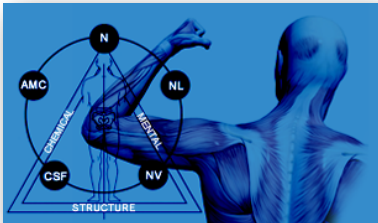


Pathways To Health



A Healthcare and Selfcare Newsletter From The International College of Applied Kinesiology - USA Chapter

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Your doctor of applied kinesiology is uniquely trained and qualified to provide care for the health issues covered in this newsletter.

Please share this newsletter with friends and family!

*The information in this newsletter is not intended to diagnose or treat the individual.

Impaired health due to biofilms often goes unrecognized

Biofilms: Common Cause of Chronic Illness

You may not be familiar with the term "biofilm," but you have certainly encountered biofilm on a regular basis. The plaque that forms on your teeth and causes tooth decay is one type of bacterial biofilm. The "gunk" that clogs your drains is also biofilm. If you have ever walked in a stream or river, you have probably slipped on biofilm-coated rocks.

They're found in natural environments such as hot springs, rivers and streams, lakes, and tide pools, to man-made and industrial environments such as water and drainage pipes, sanitation systems, house-hold sinks, toilets, and showers, and even in the water tanks of nuclear power plants. Biofilms avidly colonize many household surfaces, including toilets, sinks, countertops, and cutting boards in the kitchen and bath. Poor disinfection practices and ineffective cleaning products may increase the incidence of illnesses associated with pathogenic organisms in the household environment.

Biofilms form when bacteria adhere to surfaces in moist environments by excreting a slimy, glue-like substance. Sites for biofilm formation include all kinds of surfaces: natural materials above and below ground, metals, plastics, medical implant materials—even plant and body tissue. Wherever you find a combination of moisture, nutrients and a surface, you are likely to find biofilm.

Biofilm communities can be formed by a single bacterial species, but biofilms almost always consist of rich mixtures of many species of bacteria, as well as

fungi, algae, yeasts, protozoa, other microorganisms, that cohabitate and engage in "quorum sensing", an evolutionarily old form of bacterial communication. Biofilms are used to both protect the bacteria from the hosts' immune system, while also serving as a nutritional reservoir in times of harsh environmental conditions.

Biofilms, also referred to as "bacterial slime", are generally composed of extracellular DNA, proteins, polysaccharides, microbes, minerals and heavy metals. Biofilms are said to be anchored at certain places by positively charged ions including: calcium, magnesium, mercury, lead, etc. Biofilms can be as thin as a few cell layers or many inches thick, depending on environmental conditions.

Ninety percent of the cells in a human body are not human; the body is heavily colonized by microbes that have found it a great place to live. We have communities of microbes living on all mucous surfaces and in our digestive tract, as well as on and in layers of our skin.

For the most part we all get along; in fact, we depend on some of our gut microbes to help with digestion. Sometimes, however, the microbial load causes problems and infection. When the normal balance of microbial populations is upset or when our immune system is overwhelmed, we can have a real battle with microbial opportunists.

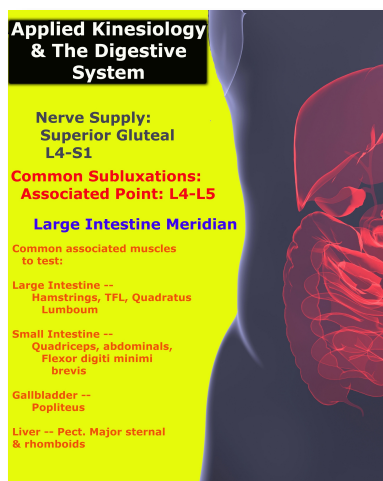
In the 1990s, as the biofilm concept was being introduced to the medical community, doctors began to make the connection between chronic, low-grade infections and the biofilms. Internal cases of chronic infection have shown that many troublesome diseases have entrenched microbial populations at their core. The NIH estimates that 80% of all human infections have biofilm involvement.

The most common cause of children's recurrent earache (Otitis Media) is an example of a typical biofilm-based infection. Other diseases in which biofilms play a role include bacterial endocarditis (infection of the inner surface of the heart and its valves), cystic fibrosis (a chronic disorder resulting in increased susceptibility to serious lung infection), and Legionnaire's disease (an acute respiratory infection resulting from the aspiration of clumps of *Legionella* biofilms detached from air and water heating/cooling and distribution systems). Chronic sinusitis patients undergoing surgery also presented with biofilms most of the time. Yeast infections, Lyme disease, etc. also typically have biofilm involvement.

