

Newer broad-spectrum antibiotics called 'fluorinated antibiotics" contain the fluorine atom and they kill an extremely wide spectrum of bacteria and also are toxic to a number of organs especially the brain. The increase of inappropriate use of these antibiotics is of widespread concern. Antibiotics occasionally can produce the fatal condition, pseudomembraneous colitis – where the entire lining of the colon sloughs off.

A life-threatening complication of antibiotic use is an infection or overgrowth due to Clostridium difficile. Ironically, standard treatment is to use even more antibiotic therapy. Success is being noted with short pulsing doses of a combination antibiotic and probiotic plus fiber to help the mucosal surface to repair itself. (Saputo/Optimal Wellness)

Dr. Blaylock notes that pediatric literature indicates antibiotic-induced diarrhea is a major problem in children given the abundance of articles published on the topic but nevertheless, small children are so frequently prescribed broad-spectrum antibiotics that cause dysbiosis. Dysbiosis in children is a major problem. He observes that doctors don't seem to realize or address this dangerous potential. In a small child, severe diarrhea can cause death or result in a lifetime of bowel problems including IBS, inflammatory bowel diseases, chronic constipation or recurrent diarrhea, yeast overgrowth, autoimmune arthritis and the potential for future cancer of colon or breast.

Dysbiosis from overexposure to antibiotics is obvious when using prescriptions. Not so obvious is the dysbiosis that results from eating meat from antibiotic-fed animals. Most all large commercial livestock operations feed animals powerful antibiotics and it's not recognized that those stay with the meat. In addition to dysbiosis, there is evidence to support antibiotic resistance as a result.

Abstract For decades, the U.S. meat industry has fed medically important antibiotics to chickens, pigs, and cows to accelerate their growth and weight gain. A strong scientific consensus exists, asserting that this practice fosters antibiotic resistance in bacteria to the detriment of human health. In response to this public health threat, the European Union has banned the non-therapeutic feeding of antibiotics of human importance to farm animals. Given recent data that suggest an overall lack of financial benefit, the U.S. meat industry has little reason to continue this risky practice. http://www.hsus.org/farm/resources/research/pubhealth/human_health_antibiotics.html

An aside on treatment of diarrhea in the case of dysbiosis – often people resort to the use of Pepto Bismol but as mentioned earlier, this OTC preparation kills H.pylori – and it also kills good bacteria in the colon and so and makes diarrhea worse. (Blaylock)

Toxic waste from environmental exposure is wide-spread. This would be synthetic chemicals that find their way into the intestinal tract through food, water and various products including tooth paste, mouthwashes and dental amalgams. These substances can damage cells of the intestinal tract, lower resistance, and damage microflora which all can lead to dysbiosis. Drugs including steroids, birth control pills, NSAIDs, antacids, H2 blockers and chemotherapy medications also can have adverse effects.(Saputo/Optimal Wellness)

When the inner balance is lost, harmful effects surface:
• Allow infection by microbes
• Deplete vitamin B 12 and some amino acids
• Short-circuit digestive enzymes
• Transform essential fatty acids into damaging saturated fats
• Encourage conditions such as inflammatory bowel disease
• Interfere with breakdown of bile acids and estrogens
(Saputo/Optimal Wellness)

More Benefits of Probiotics (just a few of many)
People with sick GI tracts, (as with Leaky Gut Syndrome), risk having bad bacteria pass through the intestinal barrier to the blood stream and infect other organs and tissues including the brain. (translocation). Probiotics help prevent this process in patients undergoing major gastrointestinal surgery. Probiotics, specifically Lactobacillus paracasei helps prevent gut inflammation. Because the entire lining of the gut is replaced every 14 days, healing can occur rapidly when you provide your body with necessary nutrients. Some food allergies generally disappear once the intestinal lining is repaired. (Blaylock)

Lactobacillus plantarum and L. reuteri have been shown to reduce the various leaky gut problems associated with chemotherapy.

Beneficial bacteria in the vagina, as in the colon, often become imbalanced and result in numerous adverse conditions when this protection is compromised. Bladder infections in women are significantly reduced with probiotic use (Lactobacillus rhamnosus). Typically the imbalance begins with antibiotic use and then yeast infections can also develop. (Blaylock)

Gingivitis and infections of the tooth's root canal are said to be the result of bacterial imbalance. Probiotic rinses are referenced as helpful.

Cancer prevention – as mentioned previously, there is evidence that low levels of natural probiotics increase risk of colon cancer. Probiotics are preventive in that they reduce inflammation, improve bowel function, bind food-based carcinogens and reduce cancer-causing enzymes. Probiotics increase the production of the very beneficial anti-cancer chemical, N-butyrate which provides energy for cells lining the GI tract and reduces inflammation in the colon.

By reducing inflammation, in cases of Crohn's colitis and ulcerative colitis, the risk of colon cancer associated with these diseases can be significantly reduced. Probiotics have been shown to be highly effective – specifically the yeast species, Saccharomyces boulardii. S. boulardii has also been shown to prevent Candida albicans from penetrating the intestinal wall.

The beneficial yeast species S. boulardii is an amazing therapeutic agent. It is unharmed by antibiotics and actually protects microflora during antibiotic therapy. It inhibits colonization by C. Diff and other pathogens. Restores normal intestinal function and children with diarrhea. If it's included in a probiotic blend, that's highly beneficial, but is often bottled separately.

Dr. Blaylock recommends women with recurrent bladder infections, vaginosis, yeast infections, history of breast, colon, endometrial, cervical and head and neck cancer, take a probiotic daily. He recommends Theralac and there are others to be reviewed later.

The same would be true for men with a history of prostate, head and neck or colon cancer.

Better bowel flora increases motility. Good for constipation; good also for diarrhea. Various types of flora offer various responses. The goal is always the proper balance or ratio of good to bad bacteria.

Pre- biotics
Often we read articles on the importance of including a "pre" biotic along with probiotics.

Prebiotics feed the good bacteria. It's like fertilizing your lawn or the ecology of your intestine. Bacteria require a diet high in polysaccharides which are complex sugars that selectively enhance growth. These are called FOS or fructo-oligosaccharides. Most bad bacteria can't use FOS, but Klebsiella can, unfortunately. So if testing indicates Klebsiella, then FOS is out. Clostridium difficile and Proteus – two of the really bad bacteria --cannot metabolize FOS. (Blaylock)

Prebiotics are found in FOS, lactoferrin and arabinoglactan (a fiber from larch tree) that also build immunity. People with autoimmune disorders should not take arabinogalactan. Lactoferrin does not feed yeast or pathogenic bacteria. (Blaylock)

Some reports indicate that FOS are safe for those fighting Candida. Dr. Rogers finds a significant number of patients that FOS definitely made their Candida symptoms worse. So be aware of this cautionary note. (Rogers/No More Heartburn)

When to use a Probiotic
Two considerations.
1. General maintenance or preventive measure
2. Therapeutic measure to assist when dysbiosis, leaky gut or other GI disturbance is diagnosed.

Before starting to supplement with probiotics and especially if you are actively suffering from overt GI symptoms, it is important to be tested to determine the cause of the GI disturbance.

Much depends on the symptoms and results of testing to determine the cause of dysbiosis.

Comprehensive stool analysis is a good start. Parasites should be ruled out. One can try to treat with a good brand of probiotic, but it can get tricky and sometimes it backfires as probiotic use, just like digestive enzyme use – when inappropriate for the condition at hand – can make the situation worse rather than better.

Caution - Before using probiotics.

Dr. Brady cautions that with bacterial overgrowth of the small intestine, probiotics are contraindicated as there is already too much bacteria and giving probiotics is like throwing fuel on the fire. A probiotic is not always universally good. It must be determined if there is a pathogen present before treating.

Just out: *The Lancet* reports "Probiotics Raise Mortality Risk in Patients with Severe Pancreatitis" Using probiotic therapy to reduce infectious complications in severe pancreatitis actually increases mortality, according to a study released early by Lancet.
http://www.thelancet.com/journals/lancet/article/PIIS014067360860207X/abstract?iseop=true

S. Boulardii is contraindicated in individuals sensitive to chicory root (insulin source).

In critically ill patients with central vascular catheters or hospitalized immunosuppressed patients, sporadic blood borne infection (fungemia) has occurred.

S. Boulardii is contraindicated in people with indwelling central vascular catheters.

If you are sensitive or have an intolerance to dairy products, a non-dairy source of probiotic culture will be needed. This is important or it's counterproductive. The same with gluten. Probiotics should be labeled dairy-free and gluten free.

Testing for Intestinal Conditions

I'll be covering this in a bit more detail in the next segment on testing but wanted to mention this recent publication – January 2008 Townsend Letter for Doctors and Patients - Title:
DNA Detection of Gut Microbiota
Advancing Routine Characterization of Microbial Populations
by J. Alexander Bralley, PhD, Robert M. David, PhD, and Richard S. Lord, PhD
Can be viewed online http://www.townsendletter.com/Jan2008/DNA0108.htm

This new DNA method of testing offers quick and reliable results. I expect it will replace the other testing methods in short order.

Which one to choose?
For general maintenance, it's typically said, "A Billion a Day, keeps the doctor away"… referring to a minimum preventive dose of 1 billion CFUs or Colony Forming Units. That's very conservative. Many functional medicine professionals recommend at least 5 billion as a daily preventive dose. Therapeutic doses are considerably higher.

The complication arises around what actually is delivered to your gut. Products vary and many are substandard. Cheap is definitely not always better and it's very easy to buy a product that is totally worthless in that it delivers virtually no helpful amount of probiotics. Of all the supplements, probiotics rank among the riskiest in purchasing something that is virtually worthless. So awareness is key here. You can test what you buy for viability.

For those who would just like to add in probiotics as insurance to keep the balance favorable, there are many good and reasonably priced probiotics available. I'll review those later on and tell you my experiences with some brands.

How to Choose a Probiotic
Key points:
1. Stability
2. Temperature
3. Stomach acid
4. Enteric coating.
5. Delivers what the label indicates – CFUs
6. Specific target or general use – what blend is best
7. Dairy-free – Gluten Free

The best reference for a Probiotic discussion that I've seen is the PDF file from Klaire Labs; try the hyperlink here.- http://www.klaire.com/images/MakingSense.pdf – " Making Sense of Probiotics". Go there. Read that and follow other links at Klaire Labs in the Probiotic section, especially the PDF file with a chart listing properties and efficacies for various conditions. http://www.klaire.com/probioticleader6.htm

General guidelines:
There is much written on making sure what you buy meets the label claims and it's important to be assured a dose is going to contain the amount of CFU's (colony forming units) that is claimed on the label. Most probiotics need to be refrigerated; others say not necessary. Selecting a quality product from a reliable bottler who does-quality assurance testing is important. As with many other supplements, what's on the label may not actually be delivered in the capsule or tablet. Typically, the idea is to oversupply so that if there is some viability lost during storage or shipment, the amount delivered to the gut will still be powerful enough to be effective.

Once again, many opinions are out there as to how many billions of bacteria need to be supplemented in one dose or what's considered adequate and right along with that comes bacterial viability. The label can claim a number but what's actually alive and delivered to your body can be quite another. Others claim that even 'dead' bacteria provide a benefit.

It's important to keep probiotics refrigerated even if they claim none is needed as the bacteria will last much longer

Testing the product you choose for efficacy
Test your probiotics by taking a double or triple dose once. If it causes tremendous gas for a few hours, the organisms are alive and performing well in your gut. Then cut back to a dose that does not cause gas. If the probiotic is dead or your stomach acid is killing them before they reach the small intestine where they live, you are wasting your money and should change brands.(Rogers)

Independent Testing Results – Consumer Labs

To give an example of how probiotics are evaluated:

Consumer Lab evaluated probiotics and in April, 2007, a short article was published in Townsend Letter for Doctors and Patients. Following is a brief summary.
Title: Probiotic Supplements Grow in Popularity, But Viable Bacteria Missing in Many Subtitle: Consumer Lab cautions consumers to select probiotics carefully and store them properly.

Consumer Lab (CL) reports 44% of probiotic supplements contained fewer viable organisms than claimed or generally known to be effective.

CL evaluates probiotics according to the following criteria
• The viability of organisms in the product — how many organisms are alive (in the case of active cultures) or can "come alive" from their inactive state when purchased and used? Some products make no claim at all and others only claim the amount at the time of manufacture. They test to be sure that the contents contain the labeled amount of stated potency or at least 1 billion organisms.

• Lack of contaminating organisms — the product should contain the bacteria and/or yeast that it claims on the label while potentially pathogenic microorganisms and other microbial contaminants should not be present. (like yeast or mold)

• Enteric protection of the product — some types of bacteria cannot survive as they pass through stomach acid and into the small intestine where the bacteria would grow. Ideally the product should contain bacteria that research shows can survive passage through the stomach or it should be enteric coated if they cannot survive the stomach acid. Products in tablets (with and without enteric coatings) should also be able to properly disintegrate so as to release the probiotic bacteria and not pass through the body intact.

Probiotics for pets are popular and were also tested. One was contaminated with mold and did not even contain its listed amount of organisms. Another provided only 10 million/day. Only one contained a large dose of viable organisms – 2.3 billion per day.

CL cautions that it's important to choose a supplement that will deliver a sufficient dose of viable organisms. They may die and become worthless if products are not properly made or stored. Products should be sealed to avoid moisture and out of heat and light – preferably refrigerated.

Brands tested by CL –
Advocare, Ark Naturals, Culterelle (Allergy Research Group/Nutricology), DDS UAS labs, Enzymatic Therapy, Flora source, Florastor, Garden of Life, Jarrow, KAL, Kyo-dophilus, Mitomax, Natural Factors, Nature Made, Nature's Secret, Nature's Sunshine, Nature's Way, Nutravite, Nutrition Now, Pharmanex, Tiscon, Rite Ade, Webber Naturals, Vita Treat.

