

Vitamin Research News

Dedicated to the Scientific Pursuit of Healthy Aging

JANUARY 2010

Vol. 24, Number 1

\$79.00/Year U.S. (\$89.00/Year International)

Table of Contents

Healthy Aging: Recommendations Based on Clinical Experience	1
The first in a series of articles discussing the most important concerns as we age.	
Eliminating the Surprising Culprit Behind Stomach Concerns	1
Excess stomach acid is unjustly blamed for gastric disorders such as heartburn, bloating, belching, gas and GERD.	
The President's Desk Is Every Supplement Company Created Equal?	3
The Hidden Link Between Parkinson's and Autism	6
Gamma-Linolenic Acid: A Powerful Anti-Inflammatory Nutrient	8
Customer Corner	9
<ul style="list-style-type: none">• Hair Loss in 8-Year-Old• Asbestos, Cognitive Enhancement• Iodoral®• Gastrointestinal Support• Chelation with EDTA• Vitamin C, NAC, Auditory Health• Testing For Supplement Needs• Cholesterol• Lectins in Baked Products• Mood Changes• Shingles	
From the Library	14
Fucoidan: Potent, Marine-Derived Immune Support	
Pet Corner	16
Winter Joint Health in Pets	
Nutrition Review	17
<ul style="list-style-type: none">• Trans-Resveratrol Supports Women's Health• Probiotics Support Immune Function• Berry Extract Supports Cardiovascular Health• Additional Research Shows Possible Benefits of Green Tea• Interesting New Use for White Kidney Bean Extract• Curcumin May Support Esophageal Health• Antioxidant May Reduce Pain Perception• Vitamin Important for Cardiovascular Health• Minerals Important During Pregnancy• Pomegranate Supports Prostate Gland	

Healthy Aging: Recommendations Based on Clinical Experience

by Chris D. Meletis, ND

Ageing can't be avoided, yet premature aging can be slowed down by our choices that are instrumental in determining to what extent aging will impact our bodies. The medical literature shows that we have the ability to age in a healthy, active manner. I share with my patients that it is not the chronological age that we should be concerned about, it is the biological age of the 75 trillion cells that make up our body that must be our focus. In fact, evidence indicates that how we age is not a predetermined conclusion but rather a choice we make based on lifestyle and nutritional factors.^{1,2}

Healthy aging is often one of the primary goals of patients, but often, they do

not know where to begin to accomplish this goal. In this article, I will describe what I feel to be some of the most important concerns we face as we age. For each concern, I will share the protocol I typically use for my patients. In this article, I will limit my protocols to a maximum of the three most important products for each of the concerns.

This is meant to be an introductory discussion, and in the coming months, I will delve more deeply into each health topic mentioned below.

The First Step

In my practice, I create a foundation for health by making sure my patients are on

Continued on page 2

Eliminating the Surprising Culprit Behind Stomach Concerns

by Carolyn Pierini, CLS (ASCP), CNC

High levels of stomach acid are blamed for nearly every midsection complaint. Yet, low stomach acid or hypochlorhydria is far more likely to be the problem. The stomach takes a hard hit with our modern-day lifestyles and when it sends a distress signal it is often quickly and profitably silenced. Relieving a symptom without addressing a cause often has dire consequences for the entire rest of the body over a matter of time. Proper stomach function is crucial because if this aspect is impaired, then everything below it is going to be compromised in a progressive and substantial manner. The stomach has become primary for evaluating gastrointestinal function.

Digestive Function

Proper digestion begins in the mouth in a *relaxed* mealtime setting with enzyme-rich salivary gland secretions and a *reasonable* amount of *real food* that is *refinely chewed* to increase surface area for digestion (the "Stomach 4R's"). Swallowed food is then propelled through the esophagus to the LES (lower esophageal sphincter) valve which opens, allowing food into the stomach.

The stomach is extended as it fills with food and digestive juices begin to be released from specialized cells in the stomach's lining. The gastric secretions, including hydrochloric acid (HCL) and the enzyme, pepsin, are released at exact

Continued on page 4

Stomach Concerns

Continued from front page

times in a coordinated effort to create liquid “chyme.” This strongly acidic milieu reduces protein and cleaves nutrients like minerals and B12 from food in preparation for further digestion and absorption in the small intestine. In the stomach, the adequacy of HCL is critical for the destruction of potentially dangerous microorganisms from food and the environment.

