August 2011
Vol. 25 No.8

Riordan Clinic

Health Hunters Newsletter

A service of the Riordan Clinic, cofounded in 1975 by Olive W. Garvey and Hugh D. Riordan.
The Riordan Clinic is a not-for-profit 501(c)(3) corporation.
Go to www.riordanclinic.org to make your tax deductible donation today.

Inside This Issue

Nutrition and the Athlete

by Jennifer Kaumeyer, ND

Very often athletes and those who exercise a lot feel that they can eat whatever they want. I often hear words such as "I worked out hard today; I deserve these doughnuts." These people are thinking that exercise gives them a reason to splurge and eat poorly. They often believe that they are healthy because they exercise even though they never eat a vegetable (French fries and corn do not count!). I know this because I consider myself an athlete and therefore have many friends and acquaintances who are into sports and physical activities. The truth is, the athlete may not gain as much weight but can be more at risk for chronic disease than the sedentary person, whom is eating the same types of foods. Let's talk about how this could be true.

Most athletes know that certain nutrients are essential for health and performance. Failure to consume adequate amounts of these essential nutrients—which include 13 vitamins, 22 minerals, essential fatty acids, essential amino acids and, of course, water—results in consequences that range from low energy to death, depending on the specific nutrient, the individual and the severity and duration of the deficiency.

Recently, nutritional science has brought new attention to the vitamin and mineral needs of athletes and the consequences of deficiencies. A recent study from the University of Oregon found that vitamin B deficiencies (B1, B2, B3, B5, B6, and B12) were common in athletes and that these deficiencies sabotaged athletic performance.

An even more recent article published in the pro-supplementation *Journal of the International Society of Sports Nutrition* concluded that it is impossible for athletes to meet their daily vitamin and mineral requirements without supplementation. The predominate view is that athletes probably do need slightly more nutrients than non-athletes, but that these nutrients are obtained automatically in the course of eating the extra calories that are required to fuel workouts—assuming a balanced, healthy diet. However, besides the extra calories, the typical athlete does not really know what a "balanced, healthy diet" consists of and eats very much like the typical American -- and in the typical American diet there are several common nutrient deficiencies resulting from poor dietary habits. Most of the time, the extra needed calories that

Nutrition and the Athlete continues on page 2…

Letter from the Editor:

by Amanda Hawkinson

Athletes need more nutrients than less-active people. They demand more from their bodies than even average fitness buffs and so must compensate with the right nutrients from foods or supplements to keep performance—and recovery—at its peak. However, athletes are not the only ones who need to make sure they are getting the appropriate nutrients. It is important for even the exercise beginner to make sure they are getting all the nutrients their body needs.

This issue of the *Health Hunters Newsletter* will focus on IV nutrition and the athlete. For those of you who are not fitness savvy, don't fear. There is something in this issue for you as well. Many people don't know where to begin when it comes to starting a steady exercise regimen and, honestly, it can be quite overwhelming. We have taken the guess work out of the equation and have listed several tips that can help you make the transition from a sedentary lifestyle to a work-out powerhouse!

If you or someone you know would like to learn more about what the Riordan Clinic can do for you, please call us at 316-682-3100 to schedule an appointment.

If you have any questions, comments, or concerns you may e-mail me at newseditor@riordanclinic.org.

Thank you for reading!

Amanda Hawkinson
Editor
newseditor@riordanclinic.org

Don't forget to "Like" us on Facebook.

Nutrition and the Athlete continued from page 1…

exercisers take in are often from "reward" meals and junk food which are usually a worthless source of nutrients. This often leads to deficiencies that are likely to affect their health and performance. Let's take a look at each of the most common deficiencies, their consequences and how to overcome them.

Physical activity increases the need for **vitamin C** so that our bodies can produce hormones such as cortisol that are needed during the event. Vitamin C is an antioxidant and helps with detoxification and oxidative stress within the body. Vitamin C is also needed to repair muscle

and soft tissue as well as build new muscle and bone. Many athletes, especially those under 25, develop a **vitamin C deficiency** because they often eat processed foods from vending machines, gas stations, fast food and anything and everything that comes in a box. Also, food prepared at colleges, work or office restaurants are usually overcooked and poor in vitamins, especially vitamin C. Young athletes eat very little fresh fruits and vegetables which are the richest vitamin C sources. To make matters worse, when they do eat these fresh foods, the vitamin C content is a lot less than it was in the same fruit/vegetable 50 years ago. Also, please note that the nutrients that are used in the fortification process are very poorly absorbed and utilized by the body. In other words, don't rely on your morning bowl of Total® cereal for your nutrients.

DEFICIENCY OF B VITAMINS, especially thiamin and riboflavin (B1, B2) deficiency, is widespread in athletes. B vitamins are very important in athlete nutrition because they are involved in energy production and its shortage may affect performance and recovery after exercises. Thiamin and riboflavin are easily lost in sweat, so the more you are active and sweating, the more you need of these two vitamins. The B vitamins are considered a family and operate as a team and usually are present in food together.

IRON DEFICIENCY is the next most common nutritional deficiency among athletes. Women and vegetarians who are involved in sports are particularly at risk for developing iron deficiency. This mineral is easily lost through sweat, urine and, in women, through menstrual flow. Iron is better absorbed from meat sources than from plant sources, so vegetarians (especially vegetarian women) need to pay extra attention to their iron intake.