Those that failed: Advocare, DDS, Flora Source, Nature's Secret, Rite Aid, - Pet: Ark Naturals & Vita Treat.

[I was surprised to see the UAS Lab failure for their DDS product. I'd used that product initially and for at least 8 years very successfully before I moved on to a professional brand sold to healthcare professionals. I felt it served me very well – see the testimonial in my add-on post. But it just serves to show that these organisms can be fragile and you may not always get a good batch. – I would still use the DDS product.]

Remember – these are batch samples… other testing dates may be entirely different but it serves as a guide to know that some products do not deliver the potencies labeled.

CL adds this cautionary note about impurities:

"Be aware that probiotic products may contain trace amounts of growth media residue left over from the manufacturing of probiotic cultures. This can be dairy (casein), soy, or even fish peptide residue, in trace amounts. The Food Allergen Labeling and Consumer Protection Act (FALCPA) requires that products made after January 1, 2006 with these potential allergens be labeled as such. Be aware that some products on the market may not carry this information, including any made prior to 2006 or by companies failing to comply with the law."

Dosing – Follow the bottle instructions; check the Klaire Labs charts and literature for recommendations of specific blends and species that target specific conditions to get an idea of how to dose for specific conditions. As with nattokinase, the idea is to over-supply the cultures so that even if some die, there is still plenty left to be therapeutic.

Generally, take away from meals unless acid-protected or at least a bit before meals before stomach acid is called into action. Also take away from antibiotics unless specific for use with antibiotics.

Often, more than one dose is required throughout a 24-hour period.

Intestinal gas build-up is typically a dose-sufficient sign.

Yogurt – How Beneficial?

For Paleo eating, dairy is out. Period. And there is a reason for that so this section will be irrelevant if you eat Paleo.

Fermented products have always been considered healthy eating because of the bacterial content. Dairy-based fermented products may be troublesome for some; not for others.

If you are dairy sensitive or have an intestinal condition where dairy use is contraindicated, eating yogurt is not an option. This just makes the immune system of the intestine work overtime and is definitely counter-productive for intestinal health and overall health. Even if you don't notice a physical symptom, it still can tax your immune system.

There is considerable controversy about whether or not yogurt really helps and it's based on how viable the organisms are after pasteurization. In products that claim to have added beneficial bacteria, proponents say this yogurt does work well. However, it cannot possibly deliver the quantities/numbers of beneficial bacteria that you can get from a capsule.

Marketing hype abounds with the new yogurts and they have even invented marketing names for the beneficial bacteria like: Bifidus Digestivum and Bifidus regularis-- totally bogus names.

I don't recommend most commercial yogurts, but there is a good Organic Kefir (Lifeway) Plain unsweetened that is tasty and would work just as well as a yogurt. The probiotic effect would be similar to yogurt. And they have a Greek style Kefir advertised. Don't know if it's organic. Kefir tastes similar to buttermilk; if you don't like that, you would probably not like Kefir. It's an acquired taste.

Just be aware and read labels. Activa yogurt's label indicates the addition of "maltodextrin, lactose, yeast extract and enzyme." Again the disguised or hidden MSG issue. Many nonfat or low fat products use dried milk solids which brings up some concern for the free glutamate factor of over- processed whey proteins. Some Activa labels indicate fructose syrup (which could be high fructose corn syrup) and has a high carb count of 69% of the serving.

Certified organic yogurt is always preferred so you don't consume the added antibiotics or hormones (rBGH) given to dairy cows that end up in diary products. Organic goat yogurt would be far less apt to be allergenic but even then, some individuals will have antibody reactions to that as well.

The main culprit for digestive problems brought on by yogurt consumption is from any sweetener that is added including sugar alcohols or from the natural milk sugar (lactose) itself. For people who are sensitive to the dairy protein, casein, yogurt is not a good choice.

If one chooses to use yogurt and does not have a dairy sensitivity, it should be plain, unsweetened with no fruit or artificial sweetener. The results for aiding intestinal problems would be highly individualized. For therapeutic use, it is unlikely to be of much benefit.

You can make your own yogurt which would definitely guarantee viable cultures in each serving.

Read labels… don't use brands that contain carrageenan, natural flavors, hydrolyzed proteins – (sources of MSG) or any other additives.

I've always liked yogurt and Kefir. I relied on it for years while recovering from hypoglycemia. It seems to have been a Catch 22 for me in that regard, because using it with leaky gut was counterproductive and I now have a dairy sensitivity…so am eliminating dairy from my diet – soon to be totally Paleo.

<u>On the plus side for yogurt use</u> -

Testing shows yogurt containing viable probiotic organisms were found to reach the colon alive. (Blaylock)

A study of babies with diarrhea found that probiotic-containing yogurt reduced hospital stays, reduced frequency of diarrhoeal stools and improved weight gain. (Blaylock)

A dental study found eating 6 ounces of yogurt a day reduced levels of odor-causing compounds in the mouth. (Blaylock)

(Optimal Wellness) Research suggests the flora provided by yogurt is just a temporary replacement but we also know that people from cultures in which yogurt is a staple often have a history of being long–lived. It is suggested that yogurt be home made and supplements added as well.

A primary consideration in yogurt use is to be tested to be sure there are no sensitivities. In some cases, yogurt can be tolerated every fourth or seventh day. People who cannot tolerate cow's milk yogurt, often can tolerate goat milk yogurt. Tolerances are always totally individual.

Goat's milk contains only trace amounts of an allergenic casein protein, alpha-S1, found in cow's milk. Goat's milk casein is more similar to human milk, yet cow's milk and goat's milk contain similar levels of the other allergenic protein, beta lactoglobulin. Scientific studies have not found a decreased incidence of allergy with goat's milk. Goat's milk contains slightly lower levels of lactose (4.1 percent versus 4.7 percent in cow's milk), which may be a small advantage in lactose-intolerant persons. (5) But you still have to buy organic goat yogurt certified free of antibiotics and bovine growth hormone (BGH).

Lactobacillus acidophilus is the culture most prevalent in yogurt. Others contain bifidobacteria. Streptococcus thermophilus and lactobacillus bulgaricus exist only briefly in the human digestive tract after being consumed. They do produce lactic acid which encourages growth of other friendly bacteria.

The point here is while yogurt can be good; it is limited to one or two beneficial species whereas blends of other bacteria seem to offer much more benefit.

Soil based organisms

Homeostatic Soil organisms (HSO) have been popular for about 10 years. Ann Louise Gittleman wrote back in 1998 – "Beyond Probiotics" and Rubin Jordan, wrote his life-saving testimonial on using HSO for Crohn's disease.(Patient Heal Thyself 2003). HSO produce superoxide dismutase, a free radical quencher and stimulate the production of alpha-interferon, a key immune system regulator. They stimulate production of human lactoferrin which helps absorb iron and interferes with pathogenic bacteria.

There is a caution for using some HSO products as they contain an extract of wheat grass so if you have gluten sensitivities, avoid these products.

This is important – I used Primal Defense by Garden of Life for several years and found it to be very effective GI wise, but because of the barley grass, I became even more sensitive to gluten and I was totally unaware of that until I stopped both the gluten food and Primal Defense and then noticed the improvement in symptoms. [I was a bit surprised that the product developed by a Crohn's patient would include the barley grass.] I have friends who swear by Primal Defense.

Adjunct products to help complement restoration of beneficial flora (Optimal Wellness)

Colostrum products are rich in secretory IgA and other immunoglobulins in immune-deficient guts. It is derived from freeze-dried goat or cow's milk – so one again, is contraindicated in those with those protein sensitivities.

Lactoferrin –primary component of colostrum and stimulates the immune system, is antiviral, antibacterial and has been found to block absorption of iron by tumor tissue while releasing iron to the body.

NAC – (N-acetyl cysteine) also important in re-establishing normal flora because it helps decrease toxicity of abnormal bacteria while rebuilding normal flora.

Researchers recommend adding FOS as well.

Probiotic Supplements - Professional Brands (just a few)

Designs for Health, Douglas Labs, Klaire Labs, Metagenics, Thorne

Professional brands for targeted therapeutic use typically contain higher numbers of bacteria in specific blends and usually are certified to deliver what's labeled and are sold through physicians offices and some can be ordered from companies such as N.E.E.D.S, Willner Chemists, Rockwell Nutrition…and other sources.

Recommended Brands by Authors

Dr. Rogers recommends Klaire Labs, Thorne, Tyler; one more easily found: Kyo-Dophilus by Waukanuga.

Dr. Blaylock recommends Theralac http://www.theralac.com/ (20 billion CFUs)

Dr. Brady obviously recommends Designs for Health

Optimal Wellness suggests: Natren, Healthy Trinity, Allergy Research Group (Nutricology)

Healthy Trinity by Natren was considered the Gold Standard for years. Now, there are many very good and less expensive alternatives.

My Personal Experience - I've had good results with:

DDS, Acidophilus/Bifidus with FOS by UAS Labs. – I used it for years.
I've traveled (unrefrigerated) with Kyo-Dophilus (Waukanuga) and PB-8 (Nutrition Now) successfully and used Primal Defense (Garden of Life) for a few years and was extremely happy with that until I realized the barley grass/gluten factor. (travels easily).

UAS Labs has a newer version - DDS probiotic called Probioplus DDS that is non-dairy, acid & bile resistant, fortified with FOS, freeze-dried and packaged with nitrogen for stability. Said to be stable at room temp for 2 years although refrigeration at 40 degrees is recommended. Provides 10 billion CFUs. I'll try that eventually. Available at Hans/iherb.

I currently use Klaire Labs Ther-Biotic Complete because it is are hypoallergenic, non-dairy, gluten free, cGMP manufactured and they have an acid-stable delivery system…. 20 billion CFUs, 12-strain formula and available in powder as well. I rotate between that and a couple other selections just to be sure getting full benefit of a variety.

For higher potency, I would also recommend Primadophilus Optima by Nature's Way for therapeutic use. Optima has a guaranteed potency for its entire shelf life. 35 Billion CFU's and 14 different probiotic strains. Available thru Hans website and iherb.com… just type in probiotic for the search and read the properties offered in the various brands.

It will be an individual thing. Test them as suggested and keep a log of symptoms, changes and improvements.

I would recommend always traveling with a good probiotic. If you come down with GI distress, it is often one of the fastest corrective remedies especially for diarrhea. Alternating at different times from the probiotic, I always use the liquid Grapefruit Seed Extract – GSE – (kills pathogens) and then the probiotic to help enhance the good bacteria population of the gut.

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Ouwehand AC.
J Nutr. 2007 Mar;137(3 Suppl 2):794S-7S.
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Abstract
A considerable part of the Western population suffers from some form of allergy, and the incidence is still rising with no sign of an end to this trend. Reduced exposure to microbial allergens as a result of our hygienic lifestyle has been suggested as one of the possible causes. It has also been suggested that probiotics may provide safe alternative microbial stimulation needed for the developing immune system in infants. This idea is supported by the fact that allergic infants have been observed to have an aberrant intestinal microbiota. They were shown to have more clostridia and fewer bifidobacteria and, in addition, to have an adult-like Bifidobacterium microbiota. Clinical trials have shown that the standard treatment of infants with atopic eczema, extensively hydrolyzed infant formula, can be significantly improved through the addition of Lactobacillus rhamnosus GG or Bifidobacterium lactis Bb-12. It has also been shown possible to halve the incidence of allergy in at-risk infants through administration of L. rhamnosus GG to expecting mothers and subsequently to their infants during the first half-year of life. Many mechanisms have been proposed for these beneficial effects, ranging from improved mucosal barrier function to direct influences on the immune system. However, the exact mode(s) of action are not yet known. For the future, elucidation of these mechanisms will be an important target. Another important area will be the investigation of interactions between probiotics and other food components that influence allergies. This will enable optimization of probiotic use for the allergic subject.

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Resident bacterial flora and immune system.
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Gastroenterology Unit, Department of Internal Medicine, University of Rome Tor Vergata, Italy.
biancone@med.uniroma2.it

The "controlled inflammation" of the normal human gut is a closely controlled phenomenon and any change in the cell type number and/or functions, including the release of soluble mediators can lead to an "uncontrolled" inflammation. The physiological inflammation in the human gut plays a crucial role in maintaining a local immune response that is appropriate, efficiently protective and which respects the gut structure and function. The intestinal mucosa represents a considerable proportion of the human immune system. Disregulation of the mucosal immune response can switch a "controlled" toward an "uncontrolled" intestinal inflammation. A key role in the maintenance of an adequate balance between antigenic stimulation and host immune response is played by the immunoregulatory molecules released by activated immunocytes in the human gut. The role of the host immune system in the maintenance of an adequate balance between luminal antigens, including the resident bacterial flora and host immune response, is strongly supported by animal models of uncontrolled intestinal inflammation. Besides the aetiology of inflammatory bowel disease, luminal antigens (including food, viral and bacterial antigens) contribute to the maintenance of the inflammatory process in inflammatory bowel disease, by stimulating the immunocompetent cells in the intestinal mucosa. Of the luminal antigens, the resident bacterial flora seems to play a major role in the development of animal

models of "uncontrolled" intestinal inflammation. Recent evidence also suggest that bacterial flora can modulate the function of the intestinal mucosal cells. These observations support the role of the intestinal bacterial flora in the induction of an uncontrolled inflammation in the human gut, leading to tissue damage. Probiotics, defined as living micro-organisms which, when taken in appropriate amounts, improve the health status, have been proposed in the treatment of inflammatory bowel disease, but their mechanisms of action still remain to be fully elucidated. PMID: 12408438 [PubMed - indexed for MEDLINE]

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[Role of intestinal flora in health and disease]
[Article in Spanish]Guamer F.
Unidad de Investigación de Aparato Digestivo, Hospital Universitari Vall d'Hebron, Barcelona, España. fguarner@vhebron.net

The terms intestinal "microflora" or "microbiota refer to the microbial ecosystem colonizing the gastrointestinal tract. Recently developed molecular biology instruments suggest that a substantial part of bacterial communities within the human gut still have to be described. The relevance and impact of resident bacteria on the host physiology and pathology are, however, well documented. The main functions of intestinal microflora include (1) metabolic activities translating into energy and nutrients uptake, and (2) host protection against invasion by foreign microorganisms. Intestinal bacteria play an essential role in the development and homeostasis of the immune system. Lymphoid follicles within the intestinal mucosa are the main areas for immune system induction and regulation. On the other hand, there is evidence implicating intestinal microbiota in certain pathological processes including multi-organ failure, colon cancer, and inflammatory bowel disease

Probiotics 'have effects on gut' Scientists say they have hard evidence foods containing "friendly bacteria" do have a tangible effect on the body
http://news.bbc.co.uk/2/hi/health/7184011.stm
http://www.pjonline.com/pdf/cpd/pj_20070331_probiotics.pdf http://www.patient.co.uk/showdoc/40024941/

Often, my motivation to write an awareness article comes from personal experience. This about probiotics is one such instance of how simplistic it can be to use natural, preventive measures and how troublesome GI conditions might be avoided.