Next, the partially digested chyme that is entering the small intestine must be acidic enough (pH 0.8-2) to stimulate the release of the hormones Secretin and Cholecystokinin (CCK). These two hormones enter the bloodstream and act on the pancreas to release digestive enzymes and bicarbonate-rich pancreatic juice.

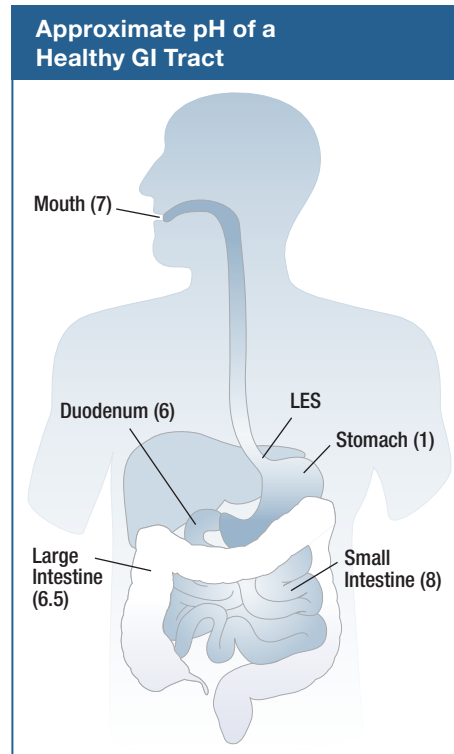
Additionally, CCK stimulates the contraction of the gallbladder to release bile into the duodenum. Bile contains bile acids that emulsify fats into small globules for further digestion by pancreatic lipase. These alkalizing secretions neutralize the chyme creating a new environment (pH 8) that allows for continued digestion and eventual absorption. The proper digestion of proteins is critical for the release of amino acids, which are used by the genes to replenish and regenerate the body.

If the chyme is not sufficiently acidified by HCL, primary digestion in the stomach and secondary digestion in the small intestine will be compromised. Furthermore, if the HCL trigger is not there for the alkalization of the small intestine, the pH of the rest of the digestive tract is disrupted, resulting in a multitude of potential health problems.

Common Digestive Problems

Many people today believe that their indigestion, heartburn, bloating, belching, gas, gastroesophageal reflux disease (GERD), etc. are caused by excess stomach acid. However, symptoms of low HCL are similar to those of excess HCL and are frequently mistaken for excess acid. HCL is a natural component of the stomach and most nutrition-oriented physicians believe that lack of acid, not excess, is the true culprit in indigestion.¹ HCL production is not easy. The parietal cells of the stomach need to make enough HCL to create a pH of less

than 1 in the gastric fluid while right across the stomach membrane the blood pH is just over 7. It takes enormous amounts of cellular energy (ATP) for the membrane pumps to maintain this gradient.² Along with a healthy stomach mucosal lining, HCL production requires proper hydration, good hormone balance, and adequate B vitamins and zinc. Furthermore, studies have shown that as we age there is a loss of HCL production from acid-producing



cells.³⁻⁴ Often what people may experience when they feel the “burn” of reflux is *any* amount of stomach acid, not necessarily “excess” amounts of acid, contacting the delicate tissue of the esophagus where there is no protective mucus layer such as that found in the stomach. The acid is reaching this area because the LES valve that separates the stomach from the esophagus is not functioning properly. Surveys show that most people do use antacids, whether over-the-counter or prescribed, for symptoms of indigestion.⁵ The pain is relieved, and damage to the esophagus is reduced, but the underlying problems are not addressed when a digestive complaint is remedied with drugs that virtually eliminate acid from the stomach. Many physicians will argue that without proper levels of HCL, putrefaction of proteins and fermentation of carbohydrates occurs in

the stomach resulting in by-products that irritate the lining and may contribute to gastric reflux. According to *The Textbook of Natural Medicine*, reflux or heartburn, as it is described, is most often caused by overeating (excess distention) and not excessive acid production. To quote Dr. David Brownstein, MD, “My clinical experience has been clear: Many suffering from GERD have low stomach acid production and a trial of HCL can improve the functioning of the LES.”⁶ The tone of the LES valve may also be affected by:

- Medications (aspirin, NSAIDS, others)
- Obesity
- Smoking
- Caffeine, coffee, black tea
- Alcohol
- Chocolate/acidic or spicy foods
- Carbonated drinks/fruit juice
- Refined/processed carbohydrates
- Lack of dietary fiber
- Sugar
- Trans fats/fried foods/rancidity
- Gluten in grains and as food additive
- Food sensitivities/allergies
- Dehydration
- Hiatal hernia (commonly undetected)
- Mint
- Pregnancy
- Stress

Eliminating processed carbohydrates and sugars in favor of more protein and non-starchy vegetables can be very helpful in eliminating acid reflux.⁷

In his book, *Why Stomach Acid is Good for You*, Dr. Jonathan V. Wright, MD, who has tested thousands of patients using the Heidelberg Gastric Analysis (gold standard for assessing HCL adequacy), finds that heartburn is almost always associated with too little HCL, not too much. He writes that historically researchers find that “hypochlorhydria increases with age from a low of about 4 percent at age twenty to as much as 75 percent after age sixty.”⁸ Gastritis, which is inflammation of the stomach mucosal lining, is often initiated by low HCL. Mild to chronic gastritis is exceedingly common in the population as a whole, especially in the middle to later years of life⁹ and eventually leads to mucosal atrophy with little to no HCL production (achlorhydria). Low HCL results in undigested food particles, which may become antigenic contributing to a leaky gut, food sensitivities and auto-

TABLE 1. Conditions Associated with Hypochlorhydria (Low stomach acid)

- Allergies/Asthma (childhood included)
- Food sensitivities
- Depression/Low energy
- Microbial overgrowth in stomach and intestines (*H. pylori*, *C. difficile*, *Candida* sp., coliforms, etc.)
- Anemias (iron, pernicious, B12)
- Stomach Cancer
- Autoimmune Diseases (MS, RA, Lupus, Type 1 Diabetes, etc.)
- Skin Disorders (rosacea, acne, hives, eczema, dermatitis, dryness)
- Osteoporosis
- Gallbladder/Pancreatic Dysfunction
- GI Inflammatory Diseases
- Hypothyroidism
- Vitamin B12/Mineral Deficiencies (lab findings)

immunity. For conditions associated with Hypochlorhydria see Table 1.

The question at this point may be why then are we so HCL deficient? Poor nutrition, excessive food/drink intake, dehydration, alcohol, prescription drug and aspirin use, infection, food sensitivities, salt-free diets and chronic stress are but some of the answers. Of course, acid-suppressing drugs are a major reason. They have been associated with a 300 percent increase in the incidence of pneumonia,¹⁰ an increased risk for hip fracture,¹¹ interstitial nephritis¹² and the risk of bacterial overgrowth.¹³⁻¹⁴ Some interfere with detoxification (p450 enzymes), leaving the body vulnerable to pathology. All acid-lowering drugs typically raise the gastric pH above 3.5, reducing mineral absorption (i.e. zinc) and thus further increasing the risk of infection.¹⁵ By inhibiting protein breakdown, antacids have been shown to cause food allergies.¹⁶ The valid use, misuse and overuse of these drugs is not without consequence.

HCL secretion is the principle line of defense against infections of the GI tract. Chronic infection in the stomach is a major source of systemic inflammation, the root of metabolic dysfunction. Hypochlorhydria alone or secondary to acid-suppression promotes the growth of *Helicobacter pylori* (*H. pylori*), the causative bacteria in many ulcers and gastritis. *H. pylori* can further lower HCL allowing for coloniza-

tion by other organisms.¹⁷ Approximately 50 percent of people over age 50 test positive for *H. pylori*, along with 70 percent of patients with gastric ulcers, and 90 to 100 percent of patients with duodenal ulcers.¹⁸ This infection is linked to stomach cancer as gastric carcinoma and adenocarcinoma.¹⁹⁻²⁰ Oxidative damage appears to be the mechanism used by *H. pylori* in destroying the gastric mucosa.²¹ Taking antioxidants such as vitamins C and E and keeping the stomach acidic with supplemental HCL are protective factors against *H. pylori*.²²⁻²⁴

Newly Reformulated GastricAid

Newly reformulated GastricAid® contains an effective level of HCL bound to Betaine, which also supports bile-release, methylation and detoxification. Pepsin is added to further support protein digestion, while B1, B6, and zinc support HCL production. Vitamin U, the active ingredient in cabbage that heals ulcers, and Gamma oryzanol nurture the stomach mucosa. Fucoidin can prevent *H. pylori* from adhering to the stomach cells and inhibits colonization by other microorganisms.²⁵⁻²⁶ GastricAid is a novel and even more comprehensive gastric support product.

