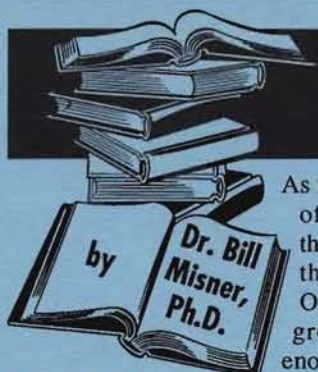


ENDURANCE NEWS #26



DR. BILL'S JOURNAL ON ENDURANCE (J.O.E.)

As if the plethora of information that is shared on the Endurance On-Line news-group was not enough, Dr. Bill

has added a weekly feature to the list called J.O.E. This is just one more reason why you should be subscribing to the group if you have e-mail. If you would like to subscribe, just e-mail Anna (ecaps@e-caps.com) your e-mail address and she will make sure that you get signed up pronto.

FROM JOE #1 - OMEGA-3 FATTY ACIDS FROM FISH OIL

Eat Fish, Prevent Cancer: When researchers compared the fish consumption of more than 10,000 hospitalized Italian cancer patients with that of nearly 8,000 people without cancer, they found that those who had consumed 2 or more servings of fish per week had a lower risk for esophageal, stomach, colon, rectum, and pancreatic cancers than those who had avoided fish. The high levels of omega-3 fatty acids found in fish may inhibit the growth of cancer cells.

Can a diet rich in fish decrease heart disease? About.com has a nutrition website which has highlighted some of the touted health benefits of omega-3 fatty acids.

www.nutrition.about.com/library/weekly/aa072499.htm

PHOSPHATIDYLSERINE REDUCES CATABOLISM AFTER EXERCISE

Phosphatidylserine (PS) has recently been studied as a phospholipid for use by athletes as a means to lower post-exercise cortisol. PS is marketed as a "cortisol blocker."

Research indicates PS may decrease the 24-hour peak rise in post exercise cortisol levels, thereby possibly being an anticatabolic agent. The theory is: the less corticoids released, the lower the muscle catabolism may be after exercise. Several studies show this,

but only for the immediate 24-hour post exercise period. None of the studies indicate the implications of lowering post-exercise cortisol for extended periods.

Monteleone et al., (1990) collected blood samples before and after the exercise for plasma epinephrine (E), norepinephrine (NE), dopamine (DA), adrenocorticotropin (ACTH), cortisol, growth hormone (GH), prolactin (PRL) and glucose determinations. Blood pressure and heart rate were also recorded. Physical stress induced a clear-cut increase in plasma E, NE, ACTH, cortisol, GH and PRL, whereas no significant change was observed in plasma DA and glucose. Pretreatment of IV-dosed 50 and 75 mg BC-PS significantly blunted the ACTH and cortisol responses to physical stress.

Sumikawa et al., (1993) indicated both "physical training and acute exercise decrease phosphatidylserine and polyunsaturated fatty acids in erythrocyte membranes, possibly due to lipid peroxidation, suggesting limited enhancement of erythrocyte defense mechanisms in adaptation to chronic oxidative stress."

REFERENCES

Monteleone P, Beinart L, Tanzillo C, Maj M, Kemali D; Effects of phosphatidylserine on the neuroendocrine response to physical stress in humans, *Neuroendocrinology* 1990 Sep 52:3 243-8.

Sumikawa K, Mu Z, Inoue T, Okochi T, Yoshida T, Adachi K, Changes in erythrocyte membrane phospholipid composition induced by physical training and physical exercise, *Eur J Appl Physiol* 1993 67:2 132-7.

COMMENTARY

Phosphatidylserine (PS) has been reformulated into Premium Insurance Caps in a minimal dose of 100 mg., replacing Echinacea, a known immune system stimulant with limited pathogenic applications only. In my opinion, PS supplementation's best application is after an event, rather than before exercise. PS is recommended by some scientists for limiting cortisol, while others may suggest use for

(continued on page 8)

GINSENG WARNING

by Dr. Bill Misner, Ph.D.

The current supplement market is full of products with ginseng. Ginseng is found in pills, drinks, chewing gum, snack foods, teas, tinctures and even vitamins. Centrum and One-A-Day, among many pharmaceutical companies, have introduced separate ginseng supplements.