Almost 20 years ago during my first colonoscopy, it was noted that I had some diverticular pouches. These can be likened to pot-holes in the road. Small caverns or out-pouching in the colon wall that are not naturally there. These tend to become clogged with food debris and often become inflamed or infected. If left untreated, they not only can cause intense abdominal pain and fever, but can rupture into the abdominal cavity spilling the infection there and can cause a life-threatening situation involving emergency surgery. When one has a diagnosis of diverticular pouches (diverticulosis or diverticular disease), they are advised never to eat nuts or seeds because those tend to lodge in the pouches and often become infected. Nuts are obvious, but seeds often are forgotten – even small seeds like poppy seeds can be trouble. The pain from diverticulitis almost always prompts a trip to the hospital. While I've never experienced it, I've heard from patients and others it can be a painful and intense experience.

At the time of my diagnosis, I was already aware of probiotics so I knew my preventive protocol would be using a quality probiotic continually. I didn't at the time and still don't, alter my diet; but I never forget the daily probiotic, either. The doctor I see for colonoscopy is a GI surgeon and always remarks that the pouches look healthy and he always reminds me about the diet. The last time, I mentioned the reason I was doing so well is my regimen of probiotics. The look on his face said everything. He had no idea – and further, he wasn't about to ask! Hopefully, he did some Googling later on. ;)

Now, to the real story. A high school classmate of mine (we are both 71) was hospitalized for severe abdominal pain. Days went by and he became worse - weaker, vomiting, fever. Could eat nothing. They decided, after what I thought was way too long a delay, to go in for exploratory surgery. They found that a diverticular pouch had ruptured and the infection was everywhere inside the abdominal cavity. He was in critical condition and by then, had lost a significant amount of weight and stamina. They removed a diseased portion of the colon and given him a temporary colostomy

bag with the plan to reconnect once he recovered sufficiently. After several weeks, he wasn't much better but they thought he just needed more time to heal. He was moved to a rehab facility where he became progressively worse and began bleeding from the rectum. Back to the hospital for more exploratory surgery and this time, the only remedy was a permanent colostomy. By this time, he weighed about 130 pounds. He could keep no food down. Feeding tube installed. He was on the critical list for over a month. Of course, during the whole time, he was on massive doses of antibiotics. At no time were probiotics prescribed. After more than three months in the hospital and rehab, he is slowly recovering and walking with a cane, gaining weight; coping with the ostomy. I do not know if he knew he originally had diverticulosis and ignored the diet restrictions or if he never had benefit of colonoscopy. I know that probiotics were never mentioned because at one point I asked his wife about it and she wasn't familiar with the term.

On the other hand, I have a good friend, about my age who has suffered from diverticulitis for at least 15 years. She observes a strict diet and has returned many a restaurant meal when it arrived with something forbidden that wasn't predictable by menu description. She's had a few trips to the ER with severe abdominal pain and has been placed on antibiotics regularly. I've shared my probiotic experience with her and it falls on deaf ears, although she is a healthcare professional.

Clostridium difficile (C.diff) is a nasty opportunistic, pathogenic microbe that causes life-threatening infections. It often shows up in intestinal surgery patients. Some say it is prevalent in those whose diets lack adequate fiber. Typically, it follows on the heels of antibiotic therapy and often more antibiotics are given to stop the overgrowth of the C. diff. Experts in functional medicine say it is important to address the entire bowel flora issue (dysbiosis) immediately when C. diff shows up. Some lab tests miss detecting C.diff initially because it is an anaerobic bacteria (can live without need of oxygen) so specific tests for metabolic by-products of such bacteria need to be done.

Years before I became holistically knowledgeable, a friend had surgery for a rectocele; it was to be a routine in and out surgery. She was kept in the hospital for a month while they attempted to kill C. diff. She felt she was dying and asked to go home. There, she started her own regimen of probiotics and juicing fresh vegetables for the enzyme content. Gradually, she healed and eventually became totally well… to the amazement of her colorectal surgeon who was the top gun at a well-known hospital. I think he had written her off.

Another friend underwent surgery for colon cancer at age 60. Had not had a colonoscopy but spent at least 20 years taking aspirin other NSAIDs for an arthritic hip which was eventually replaced before she was 50. I'm sure she had leaky gut based on other symptoms. The other hip needed replacement but the colon cancer cropped up as an anemia symptom which was actually a blessing. Just as Dr. Blaylock mentions, often people who are in for intestinal surgery are highly vulnerable to C. difficile infections and just a few days after she arrived home from the colon surgery, she was hit with C.diff. And of course she was placed on more antibiotics. We spoke and she took down the names of probiotics 'just in case'. But didn't use them. (another person who is very savvy and intelligent but didn't take that extra precaution before, during or after the colon surgery.) Fortunately, she recovered, albeit very slowly. Even now, she still isn't using probiotics as a preventive measure to keep her intestinal ecology in balance.

An elderly friend's husband – 86 yrs was hospitalized for several weeks because of flu complications (diabetic), became dehydrated etc. He was given antibiotics. He recovered except for diarrhea that plagued him significantly. His wife was at wits end and he was weak and frail. When I suggested she try the probiotic approach, she went immediately as I suggested to her pharmacist and bought just the acidophilus/bifidus combo. In a few days, the big D had stopped and he was mighty happy and so was she! Several years later, she had a similar problem but had forgotten the name of what worked for him and wanted to use it herself. She remarked it was like a miracle for him and for her.

I have more. But you get the idea.

Hopefully, those of you who have made it through these segments thus far are gaining some helpful insight as to the importance of health in the entire intestinal tract.

If you learn nothing else from this series on intestinal health, one key point should be always to remember that use of probiotics on a daily basis for prevention of dysbiosis or imbalance of bowel bacteria can be critical to your health; in some cases, it can be a life-saver.

Part 9 - Testing

As mentioned earlier in this series, sometimes heart conditions go undiagnosed because people think they 'just have heartburn.' A formal diagnosis as to the cause of discomfort should be the first priority.

All healthcare professionals warn that if there is severe abdominal pain or bloody bowel movements or signs that might set off warning bells about a growth or cancer, then you must see a gastroenterologist for formal testing.

Follow your own intuition and listen to your body. Most often, people intuitively seem to know when something is terribly amiss. Refrain from being in denial.

I've included a listing of functional medicine tests, where to order them and a resource list to locate doctors who can order and interpret the results. You may have to be your own patient-advocate and negotiate for the cooperation of your Internist or GP. I've often said, 'just humor me and order this test for me please.' That was before I found integrative medicine physicians who used these tests routinely as baselines. Welcome relief.

Dr. Rogers says that "failing a definitive diagnosis from the various tests, most patients will be given a fall-back diagnosis…a catch-all, IBS (irritable bowel syndrome) and that will send you down the path to a lifetime of drugs that do not address the cause and you'll never find a cure." (No More Heartburn)

Functional medical testing typically goes beyond traditional testing and can more often get to the core problem because these tests are looking at dysfunction in a different light. Two of many examples she gives in her book: constipation from hypothyroidism and persistent nausea as a symptom of a brain tumor.

Dr. Rogers says… There is no absolute order of tests. Your history can often guide which tests to use first. For instance, if you have a history of antibiotic use, then Candida would be an obvious initial test.

Dr. Brady has developed a Comprehensive Metabolic Profile (description later) and notes it is a cutting edge, foundational assessment or starting point – allows finding core problems and is a good follow-up test after intervention. Just about everyone can use as a starting point because it is a objective scientific, evidence-based triage type evaluation, and it follows the " Test - Don't Guess " approach espoused by Designs for Health. It helps patients get to the bottom of their unique needs. Included in the testing especially helpful is Organic Acid testing.

Dr. Brady has collaborated with Metametrix Lab to include this test as part of the Comprehensive Metabolic Profile. "Organic acids are metabolic intermediates produced in pathways of central energy production, detoxification, neurotransmitter breakdown, or intestinal microbial activity. Accumulation of specific organic acids in urine often signals a metabolic inhibition or block. This may be due to a nutrient deficiency, an inherited enzyme deficit, toxic build-up or drug effect. (Metametrix)

An ALCAT test panel (Food Allergy & Chemical Sensitivity/Intolerance Test) is customized for food allergies/sensitivities. No allergy test is fool proof or is going to catch everything because there is a lot of pathways that it can follow. Classic celiac may actually go undetected even on an ALCAT test. Much of the time, you have to go on symptoms. Testing helps to enforce compliance. (Brady).

Dysbiosis
Reiterating from earlier text – " if GI symptoms ranging from burping to discomfort, reflux and abdominal pain to gas…stool testing is helpful. People with GERD who have been on antacid medication have really 'screwed' up their downstream intestinal function. They have dysbiosis like crazy, protein maldigestion; there are a lot of problems with antacid medication. Also, pathogens must be ruled out before treating the dysbiosis so testing becomes essential. (Brady)
http://www.metametrix.com/resources/content/LearningCenter/Newsletters/Documents/DysbiosisKF2.pdf

Comprehensive Digestive Stool Analysis (CDSA)
Will identify pathogens and Candida and also tell about other functions – like digestion and absorption, low pancreatic or gastric secretions, chymotrypsin levels, phthisis is an easy test to do. You receive a kit with directions and do it at

home.

The Comprehensive Digestive Stool Analysis (CDSA) is the original non-invasive evaluation of gastrointestinal function that includes analyses of digestion, absorption, bacterial balance, yeast and parasites. This profile is recommended for patients with diffuse and non-specific GI-related symptoms, such as indigestion, dysbiosis, constipation, and diarrhea. http://www.gdx.net/home/assessments/cdsa/

Comprehensive Digestive Stool Analysis (CDSA) 2.0 uses advanced GI biotechnology to evaluate digestion, absorption, pancreatic function, and inflammation, in addition to bacterial balance, yeast, and parasite infection. This profile features exclusive new markers for assessing irritable bowel syndrome, sub-mucosal inflammation, colorectal cancer risk, pancreatic insufficiency, and occult infection.

Leaky Gut
Dr. Rogers always suggests testing but says that testing yourself is safe and can offer an answer. She says, if you suspect LGS, use L-glutamine powder for a month and if you find symptoms disappearing, then you are in the process of treating it successfully. If not, then checking for Candida or other parasites is required.

There is a formal test for leaky gut or intestinal permeability. It's a 6-hour urine collection test and requires drinking a solution of lactulose/manitol and if lactulose shows up in high levels in the urine, it's confirmation that you have leaky gut. If the mannitol is poorly absorbed that indicates malabsorption (Blaylock)

Refer to these links:
http://www.metametrix.com/resources/content/LearningCenter/Teleconferences/071207_Organix-Dysbiobis-and-GI-Effects.pdf
Intestinal Permeability Assessment analyzes urine for the clearance of two non-metabolized sugars, lactulose and mannitol. Identifies "leaky gut" and malabsorption. http://www.gdx.net/home/assessments/ip/

Bacterial overgrowth
This simple, non-invasive test detects bacterial overgrowth in the small intestine, a common condition that often underlies chronic symptoms of maldigestion and malabsorption, including bloating, gas, diarrhea, irregularity, and abdominal pain.
http://www.gdx.net/home/assessments/bacterial_overgrowth/

Comprehensive Parasitology Profile
This simple, non-invasive test detects bacterial overgrowth in the small intestine, a common condition that often underlies chronic symptoms of maldigestion and malabsorption, including bloating, gas, diarrhea, irregularity, and abdominal pain. http://www.gdx.net/home/assessments/parasit/

Helicobacter pylori
Dr. Rogers says gastroenterologists like to do endoscopies for biopsy of the stomach wall tissue but before she would allow that, she likes the blood test. It's a quantitative antibody test and not just H.pylori test. The difference is important. A simple blood test will tell whether you have antibodies to H.pylori present or not but won't tell if they are from an infection that you got rid of 10 years prior or one that you just got two weeks ago. With the quantitative H.pylori antibody assay, you get a numerical amount of antibody.

It's always important to test for H.pylori because it can eventually lead to stomach cancer. H.pylori has become more prevalent than before even though it was already the leading cause of foodborne illness. (Rogers)

Food antibody assessment
Food allergies or intolerances can begin from infancy to the first six months of life especially if eggs and/or cow's milk are fed. (formula vs. breast feeding). (Blaylock)

Newer food allergy tests can be done with finger-stick blood spot methods and testing will cover as many as 94 food antigens and a number of spices.

