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Health Hunters NEWSLETTER

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What are aluminum, lead, cadmium, and mercury doing in our bodies?

by James A. Jackson, Ph.D.

According to Doctors Bralley and Lord in their book, *Laboratory Evaluations in Molecular Medicine*, the environment contains toxic organic compounds and toxic metals. While toxic organic compounds can be chemically destroyed, toxic metals are indestructible.

Toxic metals tend to accumulate undetected in the body over time and after a certain point, a small increase will lead to a number of symptomatic health problems. The toxic metal may attack one or more targets in the body. These may include membrane or structural proteins, enzymes, membrane lipids, or the DNA. They may displace an essential mineral, such as cadmium replacing zinc in certain enzyme reactions. This will make the enzyme inactive. Also, the body has the ability to add methyl groups to metals; this makes the metal lipid-soluble and is much more toxic to the brain since the brain is about 60% fat. Many of these metals can lead to the generation of free radicals with resulting damage to cell membranes, proteins, and DNA.

Aluminum (AL) is the most abundant element in the earth's crust, after oxygen and silicon. It is used in many consumer products such as cat litter, antiperspirants, infant formula, baking soda, foils, pickled foods, toothpaste, baking soda, certain antacids, milk products, vanilla powder, and nasal sprays, to name a few. Cow's milk has 2 to 3 times more aluminum than human milk and some infant formulas have up to 10 times the amount of aluminum.

Aluminum also is used in the production of medicinal products. Trace aluminum contamination may not be of concern to adults with normal kidney function; it is of concern in the elderly, infants, and adolescents. Acid rain falling on earth high in aluminum dissolves the aluminum, which then can enter and contaminate the water supply.

Absorbed aluminum binds to albumin in the blood. Albumin transports the aluminum to all parts of the body. As a result, it builds up in the brain and bones. The neurofibrillary tangles seen in plaques in the brains of Alzheimer's, ALS, Parkinson's, and Huntington's patients all contain aluminum. In bone, aluminum replaces calcium, which causes disruption in bone formation; prevents reabsorption of calcium back into the blood; and interferes with the normal physiological control of the parathyroid gland.

Aluminum toxicity symptoms include abnormal speech, myoclonic jerks, convulsions, osteomalacic fractures, and progressive encephalopathy. Aluminum can be measured in blood, urine, and hair. In order to prevent build up, especially in those groups mentioned above, one should avoid exposure. Read the label, read the label, and read the label! Everyone is exposed to heavy metals from food, beverages, and the environment. One could take some phosphorus (amount prescribed by a healthcare worker) as phosphorus lowers the intestinal absorption of aluminum. Foods high in fiber reduce the intestinal absorption of aluminum as well as other toxic metals. These include all kinds of beans, cooked vegetables, whole grain

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Bean eaters are lighter and healthier

A National Health and Nutrition Examination Survey of 8,300 adults compared those who commonly ate beans (1.5 servings per day on average) with those who seldom did so (0.1 servings per day). The frequent bean eaters had a 22% lower risk of being obese (body mass index over 30), a 23% lower risk of large waist size (over 40 inches for men, 35 inches for women), and a trend toward lower systolic blood pressure. They also had an average 50% higher intake of fiber and 8% to 20% higher intakes of folate, potassium, magnesium, iron, zinc, and copper. This observational study probably means that bean eating helps prevent obesity and hypertension. However, it is possible that individuals who are healthier for other reasons simply choose to eat more beans. Either way, the results are consistent with the official Dietary Guideline for Americans to eat three cups or more of cooked beans per week.

–*J Am Coll Nutr* 2008; 27:569

Inside this issue...

PUBLICATION INFORMATION

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Marilyn Landreth & Barbara Dodson

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Nutritional Medicine

by Rebecca K. Kirby, M.D., M.S., R.D.

Begin the holidays with breakfast

One of the easiest ways to improve your nutrition is to start the day with breakfast. A recent survey reported that 92% of adults consider breakfast the most important meal of the day, but less than half of those surveyed said that they eat breakfast every day (*Food Insight*, July/August 2008). Not feeling hungry after waking up and not having enough time were the reasons cited for not eating breakfast.

Skipping breakfast increases your odds for being overweight by almost 5-fold. Studies show that even though more total calories may be consumed by those who eat breakfast, they are less likely to be overweight. The exact mechanism of breakfast consumption and weight management is not well understood, but those who skip breakfast will burn 150 less calories than someone who does eat breakfast. In other words, stoking the metabolic furnace early in the day appears important.

