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Austin Quan Yin Newsletter

The Better Health News

Special Interest Articles:

- Fatty acids and ADHD
- Homocysteine and autism
- Finding hypothyroidism
- Thyroid and child development
- Supplements and diabetic neuropathy
- Ginger and nausea from chemotherapy
- Diet and inflammatory bowel disease

Inflammatory Bowel Disease and Vitamin K

Inflammatory bowel disease is the name of a group of disorders that cause the intestines to become inflamed (red and swollen). The inflammation lasts a long time and usually comes back over and over again. Inflammation often leads to ulceration and eventually scar tissue can form. Inflammatory bowel disease is a term used to refer to two diseases, Crohn's disease and ulcerative colitis.

In a study that appeared in the journal, *Nutrition* (epublished ahead of print on April 8, 2011), the amount of

undercarboxylated osteocalcin was measured in 47 patients with Crohn's disease and in 40 patients with ulcerative colitis. The levels were found to be significantly higher in these patients than they were in healthy controls. The buildup of the undercarboxylated osteocalcin is likely due to a deficiency of vitamin K. Also, the severity of the disease in the Crohn's patients was proportional to the vitamin K deficiency. Low vitamin D levels were also found in patients with inflammatory bowel disease when compared to healthy controls.

Niacin and Arthritis

Niacin, or vitamin B₃ is known for the flush it causes when it is taken. Niacinamide is a form of vitamin B₃ that does not cause a flush. There has been research showing niacinamide to be of benefit to arthritis patients. In study published in *Inflammation Research* (1996;45:330-334) 72 subjects with osteoarthritis received either a placebo or 3000 mg/day of niacinamide for 12 weeks. Global arthritis worsened by 10% in the placebo group, but improved by 29% in the group receiving the

niacinamide. There was no significant improvement in pain levels, but the niacinamide group was able to reduce pain medications by 13%. There was also a 22 % reduction in the erythrocyte sedimentation rate (which is an indicator for inflammation) in the niacinamide group as well as a 4.5 degree increase in joint mobility. There were some mild GI side-effects in some of the subjects receiving the niacinamide.

Fatty Acids and ADHD

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There is an association between ADHD and other behavioral disorders and low levels of omega-3 fatty acids. Research appearing in the journal *Prostaglandins, Leukotrienes and Essential Fatty Acids* (Volume 75, Issues 4-5, October-November 2006, Pages 299-308) looked at omega-3 levels in red blood cell and in plasma phospholipids. Symptoms associated with essential fatty acid deficiency include thirst and dry skin, and the researchers found that these symptoms were more common in patients newly diagnosed with ADHD (and therefore not on drug therapy) than in healthy controls.

The researchers followed up with the willing subjects, testing blood, and urine. They also had the subjects fill out a general health questionnaire and provide dietary intake information. In the subjects with ADHD, the red blood cells and plasma phospholipids had less omega-3 fatty acids than were found in healthy controls. In the ADHD group, consumption of saturated fats was 30% higher than in the control group. The researchers were not sure why the omega-3 fatty acid levels were lower in the ADHD group and encouraged further research in this area.

Homocysteine and Autism

Homocysteine is an amino acid that may indicate inflammation. High levels may indicate inflammation. Generally it accumulates because of a need for either folic acid, vitamin B₆ or vitamin B₁₂. Those nutrients are necessary for to body to convert homocysteine to cysteine, and when they are in short supply, there is an accumulation of homocysteine.

Homocysteine levels may be higher in autistic children than in children without

autism. A study that was published in *Acta Biochem Pol* (2011; 58(1): 31-4) compared homocysteine levels in 34 autistic children and in 21 children without the disease. Children with autism had higher homocysteine levels in their urine when compared to children without autism (2.36 vs 0.76). This may be an indication that autistic children are deficient in folic acid and in vitamins B₆ and B₁₂.

Finding Hypothyroidism

The test commonly used to screen for hypothyroidism is TSH. TSH is "thyroid stimulating hormone" and it is produced by the pituitary gland. Many cases of hypothyroidism are missed because screening for TSH is not always done and because TSH is an inadequate test for thyroid function. As many as 13 million Americans may have an undiagnosed thyroid problem, according to a study known as the Colorado Thyroid Disease Prevalence Study. The study also found that even "subclinical" hypothyroidism, may raise cholesterol levels.