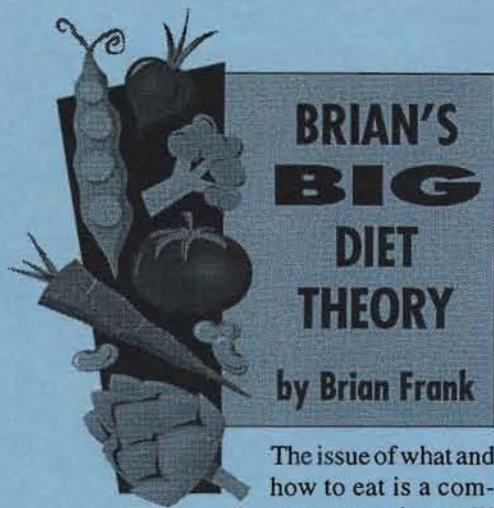
The claims for Ginseng as an "Elixir Tonic," are suggested to increase energy, to enhance immune system response, and to improve athletic performance, are not supported by reliable research.* Five well-designed studies in the US and Canada examined the claim for Ginseng to produce energy. All five studies failed to corroborate this claim. *(1-5) The origin of these false claims comes from studies done by a Hungarian physician financed by a Ginseng manufacturer in the 1980's.

Dr. Samura (1985) #6, while isolating G115 extract of Ginseng, found that stimulant effects on the brain and adrenal-pituitary from increased excitatory hormone levels were observed in rabbits subjected to ginseng. D'Angelo observed alertness increase in human subjects (1986) #7.

There are 3 authentic Ginseng plants: Panax Ginseng, (Chinese or Korean Ginseng) Panax Notoginseng, (Sanchi or Tienchi Ginseng) and Panax Quinquefolius (American Ginseng).

Siberian Ginseng or "Wujia" is NOT Ginseng but a member of the Araliaceae family, considered to be a different species entirely. This plant grows profusely in the wilds of Siberia. Studies performed by Williams, Old Dominion University, specifically determined that Siberian "Wujia Araliaceae" had no effect on physical performance whatsoever! #8 Siberian "Wujia Araliaceae" has been made popular by a product called "Endurox," whose manufacturers claim performance gain for endurance athletes using their product prior to exercising. We have received a number of complaints from athletes who confirm Endurox does give them a heightened sense

(continued on page 12)



BRIAN'S BIG DIET THEORY

by Brian Frank

The issue of what and how to eat is a complex one that will never see total agreement by all parties. One thing is for sure however, the uniqueness of each of our physiology guarantees that any one specific diet will never work for everyone. The idea is to take some foundational principals and, using a process of trial and error, determine what works best for you personally.

Please keep in mind that I have espoused this "theory" of mine for over a decade, I just didn't write a book or make a candy bar to promote it. I guess I have been kind of busy with some other "stuff." This "theory" began with the holistic foundation that my mom gave me and grew from my further education and trial and error experiences with my own diet through years of training and competition. So, here are the foundational principals:

BALANCE & VARIETY

Your body craves and desperately needs these to be present in your diet. Any time you find yourself eating the same thing all the time, you are not eating optimally.

SUGAR, SALT, DAIRY & REFINED WHEAT

The less you eat, the better you will feel and the healthier your body will be.

PROTEIN IS KEY

Carbs and fat are also important, but your diet should be built around your protein needs.

CARBOHYDRATES

Carbohydrates can be both good and bad. Since most people tend to lean

towards bad carbs instead of good, this area might take some work. Sugar and refined wheat based carbs are the enemy.

FRESH, WHOLE FOODS ARE GOOD - PACKAGED, PROCESSED FOODS ARE BAD

Whenever possible, even at extra expense and time, we should seek out good foods and avoid the bad.

FAT IS OK

Dietary fats should not be avoided or embraced, they should just be allowed to find their way into your diet. Since most people, including athletes, believe that they are following a 40-30-30 diet eat too much fat (the ones Dr. Bill has done computer dietary analysis were eating as much as 60% of their calories from fat), you probably don't need to go looking for fat to add to your diet. It is usually a naturally occurring component of proteins. If you need more, raw nuts and vegetable fats such as avocado, olives, olive oil, etc. are best.