Eating breakfast every day is a documented technique used by those who have successfully lost weight and kept it off. However, in the U.S. where over 60% of adults are overweight, 20% to 30% do not eat breakfast, plus 90% of dieters skip breakfast.

Where breakfast is eaten turns out to make a difference, as well. Eating breakfast out versus eating breakfast at home can double the risk of obesity.

Unmotivated with the usual breakfast fare? Try peanut butter (or other nut butters) on whole grain toast, crackers, or apple slices; hard boiled eggs with salsa; or reduced-fat cheese sticks with fruit. Take some food cues from the holidays and bake pumpkin and pecan whole grain muffins or make a sandwich with turkey leftovers.

Enjoy the holidays with friends and family and make that resolution to eat a healthy breakfast before the busy day begins. HH

Aluminum, lead, cadmium, and mercury—Cont'd from page 1

bread, whole grain cereals, oatmeal, and fresh fruits, especially apples.

The medical treatment for elevated aluminum in the tissues is chelation; either with oral chemicals or with intravenous EDTA. These should be administered by a health professional trained in chelation therapy. One can increase elimination of aluminum and other heavy metals by taking natural chelating substances. These form soluble complexes that can be removed by the kidney. Three such compounds are methionine, 3000 mg/day taken with enough vitamin B_{12} and folate to prevent homocysteine elevation; vitamin C, 3000 mg/day; and lipoic acid, 100 mg three times a day.

Lead (Pb) toxin has been around for thousands of years. The most recent contamination with lead is toys manufactured in China. Other sources of lead are drinking water from old lead pipes or pipes joined together with lead containing solder, old houses with paint containing lead, some paints used by artists, soil close to major highways, vegetables grown in lead-contaminated soil, milk from animals grazing on lead containing soil, painted glassware, painted pencils, putty, curtain weights, car batteries, cigarettes, tobacco, lead shot from firing ranges, and lead-arsenate pesticides. Lead ingested by mothers can be passed on to infants through breast milk.

Lead can enter the body through ingestion, breathing, and skin contact. The diet may contain about 300 micrograms (ug) of lead. A well-nourished adult will only absorb about 1% to 10% of ingested lead while children can absorb up to 50% of their dietary intake. Any diseases of the G.I. system will increase the uptake of lead, as will a decreased intake of calcium, magnesium, iron, vitamin C, and vitamin D. Diets high in these nutrients or supplements may prevent the increase in lead absorption. Symptoms of lead poisoning are anemia, kidney dysfunction, hypertension, anorexia, muscle discomfort, constipation, metallic taste in the mouth, and low I.Q.,

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Aluminum, lead, cadmium, and mercury—Cont'd from page 2

especially in children.

Lead is especially damaging to the brain and nervous system. It can easily cross the blood brain barrier. Lead interferes with many calcium dependent ion-channels and many enzyme systems in the brain. Children with symptoms of fatigue, impaired concentration, short-term memory deficits, insomnia, anxiety, and irritability, with reduced performance on visual intelligence or visual-motor concentration tests, may be suffering from lead poisoning.

Tests for measuring lead include serum or plasma, urine, whole blood, and hair. Whole blood concentrates lead about 75-fold greater than serum or plasma and has the highest correlation with toxicity. The CDC defines the whole blood lead test as the preferred method. The hair is a good marker for lead exposure and could give an indication of exposure for the last two months. The World Health Organization has listed a level of 20 ug/dL or higher in adults as elevated; in children, the level is 10 ug/dL or higher. The treatment is with oral or IV chelation by health care professionals trained in chelation.

Mercury (Hg) is as well known as lead is as a toxic mineral. Hat makers in the 17th and 18th centuries treated felt hats with mercury. Many went insane or "mad," hence the term "mad as a hatter." Remember *Alice in Wonderland*? As Dr. Bralley and Lord point out in their book, Sir Issac Newton, in his later years, suffered from dark moods and personality changes. An analysis on a sample of his hair (long after his death) showed highly elevated levels of mercury as a result of exposure while performing experiments with mercury.