POTASSIUM, MAGNESIUM, AND ZINC are also lost through heavy sweating. Deficiency of potassium and magnesium in the athletes system may cause excessive tiredness and fatigue after a training or athletic performance. Magnesium deficiency can cause muscle cramping, twitching and restless legs at night. A deficiency of zinc may cause immune dysfunction, frequent infections, skin inflammation, and gastrointestinal problems.

ESSENTIAL FATTY ACIDS, especially those that are Omega 3s, are very lacking in our diet. The main reason for this is because our beef is not grass fed anymore. Grain and corn fed cattle will produce a lot more saturated fat than grass fed cattle. Those that eat grass will produce much more of the essential fats within their meat. This is why wild animals are usually considered more lean and healthy. Americans also do not eat enough fatty fish or other foods with an abundance of essential fatty acids, such as walnuts, flax, avocados, and dark green leafy vegetables. These fats are important for athletes because they are the precursors to the chemicals in our body that help fight inflammation. A deficiency can cause a person to be at greater risk for inflammatory problems such as tendonitis, plantar fasciitis, and shin splints. These fats also help lubricate the joints, improve circulation and improve oxygen uptake.

Nutrition and the Athlete continues on page 3…

Patient Profile

In June 2011, a 28-year-old woman visited the Riordan Clinic feeling sleep deprived and depressed with frequent headaches, anxiety, and fatigue. As a personal trainer and mother, health was extremely important to her and she was discouraged by this onset of symptoms after the birth of her son in 2008.

Tests were performed at the Clinic to figure out the root cause of the problem. Based on the test results, it was discovered that she was sensitive to bananas and was having thyroid issues. The doctor encouraged her to remove bananas from her diet and advised her not to consume any dairy or whey products for six weeks. She was prescribed Armour Thyroid, Adapten-All, Inflammacore protein powder, Orthobiotic, Magnesium Citrate, Iodoral, and vitamin C. She was also to receive intravenous vitamin C treatments weekly (for the next six months) to correct her thyroid problems and to help with her symptoms.

After a month of the prescribed treatment, the patient reports that she is sleeping better and is experiencing fewer headaches. Her depression and fatigue have both decreased. She finds that although she still has trouble with anxiety, she is performing closer to an optimal level.

Watch for more on the progress of this patient in future issues of the newsletter.

If you have chronic health issues, make an appointment today by calling 316-682-3100. The health, hope, and healing we provide can make a positive impact in your life, just as it did for this patient.

Nutrition and the Athlete continued from page 2...

The reality is that most people, especially in America, are already experiencing suboptimal nutrient levels. Chronic stress (physical and emotional), environmental toxicities, bad nutrition, addictions, lack of physical activity and lack of R&R in general can deplete all of our nutrients rather quickly. The best and quickest way to get these levels back to optimal is through intravenous nutrition therapy (IVs) and intramuscular injections (IMs). This is especially true for any athlete who is experiencing any kind of gastrointestinal problem, irritable bowel syndrome, or other diagnosed chronic disease. Fortunately, here at the Riordan Clinic, we not only have the ability to order and administer these IVs, but we also have done a lot of the research that has shown the benefits of this type of therapy. We could be considered experts.

These IVs are non-toxic, painless, and last approximately 20–45 minutes depending on the combination of nutrients within the IV bag. It is best to "know your levels first" and have nutrients tested so that we can gauge the effect of the IV treatments. Every individual is different, but usually starting off with weekly IVs and then graduating to monthly IVs is standard. If the athlete is training for a certain event such as a marathon race, IVs are especially important during the "recovery" weeks.

IF YOU ARE INTERESTED IN INCREASING YOUR PHYSICAL PERFORMANCE and/or reaching optimal health, you should highly consider getting your health markers (nutrients) tested and boost your biochemistry through intravenous nutritional therapy. **Call the Riordan Clinic today at 316-682-3100.**

VITAMIN SPECIAL

15% OFF
InflammaCORE Protein Powder

Includes 3 flavors: Natural Cherry, Orange Splash, and Banana Crème

REGULAR PRICE: $59.42

SALE PRICE: $50.51

OFFER EXPIRE 8/31/2011

Know Your Nutrients — Protein Powder

by Amanda Hawkinson

Have you ever been working out at the gym and overheard various conversations about protein shakes (the best kind, best tasting, etc…)? Protein powders—made into a shake or consumed however you like—are becoming a very popular nutrition supplement. They can be purchased in every nutrition store and all over the Internet. Are protein powders just for bodybuilders, or can the average everyday exercise enthusiast benefit from them as well?

WHAT ARE PROTEIN POWDERS?

Protein powders come in various forms. The three common forms are whey, soy, and casein protein. Whey is the most commonly used as it is a complete protein (contains all nine of the amino acids necessary for human dietary needs) and is water-soluble. Because protein powders are an easy and convenient source of complete, high-quality protein, they can be very useful. However, it is possible for most people, even athletes, to get everything they need by eating sources of lean protein like meat, fish, chicken, and dairy products.

So when might you want to use them? There are a few reasons why an ordinary athlete might want more protein in their diet:

- **When you're growing.** A teenager needs more protein to fuel his workouts because his body is still growing and uses more protein in general.
- **When you're starting a program.** If working out is new to you and you're trying to build muscle, you'll require more protein than you normally would.
- **When you're amping up your workouts.** If you normally work out for half an hour a few times a week, but now you've decided to train for a half-marathon, your body will need more protein.
- **When you're recovering from an injury.** Athletes with sports injuries frequently need more protein to help them heal.
- **If you're going vegan.** People who pursue a vegan or vegetarian lifestyle eliminate a number of common protein sources from their diet, including meat, chicken, and fish, and sometimes dairy and eggs as well.

