InterClinical Laboratories
Newsletter

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Upcoming Practitioner Seminar Series

It is an important time for natural medicine practitioners. Many of you would have seen the recent news article and debate about whether natural medicine should continue to be offered in universities. We believe that education not only makes for better practicing, but also supports growth in the industry.

In light of this, we begin by letting you know about our major Seminar Series for 2012: **Autoimmune Conditions in Clinic – How to more effectively manage, treat and correct autoimmune conditions with natural and nutritional medicines.** This is an area of healthcare that is growing for many practitioners and today requires more specialised attention than ever. Hair Tissue Mineral Analysis (HTMA) is proving to be an excellent tool to help pinpoint key areas of concern for autoimmune disease sufferers with long lists of conflicting symptoms. Over many years, we have found that practitioners who use HTMA are targeting areas for treatment more rapidly and their clients are having more effective, long-term results.

Our guest speaker at this year's seminar series is Reine DuBois; a renowned speaker, naturopath and clinician. She is seeing an ever-increasing amount of autoimmune disease complaints in her practice and is delighted to share the latest research as well as her extensive clinical experience with you. For more information on this seminar series, please see the enclosed registration form, or visit the 'events' area of our website.

In this edition of our newsletter, we continue to further your clinical knowledge with our practitioner clinical updates. We are also continuing our Additional Elements series; featuring Rubidium. Many practitioners ask for more information on the additional elements which feature on our HTMA reports and so we wish to continue to help build on your existing knowledge here. For back issues of newsletters which feature additional elements previously covered, please visit the 'newsletters' area of our website or contact us directly.

We thank you for your continuing support.

Clinical Updates for the Health Professional

NIH Study Links High Levels of Cadmium and Lead in Blood to Pregnancy Delay

According to researchers at the National Institutes of Health in the United States, higher blood levels of cadmium in females and higher blood levels of lead in males can delay pregnancy in couples trying to become pregnant.

501 couples from 16 counties across Michigan and Texas were studied from 2005 to 2009. All couples were over 18, and were closely followed through their attempts at pregnancy until conception, or at least 1 year of trying. Blood samples were taken to assess levels of lead and cadmium. Researchers calculated the probability that a couple would achieve pregnancy by levels of blood cadmium and lead with a statistical measure called the fecundability odds ratio. The measure estimates couples' probability of pregnancy each cycle, by their blood concentration of metals.

Sources of cadmium include cigarette smoke, batteries, pigments, metal coatings and plastics. Airborne particles of cadmium can travel over long distances, and are also absorbed by fish, plants and animals.

Lead is found in ceramics, pipes and batteries, but a common source is from lead-based paint in older houses, lead-glazed pottery and contaminated soil and water.

"The findings highlight the importance of assessing couples' exposure jointly, in a single, combined measure," Dr. Buck Louis said. "Males matter, because couples' chances of becoming pregnant each cycle were reduced with increasing blood lead concentrations in men."

Bock, R, McGrath, J, NIH study links high levels of cadmium, lead in blood to pregnancy delay, U.S. Department of Health and Human Services, NIH News, Feb 8, 2012.

Bock, R, McGrath, J, NIH study links high levels of cadmium, lead in blood to pregnancy delay, U.S. Department of Health and Human Services, NIH News, Feb 8, 2012.

Trace Elements and the Immune System

Lukac, et al reported the importance of trace elements on the immune system. They play an important role in physiological processes that are crucial for normal functioning of the immune system. The authors also state that deficiencies of trace elements are often found with infectious disease and can therefore, influence susceptibility, course and outcome of a number of viral infections. Further, "Some trace elements inhibit viral replication in the host cells and therefore have antiviral activity. Many trace elements act as antioxidants or are able not only to regulate the hose immune response but also to alter viral genome."

Lukac, n, Massanyi, P. Effects of Trace Elements on the Immune System. Epidemiol. Mikrobiol. Immunol. 56,1,2007.