Biofilms may also be responsible for a wide variety of nosocomial (hospital-acquired) infections. Sources of biofilm-related infections can include the surfaces of catheters, medical implants, wound dressings, or other types of medical devices, such as joint prostheses, heart valves, intrauterine devices and catheters. More recently it has been noted that bacterial biofilms may impair cutaneous wound healing and reduce topical antibacterial efficiency in healing or treating infected skin wounds.

Research of recent years has revealed that bacterial communities exhibit properties, behaviors and survival strategies that far exceed their capabilities as individual bacteria. Recent advances in laboratory analysis have made it possible to actually see biofilm colonies in the bloodstream under microscopes.

There are many natural substances that can be utilized to help degrade biofilms: proteolytic enzymes as well as certain herbs and especially essential oils can be very useful. This has to be done with professional supervision as breaking down biofilms exposes the body to all the microbes and toxins within the biofilm community and can make the patient worse in some cases.



New and novel diagnostic and treatment methods in advanced applied kinesiology (by Lebowitz, Robinson, and others) have been developed to help deal with these communities and results have been encouraging. One thing noticed is these communities live on fat and certain nutrients especially B vitamins

so it is possibly that vitamins at the wrong time can feed the colony instead of the patient.

In conclusion: many chronically ill patients may have low grade infections where biofilms play a role and applied kinesiology methods aid diagnosis and treatment.

Michael Lebowitz DC has taught applied kinesiology since 1989, is secretary of ICAKUSA, and has written 3 books and over 60 research papers. Dr Lebowitz also develops nutritional products for chronically ill patients. He divides his time between Scottsdale AZ and Honolulu Hawaii.

Digestive Disorders: AK Specific Outcomes

A number of well-conducted studies have shown the effectiveness of chiropractic treatment for conditions such as infantile colic and pyloric stenosis. (Fallon, 1994)

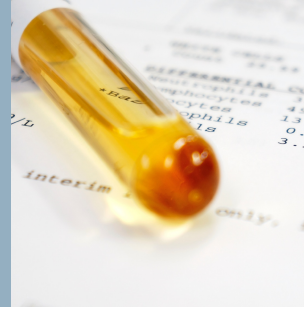
Several AK-specific reports, showed treatment of neuro-lymphatic (Chapman's) reflexes to be successful therapy for chronic constipation and associated low back pain; Kharrazian described a patient who resolved her indigestion; Lever reported on a case series of 90 patients (82 with an active enterogastric reflex) with the following results: 48 patients improved 90% of their symptoms; 11 patients improved 70% of their symptoms; 16 patients improved 50% of their symptoms using AK methods for stomach disorders; Crohn's disease and ulcerative colitis responded to AK care as reported by Dr. Duffy; Maykel reported that chronic, severe constipation responded to AK treatment of an IVD syndrome and closed ileocecal valve; Maykel also showed that AK corrected a severe case of hiatal hernia; Lebowitz presented an AK-analysis of food sensitivities in 100 patients, and a second cohort of patients with candida albicans and chemical sensitivities in 50 patients. (Caso, 2001; Kharrazian, 2008; Lever, 2006; Duffy, 1992; Maykel, 2004; Lebowitz, 1992, 1990)

Examination of the bowel using AK methods was first introduced by Goodheart in 1967. The ICAKs advancement in the understanding and treatment of the enteric nervous system has only improved since that time.

Scott Cuthbert DC practices in Pueblo, CO. He has published two brand new textbooks on AK in 2014, and is developing more textbooks covering the upper body, cervical spine, cranium and TMJ.



*Methylation controls body chemistry
Dysfunction often results in pain & fatigue
Depression and sleep disorders are common
Inflammation drives degenerative diseases*



Methylation Dysfunction: Common Cause for Chronic

Methylation is the addition of a methyl group to a molecule or the replacement of an atom or atom group in a molecule with a methyl group.

It all sounds like greek and, probably, not that important to you. Even most doctors likely don't know much, if anything about it. Yet, arguably, methylation may be the most important biochemical process in your body and the most important consideration when your health is in question, especially when nothing seems to help and the doctors you've seen just can't seem to figure out what is causing all the problem.

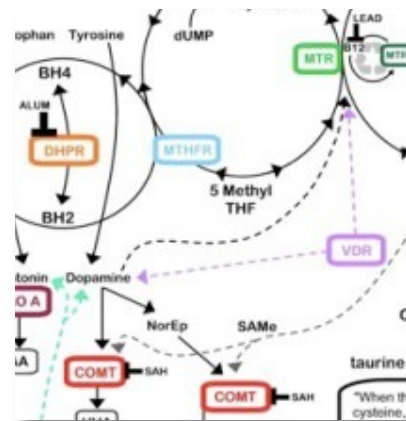
Because cell division and the manufacture of proteins and enzymes within each cell depends on methylation, a huge range of health problems can be due to impaired methylation.