Although these are all valid reasons to consume extra protein, be careful, too much protein can be hard on your kidneys and liver.

PROTEIN MATH

So how can you tell if you're already getting enough protein? Do the math.

- **Recreational athletes** need 0.5-0.75 grams of protein daily per pound of body weight.
- **Competitive athletes** need 0.6-0.9 grams per pound.
- **Teenage athletes** need 0.8-0.9 grams per pound.
- **Athletes building muscle mass** need 0.7-0.9 grams per pound.

The maximum amount of protein that most adults can use per day is 0.9 grams per pound of body weight. (To find a list of foods with their protein content, use the U.S. Department of Agriculture's Nutrient Database, online at www.ars.usda.gov/Services/docs.htm?docid=20958.)

HOW TO USE PROTEIN POWDERS

How can you use protein powders to improve your performance and make sure you are getting enough for your athletic needs? You may need to increase your protein intake with a protein powder if you're unusually fatigued, feel weak when lifting weights or doing other strenuous activity, or are slowly recovering from injuries. As with any new supplement, it is always wise to consult your doctor before beginning a new regimen.

HCG Weight-Loss Intervention—The Success Continues!

Since introducing the HCG Weight-Loss Intervention program in January, participants have lost over 2,500 pounds! **Here is one success story:**

A 63-year-old man from Tarkio, MO, began the HCG Weight-Loss Intervention program on May 28, 2011. Weighing 284.4 pounds, he was diabetic and at that time, taking 13 different pills a day (including Lantus, NovaLog, and Metformin) along with four injections of insulin (daily).

Longing to improve his health, he met with our HCG nurse weekly. At first, he had a lot of toxicity symptoms and experienced diarrhea, hot flashes, and insomnia. Although these symptoms were difficult, he continued the program. He even started walking 15–30 minutes daily and felt that it immensely helped his muscle tone. Amazingly, he lost 33 pounds of fat in three weeks, becoming the first patient to have this kind of success in this period of time.

Now weighing 251 pounds, he has been able to stop taking Lantus and has gone from taking Metformin twice daily to once a day and his glucose level has stabilized at an average of 110 in the morning. He was also on medication for neuropathy and has been able to stop it all together as well.

"Now, I feel better than I have in years!" he stated, as he continues on this road of success.

This patient is a great example of the weight loss success that awaits you with the Riordan Clinic HCG Weight-Loss Intervention. Go to www.riordanclinic.org for additional information. If you are ready to improve your health and well-being call 316-682-3100 to get started today!

In Gratitude …

As a not-for-profit organization, we rely on many to make our vision a reality. ***So many come together to provide our patients a place of hope, health and happiness.*** Here are just a few we'd like to thank.

- Crestcom International, management training group, and the Aidan Foundation for meeting space and event space rental
- High Touch Inc. for inviting Dr. Kaumeyer to speak at their company's Lunch and Learn program
- Our wonderful volunteers who give their time weekly and monthly to help in all areas of our operations, such as our organic garden, beautiful landscaping, and lunch and lectures to name a few.
- All individuals and groups who have donated to our cause through financial support, including the Hugh D. Riordan Foundation.

Vitamin C and Physical Activity

by Nina Mikirova, Ph.D

Dr. Nina Mikirova has recently been promoted to Director of Research for the Riordan Clinic Research Institute. Dr. Mikirova has been with the clinic since May of 1997.

Dr. Riordan, our founder and (for a long time) our Research and Clinical Director, once told us a story about his daughter, who was a competitive swimmer during her school years. While her coach advised the team to eat a chocolate bar before competitions to increase their energy reserves, Dr. Riordan had been trying to convince her to take vitamin C.

She always refused, opting to follow her coach's recommendations. Finally one day, several hours before a competition, she took one gram of vitamin C. To her delight, she won the competition.

Dr Riordan was a great advocate of the benefits of vitamin C. A true scientist, he established his research institute with an aspiration to prove the beneficial effects of vitamin C in the prevention and treatment of diseases. He was a pioneer in the development of using high-dose intravenous ascorbic acid to treat patients with various pathological conditions such as: infectious diseases from bacterial and viral origin, cancer and chronic degenerative diseases.

There are various benefits of using vitamin C while exercising. Interestingly, studies that address vitamin C usage by athletes are abundant and contradictory. Are antioxidant supplements necessary for individuals who exercise regularly? Should antioxidant supplements be a part of the "nutritional game plan" for athletes? These are common questions directed to fitness leaders, athletic trainers, and other health professionals who are consulted about the role of antioxidants in a healthy, active lifestyle.

VITAMIN C AND OXIDATIVE STRESS DURING EXERCISE

Several studies have examined the effects of acute exercise on changes in the amount of antioxidants in the blood and changes in lipid peroxidation to provide information on oxidative stress induced by exercise. The reason for this interest in antioxidants is the finding that highly reactive chemical species, called free radicals, may increase during exercise. It is assumed that exercise generates free radicals by other means, including 1) increases in epinephrine and other hormones released in response to stress, 2) production of lactic acid that can convert a

Vitamin C and Physical Activity continues on page 6…

HEALTHFUL HINTS from DR. K…

Like that…

1. Reese's Peanut Butter Cup
2. Bagel with cream cheese
3. Ice cream

Love this…

1. Apple with all-natural peanut butter
2. Veggies dipped in a cream cheese dip (whipped cream cheese mixed with different herbs or just cracked black pepper and fresh pressed garlic)
3. Whey protein shake blended with ice and unsweetened almond milk. Try adding a tablespoon of peanut butter, cocoa powder, banana, and/or other fruits as desired. Sweeten with Stevia.