Comment: The above statement is quite a powerful statement and with such far-reaching implications that I think most people have difficulty grasping it. For years we have discussed the importance of specific nutrients on the immune system. We have also reviewed how HTMA can provide an indication for individual nutritional needs and how they influence various components of the immune response as well alter the course of viral and bacterial infections. (See previous TEI Newsletters; Calcium and Virus Activation 1989. The immune System and Hair Tissue Mineral Patterns. Nutritional, Neuro-Endocrine Immunology. 1994. Autoimmune Disease and Women, 2002.) It seems to me that treatment of individuals suffering from immunological disorders without assessing their nutritional requirements would be considered negligence.

Hair Zinc and Copper Levels in Myocardial Infarct Patients and Their Descendants

Zinc and copper concentrations were measured in the hair and urine of patients who were hospitalised for myocardial infarction (MI). Mineral concentrations were also determined in the patient's descendants and compared to a control group who had no family history of MI. Zinc was found to be higher and copper was lower in the descendants of patients with MI suggesting a consistent rise in zinc and lowering of copper reserves in genetically predisposed individuals. The study suggests that in MI patients, a genetic disorder of mineral imbalance at a younger age can be used in predicting susceptibility to heart disease in individuals prior to onset and diagnosis in asymptomatic patients.

Taneja, SK, et al. Detection of Potentially Myocardial Infarction Susceptible Individuals in Indian Populations: A Mathematical Model Based on Copper and Zinc status. Biol. Trace Elem. Res. 75, 2000.

Mineral Status and Diabetes

It has been known for decades that mineral status is disrupted in patients with diabetes. This latest study confirms these many earlier findings. The study reported the comparison level of essential minerals found in the whole blood, urine and hair of individuals with diabetes compared to normal. The minerals studied included chromium, copper, iron, manganese, nickel and zinc. Results showed that zinc, manganese and chromium were significantly reduced in the blood and scalp hair samples of diabetic patients compared to control subjects. Urinary levels were also found to be higher in the diabetic population compared to the health control group. Hair and blood levels of copper and iron were found to be higher in affected group. The study concluded that impaired trace-element metabolism might have a role in the pathogenesis and progression of type II diabetes.

Kazi, GT, et al. Copper, Chromium, Manganese, Iron, Nickel, and Zinc Levels in Biological Samples of Diabetes Mellitus Patients. Biol.trace Elem.Res. 122,1,2008.

Part Four of HTMA and the Lesser Known Trace Minerals

37

Rb

Rubidium

85.4678

Rubidium

Chemical Structure

Rubidium is a soft, ductile, silvery-white metallic element of the alkali metals group. It is one of the most electropositive and alkaline mineral elements and can be liquid at ambient temperature with a melting point of about 40°C. Rubidium ignites spontaneously in air and reacts violently with water and has a yellowish violet coloured flame.[1] As so with all the other alkali metals, it forms amalgams with mercury, alloys with gold, iron, caesium, sodium, and potassium.[2]

Sources

Environment

Rubidium is the twenty third most abundant mineral element in the earth's crust. It occurs in the minerals pollucite, carnallite, leucite and lepidolite, from which it is recovered commercially.[3] It is a relatively abundant element when compared to lead, copper, zinc or cesium. No minerals have rubidium as the main constituent.[4] Potassium minerals and brines also contain this element and are a further commercial source.

Diet

Rubidium has no known biological role but has a slight stimulatory effect on metabolism, probably because of its similarity to potassium.[5] Both elements are found together in soils, although potassium is much more abundant than rubidium. Rubidium competes with potassium ions for entry into the body.[6] Plants will absorb rubidium quite quickly, in this way rubidium enters the food chain and so contributes to a daily intake of between 1 to 5 mg. The best known food source of rubidium is unprocessed Brazil nuts. Some fruits and vegetables have been found to contain about 35 ppm,[7] which include; bean sprout shoots, spinach leaf, parsley, bilberry fruit, rhubarb, dandelion leaves, asparagus, cashews, knotweed, and beets. There is no established Recommended Daily Intake (RDI), deficiency or toxicity levels established for rubidium.[8]