Research appearing in *Wien Klin Wochenschr* (2006; 117(18): 636-40) looked at 85 hypothyroid patients, 114 normal subjects and the implications of merely using TSH to evaluate their thyroid status. Researchers found that T3 and sex hormone-binding globulin (SHBG) were lower in subjects with hypothyroidism than in subjects with normal thyroid function. Treating the hypothyroid subjects with T4 gave them TSH levels on a par with the subjects who had normal thyroid function. Although the TSH level was normal, they tended to have lower T3 (which is the more active form of thyroid hormone) levels. The authors concluded that measuring TSH may not be the best way to monitor hypothyroid patients.

The British Medical Journal [BMJ 2000;320:1332-1334 (13 May)] published research examining the flaws in diagnosing hypothyroidism. The authors concluded that there are indeed flaws with the way that we

diagnose hypothyroidism. First of all, the research is lacking that shows us the relative importance of lab tests and symptoms in diagnosing the thyroid. TSH production is affected by the level of thyroid hormone, but it is also affected by other things. We don't fully understand how various illnesses affect TSH and the thyroid hormones. There is also a need to consider the possibilities of false positive and false negative results when looking at lab tests related to the thyroid. The fact of the matter is that there are a lot of patients exhibiting the symptoms of hypothyroidism, but are told that their TSH is normal and that there is no problem with the thyroid. Symptoms of hypothyroidism include: fatigue (and lack of motivation), feeling cold when others do not, dry skin, constipation, depression, difficulty losing weight, brittle hair and nails that break easily, poor memory, muscle cramps, sadness or crying for no reason, high cholesterol, and frequent colds. The patient does not necessarily have all of the symptoms, but often has several of them. Practitioners who utilize nutrition and other natural health care methods often get good results with these patients. The symptoms are the key. The lab results help, but are not a perfect way to diagnose. Also, it is a good idea to test for more than just the TSH, there are several other thyroid tests that can be performed, including testing for autoimmune issues. Looking at symptoms and doing more complete lab tests may help diagnose cases of hypothyroidism that otherwise may have been missed.

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Thyroid and Child Development

According to a study published in the *New England Journal of Medicine* (1999;341:549-555, 601-602), if a woman is pregnant and has an underactive thyroid, the IQ of the child may be adversely affected. Children between the ages of seven and nine, with mothers who had untreated hypothyroidism, scored an average of seven points lower on IQ tests than children with mothers that had normal thyroid function. The article goes on to say that during the first 12 weeks of pregnancy the fetus relies entirely on the mother for thyroid hormone. They thyroid may play a role in brain development.

Research appearing in the *Journal of Pediatrics* (published ahead of print April 12, 2011) looked at the relationship between maternal thyroid function, iodine levels and child development. The level of free thyroxine in the mothers of the children in the study was measured during the first trimester of pregnancy. The 86 children involved in the study were evaluated using the Bayley Scale of Infant Development at 12, 18 and 24 months of age.

IQ is not the only thing affected by poor thyroid function. Researchers found that there was a relationship between the mothers' free thyroxine levels and the children's psychomotor development at ages 18 months and 24 months. The children of mothers in the bottom 25th percentile of free thyroxine levels tended to be more developmentally delayed than the children of mothers with higher thyroxine levels. The authors of the study saw these findings as showing a need for iodine supplementation before conception and during pregnancy and lactation.

As many as 13 million Americans may have an undiagnosed thyroid problem, according to a study known as the Colorado Thyroid Disease Prevalence Study. The study was performed by Knoll Pharmaceutical (makers of Synthroid). Over 25,000 participants were studied in 1995. The researchers found that nearly 9% of the participants who were not on thyroid medication were hypothyroid and a little over 1% were hyperthyroid. If this number were extrapolated to the entire US population, the number of patients with an undiagnosed thyroid problem would number 13 million. The study also found that even "subclinical" hypothyroidism, may raise cholesterol levels.