BUILDING YOUR DIET

Start with protein. You want a minimum of 1/2 gram per pound of body weight each day to maintain your current level of lean muscle mass. If you are trying to add lean muscle mass and doing the necessary resistance training, your protein needs will increase to 3/4 to 1 full gram of protein per pound of body weight. So, if you weigh 150 pounds, 75 grams is your daily minimum and 150 would be a maximum. In order to accomplish this you will need to eat a variety of proteins three times each day and possibly a protein rich snack in between meals. Protein supplements of the Whey and or SOY variety can be added to simplify reaching your daily goal.

Next, add your carbohydrates - The goal is at least 6-9 servings per day of high quality fresh fruits and vegetables (organic whenever possible). Again, you need to eat fruits & vegetables with every meal and as snacks in between. The next group of carbohydrates are whole grains and rice. Oats, various different types of rice and more esoteric grains, along with potatoes, sweet potatoes and yams should be the bulk of your starchy carbohydrates. (Please notice that refined wheat products such as bread and pasta are not included here.)

Lastly, you have your "treats." These are the goodies that you allow yourself in extreme moderation as a reward for being such a good eater. It might be something

truly wicked like a piece of chocolate or a bowl of ice cream or it might be something that may be a staple in your current diet like a big bowl of wheat pasta or a sandwich made with extra sour dough bread. These treats can be consumed once or twice a week or there about.

TOTAL CALORIC INTAKE

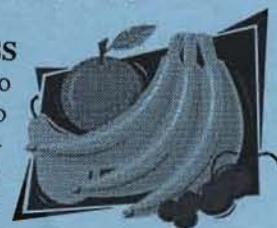
This seems painfully obvious, but needs to be stated anyway. The more you exercise, the more calories you will burn and thus the more calories you will need to consume. However, don't always let your appetite determine your caloric intake. It's far better to use the scale. Measure your weight at the same time each day and record it in your training diary. Achieving a constant weight is the obvious goal. Sorry, no charts saying "if you exercise this many hours a day you need this many calories." Counting calories is a distraction that most of us don't need in our lives.

WEIGHT LOSS

The only way to lose weight is to burn more calories than you consume. That is easy to say and quite a bit harder to actually live. However, in addition to this axiomatic truth, the type of calories and the time of day that you consume them can contribute to weight loss or weight gain. I have found that the best way to lose weight, especially while training is to eliminate some or all of the starchy carbohydrates from your diet. You may feel hungry all the time for the first 7-14 days, but you will lose fat weight without sacrificing a lot of lean muscle mass. Above all, don't be a slave to your appetite. Remember, it is your eating habits that determines your appetite. Don't let your appetite convince you otherwise.

MISCELLANEOUS

Ideally, it is better to consume the majority of your calories in the AM and midday/early afternoon hours. You should try to avoid eating after 7 PM. You should never skip breakfast because it gets your metabolism fired up for the day; it really is the most important meal of the day. Likewise, eating your last meal by or before 7 PM and doing some light exercise afterwards, even a 20 minute walk, will give your body time to metabolize those calories before going into a restive state when excess calories are more likely to be stored as fat. ■





The purpose of this article is to review the "basics" of how good digestion should occur in those of you who have no gastric stress problems as well as those who do. Several distinct practical applications for improving fuel economy and/or replenishment of the depleted macro- and micro-substrates required for your optimal health and maximal endurance performance are discussed in their simplest, easiest-to-understand, relative terms.

HOW HEALTHY DIGESTION OCCURS

When food enters the mouth, signals are passed to the saliva glands, located in the mouth, as to what mixture preparation of the enzyme, ptyalin, to generate for the initial digestion of masticated carbohydrates. These signals are also interpreted by the stomach to prepare an exact-matching Hydrochloric Acid (HCL) pH to assist breakdown of incoming proteins and dietary fibers.

CHEW IT WELL

The more you chew your food, the more effective are these transmitted chemo-signals interpreted for your maximal-efficient digestive rate of absorption. Chewing too little will cause undigested foods to pass into gastric channels putrefying in time and contributing to premature fatigue-like symptoms.