Absorption and Excretion

Chemically, rubidium is like potassium, and in some animals it can replace potassium in certain functions, though this does not seem to be the case in humans. Rubidium and potassium share the same transportation system in the body. Rubidium can act as a potassium antagonist in regard to absorption and utilization. Rubidium, like sodium and potassium, almost always has +1 oxidation state when dissolved in water, including its presence in all biological systems. The human body tends to treat rubidium ions as if they were potassium ions, and therefore concentrates rubidium in the body's intracellular fluid (i.e. inside cells).[10] The ions of rubidium are not particularly toxic; a 70kg person contains on average 0.36gm of rubidium, with a biological half-life in humans measured at 31 to 46 days.[11] Rubidium is absorbed easily from the gut and is found generally throughout the body, with the least in the bones and teeth; it is not known to concentrate in any particular tissue.[12]

Functions and Applications

Rubidium and its salts have limited applications and commercial uses. The metal is used in the manufacture of photocells and in the removal of residual gases from vacuum tubes. Rubidium salts are used in glasses and ceramics and in fireworks to give them a purple colour. Potential uses are in ion engines for space vehicles, as working fluid in vapour turbines, and as getter in vacuum tubes. It is also extensively studied as a potential heat transmission material in space vehicles, as fuel in motors of ionic propulsion, as electrolyte in low temperature alkaline batteries, etc. Some rubidium compounds are used in preparing soporific, sedatives and in the treatment of epilepsy.[12]

Toxicity and Excess

Rubidium is non-toxic because of its chemical similarity to potassium. We may absorb it from our food. Moderate toxicity may occur via ingestion. It is slightly radioactive and so has been used to locate brain tumors, as it collects in tumors but not in normal tissue.[13] Very high rubidium partnered with low potassium can put muscles into a state of semi-paralysis.[14] Rubidium will take the place of potassium in the sodium-potassium pump. Excess rubidium is eliminated from the body mainly in the urine.

The main health effects of rubidium are associated with thermal burns. Rubidium readily reacts with skin moisture to form rubidium hydroxide, which causes chemical burns of eyes and skin.[15] Signs and symptoms of overexposure include skin and eye burns, failure to gain weight, ataxia, hyper irritation, skin ulcers, and extreme nervousness. Medical conditions aggravated by exposure may include heart problems due to potassium imbalance.

Analysis in HTMA

Rubidium is analysed and measured in HTMA as an additional mineral element. In HTMA, low levels below 0.0010 ppm, may not be of any clinical significance. The presence of elevated levels above 0.0190 ppm may correlate with previous exposure from an external or environmental source. This may be of some clinical significance with its antagonistic effect with other minerals, in particular potassium, and also sodium, calcium and iron.[16]

PRACTITIONER SEMINAR SERIES 2012 - HAIR TISSUE MINERAL ANALYSIS

AUTOIMMUNE CONDITIONS IN CLINIC

How to more effectively manage, treat and correct autoimmune conditions with natural and nutritional medicines.

SUMMARY SEMINAR OUTLINE:

HTMA Primary Course (Saturday)

Introduction to HTMA in Clinical Practice

- Minerals and health
- Toxic and heavy metals
- Significant nutrient relationships
- Importance of mineral ratios
- Nutritional imbalances
- Metabolic typing
- HTMA case studies

HTMA Advanced Course (Sunday)

Autoimmune Disease and Natural Medicine

- Fibromyalgia, Chronic Fatigue Syndrome (CFS)
- Coeliac Disease
- Systemic lupus erythematosus (SLE)
- Allergies (seasonal, skin), Chemical Sensitivity
- Thyroid Conditions (Hashimoto's, Graves')
- Multiple Sclerosis, Arthritis
- Mineral/Nutritional Imbalances
- Case Studies and practical clinical examples

PRESENTED BY:

Zac Bobrov
Technical Director,
InterClinical Laboratories

Reine DuBois Dip ND, Dip HOM
Naturopath, Homeopath,
Clinic Director and CEO of
IMedicine

SEMINAR DATES & VENUES:

Brisbane:	19th & 20th May 2012	Holiday Inn
Melbourne:	2nd & 3rd June 2012	Crowne Plaza
Perth:	9th & 10th June 2012	Novotel Perth
Sydney:	16th & 17th June 2012	Vibe Hotel
Adelaide:	23rd & 24th June 2012	Crowne Plaza
Auckland:	18th & 19th August 2012	Mercure Hotel

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