Exercise

Exercise is important for everyone. If you just aren't sure how to get started, take these tips below. Each month we will have a new goal to add on to the previous month.

Getting Started…

- **Day 1:** Walk 5 minutes outside or on a treadmill or indoor track.
- **Day 2 and beyond:** Each day add on 1 minute.
- By the end of the month you should be walking about 35 minutes.
- You can break up the time in segments if you need to. For example—10 minutes in the morning; 10 minutes on your lunch break and 10 minutes after dinner.
- This is something you can do daily for this month, no need to skip days. We will adjust our walking program in the months to come.
- Have FUN and use this time walking to decompress and focus on YOU!

Vitamin C and Physical Activity continued from page 5…

weakly damaging free radical into a strongly damaging one and 3) inflammatory responses to secondary muscle damage incurred with overexertion. Exercise appears to increase reactive oxygen species, which can result in damage to the cells. In addition, the studies show that the plasma level of vitamin C is diminished in those who exercise.

The question is, can the body's natural defense system counteract the increase in free radicals or are additional supplements needed?

The studies demonstrated that a marker of oxidative stress (conjugated dienes) decreased by 11% after exercise in those individuals who ingested vitamin C (1 gram) versus those receiving a placebo.

In a bench-stepping exercise, 400 mg of supplemental vitamin C were given for 3 weeks. The supplement altered the response of plasma oxidative stress and antioxidants resulting in an increase in blood amounts of vitamin C and a boost in total antioxidant capacity (for the supplement group but not for the control group). According to the study, the vitamin C supplement resulted in greater tissue stores that were released into the circulation during exercise. The study demonstrated that the group taking vitamin C showed less strength loss after exercise and had a faster recovery.

A combination of vitamin C (2 g) and glutathione (1 g) were given daily for 7 days before individuals performed an incremental treadmill test until exhaustion. This test was previously found to increase GSSG (oxidized glutathione) in the blood, which the author attributed to increased oxidative stress. After the supplementation period, the increase in GSSG after exercise was not seen.

Because delayed-onset muscle soreness is an indicator of muscle damage induced by exercise, studies have examined whether vitamin C supplements would reduce soreness. Each day, subjects ingested 3 g ascorbic acid or a placebo for 3 days before exercising. The vitamin C supplement appeared to reduce the intensity of muscle soreness. The vitamin C supplemented group performed more sit-ups on the second bout than did the placebo group.

In another study, it was shown that vitamin C lessens muscle damage when compared with those deficient in the vitamin. In this study, it was found that vitamin C does control reactive oxidant species formed during exercise. If not controlled, these species have the ability to react with cell membranes and damage them, initiating lipid peroxidation.

VITAMIN C AND IMMUNE SYSTEM SUPPORT DURING INTENSIVE EXERCISE

There is growing evidence that, for several hours subsequent to heavy exertion, several components of both the innate (e.g., natural killer cell activity and neutrophil oxidative burst activity) and adaptive (e.g., T and B cell function) immune system exhibit suppressed function. At the same time, plasma pro- and anti-inflammatory cytokines become elevated.

Exercise is associated with extensive distress of white blood cell counts. The change in leukocyte subsets with exercise is dependent on both intensity and duration, with prolonged, high-intensity endurance exercise leading to the greatest degree of distress. Intensive running is associated with a sustained increase in the white blood cell count, the blood granulocyte count rises strongly (250%) along with monocytes (60%), while lymphocytes are decreased (40%).

In extreme cases of over exertion, nutritional interventions have been recommended for athletes to negate potential negative changes in immunity during periods of heavy training. Some

Vitamin C and Physical Activity continues on page 7…

Fresh Organic Produce Available

Our gardeners have been busy working on the recent harvest of fresh vegetables and herbs. Each day limited amounts of fresh produce are available to the public in the Gift of Health Supplement Store.

For August, we can expect:

- zucchini
- cucumbers
- kale
- herbs
- jalapeno peppers
- bell peppers

Feel free to call ahead, at **682-3100**, to check the selection we have for sale each day.

Vitamin C and Physical Activity continued from page 6…

attempts have been made through nutritional means (glutamine, vitamin C, and carbohydrate supplementation) to attenuate immune changes following intensive exercise.

We demonstrated in our research study (*Effect of Vitamin C Supplementation on Ex Vivo Immune Cell Functioning*. JOM, 2003, 18: 83–92) how vitamin C supports the immune system. In this study, we demonstrated that mediated immunity and phagocytosis may be improved with vitamin C supplementation, and vitamin C supplementation of at least 1 g per day is correlated with improved cell functioning.

VITAMIN C AND UPPER RESPIRATORY TRACT INFECTIONS AFTER INTENSIVE EXERCISE

Many ultra long-distance runners experience upper respiratory tract infections. The relationship between heavy exertion, immunity, and infection was approached early in this century among athletes who ran the 1901 Boston Marathon.

The immune response to heavy exertion has received renewed attention after the publication of several epidemiological studies indicating an increased risk of upper respiratory tract infection (URTI) during the 1- to 2-week period after marathon and ultra-marathon race events.