Mercury is widespread in nature. The earth's crust releases about 30,000 tons of mercury into the atmosphere a year. Second to this is man-made mercury. About 6000 tons/year are used for electrical switches and as a fungicide, and about 90 tons are used to make dental amalgams. The new "energy efficient" light bulbs contain mercury! The elemental of mercury (Hg^0) is non-toxic; however, when ionized to the inorganic form (Hg_2^+) it becomes toxic. Another toxic form is alkyl mercury. Microorganisms in the environment and the

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HEALTH HUNTERS AT HOME

Health...what a fascinating subject

by Dean Dodson

I am constantly fascinated with the history of medicine and how the quest for good health and longevity has been a subconscious desire for mankind since the beginning of time. We all know that Hippocrates recognized and taught the importance of letting food be your medicine and medicine be your food. Through the ages Health movements and teachings have grown, evolved, and faded. One example was The American Vegetarian Society, which was established in 1850 at a convention in New York City. William Metcalfe, William Alcott, M.D., and Sylvester Graham were the promoters of a meatless diet and diet reform lifestyle philosophy. English and European influences from several modern day health advocates, doctors, and researchers led to a caldron of realistic and idealistic methods to achieve optimal health.

Kansas had its attempts at vegetarian health colonies such as "Octagon City," founded in 1856 near Humboldt, Kansas. Promoted by idealists from the East, the new city was touted for its solitude, purity of lifestyle, and health that it offered. About 100 would-be vegetarians and moral conservatives came to Kansas from the east coast to the colony. Their hopes were shattered when they arrived and found it was a remote location with only one cabin on the town site. After a few years, the town was abandoned, and today only a nearby creek bears the name "Vegetarian."

In Europe, during the 1780's and early 1800's, Doctor Samuel Hahnemann made several research observations and developed papers related to his findings. This German physician's findings credit him as being one of, if not the founder of homeopathy and its principals.

Another historical practice used through the years for regaining health has been the use of water. Various forms of water treatment and water therapy date as far back as the Egyptians, Greeks, and Romans. In more modern times, Father Sebastian Kneipp of Worishofen, Germany, expanded on the philosophy and practice of hydrotherapy. At the age of 25 he was stricken with pulmonary tuberculosis and by chance read a booklet on hydrotherapy authored in 1734 by Dr. Johann Sigmund Hahn. Father Kneipp took the information to heart, expanded upon it, and had a great influence on the development of hydrotherapy in the United States. Father Kneipp published his own book in 1886 entitled *My Water Cure*. It outlined his approach to hydrotherapy, but he actually promoted a whole system of healing which incorporated hydrotherapy, herbalism, exercise, nutrition, and spirituality.

In the mid 1850's, Dr. James Manby Gully achieved positive results using homeopathic principals combined with water treatments. Some of his patients included Charles Dickens, Charles Darwin, Alfred Lord Tennyson, Florence Nightingale, and Queen Victoria.

Still another influential person of the 1800's was Vincent Priessnitz who gained fame from using water wraps and healing himself after a farm accident. He, too, was focused on diet and sleep, as well as the healing power of water. These influential people of the past live on through spas and health centers that bear their names throughout Europe.

There are many such stories about countless medical pioneers looking for answers and making discoveries. Today, the observations of these pioneers combine with modern discoveries and methods to culminate in a more Holistic approach to health and wellness. It is medicine that integrates and combines what is helpful in allopathic medicine along with complementary and alternative medical techniques; recognizing that healing and health includes the body, mind, emotions, and spirit.

The founder of The Center, Dr. Hugh Riordan, recognized the fact that good health equated to several ingredients. From 1984-1986, Dr. Riordan was president of the American Holistic Medical Association. During his life, he never stopped looking for answers, and the quest continues today.

On November 1, The Center celebrated a landmark event. It was on that date in 1975 that The Center saw the first patient. As I indicated...The Quest continues today. HH

INFORMATION WORTH KNOWING

by Marilyn Landreth, M.A.

As you very well know, life has changed a great deal in the last 50 years. Children used to be safe walking to school, TV was not a way of life, and computers were so big that who would have thought that we would ever be able to carry them around in one hand. Food was primarily eaten within the same area where it was grown, and many people had their own small gardens. All of these changes have had an impact on the nutrients that your body receives. In their new book, *The Vitamin D Cure*, James E. Dowd, M.D., along with Diane Stafford, have explored why those changes and others have led to a decline in the intake of vitamin D. Although all nutrients are important to the healthy functioning of your body, vitamin D deficiency and its impact on sustained illnesses has been in the news recently. With his many years as a researcher and rheumatologist, Dr. Dowd reveals how vitamin D works and the consequences of not having enough Vitamin D. It can be used both in prevention and to control many common conditions. Five steps to heal pain and improve mood are included. The questions this month are taken from their book.