Gastric HCL production decreases with age. If you have digestive problems, taking an antacid may contribute to flatulence relief, but it may also decrease the rate of digestion. Most health care professionals have a simple test method for determining HCL production; patients swallow a small pill attached to a light string. The pill is then retrieved and its color will indicate stomach acid level. If your digestive enzymes are gastric-poor, health food stores supply combine-supplement products containing protease, lipase, and amylase for digestion of proteins, lipids, and carbohydrates.

Experimenting with these supplements may take some time to determine which one is best for your metabolic demands. A solution suggested by Meyerowitz (1999) is to stimulate natural secretions (rather depending upon digestive supplements) by drinking 1-3 tablespoons raw unfiltered apple cider vinegar in 8 ounces water just prior to your meal.

As the food passes from the stomach into the small intestine, the pancreas secretes more

by Dr. Bill Misner, Ph.D.

enzymes (alkaline pH) to further breakdown proteins and carbohydrates. The gallbladder is active here, providing bile for the breakdown of lipids.

RESOLVING DIGESTION DISORDERS

(less-than-optimal gastric support for endurance performance)

PROBLEM #1-Overeating

Most body's digestive systems can only handle at max around 200-250 grams of carbohydrates, after an individual is exercise-depleted. For every 4 grams above a 250 grams carbohydrate intake, 3 grams is routinely converted into fat stores for most of us! Some excess carbs may not be completely digested, contributing to a premature or elevated state of fatigue. Eating smaller portions and/or avoiding eating to satisfaction, and resting digestive organs between meals, insures adequate enzymes for the meals to follow, resulting in a higher energy state, translating into enhanced endurance performance upon demand.

PROBLEM #2

When to eat and when not to eat.

If you eat late or prior to bedtime, the food tends to sit in warm humid digestive caverns, drawing out and depleting digestive enzymes, without permitting gastric absorption due to it shutting down during sleep. A percentage of the food eaten late in the day may putrefy, causing gas, sluggishness, "fogheadedness," and bad breath.

One should not eat immediately prior to or during: exercise, during intense emotional states, but only while reclining, sitting, and in a mellow-relaxed state. Aerobic exercise between meals, however, will elevate digestive efficiency.

PROBLEM #3

Gastric diseases may be the result of the Systemic ratio of good gastric bacteria vs. bad bacteria.

Chronic diseases such as chronic fatigue syndrome, lupus, irritable bowel syndrome, food allergies, flatulence, arthritis, leaky gut syndrome, yeast infections, bloating, skin reactions, and candida overgrowth may result from an improper balanced ratio between good bacteria and unfriendly bacteria growths in the gastric channels.

Candida Albicans is the yeast microbe that lives in all human gastric channels. When Candida overgrows its relationship with our gastric "Friendly Bacteria," several health disorders (listed above) develop. If given time, Candida will develop into a fungus that sends down roots (rhizoids) into our intestinal walls. The 25 foot-long intestinal wall is made up of billions of villi (protrusions lined with capillaries), made to absorb food into the bloodstream. When this forest of mucosal filters becomes irritated with candida and parasitic overgrowths, it begins to breakdown, allowing bacteria and larger proteins into the bloodstream, further causing the immune system alarms to sound, resulting in allergenic reactions, premature fatigue, and the systemic response, sickness. Candida and harmful gastric parasites thrive on simple sugars. Eliminating sucrose, fructose, maltose, and all types of "syrups" from the diet tend to "starve" active reproductive mechanics of harmful bacteria. Elimination of harmful bacteria and cholesterol increases when bowel transit time is increased by adding dietary fiber such as psyllium, flax, or chia seeds. These gelatinous seeds will swell up in the presence of fluids, sweeping the bowel walls like a broom. bran, wheat, rice, and oats also make an excellent "Roto-Rooter Cocktail" for a necessary daily cleansing of bowel walls.

Increasing water intake volume further potentiates bowel transit time and the cleansing effectiveness of fiber. Most of us do not drink enough fluids (8-10 glasses/day).

Adding a "Green Product" with high content Chlorophyll (such as Phytomax), wheat grass, algae, or alfalfa has been reported to enhance the healing of irritable bowel syndrome, diverticulitis, colitis, and the dreaded Crohn's Disease.