Most people can easily begin using sup-

plemental HCL. However, caution must be used by those with mild to serious gastritis as they first need to allow the stomach lining to heal for several weeks prior to beginning a trial with HCL. Medications can weaken the stomach lining to the point that it cannot tolerate HCL even when it is really needed. Consider natural treatments for inflammation. Other products such as CeaseFire®, GI Cell Support, Lactoferrin, BioPRO™ and Lectin Lock™ may provide support for clearing infection and speeding recovery of the gastric mucosa. Naturally, providing the basic nutrient support for the stomach with a multivitamin and a source of omega fatty acids is recommended. By following the above steps, drinking pure water between meals and making the necessary diet and lifestyle changes, these folks should eventually be ready to use and benefit from HCL supplementation.

It is very important to note that although taking a digestive enzymes supplement alone may improve digestion and relieve symptoms, normal digestion is not restored. Enzymes do not have the same effect on protein and mineral absorption; they do not provide a microbial acid barrier and they do not support the acid/alkaline phases of normal digestion as HCL and pepsin do.

Conclusion

Remember that a symptom is your body telling you its needs. The goal is to correct digestive function to restore health, energy, eating pleasure and a longer life. Adequate HCL is important for initiating protein digestion and cleaving nutrients from food, stimulating the release of bile and digestive enzymes, and assuring a protective acidic barrier against threatening microorganisms. The newly reformulated GastricAid can help accomplish each of these goals.

References:

1. Pizzorno J, Murray, M. eds. Textbook of Natural Medicine. 3rd ed, St. Louis: Churchill Livingstone, 2006, pg 661.
2. Lord R, Bralley, A. Laboratory Evaluations for Integrative and Functional Medicine. 2nd ed, Duluth: Metamatrix Institute, 2008, pg 418.
3. Krentz K, Jablonowski H. In: Hellemans J, Vantrappen G, eds. Gastrointestinal Tract Disorders in the Elderly. Edinburgh: Churchill Livingstone, 1984.
4. Rafsky HA, Weingarten M. A study of the gastric secretory response in the aged. Gastroenterology 1947; May:348-352.
5. Graham DY, Smith JL, Patterson DJ. Why do apparently healthy people use antacid tablets? Am J Gastroenterol 1983;78:257-260.

TABLE 2. Common Signs/Symptoms of Hypochlorhydria

- Lost taste for meat or high protein foods (can't digest)
- Dilated capillaries around the nose and cheeks (telangiectasia)
- Nails: peel, brittle, too soft
- Hair loss (primarily women)
- Crater-like crack running centrally down length of tongue surface (TCM)
- Bad breath (bowel breath)
- Body odor
- Undigested food in the stool
- Burning feeling in the stomach that is relieved or worsened by eating
- Lingering heartburn and acid reflux (up to 4 hours after eating)
- Bloating, belching and gas immediately after a meal
- Leg/foot cramps (dehydration and low minerals)
- Rectal (anal) itching
- Nausea after taking supplements
- Constipation
- Constantly feeling hungry (poor absorption)

Continued on page 16

Stomach Concerns

Continued from page 5

6. www.drbrownstein.com, accessed on 12/10/2009.
7. Austin GL, Thiny MT, Westman EC, Yancy WS, Shaheen NJ. A very low-carbohydrate diet improves gastroesophageal reflux and its symptoms. *Dig Dis Sci.* 2006 Aug;51(8):1307-12.
8. Wright JV, Lenard L. Why Stomach Acid Is Good For You. Lanham: M. Evans, 2001, pg 40.
9. Guyton A, Hall J. Textbook of Medical Physiology. 11th ed, Philadelphia: Elsevier Saunders, 2006.
10. www.hopkinsmedicine.org, podcasts, Week of May 18, 2007.
11. Yang YX, Lewis JD, Epstein S, et al. Long-term proton pump inhibitor therapy and risk of hip fracture. *JAMA.* 2006;296(24):2947-2953.
12. Geevasinga N, Coleman PL, Webster AC, et al. Proton pump inhibitors and acute interstitial nephritis. *Clin Gastroenterol Hepatol.* 2006;4(5):597-604.