We also need to be concerned about the environment and its effect on child development. An article in *Environmental Health Perspective* (June 2000;108(Suppl 3):433-438) reviewed the importance of the thyroid for brain function and the effect environmental chemicals have on both the thyroid and the nervous system. Proper thyroid function is especially important for brain development in the fetus and during the first two months after birth.

Animal studies have shown that exposure to PCBs and dioxins create abnormal neurologic function and impaired thyroid function. Chemical exposure can enlarge the thyroid, and decrease T4 levels. Many environmental toxins mimic thyroid hormones and bind to proteins used to transport thyroid hormone, competing with thyroid hormone and altering function.

Supplements and Diabetic Neuropathy

Research appearing in *Diabetes Research and Clinical Practice* (epublished April 13, 2011 ahead of print) looked at vitamin supplementation and its effect on diabetic neuropathy. The subjects in the randomized, double-blind, placebo-controlled study were 67 patients with type 2 diabetes. The subjects were divided into three groups. They received either a placebo or supplements containing a daily dosage of zinc (20 mg), magnesium (250 mg), vitamin C (200 mg), vitamin E (100 mg), or supplements containing thiamin, riboflavin, pyridoxine, biotin, folic acid and vitamin B₁₂ (along with the same nutrients given to the other

supplemented group) for four months. Neuropathy scores were based on the MNSI questionnaire. Patients receiving the basic supplementation had a reduction in neuropathy symptoms, scores went from an average of 3.96 to 1.0. Further improvement was experienced by the third group that received the additional B vitamins; their score improved from 3.45 to 0.64 on the MNSI questionnaire. According to the authors of the study, "These studies suggest that micronutrients supplementation might ameliorate diabetic neuropathy symptoms."

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Ginger and Nausea from Chemotherapy

In spite of the use of anti-nausea medication, 70% of patients undergoing chemotherapy complain of nausea. A double-blind, placebo-controlled study that appeared in the *Journal of Clinical Oncology* (2009 ASCO Annual Meeting Proceedings Vol 27, No 15S (May 20 Supplement), 2009: 9511) looked at the effect taking ginger had on nausea experienced by chemotherapy patients. The subjects of the study were 644 cancer patients who had experienced nausea from their chemotherapy and who were scheduled to receive at least three additional cycles of chemotherapy treatment. The subjects were randomly assigned to receive either a placebo, 0.5

grams of ginger/per day, 1.0 grams of ginger per day, or 1.5 grams of ginger per day.

The subjects rated their nausea on a seven point scale for the first four days of each chemotherapy cycle. Nausea scores were significantly lower in all of the groups receiving ginger (especially in the groups receiving 0.5 grams and 1.0 grams) compared to the placebo group. The authors concluded, "Ginger supplementation at daily dose of 0.5g-1.0g significantly aids in reduction of nausea during the first day of chemotherapy."

"We can't solve problems by using the same kind of thinking we used when we created them." —*Albert Einstein*

Diet and Inflammatory Bowel Disease

The term "inflammatory bowel disease" refers to either Crohn's disease or ulcerative colitis. Inflammatory bowel disease is the name of a group of disorders that cause the intestines to become inflamed (red and swollen). The inflammation lasts a long time and usually comes back over and over again. Inflammation often leads to ulceration and eventually scar tissue can form.

Research that appeared in the *American Journal of Gastroenterology* (2011 April; 106(4): 563-73) indicates that there may be a connection between diet and the development of inflammatory bowel disease. Studies that looked at the role of diet and the risk of inflammatory bowel disease were systematically reviewed. There were 19

studies that gathered data from 1,269 patients with Crohn's disease, 1,340 patients with ulcerative colitis and 4,000 healthy controls.

The researchers found that eating fruit and other high fiber food lowered the risk of developing Crohn's disease. A high fiber diet was also negatively associated with the risk for ulcerative colitis. The development of ulcerative colitis was positively associated with a high fat diet. It did not seem to matter what kind of fat was in the diet. Monounsaturated oil (like olive oil), polyunsaturated fatty acids, omega-6 fatty acids and meat all had a positive association with ulcerative colitis risk.