"Good bacteria" in ratio of "bad bacteria" may

(continued on page 4)



This year more than a few athletes using E-caps and Hammer nutrition products have had some impressive performances and won many championships. Below is a partial list of their results. If we have neglected to include your results, please let us know so that we may include them in the next issue of Endurance News. We would like to extend a sincere congratulations to everyone mentioned in this article as well as to those of you reading this article who had superior performances of your own.

JULIE KAPLAN for her brilliant performance in the National Masters Cycling Championships held in Arkansas! 3rd in the tandem road race (with E-Caps sponsored **MARGARET THOMPSON** from New York...we actually rode as Team E-Caps), and 3rd in the crit.

MIKE FREEMAN: 1999 National Criterium Champion and USCF district 5 crit champ too!

KERRY MAXWELL: Bronze medal in CA state championship individual time trial in the master 50-54 category.

DAVE PATTEN: Florida State Olympic Sprint Championships. A teammate, who is also his coach and Dave (total age 165 years) took the Silver medal in the 135+ age group, missing the Gold by only .06 seconds. He also won two Golds, one in the 500 Time Trial (50-54 age group) and one in the Match Sprints in the Florida State Championships. In the 500 he set another PR at 37.92."

CINDY GOODMAN of Landis Cyclery/Toyota, placed 2nd "SILVER" in the road

race. At the Masters U.S. Nationals Track Championships in Frisco, TX, Cindy took four Gold medals and set two national time records. At the Masters California State Track Championships in Carson, California, she also took first with the Gold medal in the 500 and 2000 meter. At the Masters UCI Road World Championships in St. Johann, Austria she took the Silver with 2nd place. Her other two Silvers were for the Olympic sprints at the Masters U.S. Nationals in Frisco, Texas and the criterium at the Masters U.S. National Championships in Fort Smith, Arkansas.

RICK SORENSON won Gold at Masters Nationals in the 40-44 Road Race and finished 2nd in the 40-44 TT.

Newly crowned 24 Hour Solo World champion **RISHI GREWAL** continued his winning ways just six days later by winning Montezuma's Revenge. The Revenge is a 24-hour endurance odyssey that is likely the World's toughest single day event. Rishi covered 160 miles, climbed 24,980 feet, setting a new Revenge record in the process. After extremely brutal conditions, including the scaling of 14,270 foot Gray's Peak with his bike strapped to his back, and descending in the wrong direction, through harrowing cliffs, Rishi continued to increase his lead all the way to the finish.

WOODY COX is doing extraordinary for the 1999 Track Season. He is currently 1st Overall in the season points for the 1-2 Pro at Maymoor Velodrome. He won 5 Gold medals and one Silver medal at the Masters Track National Championships. His Golds were in the Kilo, Sprints, 3000-Meter Time Trial, 4000-Meter Time Trial and the Silver was in the Olympic Sprints.

TRENT KLASNA of the Navigators Cycling Team won all three stages at the Killington Stage Race in Killington, Vermont in solo fashion. It is said that Trent and his Navigator teammates controlled all three events from the starting whistle on day one. Never before has "The Beast of the East," as the race is known, seen such dominance by an individual rider.

Again, if we have missed your results, please let us know so that they can be included in the next issue. ■



ENDURANCE NEWS LIST FLOURISHES

An internet free "chat" group that is sponsored for our customers may be one of the best "free" offers on the internet. Over 149 E-CAPS and HAMMER NUTRITION customers are presently active in discussing health, nutrition, equipment, travel expenses, and all the what-to-do-when scenarios that may contribute to a better endurance performance. Several professional panel experts from multiple backgrounds are available to discuss with you, at no cost, your every concern or question. You may also get the articles that are printed in Endurance News through the chat line. This is an up-to-date method of getting the news right away instead of waiting a month or two for the newsletter to be printed.