Food intolerances differ from true allergies as they can be delayed days, weeks and even months after exposure to the

offending food and often missed diagnosis because symptoms are usually not considered as connected to reactions to foods – like fatigue, joint pain, muscle pain, ADHD, chronic migraines, and neurological problems. (Blaylock)

Testing by the old skin scratch test is highly inaccurate and misses many food allergies and ALL food intolerances. (Blaylock)

The ELIZA testing for food intolerances uses an enzyme-linked immunosorbent assay which tests for both IgE and IgG immune complexes. IgE – immediate reaction/allergy; IgG- gradual intolerance that can be delayed and ongoing for long periods of time. The antigliadin antibody test is important to include along with the gluten/gliaden sensitivity tests - references to that reasoning is in CR #54

It's important to test because reactions to certain foods can cause significant and often crippling neurological damage (brain and nerve) as well as immune system damage. (Blaylock)

SIgA testing should also be done as a measurement of the strength of our protective antibody system (Secretory IgA). A salivary test that measures SIgA in the mouth/throat and stool can measure can be used to measure in the gut. There is a strong correlation between mouth/throat area and from intestinal tract and the salivary assessment is an easy initial step.

Food Antibody Profiles
The Genova Diagnostics IgG Food Profile helps identify those with true immune-mediated allergies versus food intolerance. It measures IgG antibody levels to 88 foods and Total IgE. The IgE Food Profile measures quantitative IgE antibody levels to the most common types of dietary allergens. Additional tests are also available for Vegetables and Spices.
http://www.gdx.net/home/assessments/allergy/
http://www.gdx.net/home/assessments/allergy/appguide/index.html

Stress Testing
As mentioned in several segments, stress impacts digestive wellness and levels of stress hormones can be evaluated by salivary collection methods. A powerful and precise non-invasive assay, the Adrenocortex Stress Profile evaluates bioactive levels of the body's important stress hormones, cortisol and DHEA. This profile serves as a critical tool for uncovering biochemical imbalances that can underlay anxiety, chronic fatigue, obesity, diabetes and a host of other clinical conditions. It's also a crucial tool for monitoring DHEA and/or cortisone therapy.

Changing amounts of DHEA and cortisol over an individual's lifetime may signal important alterations in adrenal function that can profoundly affect his/her energy levels, emotional state, disease resistance, and general sense of well-being. That's because adrenal hormones exert a profound influence on the body's carbohydrate, protein, and lipid metabolism, immune response, thyroid function, cardiovascular health, and overall resistance to stress.
http://www.gdx.net/home/assessments/adrenocortex/

Organic acid by Cellular Energy Profile testing is highly valuable. The Cellular Energy Profile evaluates organic acids that play a pivotal role in the generation of cell energy. The test can reveal metabolic distress associated generalized pain and fatigue, which may arise in response to toxic exposure, nutrient imbalances, digestive dysfunction and other causes.
http://www.gdx.net/home/assessments/cellenergy/

These are just a few tests that are invaluable to diagnosing accurately what goes on in the gut.

One way to locate a doctor in your area who will order and interpret the tests is to call one of these labs and ask for names in your area or zip code.

BioHealth Diagnostics – Our aim is to assist health professionals in the diagnosis and treatment of the underlying causes of illness. Complimentary technical support from active clinicians in successful practices - not lab staff - is provided at no charge. Interpretive assistance and therapeutic suggestions are included. San Diego, CA
http://www.biodia.com
800-570-2000

Genova Diagnostics (formerly Great Smokies) - our laboratory serves over 8000 primary/specialty physicians and healthcare providers, offering over 125 specialized diagnostic assessments. These innovative tests cover a wide range of physiological areas, including digestive, immune, nutritional, endocrine, and metabolic function. To date, we have performed over 2 million individual diagnostic tests. Ashville, NC
800-522-4762

DiagnosTech, Inc. was established in 1987 and was the 1st lab in the United States to implement salivary based hormone assessment into routine clinical practice. For the past twelve years, our tests have converted many physicians in their preferences from run-of-the-mill mass production panels to precision diagnosis of problems. These tests have become powerful tools in evaluating gastrointestinal problems, stress and hormone related diseases and the overall wellness of the patient. Quality control is our primary goal. All parameters on our reports are standardized daily to WHO (World Health Organization) and other standardization agencies' reference materials. This insures the reproducibility of results, and permits precise clinical diagnosis based on real values, year in and year out. Seattle, Washington -800-878-3787.
http://www.diagnostechs.com/main.htm

Doctor's Data - specialist and pioneer in essential and toxic elemental testing of multiple human tissues, the laboratory offers a wide array of functional testing. DDI's tests are utilized in the assessment, detection, prevention, and treatment of heavy metal burden, nutritional deficiencies, gastrointestinal function, hepatic detoxification, metabolic abnormalities, and diseases of environmental origin. St. Charles, IL
800.323.2784 (USA & Canada)
0871.218.0052 (United Kingdom)
630.377.8139 (Elsewhere)
E-mail: inquiries@doctorsdata.com

Immunosciences Lab- a diagnostic and research facility that specializes in innovative microbiology and immunology laboratory testing. As one of the pioneering laboratories in the field of molecular medicine, ISL analyzes complex diseases that directly or indirectly involve the human immune system. ISL is dedicated to the research and development of new biomarkers that will offer detection and prevention of chronic illnesses at the earliest possible stages. Through its unique diagnostic testing, the lab provides physicians with tools to inhibit disease progression and perhaps ultimately prevent certain occurrences. ISL offers more than 400 tests, which include detection of cancer, diabetes, Lyme disease, allergies, and a unique test for bacterial and viral agents in sexually-transmitted diseases of the reproductive system. Physicians throughout North America, South America, Europe and Australia have access to experienced ISL client service representatives who are fully informed about the company's latest testing methodologies and results analysis. Beverly Hills, CA 800 950-4686. E-mail: immunsci@ix.netcom.com

Metametrix - The mission of Metametrix is to improve health worldwide by providing clinical laboratory tests that identify nutritional imbalances and toxicities underlying chronic diseases. Physicians use our testing services to custom tailor nutritional therapies, detoxification programs and other lifestyle changes that can result in significant, positive impact on patient outcome. Duluth, GA 800.221.4640

Designs for Health through Dr. Brady has developed a special Comprehensive Metabolic Profile that encompasses all in one for an economical package. (Windsor, CT)

My Input
If I were starting out with this testing endeavor, I'd have my doctor contact Metametrix (see below) or Designs for Health to learn how to order that test kit because it is so comprehensive and to order many separate tests can become costly.

The Designs for Health Comprehensive Metabolic Profile (CMP) provides the tools needed to evaluate your patients' complete nutritional and metabolic health, enabling you to develop targeted nutritional interventions.

The profile, administered by our partner, Metametrix Clinical Laboratory, assesses the following — and much more — through a combination of organic acid, lipid peroxide, fatty acid, and IgG food antibody testing:
• Dysbiosis

• Detoxification
• Essential fatty acid balance (AA/EPA ratio)
• Food sensitivities due to leaky gut
• Mitochondrial function / energy production
• Neurotransmitter metabolism
• Oxidative stress
• Yeast marker

Benefits to the Practitioner:
• Comprehensive, objective nutritional assessment
• Allows for optimization of metabolic function
• Cost-effective
• Highest quality lab test available
• No blood draw required
• Better compliance and patient outcomes
• Free consults available via Metametrix

Benefits to the Patient:
• Cost-effective
• Convenient (test can be administered at home)
• Easy to understand
• Better and faster results
• Easy-to-implement recommendations
• Peace of mind and commitment to the program
To learn more, or to request specimen collection kits, r call us at 800-FOR-HEALTH (800-367-4325). East Windsor, CT

Self Test - Check the questionnaire here:
http://healthyrevolution.info/hr/PersonalHealthAssessment/tabid/58/Default.aspx

To find a local healthcare provider using the Metabolic Profile please contact Metametrix Clinical Labs at 1-800-221-4640 or <inquiry@metametrix.com> and ask specifically for a provider near you who is using the Designs for Health Metabolic Profile. If there is no provider currently using the Metabolic Profile in your area please contact Designs for Health (DFH) at 1-800-847-8302 or <info@designsforhealth.com> and ask for a DFH provider in your area and request that they perform the DFH Metabolic Profile on you

Other sources - Finding a functional medicine, nutritionally-oriented health-care professional in your area.

The Institute for Functional Medicine
Gig Harbor, WA
800-228-0622
www.functionalmedicine.org

The American Association of Naturopathic Physicians
Washington, DC
866-538-2267
www.naturopathic.org

The American College of Advancement in Medicine
Laguna Hills, CA
949-583-7666
www.acam.org

International College of Integrative Medicine
Norristown, PA
866-464-5226
www.icimed.com

This concludes the Testing section. Again, because of space and complexity, this is just a brief survey of initial testing methods. The data is much more extensive but this gives an idea of diagnostic testing that is needed beyond the standard or traditional testing that is typically ordered by your family physician so you can get to the core issue of your digestive problems.

Part 10 – Treatment Protocols

Introduction

It's always smart to have a definitive diagnosis before embarking on a do-it-yourself quest to cure symptoms or conditions. Otherwise, you can harm yourself. Often, certain identical symptoms can correspond to very different sources of dysfunction. Even mild, occasional heartburn can be a sign of underlying GERD, a potentially serious disease.

Once you have the diagnosis and if a prescription drug is offered, you should begin by doing a thorough search on the condition, symptoms, treatment and side effects of the drug or drugs involved. If you choose to try a natural approach instead, you should do the same research.

Remember, snake venom is "natural." Mushrooms are natural, but the wrong species is lethal.

Once again, I always suggest you work with a functional medicine/nutritionally oriented physician or healthcare professional certified to test and treat patients. While I do a large amount of experimenting, I have always had direction from my FM MD to avoid detrimental conflicts.

This final segment includes excerpts from the various sources I referenced initially along with a few of the opinions they offer on conventional drug treatment plus holistic or natural-type treatments. If you become very interested in one of these areas or remedies, I suggest you read one of the books for more complete detail and also do plenty of Internet searching for related and relevant information. I am not intending to provide you with an exhaustive survey or a complete do-it-yourself guideline but rather, to illustrate that there are many options.

Dr. Brady comments in his new book Healthy Revolution that "a promising and striking paradigm shift has been underway in how doctors think …. moving to integrate conventional Western medicine that seems to mandate the advocacy of prescription and over-the-counter synthetic medications and surgery as the only answers while historically promoting the active suppression of more natural and preventing measures."

"There is a rise in phenomena referred to by many names; functional medicine, metabolic medicine, comprehensive medicine and integrative medicine and there has been significant interest from many nationally renowned physicians from the hallowed ivy-covered towers and halls of academic allopathic medicine. This new medicine packages this emerging paradigm of thinking into a very scientifically-valid and research-based body of knowledge that provides a level of credibility that no other new or alternative approach has ever enjoyed." (Brady)

Nutritionally oriented, functional medicine works and works well.

Chapter 1 of *No More Heartburn* (Sherry A. Rogers, MD) is titled, "How Standard Medical Treatments Guarantee that the Sick Will Get Sicker, Quicker."

Dr. Rogers says that gut symptoms are among the ten top symptoms for which patients seek doctors' help. Dr. Brady notes that a high percentage of his practice involves treating some condition traced to gut origin. Research indicates over a 3-month period, 7 out of 10 households experience some sort of GI symptom and miss work three times as many days a years as those without gut problems. (Rogers/Drossman) Still other research indicates at least 4 in 10

experiencing indigestion. (Rogers/Jones)

And to this, Dr. Rogers points out that in over half of these cases, doctors are unable to find any cause of the symptoms. This is not a minority of the population. You have only to check the shelf space devoted in pharmacies/drug stores to OTC digestive remedies to confirm that indeed, people suffer from gastro-intestinal problems. Americans spend nearly $2 billion each year for OTC medications to treat diarrhea, heartburn and constipation.

The issue becomes that often doctors do not know what causes dyspepsia or irritable bowel symptoms and often patients are told "they'll just have to live with it."

Dr. Rogers says, "the fact is gastrointestinal specialists do not know how to find the causes or cures for most intestinal symptoms" and it's the reason she wrote her very informative book. She says, "I was trained to rely on and trust in drugs. Now that the mass marketing of drugs has reached the consumer, you, too, will be led down the same thorny path. I'm here to see that does not happen."

She says "when you use medications to suppress or to hide symptoms, thereby avoiding finding the true cause, you pay three hefty prices:
1. Shutting down or turning off a normal physiologic function of the body
2. Ignoring the cause of the original problem so it continues to worsen
3. The drug's numerous side effects."

If you have or suspect GI dysfunction, I highly recommend reading all three of the books *No More Heartburn, Digestive Wellness and Optimal Digestion* so you have a good overview of collective opinions on how to test and manage your journey to wellness.

Now with the current news of municipal water supplies contaminated by prescription drugs residue, antibiotics and hormones, the detoxification burden and antibiotic resistance issue is even more of a concern in gut issues. So, this series is timely and extremely relevant as there likely will be more impact on GI function as this unfolds and continues to be another risk factor.

CAVEATS ABOUT USING OTC ANTACID-TYPE MEDICATIONS…a brief review

Antacids - Mylanta, Tums, etc.
Antacids sop up the acid that prompts indigestion and also depletes the same acid needed for absorbing minerals. Without sufficient minerals, we are vulnerable to many diseases including depression and cancer. Liquid Mylanta contains aluminum which collects in the brain enzymes and contributes to early senility (Rogers/Kaehny) and memory loss. Dr. Rogers cites severe depression as well. The brain shrivels into a non-functioning, tangled mess (Rogers/Perl 1980, 1990) known as neurofibrillary tangles. If detected early enough, it can be reversed.

Sopping up acids with antacids also blocks the ability to absorb minerals like calcium (osteoporosis) and we know afibbers are typically low on magnesium stores. One of Dr. Rogers' patients came to her after resorting to back surgery because of severe pain and he still wasn't out of pain until she uncovered his magnesium deficiency from antacids. Another patient using antacids suffered a sudden and fatal cardiac arrest.