13. Williams C, McColl KE. Review article: proton pump inhibitors and bacterial overgrowth. *Aliment Pharmacol Ther.* 2006;23(1):3-10.
14. Cunningham R. Proton pump inhibitors and the risk of Clostridium difficile-associated disease: further evidence from the community. *CMAJ.* 2006;175(7):757.
15. Sturniolo GC, Montino MC, Rossetto L, et al. Inhibition of gastric acid secretion reduces zinc absorption in man. *J Am Coll Nutr.* 1991;10(4):372-375.
16. Untersmayr E, Scholl I, Swoboda I, et al. Antacid medication inhibits digestion of dietary proteins and causes food allergy: A fish allergy model in Balb/c mice. *J Allergy Clin Immunol.* 2003;112:616-623.
17. Sarker SA, Gyr K. Non-immunological defense mechanisms of the gut. *Gut.* 1992;33:987-993.
18. Berstad K, Berstad A. Helicobacter pylori infection in peptic ulcer disease. *Scand J Gastroenterol.* 1993;28:561-567.
19. The EUROGAST Study Group. An international association between Helicobacter pylori infection and gastric cancer. *Lancet.* 1993;341:1359-62.
20. Parsonnet J, Friedman GD, Vandersteen DP, et al.

- Helicobacter pylori infection and the risk of gastric carcinoma. *N Engl J Med.* 1991;325:1127-31.
21. Baik SC, Youn HS, Chung MH, et al. Increased oxidative DNA damage in Helicobacter pylori-infected human gastric mucosa. *Cancer Res.* 1996;56:1279-82.
22. Rokkas T, Papatheodorou G, Karameris A, et al. Helicobacter pylori infection and gastric juice vitamin C levels: impact of eradication. *Dig Dis Sci.* 1995;40:615-621.
23. Phull PS, Price AB, Thorniley MS, et al. Vitamin E concentrations in the human stomach and duodenum: correlation with Helicobacter infection. *Gut.* 1996;39:31-35.
24. Shibata T, Imoto I, Taguchi Y, et al. High acid secretion may protect the gastric mucosa from injury caused by ammonia produced by Helicobacter pylori in duodenal ulcer patients. *J Gastroenterol Hepatol* 1996;11:674-680.
25. Nagaoka M, Shibata H, Kimura-Takagi et al. Anti-ulcer effects and biological activities of polysaccharides from marine algae. *Biofactors.* 2000 Jun;51(6):2274-7.
26. Pierini CM. Lectin Lock™: Natural Defense Against a Hidden Cause of Digestive Concerns and Weight Gain. *Vitamin Research News.* 2007;21(2):7.

Fucoidan

Continued from page 15

2. Hoshino T, Hayashi T, Hayashi K, Hamada J, Lee JB, Sankawa U. An antivirally active sulfated polysaccharide from Sargassum horneri (TURNER) C. AGARDH. *Biol Pharm Bull.* 1998 Jul;21(7):730-4.
3. Zeitlin L, Whaley KJ, Hegarty TA, Moench TR, Cone RA. Tests of vaginal microbicides in the mouse genital herpes model. *Contraception.* 1997 Nov;56(5):329-35.
4. Thompson KD, Fitton JH, Dragar C, et al. GFS, a Preparation of Tasmanian Undaria pinnatifida, is Associated with Healing and Inhibition of Reactivation of Herpes. *BMC Complementary and Alternative Medicine.* 2002;2:11.
5. Zaretsky FR, Pearce-Pratt R, Phillips DM. Sulfated polyanions block Chlamydia trachomatis infection of cervix-derived human epithelia. *Infect Immun.* 1995 Sep;63(9):3520-6.
6. McClure MO, Moore JP, Blanc DF, Scotting P, Cook GM, Keynes RJ, Weber JN, Davies D, Weiss RA. Investigations into the mechanism by which sulfated polysaccharides inhibit HIV infection in vitro. *AIDS Res Hum Retroviruses.* 1992 Jan;8(1):19-26.
7. Hirayasu H, Yoshikawa Y, Tsuzuki S, Fushiki T. Sulfated polysaccharides derived from dietary seaweeds increase the esterase activity of a lymphocyte tryptase. *granzyme A. J Nutr Sci Vitaminol (Tokyo).* 2005 Dec;51(6):475-7.