To join this list of endurance athletes, e-mail: endurance-request@mailinglist.net. Leave the subject line blank and in the body write "subscribe" without quotation marks. ■

(DIGESTION continued from page 3)

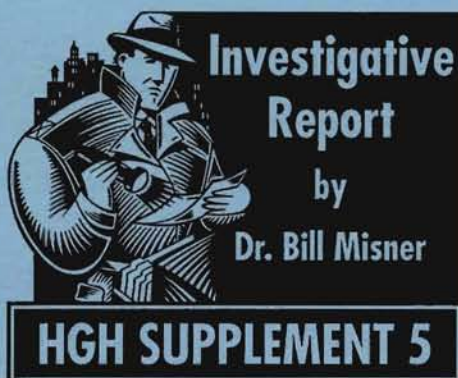
be supplemented in one's daily diet for balancing the bacterial ratio. Lactic acid "good bacteria" as called by some, "Probiotics," may come in foods such as yogurt, kefir, sour-kraut, or it may be purchased as an encapsulated supplement. Fructo-oligosaccharides (FOS) and whey enhance the growth of the "Good Bacteria."

Regular routine waste-elimination, solid light-to-medium brown feces and a high-energy state are the outward signs of efficient, healthy digestion in progress. ■

REFERENCES**

Meyerowitz, S., Gutsy Moves Natural Ways to Support Digestion, BETTER NUTRITION, July 1999:44-50.

**My special appreciation to Steve "The Sproutman" Meyerowitz for his assistance with this article.



Several supplement manufacturers are touting that from oral or nasal supplements their products elevate Human Growth Hormone (HGH). HGH precursors, elevated prohormone secretagogues, and HGH itself are printed in the promotional "woo-woo" in these suspect supplements available from health food stores, gyms, MLM sales meetings, and on the internet. Real rHGH-IV is dangerous to all athletes with an active pituitary gland. "rHGH" is available only by prescription (injection).

HGH is classified as a pharmaceutical drug, strictly controlled by the FDA under state and federal laws and regulations. It is illegal to sell, prescribe, or dispense HGH except through a licensed pharmacy or clinic, and then only by a doctor's prescription. Research studies showing the benefit and safety freeze-dried powdered-form of rHGH have been published, is only given by injection soon after it is dissolved in solution.

HGH METABOLIC ACTIVITIES

HGH or Somatotropin has widespread physiological activity, promoting cell proliferation throughout the body. Protein synthesis is increased by elevating amino acid transport through plasma membranes, stimulating RNA formation, activating cellular ribosomes, which increases protein synthesis. HGH decreases carbohydrate breakdown while increasing fat fuels for energy metabolism. Bone, cartilage, and other soft tissues are rebuilt and restructured as a result of HGH activities.

There are other HGH benefits realized which will be named from measured, observed data recorded from research listed below.

FOOTNOTE: Do not confuse anterior Pituitary HGH with steroids, testosterone, or estrogen activities, though there are signifi-

cant relationships when any hormonal activities occur.

Hypothalamic hormones activate pituitary release of HGH. The pituitary gland then releases HGH into the bloodstream. (This is a complex physiological hormonal mechanism that is not totally understood by science.) HGH has trillions of cell receptor sites throughout the body. HGH is a very large molecule, over double the size of the insulin molecule, supporting its need to be injected for a positive receptor-attaching effect. Like Insulin, but larger by a factor of "2," HGH is too big to enter gastrically, through the cheek, or under the skin. If this were not so, millions of people suffering from diabetes would no longer need to take insulin by injection! The 1/2 life of HGH is a few seconds after its release into the blood stream by either IV or normal pituitary secretion. It dilutes in solution, rapidly attaching to receptor cells throughout the body in a matter of seconds.

If your body does not require HGH, it produces other brain hormones to block HGH production. The typical 20-year old produces around 500,000 nanograms per day, while a 75-year old may produce only 100,000 nanograms per day. Females, as a group, have higher resting HGH levels, but during prolonged exercise, this difference disappears! Not-so-typical genetic-advantaged athletes (male or female) may produce up to 1,000,000 nanograms per day. The release of HGH occurs in response to exercise intensity. The more duration of exercise or intensity of exercise, the more HGH is released. Certain free-form (by themselves) amino acids increased HGH by crossing the blood-brain barrier, increasing brain neurotransmitters that release somatotropin, which releases HGH. Those amino acids are Glycine, Tryptophan, Ornithine, Arginine, and a composite product called L-Ornithine Alpha-Ketoglutarate. Use of these amino acids must be applied 3-hours separate or alone, since amino acids in the same class compete for entry across the blood-brain barrier. Taking an amino acid is a natural way to raise the growth hormone response, but taking other proteins reduces the hormone response significantly.