By using antacids, the opportunity to find out what's wrong and fix before it worsens is lost. People suffer the side effects of the toxins in the products (especially aluminum) and prevent the body from absorbing the minerals on which health hinges. (Rogers) Tums-type antacids contain calcium carbonate which neutralizes the acid, so it is illogical to take Tums as a source of calcium when you shut down stomach acid needed to metabolize minerals in the first place. (Rogers) In the case of H.pylori infections and if you reach for the Mylanta as soon as you feel stomach distress and when that doesn't work, go to stronger medications like Zantac or Tagamet that more efficiently turn off stomach acid production, then this effectively adds fertilizer to the H.pylori bug by wiping out the natural bug destroyer. (Rogers)

On antacid use, Dr. Blaylock says the calcium in these products actually stimulates acid release. There is a rebound effect when too much buffer enters the stomach and the result is an outpouring of stomach acid. He also warns about

the dangerous aluminum content.

He notes a recent study of healthy elderly people found that 90% had normal or near-normal acid production. The others had varying degrees of low or absent stomach acid. However, the percentage of those suffering with this problem would be higher if people with a variety of chronic diseases commonly seen in our society were included. Many of the digestive problems linked to aging are the result of a hydrochloric acid shortage. Ironically, acid loss can actually boost the risk of acid reflux. (Blaylock) Sound strange?

Low stomach acid relaxes Esophageal valve and facilitates GERD
This is due to the fact that when acid levels are low, the muscular valve at the lower end of the esophagus relaxes dramatically, making reflux much more likely. Plus, improved liquefaction of the food (breakdown by stomach acid) means less pressure in the stomach, which further reduces the chance that acid might be forced back into the esophagus.(Blaylock)

Most treatments to improve digestion have been incorrectly designed to lower stomach acid levels but this reduction can interfere with the absorption of several nutrients and has been linked to a number of medical conditions, including cancer of the stomach. Studies using more accurate measurements indicate that 40% of normal elderly people and 80% of the chronically ill elderly have significant B12 deficiencies. Research also suggests that virtually all people with Alzheimer's disease are vitamin B12- deficient, and a shortage of this vital substance increases the risk of cancer in a number of organs.(Blaylock)

With OTC products, you also take in undesirable additives, dyes and chemicals that are toxic to the body and add to the detoxification burden.

Be a label-reader: don't take in these toxins
The fine print on the label will often disclose chemicals and dyes that add to the toxic burden discussed previously. Here's a sample from a few combined labels of popular antacid OTC products: Sodium laurel sulfate, D&C Yellow #10, FD&C Blue #1, D&C Red #27, FD&C Green #3, FD&C Yellow #6, FD&C Red #40, Flavors, Butylparaben, carboxymethylcellulose sodium, hypromellose, microcrystalline cellulose, propylparaben, purified water, sodium saccharin,carboxymethylcellulose sodium, Sucrose, Calcium Carbonate, Corn Starch, Talc, Mineral Oil, Natural & Artificial Flavors, Adipic Acid, Sodium Polyphosphate, Red 40 Lake, Yellow 6 Lake, FD&C Yellow 5 Lake (Tartrazine), Blue 1 Lake, Colloidal Silicon Dioxide; D&C Red 30; Dextrose; Maltodextrin; Mannitol; Pregelatinized Starch; Talc; Tribasic Calcium Phosphate. Benzoic Acid, Magnesium Aluminum Silicate, Methylcellulose, Red 22, Red 28, Saccharin Sodium, Salicylic Acid, Sodium Salicylate, Sorbic Acid, Water. And often aluminum hydroxide. (Liquid Mylanta – 500 mg. Aluminum hydroxide)

Note that some afibbers have found the calcium in Tums creates a double whammy for being pro-arrhythmic: The calcium content is often too high for their intracellular magnesium stores which allows the excitatory property of calcium to dominate heart cells and even if the calcium is buffering stomach acid, then it can reduce absorption of magnesium (unless it is the chelated amino acid form magnesium glycinate (by Albion) which doesn't require stomach acid to facilitate absorption). If you need supplemental calcium for bone health, then taking Tums is not the way to obtain it…regardless of what the marketing hype says as typically the calcium supplied is the carbonate form - the least absorbable compared to calcium citrate and other better forms.

An occasional Tums or Mylanta won't kill you; it's just that there are healthier and better options. If I needed Tums, I'd take DGL rather than Tums.

PHARMACEUTICAL ACTIONS AND POTENTIAL SIDE EFFECTS (Rogers)

Tagamet – (cimetidine) – is now available OTC and TV marketing has popularized it. Tagamet doesn't sop up stomach acid, but rather, blocks the H2 acid-secretion site on stomach cells so they do not release gastric juices. Dr. Rogers says "while this makes Tagamet more effective, it also increases the side effects exponentially." She cites a case widely published back in 1991 where a vigorous athletic 36-year-old Dallas-based petroleum engineer was stricken down as he mowed his newly pesticided lawn. He was overcome by dizziness, nausea, chest tightness, runny nose and a pounding headache. Other symptoms progressed over several months. In less than 6 months, he was diagnosed with testicular cancer and his health continued to spiral downward. After six years, and more health

deterioration, he was exhausted, had neuromuscular problems, trouble walking and frequent seizures. The collective opinion of a toxicologist, three neurologists and two neuro-opthalmologists independently agreed he had organophosphate pesticide poisoning.

His vulnerability to the poisoning was increased by his daily consumption of 900 mg of Tagamet which grossly interfered with his body's ability to detoxify the common pesticide, diazinon. The H2 blocker, Tagamet, had vied for the same detoxification pathways in his body as the pesticide and he did not have enough detoxification reserve. This allowed the pesticide's carcinogenic properties to be magnified and resulted in damage to mitochondria and to his brain.

The detoxification pathway competition is common knowledge in medicine. The warning (for Tagamet) is in the PDR. But individual biochemistry comes in to play and no one can predict how toxicity from various exposures will manifest in a body – or what other self-medications the person takes that can compound the problem.

Tagamet has other side effects that can occur at any time, even years after initially taking the drug which decreases the likelihood of your associating the appearance of symptoms with the drug.
Cardiac arrhythmia
Hypertension
Gynecomastia in men
Headaches
Dizziness
Low white blood cell count
Heart block
Diarrhea – for Tagamet and all related drugs.
Caution: If you are taking Tagamet or similar drugs like Zantac (ranitidine) Axid (nizatidine), Pepcid (famotidine) or Mylanta AR Acid Reducer (famotidine), they also interfere with your body's ability to detoxify the poisons you consume on a daily basis.

Another side effect of H-2 blockers and Tagamet… they potentiate the effects of alcohol… make one alcoholic drink seem like two or more (Rogers/Leiber). It was found that subjects who took Zantac or Tagamet before alcohol, had blood alcohol levels increased 34 – 92% higher than normal. TV commercials often suggest premedicating before imbibing but don't warn of the potential of a fatal auto accident as a result of high blood alcohol levels.

Ingredients from the Tagmet label: Croscarmellose Sodium, Hydroxypropylcellulose, Hydroxypropyl Methylcellulose, Magnesium Stearate, Methylcellulose, Polyethylene, Polyethylene Glycol, Titanium Dioxide. Cellulose, Corn Starch, Polysorbate 80, Povidone, Sodium Lauryl Sulfate, Sodium Starch Glycolate, Titanium Dioxide. (Note the antifreeze components)

Prilosec/Prevacid (omeprazole) Side effects include diarrhea, abdominal pain, nausea, vomiting gas, constipation, acid reflux and carcinoid tumors in the gut. Prilosec can cause:
Fatal liver rot (necrosis)
Fatal pancreatitis
Headache
Back pain
Hair loss
Toxic epidermal necrolysis
Can stop production of blood cells
Like Tagamet, Prilosec can distort or compromise the detoxifications pathway function.

As proton pump inhibitors (PPIs), Prilosec-type drugs stop stomach cells from producing acid altogether and essentially curtail normal stomach function and so can interfere with the secretion of intrinsic factor that enables vitamin B12 absorption. This can set you up for a variety of symptoms from accelerated arteriosclerosis, depression or fatigue to undiagnosable numbness, tingling and other nerve dysfunction. If you have a chronic disease like diabetes or arteriosclerosis, you accelerate the side effects of that disease. Early aging, cataracts, painful neuropathy and early death from heart attack…are just a few more.

Again, distortion of a cell's basic actions will bring about dangerous side effects…and as she says, "the sick get sicker - quicker." Prilosec-type drugs shut down the basic function of the stomach cell acid secretion for food digestion and also the ability to kill pathogens (pneumonia, food poisoning) entering the stomach like fungi, viruses and bacteria as well as absorption of minerals and acid/base (pH) balance that keeps us healthy.

H-2 blockers and Prilosec tend to be counterproductive in the long run and encourage H.pylori's transformation into a cancer-causing bug (Rogers/Hencschel). Prilosec, is not only expensive, but can actually increase your chance of getting H.pylori tenfold – if you don't already have it. (Rogers)

Relevant for afibbers - the loss of magnesium absorption can be high with Prilosec and have an impact on heart rhythm. (Rogers)

There is extra toxicity with Prevacid as it has a fluoride molecule and may account for the higher rate in tumor formation users. (Rogers)

Propulsid (cisapride) is a prescription drug used mostly for diabetics and those with poor nerve-muscle tone and it also affects the GI tract. The action of Propulsid is to release acetylcholine the main nerve-to-muscle transmitter and that accelerates gastric emptying. Actually, it hurries food through the gut and thereby relieves heartburn and reflux in some cases. Reglan (metoclopramide) is another brand of the same family. Obviously, when nerves are tampered with, other areas of the body can be affected.
Propulsid side effects include
Serious electrocardiogram (EKG) abnormalities causing potentially fatal ventricular tachycardia and ventricular fibrillation
Headache
Diarrhea
Abdominal pain
Nausea
Constipation
Anxiety
Arthralgia (joint pain)
Myalgia (aching all over) and more

Cytotec (misprostol) is a prostaglandin analogue or cytoprotective drug that protects the stomach from ulcers produced by NSAIDs used for arthritis, i.e., Aleve, Advil, Motrin, ibuprofen and others. Cytotec not only inhibits stomach acid production but also pepsin and increases alkaline bicarbonate mucus production. It doesn't prevent duodenal ulcers. It does not fix what's broken; only masks it. It has the usual side effects and a few more:
Diarrhea
Abdominal pain
Nausea
Gas
Headache
Heartburn
Vomiting and
Constipation
High blood pressure
Body aches,
Chest pain, heart arrhythmia, impotence
Fever
Blood clots
Intestinal hemorrhaging
Abnormal menses and uterine cramps and has been shown to induce abortion

Low Stomach Acid/Pneumonia Risk

Researchers analyzed computerized medical records for some 500,000 Dutch patients. Those taking acid-suppressing drugs for heartburn and indigestion were four times more likely to have pneumonia than those who did not. The acid

can kill bacteria and viruses that cause pneumonia.

Laheij's team found the risk of severe pneumonia to be highest in the elderly. Children and people with weakened or suppressed immune systems were also at higher risk. And there was a greater risk of pneumonia in users of acid-suppressing drugs who had asthma or lung disease.

"The risk of pneumonia from a PPI is almost identical to the risk of bleeding from an NSAID," Gregor says. "We will probably in the next few months see people switched to chronic PPI use to protect them from NSAID bleeding. Maybe we'll be trading the risk of a bleed for risk of pneumonia." http://www.webmd.com/heartburn-gerd/news/20041026/stomach-acid-drugs-may-raise-pneumonia-risk

NATURAL TREATMENT THERAPIES

This portion of the final segment reviews just a few of many commonly-recommended and highly-successful natural therapy options used by integrative medical professionals. It is impossible to cover thoroughly and list all as each of the reference books from which I've gleaned this information are mostly about natural therapies and have least 300 pages or more. These aren't the only very fine resources available. This just serves to give examples of the endless possibilities. Other professionals treating GI disturbances will have their own favorites based on their clinical patient results and successes. This is intended as a general guide to what's almost always considered common first-line therapy.

When treating digestive dysfunction by functional medicine approaches, the guidelines of the 4 R's will typically be followed as a stepwise treatment plan. Over 10 years ago, Jeffrey S. Bland, PhD, introduced the revolutionary, systematic 4R® GI Restoration Program, which has been successfully implemented by healthcare providers around the world ever since. It highly successful. It goes like this:
REMOVE dietary insults and offending GI substances(using test results as a guideline)
REPLACE digestive enzymes and support stomach acid when necessary
RESTORE or REPOPULATE the GI tract with health-promoting, friendly bacteria
REGENERATE the GI mucosa/intestinal lining with proper nutritional support

[And I would add the 5th R would be to Remove or **Resolve** the underlying Stress Factors found to be so prevalent in intestinal dysfunction. To ignore this is to leave the healing process incomplete.]

In her book, Dr. Rogers expanded the R's for clarification…Recognize (Diagnose, Remove (kill bugs) Reinoculate (add good bugs) Replace (enzymes) Recall – total load (FOS, L glutamine, nutrients) Repair (detox the gut and lifestyle) Rectify or repent (change your dietary habits, stop taking NSAIDs, etc.)

Supplement manufacturers that serve the professional functional medicine community such as Designs for Health, Metagenics, Thorne, Ortho-Molecular have product lines that follow the 4R program to ensure there is always nutritional support being provided while the gut issues are being cleared from the body so the patient doesn't end up worse than when they started.

To make a long post longer, I'm going to cover the "Remove" segment in more detail since while all the R's are important, Removing the influencing factors is crucial to recovery.

REMOVE - dietary insults and offending GI substances.(using test results as a guideline)

(Remember, what is taken into the body, must be detoxified - starting in the GI tract. If the body is too busy managing toxins, other GI functions including the immune system will suffer.)

Following the patient's test results, food diaries, questionnaires of symptoms steps –

Remove/avoid: (Rogers/Blaylock)
•allergenic foods including gluten/gliadin grains (wheat) , dairy, soy, corn, nuts, etc
•eat organic to avoid toxic burden from pesticides, herbicides, antibiotics, additives, chemicals, MSG and stealth MSG, etc.