1 Among patients treated at the Arthritis Institute of Michigan by a rheumatologist, _____ % are deficient in vitamin D.

a. 10 b. 40
c. 70 d. 90

2 Chronic vitamin D deficiency affects your mood. In the summer you get more fruits and vegetables in your diet, which raises vitamin D and calcium absorption levels. This also increases _____ production.

a. estrogen & serotonin
b. magnesium & serotonin
c. magnesium & linolenic acid
d. estrogen & linolenic acid

3 Low calcium due to inadequate vitamin D or calcium in the diet triggers the release of parathyroid hormone, which increases the concentration of activated vitamin D in fat cells and causes them to store energy as more fat.

a. True b. False

4 New research indicates that vitamin D is important to proper _____ development.

a. eye b. brain
c. suntan d. skin

5 Melanin acts as a natural sunscreen that can block 90% of UV light. The more melanin in your skin and the faster you tan, the more _____ you need to convert pre-vitamin D to the form of vitamin D that you can use.

a. sunscreen
b. vitamin E
c. sunlight
d. vitamin C

6 Osteoporosis is a failure to attain peak bone mass in early adult life, which leads to osteoporosis in an older adult.

a. True b. False

7 There are many forms of activated vitamin D that all serve slightly different cell functions. Your own physical and _____ demands and your supply of vitamin D from sunlight or supplementation determine the composition of this mixture.

a. biochemical
b. psychological
c. social
d. mental

• *FOR ANSWERS, SEE PAGE 7* •

"The greatest discovery of my generation is that human beings can alter their lives by altering their attitudes of mind."

—William James

Test of the Month

by Dr. James A. Jackson, Director, Bio-Center Laboratory

Folate and folic acid

Folate and folic acid are forms of water-soluble B vitamins. Folate is found naturally in foods and folic acid is the synthetic form. Other names are vitamin B_9, vitamin M, folacin, and folinic acid. In 1931, folate was identified as the nutrient needed to prevent anemia during pregnancy. It was also discovered that anemia could be reversed with brewer's yeast. In the late 1930's, folate was found to be the corrective substance in the yeast. It was first synthesized in 1946.

Folate is necessary for the production and maintenance of new cells. This is especially important in pregnancy and infancy. It is important for forming cells of the G.I. tract and tongue. It is needed to replicate DNA. It also helps mobilize fat from the liver.

Folate is critical for all women during preconception and pregnancy. It helps prevent neural tube defects of the spine, spina bifida, and defects of the skull and brain. Pregnant women are urged to eat foods high in folate or fortified with folic acid. The RDA for pregnant women is 600 to 800 micrograms a day. In 1996 the FDA ordered the addition of folic acid to enriched bread, cereals, and other grain products. This was after years of denying that vitamins, such as folate, had anything to do with birth defects!

Other signs of folate deficiency are growth problems, fatigue, poor memory, sore tongue, toxemia of pregnancy, and digestive problems. Alcohol intake also increases the need for folate.

Foods high in folate are leafy vegetables (turnip greens, spinach, lettuces), dried beans and peas, sunflower seeds, certain fruits and vegetables, whole wheat, salmon, liver, and eggs. Folate is lost from foods cooked at high temperatures.

The RDA for men and women over 19 years of age is 400 micrograms. We measure folate (folic acid) in our laboratory and it is included in many of our Health Hunter/Beat The Odds panels. HH

Aluminum, lead, cadmium, and mercury—Cont'd from page 3

G.I. tract can convert mercury to the toxic form. Mercury passes up the food chain in deep-sea fishes (tuna & albacore) to humans. The toxic mercury will accumulate very quickly in the brain and nervous system.

Mercury released from dental amalgams and its effect on health is very controversial. Amalgams contain up to 50% mercury. Small amounts (20 ug) are released each day from the amalgam surface. Hot liquids and chewing will accelerate the release and the bacteria in the mouth and intestine will convert it to the toxic forms. Whole blood mercury level in a "normal population" was <5 ug/L. Dentists and dental technicians had levels of up to15 ug/L.