Exercise immunologists in general have advanced the idea that the immune changes after prolonged and intensive endurance exercise do contribute to the increased URTI risk in athletes, reported by epidemiologists.

For example, during the week following the Los Angeles marathon race, 12.9% of the marathoners reported sickness, compared with only 2.2% of control runners who did not participate (odds ratio 5.9).

In another study, it was shown that 68% of runners reported the development of symptoms of URTI within 2 weeks of competing in the 90-km Comrades Ultra-marathon. The incidence of URTI was greatest among the runners who trained the hardest coming into the race (85 vs. 45% of the low- or medium-training-status runners). The possible role of vitamin C in preventing

these infections was addressed on a double-blind placebo research design. Symptoms of upper respiratory infection were monitored for 14 days after an ultra-marathon in subjects receiving either placebo or vitamin C supplementation (600 mg). Sixty-eight percent of the runners on the placebo reported the development of respiratory tract infections. In contrast, only one-third of the vitamin C group reported the infections. The scientists concluded that vitamin C supplementation might actually be beneficial in helping prevent upper respiratory infections in marathoners.

Authors suggested that because heavy exertion enhances the production of free oxygen radicals, vitamin C, which has antioxidant properties, might be required in greater quantities.

EFFECT OF VITAMIN C ON INCREASED WORK CAPACITY

Other evidence to suggest that those who exercise require more vitamin C is measurements of work capacity. Athletes receiving a one-gram vitamin C supplement showed increased work capacity at a heart rate of 170 beats per minute. Subjects served as self-controls and were given a placebo for two weeks and then vitamin C for two weeks. During vitamin C supplementation, subjects repeatedly demonstrated decreased heart rates at all levels of work when compared with the placebo.

PERFORMANCE

Although several early studies examined the effects of vitamin C supplementation on exercise performance, other than its effect on soreness, the results are vague. However, most well-

Vitamin C and Physical Activity continues on page 8…

Laboratory *Special*

This month, our laboratory has created a special **Performance Health Panel** to help determine the underlying cause of your chronic symptoms and / or help you establish optimal health for optimal performance in your daily life.

The panel includes a **vitamin C test** and **hair tissue analysis**. Vitamin C can be rapidly depleted during times of illness and everyday stress. Assuring your levels are optimal is very important to keeping you healthy. Stress, including good stress such as exercise, can also deplete certain minerals within your body. The hair analysis can tell us your mineral nutrition status as well as toxic exposures over the last 3 months. This profile tests the levels of the hair nutrient minerals calcium, chromium, copper, iron, potassium, magnesium, manganese, sodium, selenium and zinc, and the hair toxic minerals aluminum, arsenic, cadmium, lead, and mercury.

Call 316-684-7784 to schedule your Performance Health Panel.

Regular price: $190

special $114

40% discount

Vitamin C and Physical Activity continued from page 7…

controlled studies report no beneficial effect on either endurance or strength performance.

At the same time, it is known that a diet lacking vitamin C will in turn inhibit performance. However, the theoretical basis for why antioxidants should enhance performance is not clear.

Future research needs to demonstrate that increased vitamin C levels can ultimately cause increased performance. As vitamin C can regenerate other antioxidants and act as an antioxidant itself, the need for vitamin C is likely increased in those who exercise regularly. An intake of 100 - 500 mg seems to be sufficient to meet the needs of the exercising individual.

A high probability exists that athletes should consume higher vitamin C in their diet (1000 mg or more). Multiple small doses help prevent side effects and are advised for those choosing to consume large quantities of supplement with the vitamin.

Lunch and Lecture Series 2011

Dr. Jennifer Kaumeyer

Enhancing Your Health with IV Nutrition

Speaker: Dr. Jennifer Kaumeyer
Thursday, August 11, 2011
12:00 p.m. to 1:00 p.m.
Cost: $15—Lunch is included.

The foundation of better health is better nutrition. Your body's cells depend upon nutrients to fuel their energy-producing biochemistry, and those who are active may need additional vitamins and nutrients to maintain health. Dr. Kaumeyer will speak to the importance of giving our bodies the key nutrients they need through intravenous (IV) nutrition and how it helps everyone from the busy mom to the hard-core athlete.

The Riordan Clinic has pioneered the use of intravenous nutrients for the past 35 years. IV nutrition is the fastest way available to replenish chronically depleted nutrient reserves. It can be used to correct deficiencies, enhance immune function, increase energy and assist in maintaining health. Elaborating on her IV nutrition article in this newsletter, Dr. Kaumeyer will discuss the most common vitamin and mineral deficiencies, the bodily processes in which each vitamin and mineral is involved, pathologies that could arise with the deficiency, and how to prevent and treat deficiencies with IV nutrition.

Everyone, no matter your health status, can benefit from IV nutrition. If you are interested in improving your health and well-being, don't miss this informative lecture!

For reservations: call 316-927-4723 or email us at reservations@riordanclinic.org

The Nutrition Reporter™

The independent newsletter that reports vitamin, mineral, and food therapies

Eating More Protein, Cutting Back on Carbs Keeps Those Extra Pounds Off

Trying to diet and keep those pounds off?

Eating a little more protein and cutting back a little on sweets and other refined carbohydrates can help you keep the weight off after dieting, according to a study in the *New England Journal of Medicine*.