•at least 2 dozen pesticide residues have been found on common, conventionally- grown vegetables
•eliminate chemical causative factors for leaky gut – ie, NSAIDs (aspirin ibuprofen), alcohol
•eliminate sugar, bad fats, packaged, refined foods with no nutrient value, artificial/chemical sweeteners
•avoid antibiotics whenever possible and use only when absolutely necessary
•avoid imported fresh produce where the incidence of parasites from contaminated irrigation water or human fecal waste is high
•avoid imported foods apt to be grown in soil with toxins, heavy metals, US banned pesticides
•avoid fluoridated, chlorinated water
•avoid fluoride from black and instant tea, grapes, processed chicken, California wine, reconstituted foods
•avoid environmental chemicals in the home, yard, workplace, personal care items – they all contribute to the detox burden
•remove H.pylori, parasites, yeast/fungi (Candida)–as indicated by reliable testing

Gluten/gliadin is covered in the Conference Room #54 detailed report, but what we don't often realize, is that food toxins not only come in to our body from manmade poisons but can even be produced by the plant themselves to protect against bugs, fungi, bacteria. These are called phytoalexins and the body has to detoxify these along with all the other incoming toxins. Cooking certain plants can produce harmful toxins – frying potatoes (and potato chips) produces the carcinogenic toxin, acrylamine. (Blaylock)

Not everyone will have an adverse reaction to these but cumulative levels may prove harmful especially to those with inflammatory bowel disorders. It just makes sense to be aware of the potential in case you are faced with a condition that nothing resolves, then looking at specific food intake and the gut may be the last thing thought of, but it really should be the first.

Examples plant-produced toxins –(Blaylock)
Nightshades secrete powerful toxins called glycoalkaloids – potatoes, tomatoes, most peppers, eggplant and tobacco. Glycoalkaloids inhibit cholinesterase which can lead to seizures, muscle spasms, inhibit digestive enzymes, increase intestinal permeability (LGS), worsen inflammatory bowel disease and increase incidence of miscarriage. Sprouting or greening potatoes – do not use.(high glycoalkaloids)

Studies show these compounds damage the mitochondria of cells, leading to cell death. The heart has the largest concentration of mitochondria in the body.

For those with inflammatory bowel disease, Crohn's, ulcerative colitis, concern should be focused on dietary intake of tomatoes, potatoes, eggplant and peppers (the Solanaceae family of plants). Studies show inflammatory bowel diseases most prevalent in countries with high intakes of these plants.

H.pylori, ulcers

[I'm devoting extra space detailing H.pylori treatment because these infections boost risk of stomach cancer by 600%. (Blaylock)]

Conventional drug-based therapy for H.pylori is triple therapy: two heavy-dose antibiotics and an acid suppressor. Even with that, it is hard to kill. Plus there is the complication of taking two broad spectrum antibiotics for a couple of weeks at a time. Sometimes, a fourth component is added, Bismuth, as it is lethal to H.pylori. (Brady)

Dr. Brady comments if a patient tests with occult blood in a stool test, he will immediately check for H.pylori and the same is true with a patient who has iron deficiency anemia or blood-loss-pattern anemia. Studies show that eradication of H.pylori will often reverse the iron deficiency anemia suggesting the blood loss is coming from micro bleeding in the stomach or duodenum due to H.pylori infection. Usually when that's the case, he treats the H.pylori but also supplements with a chelated, glycinated iron form (Ferrochel), the iron bis-glycinate which is a very safe and absorbable form that doesn't cause GI upset.

He also suspects H.pylori if cardiac C-reactive Protein (CRP) tests come back with high values of inflammation. H.pylori causes the production of inflammatory proteins – like C-reactive protein - that can then help the genesis of atherosclerotic lesions and ultimately MI.

He says, “we look at H.pylori if someone is having dyspeptic symptoms or reflux burning, but if you wait for those symptoms you are going to miss a lot of it. If we do a stool test for other reasons and there is occult blood, then we automatically do H.pylori testing.

If, in an elderly patient (about 60), we get occult blood in the stool we will do more seroculture – hemoccult and if they have a couple of positives, we do endoscopy because of the higher incidence of stomach cancer that needs to be ruled out.

Natural treatments with natural plant extracts or volatile oils that have direct ability to kill H.pylori. Alan Gaby in Alternative Medicine Review a few years ago looked at all the different H.pylori natural treatment agents and ranked them out. http://www.encyclopedia.com/doc/1G1-78539416.html

Broccoli sprouts eradicate Helicobacter pylori
http://www.townsendletter.com/April2006/litreview0406.htm
http://www.lakeforest.edu/eukaryon/vol003/reviewarticle/johnson.asp

Dr. Brady uses garlic extract often – the higher allicin component the better. He uses DFH Allicillin http://catalog.designsforhealth.com/s.nl/it.A/id.864/.f which is actual stabilized allicin – not a garlic extract. It is garlic that has been forced to have a reaction to create allicin. The allicin is taken out of the reaction vessel and is sprayed on a slightly acidic acacia matrix which yields a product that is a nutraceutical. It is very strong against H. pylori and is antimicrobial to the point of treating MRSA -the flesh eating bacteria. Named Allicillin because of its strong penicillin-like effects without eradicating all the normal gut flora.

He says, “I dose pretty heavy for H.pylori – 2 – 3 capsules, 3 – 4 times a day for two week period on empty stomach. If the patient can tolerate it, I also add in a couple capsules of Oregano Oil that has anti-H. pylori properties as well. If there is repeating or gastric symptoms from the oil of Oregano on empty stomach, we have them take with a cracker or bread to buffer. Fish oil taken at fairly high dose 2 grams a day has been shown to be anti-H.pylori and Gaby wrote about that extensively as well.”

“Sometimes I use a singular herb Pistacia lentiscus (aka mastic). It’s used very broadly in the Mediterranean basin (means gum). They chew the resinous extract from the tree as a tonic. It is very anti-H.pylori.” (Brady)

That’s the eradication phase, but the healing phase must also be addressed. In pharmaceutical/medical therapy, all they are doing is trying to kill the bug and suppress acid. What we want to do is not necessarily suppress acid. We want to kill the bug, but we also want to try to heal up the gut mucosa. So for that we use glutamine, mucilaginous herbs like aloe, slippery elm, marshmallow, chamomile, okra, cat’s claw. Many of these are grouped in the DFH product called GI Revive 1 teaspoon twice a day to help heal the mucosal gut lining – for six to 12 weeks.(Brady) [You can view the ingredient label here to get an idea of ingredient/dose/quantities.
https://www.rockwellnutrition.com/product.asp?itemid=1006]

The antimicrobial part – goes for 2 – 3 weeks with a washout period of a few weeks and repeat. You can’t retest the antibodies and know if you got the H.pylori infection for up to six months because the antibodies will stay in the serum. (Brady)

Dr. Rogers says in most cases of H.pylori, there is more than just that bug causing the infection. Treatment with antibiotics and Prilosec only improved the symptoms in 27% of patients (McColl) which she terms a failure. She blames doctors for not considering the concept of “total load” in treatment which looks at hidden vitamin and mineral deficiencies, Candida, hidden food allergies or any of the many other proven causes of GI symptoms. She also says that the triple therapy treatment causes many other problems from side effects, including the Candida overgrowth Dr. Brady mentions.

She suggests using bismuth subsaliclyate, (Pepto-Bismol). Two caplets four times a day, with meals and before bed. Note that all the forms contain aluminum and the tablet form contains saccharin so use sparingly. A two-week regimen will be sufficient. (Rogers)
A warning: It will turn your tongue black and produce black stools. A caution is to be sure that you can turn off the black

stools by stopping the medication because if you can't, it's a sign of blood in the stool.

An alternative to Pepto-Bismol –(Rogers)
1. Formula SF734 (by Thorne) a non prescription supplement that contains bismuth and DGL- Take 2 to 3 four times a day for 4 – 8 weeks.
2. Gastromet (Ecologic Formulas) also contains DGL and vitamin U isolated from cabbage juice – known to heal ulcers plus chlorophyll… same dose as #1
3. A companion to either is Helicoactrin (Ecologic Formulas) – has a high sulfate mucin needed to heal badly invaded and damaged tissue along with many other aids she recommends to her patients not listed in the book. Same dose.

Caution: Should you choose the Pepto-Bismol route… call up the label on an Internet search and be sure you are aware of the ingredients. Other names for Pepto-Bismol include: Bismatrol, Bismatrol Extra Strength, Extra Strength Kaopectate, Kaopectate, Bismed, PMS-Bismuth Subsalicylate.

There is the aspirin component salicylate. Be cautious of this for use with children because of Reyes Syndrome complications or anyone on blood thinners.
http://drugtopics.modernmedicine.com/drugtopics/article/articleDetail.jsp?id=109831

Then there was the lead contamination issue with Kaopectate that hopefuly is resolved, but who knows? Any amount is dangerous. http://ag.ca.gov/newsalerts/release.php?id=925

Unfortunately, there are also numerous ingredients that may not sit well with afibbers… note the artificial sweeteners, colorings etc, in some of the labels under "inactive ingredients" including saccharin, aluminum, calcium, and sucralose (Splenda) which is another artificial sweetener we all should avoid regardless of afib or not. When you see 'sugar free' on the label, be suspect of what is the substitute. We have no way of knowing what's in the "flavor" ingredient. I'm a bit surprised that Dr. Rogers wasn't more attentive when recommending this OTC product.

Active Ingredient Bismuth subsalicylate 525 mg – extra strength
Active Ingredient Bismuth subsalicylate 262 mg • (Salicylate 130 mg)

Liquid Inactive Ingredients: benzoic acid, flavor, magnesium aluminum silicate, methylcellulose, red 22, red 28, saccharin sodium, salicylic acid, sodium salicylate, sorbic acid, water

Liquid Inactive Ingredients: benzoic acid, flavor, magnesium aluminum silicate, methylcellulose, red 22, red 28, saccharin sodium, salicylic acid, sodium salicylate, sorbic acid, sucralose, water

Chewable: Inactive Ingredients: calcium carbonate, flavor, magnesium stearate, mannitol, povidone, red 27 aluminum lake, saccharin sodium, talc

Caplets Inactive Ingredients: calcium carbonate, magnesium stearate, mannitol, microcrystalline cellulose, polysorbate 80, povidone, red 27 aluminum lake, silicon dioxide, sodium starch glycolate

(Continuing H.pylori treatment)

The last segment of treatment should be to boost the immune system by eating whole foods; more raw fruit and vegetable, that will provide natural enzymes, antioxidants, minerals and detoxing phytochemicals. If your gut does not tolerate raw then, lightly steam fruit and vegetables. She recommends freshly juiced carrot with a slice or two of organic beet or cabbage to bathe the ulcer or gastric erosion in the healing nutrients – consumed 2 to 5 times a day.

Dr. Blaylock recommends a few other natural treatment options for H.pylori. Several studies have documented that certain flavonoids and vitamin C can inhibit the growth of H. pylori. The most potent were:
--Epigallocatechin gallate (a component of green tea extract and white tea) (ECGC)
--Luteolin (celery and artichoke extract)
--Quercetin and Curcumin

Green tea is very high in fluoride, so instead, use white tea which has much less fluoride and higher levels of the beneficial flavonoid than green tea.

Researchers have found the two powerful flavonoids, curcumin and quercetin, are effective in blocking the toxin that H.pylori secretes that causes digestive problems and ulcers as well as promoting healing of stomach lining and helping prevent the formation of cancer. Other studies indicate curcumin and hesperidin boost protective mucus production to help protect stomach lining from acid. Studies also found both quercetin and green tea extract (EGCG) enhanced the effects of antibiotic therapy for H.pylori so smaller doses could be taken and get the same results. They also found these two flavonoids to be effective in fighting the antibiotic-resistant strains of H.pylori.(Blaylock)

Dr. Blaylock also recommends using DGL and mentions a report in the journal Life Sciences confirmed the efficacy of the deglycyrrhizinated form of licorice (DGL) and that it is also effective against strains of bacteria that have now become antibiotic resistant.

For maximum efficiency, he suggests combining and dissolving
250 mg. quercetin
250 mg. hesperidin
250 mg. curcumin in one tablespoon of either extra-virgin olive oil or omega-3 oil. All of these are fat-soluble, which enhances absorption and penetration into the stomach lining. Also, add 1/4 teaspoon of pure liquid vitamin E to the oil. Mix well and swallow. He says, this mixture expedites the destruction of H. pylori and simultaneously promotes healing of ulcers, and gastritis. It can also prevent cancer development. If you have ulcers, you should also take two DGL capsules three times a day between meals, plus two capsules at bedtime. This regimen has been shown to be just as effective as taking prescription medications. Bolster this treatment by drinking a mixture of white tea and rosemary tea at least twice a day. (Blaylock Wellness Report Stomach Health October 2005)

Interesting review by Alan Gaby, MD.
Helicobacter pylori Eradication: Are there Alternatives to Antibiotics?
Alternative Medicine Review, August, 2001 by Alan R. Gaby
http://findarticles.com/p/articles/mi_m0FDN/is_4_6/ai_78539416/pg_1
or
http://www.encyclopedia.com/doc/1G1-78539416.html
http://www.lakeforest.edu/eukaryon/vol003/reviewarticle/johnson.asp

Candida

Dr. Rogers says, even though Candida is a normally harmless yeast, it is still the most common infection that causes gut symptoms and doctors seldom look for it. One patient reported her doctor said only people with HIV and AIDS suffer from Candida infection.(!) Candida can cause a myriad of other body symptoms. She says, “A healthy body, not a powerful drug, can overcome Candida.” Over her 25 years’ clinical experience, her patients have said following her Candida program is the best thing they ever did for their gut as well as their overall physical and mental health and energy. That’s a powerful endorsement.