Symptoms of mercury toxicity are irritability, fatigue, insomnia, short-term memory loss, tremor, stomatitis (inflammation of the mouth), gingivitis, G.I. and renal problems, decreased immunity, pain in joints and limbs, weight loss, and metallic taste. Treatment of mercury toxicity is oral or IV chelation. Selenium, 50 ug/day, will protect against cellular toxic effects of mercury. Mercury can be measured in whole blood, urine, and hair.

Cadmium is a toxic metal found in drinking water from galvanized pipes. It is also found in refined wheat flour, canned evaporated milk, processed foods, oysters, kidneys, liver, cigarette smoke and tobacco products, some fertilizers, ceramic glazes, paint pigments, electroplating, silver polish, polyvinyl plastics, rubber carpet backing, nickel-cadmium batteries, automobile exhaust, and rust proof materials.

Cadmium competes with zinc at all cellular level binding sites, especially enzyme binding sites. It is referred to as an "enzyme poison." It is very toxic to the kidneys. Some symptoms of poisoning are femoral pain, lumbago, osteopenia, renal dysfunction, hypertension, vascular dysfunction, and pulmonary dysfunction. Zinc, 50 ug/day, competes with cadmium for binding sites and is a treatment, as is chelation.

Be careful what you eat, drink, and breathe. It may contain something extra!

Reference: *Laboratory Evaluations in Molecular Medicine*, by L.A. Bralley and R.S. Lord, 2001, IAMM, Norcross, GA.

Herbal History

by Chad A. Krier, N.D., D.C.

Getting the fat (toxins) out

I recently attended a medical conference where the presenter discussed the relationship between weight (fat cells) and toxicity. Some studies have shown a correlation between obesity and higher levels of toxic burden in the body. We know that eating high fat foods (dairy, meats) is one of the most common ways to get fat soluble toxins into our bodies. In order to burn fat for energy needs, the powerhouses (mitochondria) of our cells must be working adequately. Fat soluble toxins and heavy metals reduce the ability of our cells to burn fat for fuel.

With weight loss, levels of circulating toxins can rise between 25% and 388% in the blood. The PROBLEM is that we need to get rid of these toxins in order to increase our metabolism, but when we exercise or go on lower calorie diets we actually may increase our toxic burden in the bloodstream without increasing the excretion of these toxins. This can result in depositing toxins in unwanted areas such as our fatty organs. The goal should be to enhance clearance of the fatty toxins by increasing fat in the intestines and stool.

Botanical pancreatic lipase inhibitors reduce fat absorption and promote weight loss. Botanicals to consider for this purpose include: Oolong Tea, Humulus lupulus (Hops), Ginger, Panax japonica (Japanese ginseng) and Camellia sinensis (Green tea) seeds. Using fibers/botanicals that increase fecal fat and fecal bile is another way to promote fatty toxin excretion. Rice bran fiber, Oat bran fiber, Matcha Green Tea, Seaweed, and Chlorella can all be used to increase fat excretion.

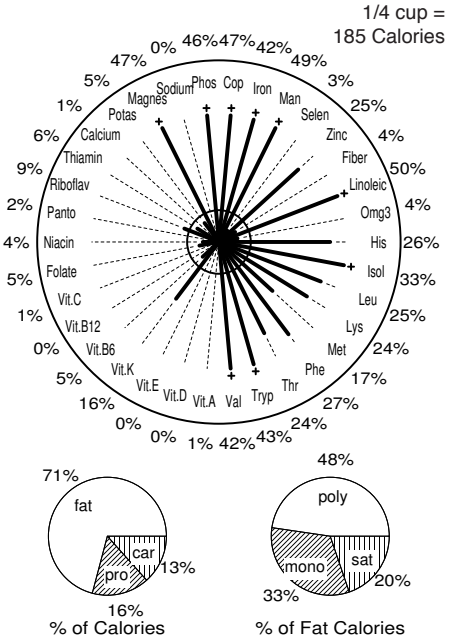
If you have tried to lose weight in the past but always felt worse when doing it, consider trying some of the above herbals as part of your routine.

Food of the Month

by Donald R. Davis, Ph.D.

PUMPKIN and SQUASH SEED KERNELS are good sources of several minerals, vitamin K, polyunsaturated fat, and protein. One-quarter cup of raw kernels contains nearly half of the RDAs for magnesium, phosphorus, copper, iron, and manganese, with smaller amounts of zinc, vitamin K, and other nutrients. It also contains a hefty 90 mg of phytosterols that reduce cholesterol levels, reduce the risk of some cancers, and enhance immune function. Pumpkin seeds and their oil are often promoted to shrink enlarged prostates, but the evidence seems limited to rats with artificially enlarged prostates. Roasting improves protein availability.