8. Irhimeh MR, Fitton JH, Lowenthal RM. Fucoidan ingestion increases the expression of CXCR4 on human CD34+ cells. *Exp Hematol.* 2007 Jun;35(6):989-94.
9. Maruyama H, Tamauchi H, Iizuka M, Nakano T. The role of NK cells in antitumor activity of dietary fucoidan from Undaria pinnatifida sporophylls (Mekabu). *Planta Med.* 2006 Dec;72(15):1415-7.
10. Jean-François Deux; Anne Meddahi-Pellé; Alain F. Le Blanche; Laurent J. Feldman; Sylvia Collic-Jouault; Françoise Brée; Frank Boudghène; Jean-Baptiste Michel; Didier Letourneur (2002). "Low Molecular Weight Fucoidan Prevents Neointimal Hyperplasia in Rabbit Iliac Artery In-Stent Restenosis Model" (PDF). *Arteriosclerosis, Thrombosis, and Vascular Biology* 22: 1604.
11. Aisa Y; Miyakawa Y; Nakazato T; Shibata H; Saito K; Ikeda Y; Kizaki M (2005 Jan). "Fucoidan induces apoptosis of human HS-sultan cells accompanied by activation of caspase-3 and down-regulation of ERK pathways". *American Journal of Hematology* 78 (1): 7-14. Maruyama H, Tamauchi H, Iizuka M, Nakano T. The role of NK cells in antitumor activity of dietary fucoidan from Undaria pinnatifida sporophylls (Mekabu). *Planta Med.* 2006 Dec;72(15):1415-7.
12. Logeart D, Prigent-Richard S, Jozefonvicz J, Letourneur D. Fucans, sulfated polysaccharides extracted from brown seaweeds, inhibit vascular smooth muscle cell proliferation. I. Comparison with heparin for antiproliferative activity, binding and internalization. *Eur J Cell Biol.* 1997; 74: 376-384.
13. Deux JF, Meddahi-Pelle A, Le Blanche AF, Feldman LJ, Collic-Jouault S, Bree F, Boudghene F, Michel JB, Letourneur D. Low molecular weight fucoidan prevents

- neointimal hyperplasia in rabbit iliac artery in-stent restenosis model. *Arterioscler Thromb Vasc Biol.* 2002; 22: 1604-1609.
14. Miura T, Nelson DP, Schermerhorn ML, Shin'oka T, Zund G, Hickey PR, Neufeld EJ, Mayer JE Jr. Blockade of selectin-mediated leukocyte adhesion improves post-ischemic function in lamb hearts. *Ann Thorac Surg.* 1996 Nov;62(5):1295-300.
15. Pereira MS, Mulloy B, Mourao PAS. Structure and Anticoagulant Activity of Sulfated Fucans. *Journal of Biological Chemistry.* 1999 March 19; 274(12):7656-7667.
16. Nagaoka M, Shibata H, Kimura-Takagi I, Hashimoto S, Aiyama R, Ueyama S, Yokokura T. Anti-ulcer effects and biological activities of polysaccharides from marine algae. *Biofactors.* 2000; 12: 267-274.
17. Doh-Ura K, Kuge T, Uomoto M, Nishizawa K, Kawasaki Y, Iha M. Prophylactic effect of dietary seaweed Fucoidan against enteral prion infection. *Antimicrob Agents Chemother.* 2007 Jun;51(6):2274-7.
18. Maruyama H, Tanaka M, Hashimoto M, Inoue M, Sasahara T. The suppressive effect of Mekabu fucoidan on an attachment of Cryptosporidium parvum oocysts to the intestinal epithelial cells in neonatal mice. *Life Sci.* 2007 Jan 30;80(8):775-81.
19. Amster E, Tiwary A, Schenker MB. Case Report: Potential Arsenic Toxicosis Secondary to Herbal Kelp Supplement. *Environmental Health Perspectives.* April 2007;115(4).



PET CORNER

by Gary L. Ailes, DVM

Winter Joint Health in Pets

The wonderful world of white surrounds us again creating a bit of a chill and causing our pets that are a little long in the tooth to move a bit slower.

What brings on this decrease in activity? The most common syndrome is osteoarthritis, which is not uncommon in the older dog and cat. The development can occur from trauma, which

may be nothing more than playing extremely hard as a young dog or cat. It may also relate to congenital problems such as elbow or hip dysplasia. Some of the immune diseases attack the joints as well as the possibility of infectious diseases.

Our pets will slow down with the decrease in hormone function that

occurs with age. Chronic insults to the liver that decrease its ability to break down waste products and help with elimination cause problems as well as a decrease in the ability of the liver to process foodstuffs and create energy.

To read the rest of this article please go to www.vrp.com