When tests indicate Candida overgrowth, steps must be followed to get rid of it and it may not be easy. One tip-off for Candida overgrowth is when a person has strong cravings for foods that feed Candida. This would be sugar and starchy carb, sweet type foods. However, just eliminating those foods will not necessarily kill the Candida as it will find other fuels.

1. Test to determine presence of yeast overgrowth. A stool culture sensitivity test can indicate the best remedy to kill the yeast so the treatment can be short and effective.
2. Strict adherence to the Candida elimination diet – you can’t try to kill it and feed it at the same time.
3. If taking a probiotic, be sure it doesn’t contain FOS as the FOS fuels Candida
4. Expect that it may take 1 – 4 months to kill the Candida and along with that, take a non-FOS probiotic to ensure the good flora population remains high.

Some natural therapies include
Berberine-containing herbals. (Metagenics Candibactin BR)
Garlic like Garlinase or KyolicAquaPhase – a homeopathic remedy
Kapricidin – Caprylic acid is highly effective
Grapefruit or citrus seed extract – (GSE) widely effective antiparasitic, antiviral and has antibiotic properties (Lipski)
Oil of Oregano – (North American Herb & Spice). Must be their strong version
Candex by Pure Essence – unique product that destroys cell walls with cellulase and does not cause the die-off response (Herxheimer reaction). Works well for vaginal yeast infections.

When Candida is being killed off, it is not uncommon to have the 'die-off' reaction which manifests in an intensely itchy rash almost anywhere on the body. [Mine were on the inside ankle, the thymus area of my chest, and on the inside upper thigh of one leg. It's the strangest thing. Fortunately it only lasts about a week.]

There are many natural Candida fighters available. This should be a doctor-directed program and it is often necessary to combine several products in one treatment regimen depending on severity of infection.

The probiotic Saccharomyces boulardii has been shown to prevent Candida albicans from penetrating the intestinal wall – useful info.

Parasites
There are many excellent tests for parasites including, the CDSA (Stool Analysis) or the 7-day Candida Culture or Purged Parasite. Testing also indicates the presence of other bowel pathogens; then, the remedy specific for that particular parasite is prescribed. Often there are multiple pathogens that need specific treatment. Retesting is the only way to ensure successful annihilation.

Treatments include probiotics, herbals and sometimes prescriptions. Grapefruit or citrus seed extract (GSE)-- widely effective antiparasitic, antiviral and has antibiotic properties (Lipski) Paraguard--broad spectrum herbal that may be effective- contains, garlic, aloe, Pau D'arco, goldenseal, Sarsaparilla root, black walnut hulls, clove.

Klebsiella can be masked by Candida, so retesting after a treatment course is essential. Klebsiella commonly causes irritable bowel symptoms. It can be picked up in restaurant foods, packaged foods or spoiled foods. Symptoms make the stomach feel like a load of rocks have been dumped into it. Klebsiella is one of the most common bacteria and can cause arthritis, IBS and leaky gut. The next common include: Citrobacter, Pseudomonas, Proteus, Salmonella, Bacillus and Staph aureus. All can produce symptoms that mimic any gut symptom as well as present with a baffling array of other body symptoms. Clostridia is a nasty bacteria and can result after taking antibiotics. (Rogers)

Allergenic Foods - (Lipski, Brady)

As mentioned in Segment 9 – Testing – many really good tests are available to determine foods to which we may be sensitive. These typically are not true allergy-causing foods but those that create intolerances or sensitivities. The true allergy foods cause an immediate and dramatic reaction. Avoidance is that 'cure.'

Throughout this series, it's been observed that it's not possible just to look at a patient and know intuitively what ails them, but typically, it all comes down to a gut problem and determining exactly what can be somewhat difficult. "Test, don't guess."

Dr. Lipski offers some self-test options. Often times just doing a food-avoidance self-test will target one or more culprits. When availability to more sophisticated lab tests that can add up cost-wise is limited, this can be one method of embarking down the cure road to intestinal health. The typically most allergenic or foods to which the majority of people have intolerances are the proteins from wheat and dairy, gluten/gliadin and casein from dairy, lactose from dairy as well, soy, corn, beef, pork, nuts, to name a few, but experts agree that any food or substance can be reactive in any individual. No set rules.

The Elimination Diet

Sometimes when people are unable to be tested or while they are awaiting test results, Dr. Lipski has them go on an elimination diet for 3 weeks and keep a log of changes or improvement in symptoms. Often within two weeks, patients report diminished pain and resolution of GI symptoms just by avoiding all gluten/gliadin containing foods including all grains, diary, soy etc. She has them eliminate sugar and alcohol.

That way you get a full cycle of new gut mucosal cells – the lining is replaced and repaired every 3 weeks so the elimination diet makes sense. She has patients reintroduce one food at a time and starts with the food they are missing the most. She has them eat that 2 – 3 times a day for the first couple of days. If there is an immediate reaction, they stop. Typically, they feel terrible so it is reinforcing to them to remain free of that food, but it can often take 24 to 48 hours to get a reaction. She offers that as one way to trick the body. Only eat the offending food, once every 4 days so the antibodies disassemble.

If you think you are only mildly sensitive, adding back that food every 5 or 7 days only can often allow a sensitive individual to eat a small amount of the offender without stirring up the GI problems. This is not a license to cheat wholesale. In most people, it doesn't work at all, especially if leaky gut is present because the same molecules still escape and cause the antibody response. Dr. Lipski notes that typically, the patient will totally relapse from feeling great and free of symptoms to feeling poorly. She does that with each food they use in her plan and by the time the test results are back and the patient comes in, they already have a good idea of the direction they will take to avoid foods that are interfering with that patient's health.

However, Dr. Brady says it's better not to do this short-term, but to take out the offending foods for several months or longer if possible. It gives the gut a chance to heal. She advises adding betaine hydrochloric acid (HCl) to help digest proteins better so they are less allergenic.

If people test as having 20 or 30 foods to which they are sensitive, then that directs the treatment to Leaky Gut Syndrome.

When people are pan-allergic – many foods on the forbidden list, he takes out the first level of the worst reactors and then chooses some from the next levels so the patient can have a reasonable diet

If you ignore the symptoms that certain foods bring about, then you will continue to have gut issues – whether they are noticeable or silent. Inflammation in gut tissue will continue to manifest and the immune system will continue to be overtaxed because it is on surveillance for foods that shouldn't be there. The idea is to reduce circulating immune complexes. Protease enzymes taken in between meals on an empty stomach help break down these complexes so the body gets less and less reactive over time. (Lipski)

Leaky Gut Syndrome

Hidden food allergy is a major cause of leaky gut. In her book, No More Heartburn, Dr. Rogers outlines a method to follow for figuring out hidden food allergies. Then she looks for unsuspected gut infections, like Candida overgrowth from years of sporadic antibiotic treatments or lots of sweets, or bacterial or protozoa infections from eating restaurant foods, contaminated municipal water and more. She devotes considerable space as does Dr. Lipski in *Digestive Wellness* to what is involved in treating LGS.

First, eliminating the suspects or contributors and then healing the gut is the standard course of action.

It's important to treat adequately as everything in the gut can make it's way into the blood and eventually the brain causing dizziness, depression and other symptoms.(Rogers) You either have leaky gut or you don't. It makes sense to test to find out.

Dr. Lipski likes to use bone broth as a good gut healer as it helps to adjust pH to alkalinity. But supplemental nutrients are also needed to heal the gut.

Dr. Lipski increases stomach acid with betaine HCl, uses full spectrum probiotics and adds glutamine for healing. She uses a 4-day rotation diet to give the antibodies that build time to disassemble. It tricks the body so the patient is able

to eat something in the case pan-allergy.

Leaky gut syndrome not only triggers immune reactions but can aggravate preexisting immune disorders. Bacteria and fungi in the gut like Candida can also enter the blood stream and cause a worsening immune system response. This also happens in Crohn's disease which results in leaky gut and a worsening of the immune response. Dr. Blaylock says in one study, 63% of patients with LGS vs. 8% of controls had IgG antibodies to E.coli., and 42% also had antibodies to yeast organisms. It becomes a vicious cycle. The gut's bacteria and food intolerances drive the inflammatory gut reaction, the disease worsens and persists. It may explain why probiotics seem to be so beneficial – because they reduce the growth of harmful bacteria and help control the immune system. (Blaylock)

He reminds that during the first six weeks of life, when the infant bowel is still in a naturally leaky form, feeding table food during the first six months of life, especially eggs and/or cow's milk is associated with a high incidence of subsequent food allergies to those foods later.

Eating the same foods many times during the day and every day is another good way to develop food sensitivities that lead to leaky gut. He recommends rotating your menu daily to use different foods – eating one particular food only once a week rather than every day….or several times in one day. Dr. Blaylock says that correcting LGS can reverse many food sensitivities.

Glutamine is recommended by most all experts as a nutrient that helps heal the gut lining. Dr. Blaylock says "While glutamine in very large doses (as much as 40 – 60 grams a day) has been proposed, I am somewhat skeptical. If glutamine is used, it should be used only for short periods (no more than one month) and one should exercise to prevent it from entering the brain. With exercise, glutamine is diverted into building and supporting muscle; inactivity allows it to enter the brain where it is converted into glutamate, a potential neurotoxin. (Blaylock Wellness Report, November 2007)

As a label example, check the product GI Revive https://rockwellnutrition.com/product.asp?itemid=1006 that Dr. Brady developed for healing gut issues. Note one dose provides 1500 mg of glutamine and GI revive is taken twice a day, so it's really not as high as some dosage protocols. I've used this product and found it to be an excellent formulation because along with the glutamine, there are all the other important nutrients to support gut healing and especially the mucilaginous herbs (aloe, okra, cat's claw, marshmallow root) that are very soothing as well. Especially great is the addition of DGL and the MSM. It looks expensive, but to add all the ingredients separately, it would cost more and this is just one teaspoon that mixes well in water and is very palatable.

Dr. Lipski says the digestive tract uses glutamine, the most abundant amino acid in the body, as a fuel source and primary nutrient for healing intestinal cells as well as effective healing of stomach ulcers, IBS and ulcerative bowel diseases. With increased intestinal permeability, nutrients such as glutamine, quercetin and gamma-oryzanol plus beneficial flora can help heal the leaky cells. She has various protocols beginning with 4 grams glutamine a day for 4 weeks.

Gamma-oryzanol, a compound found in rice bran oil, is a useful tool in gastritis, ulcers, IBS and leaky gut syndromes. It acts on the autonomic nervous system to normalize production of gastric juice. Typical dose is 100 mg. 3 times a day for 3 weeks. Occasionally, the dose is increased and often the therapy is longer. Then always we must rebuild the bowel flora and nothing in the world beats the ideal combination of soluble and insoluble fiber. (Lipski)

Rice Bran extract is one of the most nutrient dense foods supplying nutrients like choline, inositol, Beta Sitosterol, and Gamma Oryzanol. These are all extremely useful nutrients and they also support a healthier bowel flora, particularly if used in conjunction with a broad-spectrum probiotic. With the epidemic today of leaky bowel, food sensitivities and Candida overgrowth please do not fail to recommend the fiber we all need, and thus let your patients live far longer with the lower levels of inflammation this vital missing nutrient is producing. (Lipski)

Nutrients important in gut health are Omega 3 oils – especially DHA, natural form vitamin E, multiple B vitamins, buffered vitamin C, mixed carotenoids and the flavonoids hesperidin, curcumin and quercetin which reduce inflammation in the gut wall. You can sooth the irritation and inflammation by avoiding irritating foods, food additives and chemicals and by suppressing histamine release using nutrients like quercetin and vitamin C. Natural vitamin E in it s pure form (Unique E), reduces inflammation and thereby lowers cancer risk. (Blaylock)

The probiotics, especially Lactobacillus plantarum and L. reuteri, have been shown to reduce the various leaky gut problems associated with chemotherapy. Another good nutrient combination is white tea/blueberry tea — and you should drink it twice a day. The flavonoids in white tea have been proven to support the growth of those healthy bacteria in the colon. (Blaylock)

In severe cases of multiple food intolerances, putting patients on the Specific Carbohydrate Diet developed by Elaine Gottshall, is something Dr. Lipski uses as last resort. http://www.breakingtheviciouscycle.info/ Because it's so restrictive, she tries other options first.

If you are diagnosed with LGS, then I'd strongly suggest reading both Drs. Lipski and Rogers books and using the best suggestions from both for treatment options.

In the "**REPLACE**" segment of the 5 R protocol, are digestive concerns including digestive enzymes and support stomach acid when necessary.

Digestive enzymes can be helpful but not always. In some people, they make the situation worse. When enzymes contain the betaine hydrochloric acid component, care must be taken when beginning. I always like to use betaine HCl separately and add that to a good digestive enzyme that is abundant in the proteolytic enzymes and pancreatin, lipase etc.

Hans has good suggestions for enzyme therapy on his vitamin/iHerb link. Compare labels. If you can't read the label for a breakdown of separate enzymes, don't buy it. Beware of undesirable fillers or chemicals in any product you choose.

I've used Source Natural Essential Enzymes for years. And also supplement protein meals separately with Betaine HCl. I tweak that from time to time, but typically come back to Essential Enzymes. NOW brand has a nice proteolytic digestive enzyme(Super Enzymes) with 200 mg of Betaine HCl in each tablet that I often use right along with the Essential Enzymes. It does contain ox bile so that will be out for vegetarians. I take either one or two with a protein-containing meal. For those who are lactose intolerant (not casein sensitive), choose an enzyme that contains the enzyme lactase that breaks down the milk sugar, lactose. Lactaid is an OTC chewable product that contains just lactase.