NutriCircle



The length of each bar shows the amount of one nutrient. If a bar extends out to the inner circle, the food has enough of that nutrient to match the calories it contains. The numbers show nutrient amounts in RDAs per serving shown. The pie charts show the sources of calories (left) and the types of fat (right).

Mental Medicine

by Marilyn Landreth, M.A.

Time to mend fences

By the time you read this, the President of the United States will be elected. It seems like this election campaign has gone on forever. We have heard a lot of half-truths and some untruths. Politicians have found that negative advertisements win elections. Then, they wonder why our country is so divided.

We have a tendency to only hear what is favorable to our candidate/party and disregard anything good about the other candidate/party. Getting people to strongly support a candidate is one way to get them to vote. It is good that we care enough to vote since so many people have fought and died for us to have that right.

Once the election is over, it is time to work together to make our world better for our children and grandchildren. Their future is at stake and it is too important to carry on a partisan fight. Now is the time to remember that we are Americans first and a specific political party second. The candidate/party that we wanted may not be elected but the majority of the people have spoken.

In the years ahead, we may be going through times that will try our souls just as times have troubled the souls of our ancestors. We may need to cut back on our consumer expectations but we should never cut back on our ability to come together for the common good. The best mental medicine is to realize that we are in this world together as human beings. Theodore Roosevelt said, "There can be no fifty-fifty Americanism in this country. There is room here for only 100% Americanism." HH

CENTER UPDATE

by Michael Gonzalez, Ph.D.

The RECNAC II project

A publication by the Levine group of the National Institutes of Health (NIH) reporting that pharmacologic concentrations of ascorbic acid selectively kill cancer cells has received worldwide attention. The reason for this is that vitamin C (ascorbic acid) is a relatively cheap, nontoxic nutrient with a history of being used with certain efficacy as a therapeutic tool against cancer. Nevertheless, this history has been full of controversy.

The classical controversy was between Linus Pauling (Linus Pauling Institute) and Charles Moertel (Mayo Clinic). Varied results were published by the different camps, which initiated a seemingly never-ending debate. The reality is that the studies were not done the same way. Moertel never replicated the Pauling experiments. The most critical point is that both studies used oral doses of about 10g, but Pauling also used intravenous administration. The oral doses cannot reach plasma concentrations needed for vitamin C to achieve antineoplastic activity.

We are very excited with the results of the NIH. We believe this may lead to a new era in research, education and healing in an integrated manner. We also think these reports may advance the goal of our cancer research initiative, the RECNAC II project, aimed at the development of effective, nontoxic cancer therapies. We believe that by changing the biochemical conditions that promote, develop, and sustain the malignant state, we can inhibit malignant cell proliferation, increase aerobic metabolism, and achieve redifferentiation. Our research indicates that vitamin C is just one of various substances that can have a selective effect in modulating cancer cell metabolism either toward redifferentiation or apoptosis (self-induced cell death).

There is much more research to do, but the emerging light makes the future look brighter. The RECNAC II project was inspired and supported by the late Hugh D. Riordan, M.D., a medical maverick from The Center. Dr Riordan and his son, Neil, pioneered the use of high-dose intravenous vitamin C in cancer patients. HH

Case of the month

This 77-year-old woman came to The Center in June of 2007 with pancreatic cancer. Health history included the usual childhood illnesses, neck injury in 1972, aortic valve replacement in 1988, foot surgery in 1994, and congestive heart failure in 2006. She was not a good surgical candidate and opted not to take chemotherapy and radiation. She said she came to The Center to maintain her quality of life. A history completed by the patient prior to her arrival indicated that her predominant feeling over the past two weeks reflected that she felt encouraged, satisfied, grateful, calm, and comfortable.

During her initial session with the doctor, extensive laboratory tests were recommended to obtain a baseline. A series of vitamin C infusions were recommended and she was accepted as a participant in the cytokine research study at The Center. This patient had been taking several supplements prior to being seen at The Center. Additional supplements were prescribed upon the result of the laboratory tests, including magnesium gluconate, co-enzyme Q10, oral vitamin C, cal/mag/zinc, lipoic acid, and d-ribose, a naturally occurring substance used by every cell in the body to synthesize and rebuild energy.