Thomas Meinert Larsen, PhD, of the University of Copenhagen, Denmark, and his colleagues recruited 773 men and women and their families, with all of the subjects living in eight different western European nations. All of the men and women had recently lost at least 8 percent of their body weight on a low-calorie diet.

The subjects were asked to follow one of five follow-up dietary regimens for six months: a low-protein, low-glycemic index diet; a low-protein, high-glycemic index diet; a high-protein, low-glycemic index diet; or a high-protein, high-glycemic diet. The remaining group had no food restrictions and served as a control. Everyone was allowed to eat as much as they wanted to.

In the high-protein groups, people consumed 25 percent of their calories as protein. Meanwhile, in the low-protein groups, people consumed about 13 percent of their calories as protein.

After six months, substantially more people had stayed with the high-protein or low-glycemic groups, compared with those in the low-protein, high-glycemic group.

People eating the low-protein, high-glycemic index diet regained the most weight – an average of 3.7 pounds. In contrast, people in the high-protein groups regained an average of 2 pounds *less*.

Typically, higher protein diets are more nutrient dense, whereas lower protein diets tend to be richer in sugars and other types of carbohydrates.

In related research, Renata Micha, PhD, RD, and her colleagues at the Harvard Medical School, analyzed 20 published studies on the relationship between meat consumption and the risk of heart disease, stroke, and type 2 diabetes.

Micha reported that red meat per se was not associated with the risk of developing coronary heart disease, stroke, or diabetes. However, the daily consumption of 50 grams (a little less than 2 ounces) of processed meats – also known as luncheon or deli meats, such as bologna or salami – was associated with a 42 percent greater risk of coronary heart disease and a 19 percent higher risk of diabetes.

In another study, Jeff S. Volek, PhD of the University of Connecticut, Storrs, asked eight weight-stable men to follow one of two low-calorie, low-carbohydrate diets for six weeks. One diet was relatively high in saturated fat (86 grams daily), and the other was high in polyunsaturated fats (47 grams daily).

With both diets, the subjects benefited from lower triglyceride and insulin levels and an increase in LDL cholesterol particle size. Large LDL particles (in contrast to small LDL particles) protect against cardiovascular disease. Despite a significant increase in saturated fat consumption, the subjects showed signs of reduced body fat production. Volek wrote that the study's findings were "consistent with the concept that dietary saturated fat is efficiently metabolized in the presence of low carbohydrates."

The findings build on earlier research and analysis of published studies showing that saturated fat seems to have no bearing on the risk of cardiovascular diseases. (See the May 2010 issue of *The Nutrition Reporter*.)

References: Larsen TM, Dalskov SM, van Baak M, et al. Diets with high or low protein content and glycemic index for weight-loss maintenance. *New England Journal of Medicine*, 2010;363:2102-2113. Micha R, Wallace SK, Mazaffarian D. Red and processed meat consumption and risk of incident coronary heart disease, stroke, and diabetes mellitus. A systematic review and meta-analysis. *Circulation*, 2010; 121:2271-2283. Siri-Tarino PW, Sun Q, H FB, et al. Forsythe CE, Phinney SD, Feinman RD, et al. Limited effect of dietary saturated fat in the context of a low carbohydrate diet. *Lipids*, 2010;45:947-962. ❑

More research summaries on next page

Perspectives

Vitamin E and Stroke Risk

A recent article in the *British Medical Journal*, a related news release from the publisher, and news stories published around the world were nothing less than misleading and alarming. The *BMJ* article, based on an analysis of nine previously published studies, reported that vitamin E supplements increased the risk of stroke.

Wait a minute! The study and all the negative publicity were deeply flawed – and the data were twisted around.

First, none of the individual studies had found an increased risk of stroke. Second, the dosages varied from 300 IU to 800 IU of vitamin E daily, some using natural and others using synthetic vitamin E. The studies ranged from about a year and one-half to 10 years, the subjects varied from middle-age to seniors, and some were healthy while others were at high risk of cardiovascular disease (and whom were likely to be taking several medications). With this disparate data, the researchers concluded that one additional person in every 1,250 taking vitamin E would suffer a hemorrhagic (bleeding) stroke, whereas about 2.6 additional people in 1,250 would be *less likely* to suffer an ischemic (clotting) stroke.

You would think that the significantly greater reduction in ischemic stroke would be the subject of headlines. But it wasn't. The researchers downplayed the benefits, and headlines warned that vitamin E increased the risk of stroke.

The article neglected to note that you are far more likely to suffer an ischemic stroke. That's because 90 percent of all strokes are related to blood clots. You are far less likely to suffer a hemorrhagic stroke; they account for only 10 percent of all strokes.

Even though this study was of questionable quality, it still showed that vitamin E supplements significantly reduced the risk of the most common type of stroke, whereas it slightly increased the risk of the least common stroke. You don't have to be a rocket scientist – or a statistician – to figure out that the benefits:risk ratio of vitamin E supplements is strongly in your favor.

Selenium Supplements Helpful in Auto-Immune Thyroid Disorder

Taking supplemental selenium, an essential dietary mineral, can lead to improvements in Hashimoto's thyroiditis, the most common cause of low thyroid activity. Hashimoto's involves an auto-immune reaction, in which the body's immune cells attack the thyroid. Because the thyroid gland regulates the metabolic rate, reduced thyroid active can cause a variety of symptoms, including fatigue, cold hands and feet, and weight gain.

Konstantinos A. Toulis, MD, of the Papageorgiou General Hospital in Thessaloniki, Greece, and his colleagues analyzed data from seven previously published studies in which doctors used selenium supplements as an adjunct in the treatment of people with Hashimoto's. A total of almost 400 patients were in those studies.