Taking Betaine HCl - start low, one tablet and keep increasing until the stomach feels slightly warm. Then lower the dose by the last addition for the dose that is adequate for you. Go slowly. You can dilute the warm feeling by drinking a large glass of water. If you are going to experiment with Betaine HCl separately, I'd suggest buying a product with 100-200 mg in each capsule/tablet. Some have 500 mg which may be too high. If you determine that it takes 500 or more to settle the digestive issues, you can always buy the higher dose product later on. (HCl stands for hydrochloric acid and it must be from a plant source such as betaine derived from beets, molasses, etc.)

(Lipski)-Proteolytic enzymes – take on empty stomach for those with a lot of food allergies to reduce inflammation and stimulate macrophages to recognize antigens in the blood stream and eliminate them…increase circulation, reduce circulating immune complexes. Protease enzymes on an empty stomach is one of those missing pieces that enzymes with meals really helps a lot be in-between meals, the antigens are still in the blood and they all clump and make IgG immune complexes and the proteases really help break them down so the body becomes less and less reactive overtime.

Nutrients that also need to be replaced will be determined as a result of the testing and prescribed according to each deficiency. An example would be vitamin B 12 deficiency from not enough stomach acid to facilitate absorption.

GERD, Gastritis, Ulcers

Reminder: Low stomach acid relaxes the valve and lets acid escape into the esophagus. Check before resorting to invasive surgery.

DGL – aids in healing irritated stomach & helps with normal acid secretion

Starting with the first segment on DGL, I can't emphasize strongly enough that if you have heartburn/GERD type symptoms to give that product a try. Again, check the labels and be sure there are no undesirable sugars or additives such as maltodextrins that have the potential to be excitotoxins and potential afib triggers. I've used the Enzymatic Therapies DGL for years (on demand) with great success. My herbalist suggests that the deglycyrrhizinated licorice is also helpful for adrenal support when managing stress issues.

I suggest using the formula without the fructose since the natural sugar alcohol sweetener, Mannitol and the Dextrose taste just fine and are healthier. Read the ingredient labels before you purchase. Refer back to Part 1.

Treating Acid Reflux (Blaylock)
 Avoid Tums, Maalox, Rolaids and similar medications
 Avoid large meals and carbonated drinks
 Avoid alcohol
 Avoid calcium supplements
 Chew your food thoroughly
 Do not eat peppermint candies after a meal
 Get tested for adequate stomach acid
 Use acid-lowering prescriptions only for short-term relief.
 Sleep with head elevated
 Avoid nighttime snacks
 Never lie down after meals

Fighting Gastritis (Blaylock)
 Take supplements to combat H. pylori
 Avoid hot or spicy food
 Stay away from alcohol
 Don't take NSAIDs (nonsteroidal anti-inflammatory drugs). These include Advil, ibupropen, aspirin, etc. If unable to avoid, use a transdermal form or take curcumin and quercetin in addition
 Take DGL capsules during the day and at bedtime
 Use antioxidant vitamins with food
 Chew your food thoroughly

Ulcer Remedy (Blaylock)
 Use quercetin, curcumin and hesperidin mixed with extra-virgin olive oil (one tablespoon between meals)
 Take two capsules of DGL (deglycyrrhizinated licorice) between meals and two at bedtime
 Drink white tea/rosemary tea mixture two to three times a day

Detoxifying - Throughout the healing process and afterwards, detoxing is always important. This topic deserves separate space all to itself, as do they all. Your health is only as good as what your liver can detoxify. This is a program that should be directed by your physician or nutritionist. Macronutrients are important to fuel detoxifications pathways to support liver function and support and balance phase I and II metabolic pathways along with high levels of antioxidant support for safe detoxification are highly important.

Immune System Support

A properly functioning immune system is obviously important. The integrity of the gut lining is of critical importance. Therefore any influence that interferes with intestinal function must be addressed such as genetics in general, inherited tendencies for allergies, nutrition, stress, age, health of microflora and the presence of infection in the gut or anywhere in the body. (Rosenbaum/Optimal Digestion).

Poor diet and low nutrient levels generally also lower immune protection. Because antibody levels decrease with age and reduce secretory IgA, it is especially important to be aware of adequate daily nutritional intake. Research has found that nutrition can affect the way your genetic makeup is expressed so being mindful that good nutrition can tip the balance toward health. (Rosenbaum/Optimal Digestion)

A balanced lifestyle which encompasses our ability to nurture ourselves, environmental considerations, exercise, good

food choices, and moderate stress levels can increase SIgA levels. Choline, essential fatty acids, glutathione, glycine, phosphatidylcholine, phosphatidylethanolamine, quercetin, vitamins A and C and zinc are all required to maintain healthy sIgA levels. (Lipski)

Vitamin A in particular is critical in replenishing the lining of the gut and maintaining the integrity of the mucosa. Unfortunately, vitamin A deficiency happens to be the most common in the entire world. Other nutrients that increase sIgA include zinc taken with vitamin A, colostrum (for people who are not dairy intolerant), and probably L-glutamine. (Rosenbaum/Optimal Digestion) Saccharomyces boulardii has been shown to raise levels of secretory IgA.

The book, *The Immune System Cure* by Vanderhaege and Bouric on the use of plant sterols and sterolins found in Moducare is worth reading for tips to supercharge your immune system. Other natural supplements include Beta 1, 3 Glucan – taken only when illness symptoms occur. Epicore is a similar type of immune stimulant. Arabinoglactan from larch tree is another highly effective immune system enhancer. Others include Astragalus, Andrographis, lauric acid, Sambucus nigra, Echinacea for short term help and Green Tea Extract. Plant sterols increase DHEA levels which is helpful for stress management.

Caution for anyone with autoimmune disorder tendencies, research carefully the use of immune boosters. Can be harmful.

Daily intake of vitamin D3 – 2000 IU – is essential to reduce dangerous immune overactivity

For those who tolerate dairy, lactoferrin and colostrum supports immune function in the GI – helpful with generalized IBS symptoms-- increases secretory IgA and basically improves the mucosal immunity. Improved mucosal immunity helps directly to combat opportunistic microbes so you are less likely to have dysbiosis if you have good mucosal immunity and good secretory IgA-less likely to have antigen penetration through the gut lining and the subsequent food allergy. So products with colostrum would also be recommended the case of pan-allergy to foods, inflammation of the gut lining, IBS and any infectious situation in the gut. (Brady)

The 5th R- Resolve Stress - You can't heal the gut without determining "what's eating you"

Nothing new here--just re-emphasizing that a healthy lifestyle will reflect in healthy body function including GI health. We need a good exercise program, ways of nurturing ourselves and what Lipski says, "training to increase emotional heartiness." During stressful times, food choices usually suffer; we either don't or can't eat; make bad choices, resort to sugar for comfort and it all backfires. As we know with afibbers, stress depletes essential magnesium and potassium but there are many other nutrients depleted as well.

(Brady) –You have to look at catecholelamine and how the patient deals with stress. If no improvement, they may have unresolved issues with parents, sibs, spouses and sometimes need to co-manage with a really good counselor who understands PTSD types of physiology.

Unresolved emotional issues like personal relationships and job conflicts are often major sources of stress and when coupled with environmental stresses from food sensitivities or food additives and toxins, just help to magnify the total manifestation burden. It is obviously necessary to recognize the potential culprits and take steps to eliminate or manage those stressors so intestinal health therapies have a chance to work.

Attitude (Haas/Optimal Digestion)

-Staying positive and motivated to experience life, unafraid to handle challenges or deal with uncomfortable emotions also is crucial to health.

-Begin with personal assessment. Lifestyle medicine is the highest art of healing for each of us.

-Use supportive self-talk to maintain a positive inner dialog.

-Recognize that we may need therapy to help us cope in some situations

Elson Hass, MD says “My goal is to remind you that you hold much of the power over your own health. What really matters is how you live—what you do, what you eat and what you think and feel. Take hold and do what you can to be vital and healthy. It is really worth it! Be well.”

A hurried lifestyle takes its toll on the body. Even basic, fundamental things like taking time in the morning to have a bowel movement before dashing off to work are of critical importance to GI health. One doctor says she tells her patients that they absolutely must have 20 minutes of complete and total privacy in the morning and to have a warm drink and solitude to accomplish this important function. She says tell everyone else not to intrude.

Dr. Lipski says “because of our overbooked lifestyles, people today have less leisure time than people of 20-30 years ago even with all the ‘time-saving’ technology. Because our bodies and minds work together, the stresses we feel in either one affects the other. The synergy can help calm us down or stress us out. The mind/body connection plays an important role in the digestive wellness. Stress makes our stomach feel like it has rocks in it. Stress plays a large role in ulcerative colitis, skin conditions and autoimmune problems. All health problems are due to stress: physical, emotional or environmental. “Visualization and relaxation techniques significantly increase sIgA levels. (Digestive Wellness)

The sympathetic system handles both intense stress and low-grade, ongoing stress. Our parasympathic system does the repairing, restoring and rebuilding. A critical balance exists between the two systems. When we are responding to stress too much of the time, it can overload the sympathetic system and lead to adrenal exhaustion. (Optimal Digestion)

Stress reduces antibody levels. Any type of stress can do this. Two German studies indicate that mental relaxation procedures such as meditation or biofeedback, can lead to increased secretion of SIgA as opposed to a vigilant task. (Rosembaum/Optimal Digestion)

Chronic and prolonged stress changes the immune system’s ability to respond quickly and affects our ability to heal. When stressed, we produce less secretory IgA, less DHEA –(the antiaging antistress adrenal hormone) and slow down digestion and peristalsis, reduce blood flow to digestive organs and produce toxic metabolites. (Lipski)

We need to have coping mechanisms in place – Meditation, guided imagery, relaxation techniques, a good sense of humor, and a priority to take time for ourselves when we need it every day. No putting off what’s best for you. Dr. Lipski has a wellness chapter in her book that is worth reading and implementing, she titled it, “Moving toward a wellness lifestyle.”

Our whole body is a web of systems working together in synergy… or should be. The stress factor is a huge influence in whether or not we can achieve digestive wellness.

Concluding Comment

This concludes my mission to create awareness about the importance of digestive wellness since so many afibbers are prone to gastric disturbances that lead to atrial fibrillation. It seemed highly relevant to bring this to readers. Share this information with your friends and family because it’s not a problem exclusive to afibbers.

If you think you don’t have digestive issues, great. Just be aware that often times, we aren’t conscious of intestinal issues such as leaky gut because as these doctors have observed, many people or their doctors don’t connect chronic symptoms with gut dysfunction. As Dr. Blaich observes, “Chronic disease develops gradually as a result of dysfunction. One doesn’t just “get” GERD, diabetes, heart disease or cancer-- they are each preceded by years of dysfunction of the body involving gradual deterioration of normal function over time.”

It’s important to note that while we afibbers are adults, digestive issues are extremely crucial to recognize in children, especially a preventive plan to avoid the many destructive pitfalls that occur from poor food choices or even the premature introduction of food in infants whose digestive systems are not yet fully developed and functioning. This is key in preventing a lifetime of allergy/asthma/digestive issues and avoiding intestinal complications that lead to unneeded bowel surgery in young individuals.

It is tragic that PPIs have now been approved for use in children ages 1 – 11. Do what you can to help protect youngsters from the use of these drugs by sharing what you've learned about digestive wellness from this series. Stop the insanity and spare children from a lifetime of consequences from poor diet, lifestyle habits and digestive ailments. http://www.fda.gov/bbs/topics/NEWS/2008/NEW01802.html

Anecdotal testimonial

The movement of Functional Medicine is defined as "A patient-centered, science-based healthcare that identifies and addresses underlying biochemical, physiological, environmental and psychological factors to reverse disease progression and enhance vitality."

Without this approach, my health would never have been regained.

In 1994, after being diagnosed with being diagnosed with fibromyalgia/chronic fatigue syndrome and multiple chemical sensitivities by a well known rheumatologist, I prescribed a drug just to take the 'edge off' and relax muscles. That amounted to saying, "Here, we are diagnosing you with this catch-all diagnosis of FM/CFS because it happens to many peri-menopausal women and we really don't know how to treat it, but if you take this pill to relax, you won't care as much about finding a cure.

I took the muscle relaxant for a few months while I began my own search for the truth. My journey took to me many 'experts' and along the way, I made mistakes by trusting that every mainstream medicine MD would guide me to do the very best treatment for my particular circumstances.

The drug and surgery medical model was as alive and well then…as it is now. I've come a long way from those days and with the help of several extremely knowledgeable physicians educated in nutrition and functional medicine and my own 14 years research, I've been able to reverse most of my symptoms stemming from what was undoubtedly GI dysfunction that manifested by mimicking named conditions. Some, were obviously hormonal imbalances and others, systemic imbalances. My web was broken.

Here's a few of the challenges I uncovered through testing and reversed through nutritional intervention.

Intestinal permeability (leaky gut syndrome), Candida, Kleibsella, food sensitivities – especially gluten and cow's milk proteins – methylation dysfunction, adrenal burnout, estrogen dominance/hormonal imbalance, hypothyroidism, fibromyalgia pain, chronic fatigue, incomplete digestion, skin manifestations from Omega 3 deficiency, weight gain, insulin resistance, oral lichen planus, insomnia, vitamin D deficiency, chemical sensitivities and I was sick with colds or flu at least a couple times a year.

Unfortunately, I was late in finding nutritional solutions so I regrettably gave in to a hysterectomy and breast surgery that could have been avoided had I found my functional medicine doctors sooner. And of course, as you recall, I was unable to reverse the lone atrial fibrillation and I do hope that in 20 or 30 years, I don't look back and regret that I had the ablation procedure as well.

I offer this story of my ongoing health journey just to emphasize the importance of the GI system and how seemingly unrelated symptoms really do have roots in a dysfunctional intestinal tract. As it relates to improved immune function, I have not been sick with cold or flu for 8 seasons running and I am out with the public every day. I still have some challenges but they are far more minor than they were 6 or even 14 years ago.

I urge you not to give in to drugs or surgery until you have checked out every facet from a functional medicine standpoint if that is at all possible. Surgeries are not without risk and often the result is less than optimal; and once done, there is no going back.

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