Due to her past history of congestive heart failure, it was important to adjust the fluid volume of her infusion and to monitor her weight before and after each infusion. Her intravenous vitamin C dose was increased gradually to 37.5 grams per IV.

She continued to follow up with Dr. Ron Hunninghake and was seen on a regular basis by Dr. Hyland, oncologist on staff. She continued receiving intravenous vitamin C three times a week, maintaining fair energy levels, and reported that the IVs helped her feel stronger and better. In early March, she moved into a nursing home in her hometown and was grateful that the nursing staff continued to administer the intravenous vitamin C twice a week. In a recent conversation with a family member, they reported that the patient continues with no pain and that she has had a much better quality of life than they had hoped for. HH

Answers from page 4

1 d. According to the Centers for Disease Control, over half of the general population is deficient in vitamin D regardless of age.

2 b. As serotonin production and magnesium and calcium levels decline, your mood changes.

3 a. Increased intake of vitamin D, calcium, and magnesium in low-fat dairy products can enhance weight-loss.

4 b. A lack of vitamin D may be a contributing factor in the development of schizophrenia, Parkinson's disease, and depression.

5 c. Dark African-Americans need about 7 times as much sunlight as fair skinned Europeans to manufacture the amount of vitamin D their body needs.

6 a. Osteoporosis is a disease that begins before birth and in childhood with vitamin D deficiency, dietary imbalance, and lack of exercise.

7 a. Your body's actual supply of vitamin D determines how much activated vitamin D you can make. HH

SPECIAL DISCOUNTS

Audio Tapes: Regular Price—$7.95; Health Hunter Price—$7.16
Video Tapes: Regular Price—$9.95; Health Hunter Price—$8.95
CDs: Regular Price—$14.95; Health Hunter Price—$13.45
DVDs: Regular Price—$14.95; Health Hunter Price—$13.45

THE VITAMIN D CURE
by James E. Dowd, M.D.
A noted rheumatologist and researcher explains the causes of vitamin D deficiencies and reveals why North Americans are especially vulnerable to it. Dr. Dowd uses research studies, clinical data, and case studies to show how vitamin D deficiencies result from a combination of diet and lifestyle choices. Hard cover. ($24.95 HH price $22.46)

UNDERSTANDING FOOD LABELS
with Donald R. Davis, Ph.D.
Food packages often beckon with bold names, appealing graphics, and glowing descriptions. But the small print is usually more informative. With examples of common foods, we show simple ways to make the best use of ingredient lists and Nutrition Facts labels.

HOW VITAMIN C FIGHTS CANCER
with Ron Hunninghake, M.D.
Vitamin C is commonly understood to be an antioxidant. The National Institutes of Health has replicated research done here at The Center which shows that very high blood levels of vitamin C can act as a pro-drug that forms hydrogen peroxide at doses lethal to cancer cells. Learn how vitamin C does fight cancer.

VITAMIN E UPDATE
with Rebecca Kirby, M.D., M.S., R.D.
Vitamin E has been in the news a lot lately. Should we be cautious of taking it? It is known as being protective against coronary heart disease and certain cancers, as well as the oxidative effects of aging. Learn about the research and the evidence for the many faces of vitamin E.

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Upcoming Events. . .

Lunch & Lectures:

November:

6 Health Hunter/Beat The Odds "Ask the Doctors"

13 Aluminum, Cadmium, Lead, and Mercury Should Be in Cans, Batteries, and Thermometers: What Are They Doing in Our Bodies?

20 The Coffee Controversy

Mark your calendar!

New Lunch & Lectures will begin in January.

New concerns about bisphenol A

Bisphenol A is an endocrine disruptor found in the linings of food and beverage cans. Other sources of exposure include some "carbonless" paper used for copies. Animal studies suggest that tiny amounts might cause brain and behavior problems in infants, early puberty, and cancer and diabetes later in life. Now the first large study in humans finds that U.S. adults with high urine levels of bisphenol A have increased risks for heart disease, type 2 diabetes, and liver abnormalities. Although more study is needed, it seems prudent to reduce intake. Most adult exposure comes from canned foods and beverages. Alternatives include fresh and frozen foods; soups, vegetables, and meats in shelf-stable cartons; bottled beverages; and Eden brand canned foods.

–*J Am Med Assoc* 2008; 300:1303 & 1353