All of the patients had been receiving treatment with synthetic thyroid hormone, commonly known as T4. Some of the subjects received 200 mcg of selenium and others received placebos daily for three to six months.

After taking selenium for three months, patients benefited from significantly lower levels of auto-immune antibodies – a sign of reduced disease activity – as well as improvements in well-being and mood.

Selenium-dependent enzymes, called deiodinases, are needed to convert T4 to the active form of thyroid hormone, T3.

Reference: Toulis KA, Anastasilakis AD, Tzellos TG, et al. Selenium supplementation in the treatment of Hashimoto's thyroiditis: a systematic review and meta-analysis. *Thyroid*, 2010; doi 10.1089/thy.2009.0351. ❑

Vitamin B6 Eases Inflammation in Rheumatoid Arthritis

Supplemental vitamin B6 has long been known to reduce inflammation and pain, and now researchers have shown that supplements reduce inflammation in people with rheumatoid arthritis.

Yi-Chia Huang, PhD, of the Chung Shan Medical University, Taiwan, and colleagues used B vitamins to treat 35 patients who had been diagnosed with rheumatoid arthritis. Fifteen of the patients took 5 mg of folic acid daily, while 20 patients took 100 mg of vitamin B6 and 5 mg of folic acid daily for 12 weeks.

Huang and colleagues measured several blood markers of inflammation.

At the end of the study, people taking vitamin B6 had significantly lower levels of two inflammatory markers, interleukin-6 (IL-6) and tumor necrosis factor alpha (TNF-α).

"Pro-inflammatory cytokines such as IL-6 and TNF-α have key roles in driving the inflammation and synovial cell proliferation that characterize rheumatoid arthritis joint destruction," wrote Huang.

In addition, people taking vitamin B6 had about a

10 percent increase in lymphocytes, a type of immune cell. Huang wrote that this increase might reflect more normal activity of immune cells.

"Our results provide valuable reference data for clinical practice with regard to the potential beneficial use of vitamin B6 to suppress inflammatory response in rheumatoid arthritis patients," wrote Huang.

Reference: Huang S-C, Wei JC-C, Wu DJ, et al. Vitamin B6 supplementation improves pro-inflammatory responses in patients with rheumatoid arthritis. *European Journal of Clinical Nutrition*, 2010;64:1007-1013. ❑

High Intake of Alpha-Carotene Linked to Lower Death Risk

Eating a lot of foods rich in alpha-carotene seems to reduce the risk of death from heart disease, cancer, and all other causes.

Although beta-carotene tends to get more attention, alpha-carotene is found in many of the same foods, particularly carrots and squash.

Chaoyang Li, MD, PhD, of the U.S. Centers for Disease Control and Prevention, Atlanta, Georgia, and his colleagues analyzed dietary and health data for 15,318 people who participated in the Third National Health and Nutrition Examination Survey Follow-up Study.

People who consumed relatively large amounts of alpha-carotene had 23 to 39 percent lower risks of death, with the greatest benefits occurring in people who ate the most alpha-carotene.

High alpha-carotene intake was also associated with a 29 percent lower risk of cardiovascular diseases, 43 percent lower risk of cancer, and a 67 percent lower risk of diabetes.

"Because current antioxidant supplements or food additives contain little if any alpha-carotene, we assumed that members of our study cohort obtained alpha-carotene primarily from consumption of fruits and vegetables," wrote Li.

Reference: Li C, Ford ES, Zhao G, et al. Serum alpha-carotene concentrations and risk of death among US adults. *Archives of Internal Medicine*, 2010; doi 10.1001/archinternmed.2010.440. ❑

Omega-3 Fish Oils May Reduce Chances of Serious Eye Disease

People who eat a lot of fish or shellfish rich in the omega-3 fish oils – eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) – are far less likely to develop the most severe form of age-related macular degeneration (AMD), a common cause of blindness among seniors.

Bonnielin K Swenor, MPH, and her colleagues at Johns Hopkins University, Baltimore, analyzed dietary intake of fish over the course of one year and the risk of AMD in 2,520 people, ages 65 to 84 years.

People in the study were divided into four groups: those free of AMD, with early AMD, with intermediate-stage AMD, and advanced AMD. All of the participants ate some seafood, and they all lived on the eastern shore of Maryland.

People with advanced AMD were far less likely to consume fish and other types of seafood rich in omega-3 oils. Conversely, a high intake of omega-3 oils from seafood seemed to protect against the most severe form of AMD.

Reference: Swenor BK, Bressler S, Caulfield L, et al. The impact of fish and shellfish consumption on age-related macular degeneration. *Ophthalmology*, 2010: 117:2395-2401. ❑

Coenzyme Q10 and Pycnogenol® Help in Heart Failure Patients

Coenzyme Q10 (CoQ10), a vitamin-like substance involved in energy production, can help strengthen a weak heart. A new study has found that a combination of CoQ10 and Pycnogenol, an antioxidant extract of French maritime pine trees, also benefits people with moderate to serious heart failure.

Gianni Belcaro, MD, PhD, of Chieti-Pescara University, Italy, and his colleagues treated patients with either the CoQ10 and Pycnogenol combination or placebos. All of the patients were also treated according to conventional medical guidelines. However, people taking statins were excluded from the study because the drugs reduce CoQ10 activity.