Low methylation impairs the production of CoQ10 and can lead to high homocysteine levels in your system resulting in inflammation and damage to the heart and blood vessels. Fatigue is a common symptom associated with this problem because CoQ10 is essential for the mitochondria within the cells of your body to produce energy.

Your mood is controlled by methylation deficiency in that many of your brain neurotransmitters need methylation for production. Serotonin, acetylcholine, dopamine, epinephrine, and norepinephrine are all effected. For example, low dopamine levels are associated with poor

concentration, impaired memory, disorganization, and ADD and low serotonin is associated with depression and impaired sleep.

Your ability to handle stress, control blood sugar, and regulate immune response and inflammation depend on cortisol which requires methylation. Low cortisol can predispose to inflammation, allergies, or autoimmune diseases, such as lupus, MS, or rheumatoid arthritis.



Glutathione, the major antioxidant in your body, depends on methylation for production. It acts as an antioxidant and preserves the activity of other antioxidants and controls levels of nitric oxide, an enzyme essential to cardiovascular function, hormone regulation, and cell repair. Glutathione also breaks down environmental chemicals, including carcinogens, estrogen mimics (xenobiotics), and toxic metals (mercury, lead, arsenic) so they can be eliminated from your body.

Because methylation controls optimal cell division and regulation and

inflammation, impaired methylation has been associated with the development of many degenerative diseases (heart disease, osteoarthritis, osteoporosis, diabetes, dementia) and accelerated aging.

Folic acid is the most important single essential nutrient for methylation, yet a common genetic fault (polymorphism MTHFR C677T) results in an inability to produce the active form, methylfolate, from dietary folic acid. Other nutrients necessary for normal methylation of this cycle include B12, glycine, serine, activated B6, selenium, and the amino acids, cysteine and methionine.

Your doctor trained in applied kinesiology methods can test your methylation status and make corrections to your nutrition through diet and supplementation to balance your methylation. Diagnosis of methylation dysfunction typically comes from a combination of history, physical exam, laboratory findings, and applied kinesiology testing. Sometimes, the diagnostic process may include genetic testing. When the right combination of factors optimize your methylation functions, the improvement in your health can be dramatic.

References

Mark Force, DC, DIBAK, is a diplomate and certified teacher of applied kinesiology. Dr. Force has published a book on selfcare, *Choosing Health*, and practices in Scottsdale, Arizona.

Q&A

How can I protect myself from developing health problems due to biofilms?

The best way is to get checked and treated for any subclinical infections as any of these may potentially cause biofilms. Once they are there specially formulated essential oil blends can help degrade them. Proteolytic enzymes may also help but should only be used once the infection is resolved.

Besides infections any metal implants in the body other than dental may encourage biofilm production.

How can I do to improve my digestion and intestinal health?

The foundation of good digestion and gut health is to eat a diet that is primarily comprised of unrefined, or unprocessed, foods that are fresh and high in naturally occurring fiber. For most of us that means eating more vegetables in our diet. People who eat a high plant fiber diet are more regular in their bowel habits and have a lower incidence of all kinds of digestive and intestinal illnesses, including constipation, colitis, irritable bowel syndrome, gastritis, and even stomach and colon cancer.

Staying hydrated by drinking more water than other kinds of fluids and including unrefined salt as a condiment to a diet of unrefined foods also improves digestion.

How can chiropractic and applied kinesiology care help someone with digestive problems?

Your digestion is under the control of your nervous system. The part of the nervous system that is in charge of your digestion is the autonomic, or unconscious, nervous system and it is made of two parts, the parasympathetic and sympathetic nervous systems.

Most people need more tone to their parasympathetic nervous system which stimulates the organs of digestion to make more digestive enzymes, maintain a healthy intestinal wall, and move food and enzymes through the stomach and intestines through peristaltic action.

Chiropractic and applied kinesiology techniques help restore optimal tone to the nervous system and optimal regulation to your digestive functions

How does my AK doctor diagnose a methylation dysfunction?

A careful health history that includes your family health history can indicate a likelihood of methylation dysfunction. Because methylation is such a basic biochemical process that effects every cell of the body, people who have methylation dysfunction tend to have very complex and chronic health histories and their family will tend to have chronic and complex health histories, as well.

Physical exams will provide clues and blood work will provide more evidence. There will usually be evidence of inflammation, a common result of this problem. There are also genetic markers for the problem that provide greater proof. If you test positive for the genetic markers for this problem, diagnosing methylation dysfunction will often help solve a long list of health problems for members of your family, too, as they then can address the issue!