Thirty-two people took 350 mg of CoQ10 and 105 mg of Pycnogenol daily daily, while 21 people took placebos for 12 weeks.

The supplement combination led to significant improvements in heart function, whereas the placebos did not. On average, people taking CoQ10 and Pycnogenol had a 22 percent increase in ejection fraction, a measure of the heart's ability to pump blood. They also had significant decreases in blood pressure and edema, and they were able to walk more than three times farther on a treadmill.

Nine of the 32 people taking CoQ10 and Pycnogenol had an improvement in their New York Heart Association (NYHA) classification of heart failure, compared with only three of those taking placebos. NYHA heart failure classifications (I-IV) are used worldwide to assess the severity of heart failure.

Reference: Belcaro G, Cesarone MR, Dugall M, et al. Investigation of Pycnogenol® in combination with coenzyme Q10 in heart failure patients (NYGA II/III). *Panminerva Medica*, 2010; 52 (Suppl 1 and 2):21-25. ❑

Quick Reviews of Recent Research

• Diversity of veggies has health benefits

Considerable research has shown that eating large amounts of vegetables and fruits reduces the risk of developing cardiovascular diseases and cancer. However, consuming a wide selection of veggies and fruits may be more important – in part because of the broad range of nutrients provided by a diversity of veggies and fruits. Researchers from Tufts University, Boston, analyzed the dietary habits and levels of inflammation in 1,200 middle-age and elderly Puerto Rican men and women living in the Boston area. People who consumed the most diverse selection (but not the largest quantity) of vegetables and fruits had on average C-reactive protein (CRP) levels about one-third lower than those who did not not consume a wide selection of produce. CRP is a commonly used marker of inflammation.

Bhupathiraju SN. *American Journal of Clinical Nutrition*, 2010;93:37-46.

• Psoriasis linked to metabolic syndrome

Psoriasis is often related to unbalanced or inadequate intake of essential fatty acids. Researchers at the Harvard Medical School reported that people with psoriasis are more than twice as likely (compared with healthy subjects) to have signs of metabolic syndrome. The most common sign of metabolic syndrome among these patients was abdominal obesity, follow by elevated triglycerides and low levels of high-density lipoprotein (HDL) cholesterol. Similar eating habits may underlie both psoriasis and metabolic syndrome.

Love TJ. Prevalence of the metabolic syndrome in psoriasis. *Archives of Dermatology*, 2010; doi 10.1001/archdermatol. 2010.370.

• Fish oils protect against heart attack

Researchers from Umeå University, Sweden, investigated blood levels of omega-3 fats among 431 people who had a heart attack and 499 people who had not. The statistical analysis also included 69 women from a breast-cancer screening registry. People with the highest blood levels of omega-3s had a 35 percent lower risk of heart attack. Analyses of blood levels of both mercury and selenium, which are commonly associated with fish intake, showed no harmful effect. Fish consumption per se was not associated with heart attack risk.

Wennberg M. American *Journal of Clinical Nutrition*, 2010;93:27-36.

• Vitamin B3 protects chromosomes

The B-complex vitamins are involved in maintaining the integrity of chromosomes and genes and enhancing gene-repair activities. Scientists at the U.S. Centers for Disease Control and Prevention, Cincinnati, Ohio, investigated how the diets of 82 airline pilots might affect chromosome damage. Pilots were selected because high altitudes induce more chromosome damage. They found that pilots who had diets rich in vitamin B3 were 42 percent less likely to experience chromosome damage.

Yong LC. *British Journal of Nutrition*, 2010:doi 10.1017/S000711451000379X.

• Sugary drinks may cause gout in women

Researchers at the Boston University School of Medicine found that women who consume soft drinks and orange juice have a substantially higher risk of gout, compared with women who do not. The study tracked almost 79,000 women over 22 years. Women who had one non-diet soft drink daily had a 74 percent greater risk of gout, compared with women who had a soft drink only once a month. The risk of gout was 2.4 times higher if they consumed two or more soft drinks daily. Women who had a 6-ounce glass of orange juice daily were 41 percent more likely to develop gout, and those who consumed two or more glasses daily were 2.4 times more likely to have gout. The researchers attributed the risk to fructose in the beverages.

Choi HK. *JAMA*, 2010: doi 10.1001/jama.2010.1638.

• Probiotics reduce risk of infections

Researchers from Georgetown University Medical Center, Washington, D.C., provided 638 children with either a probiotic-containing dairy beverage or an identical placebo. The children were three to six years of age, and they were given the drinks daily for three months. Children consuming the probiotic drink, containing *Lactobacillus casei*, had a 19 percent lower risk of developing respiratory or gastrointestinal infections.

Merenstein D. *European Journal of Clinical Nutrition*, 2010;64:669-677.

The Nutrition Reporter™ newsletter (ISSN 1079-8609) publishes full monthly issues except for August and December and is distributed only by prepaid subscription. Phone: (520) 529.6801. Email: nutritionreporter@gmail.com. The Nutrition Reporter™ is strictly educational and not intended as medical advice. For diagnosis and treatment, consult your physician. Subscriptions are $28 per year in the U.S.; either $34 US or $40 CND for Canada; and $42 for all other countries, payable in U.S funds through a U.S. bank. The Nutrition Reporter™ is a trademark of Jack Challem.

The Nutrition Reporter™
Post Office Box 30246 • Tucson AZ 85751-0246 USA
Editor and Publisher: Jack Challem
Copy Editor: Mary E. Larsen