So-called HGH-oral sprays promise to elevate HGH production +50 nanograms, while oral tablet high doses claim +100

nanograms, or between 1/5,000th and 1/10,000th of a beneficial HGH-dose. The justification for such a miniscule dose is nil, neither would it have a measurable effect; little, if any, of the tiny oral spray and oral HGH reaches the blood stream, therefore it has NO effect, good or bad.

WHO BENEFITS BY HGH PRESCRIPTION DRUGS? ISN'T IT DANGEROUS?

Replacement HGH is generally prescribed for anti-aging symptomology when the pituitary gland has been determined to have shut down. If the pituitary is still productive, the application of HGH replacement is not warranted. Giving more than that which is needed may be very harmful to the individual. **CAUTION:** HGH can be very dangerous if not used in safe proper replacement doses. However, if a patient has been diagnostically screened for replacement HGH prescription treatment, several tabulated objective benefits were measured in a clinical study.

The following objective measurements from Scientific Studies published in peer-reviewed scientific Journals were reported only from the application of IV-HGH.*

- 15% average decrease in fat.
- 8% average increase in muscle and lean body structures.
- Improved skin texture resulting in a more youthful appearance.
- Skin 7% thicker.
- Fewer skin wrinkles.
- Increased bone density, reversal of osteoporosis.
- Faster healing of any type of injury, fracture, or wound.
- Greatly enhanced immunity and resistance to infection.
- Enhanced brain function, retention of intellect with aging.
- Improved sex drive.
- Improvement in overall physical and mental well being.
- Improvement in sleep disorders, better quality of sleep.
- Improved exercise tolerance.
- Improved mineral balance.
- Improved mood, with less depression and fatigue.

(* Article: "HGH Oral Or Nasal Spray? I Doubt It!" See www.drcranton.com/hrt/hghspray.htm.

(continued on page 7)



STEVE BORN BREAKS CROSS-STATE TEXAS RECORD

by Steve Born

The only mistake we made was getting a wake up call while still in Mountain Standard Time. We were so focused on Texas that we thought we were on Central Standard Time. "Well," I thought, "if that's the only mistake I make, I'll be really happy...and amazed." At about 4:30 AM on Saturday, July 10th, we departed from the hotel we stayed at in Hobbs, New Mexico. My crew of my father D.C. and my brother Dave, the UMCA officials Ed Fleming and Lanie Smith and I drove up to the border. At 4:55 AM Central time, I headed east. The weather was unusually and thankfully cool but the winds were not what I expected. I wasn't to know it then, but they would be with me for nearly 320 miles. Still, I had a goal in mind and the toughness of Tom Seabourne's Texas record wouldn't allow for any mistakes or much time off the bike, no matter what the weather was like.

I chose Texas because I felt the distance was a good one for me. Besides, every time I've ridden through the state, it's been after 3-4 sleepless days of RAAM. I thought that perhaps the Texas experience would be a lot better riding it fresh.

The wind didn't seem to let up and the rain was off and on. Still my crew was doing a great job; I felt pretty good, was eating and drinking at regular intervals, so I kept up a good pace. My plan was to ride a strong first 200 miles in order to allow myself a little bit of a

buffer, so if I started slowing later on, I'd have that to fall back on. In order to break the record I had to ride a bit over 17 mph. That, in and of itself, would be difficult, but with this wind, I was constantly concerned about maintaining that speed. Since I was pushing hard to get as close to a sub-11 hour double, I was worried that I would sap my energy reserves too soon.

My first 100 went by quickly in 5:04. The winds seemed to pick up and I started to slow slightly. I hit the 200 mile mark in 10:40, still well under my desired goal, but not fast enough, I told myself. I was sure that the next 100 miles, since it was quite hilly, would be a lot slower. However, I managed to reach that 300 mile mark in 16:30. I was averaging almost 18.2 mph and would have to average a bit over 16 mph the rest of the way to break the record. To be honest, I wanted to go a lot faster so that I would have to only average 14 or 15 mph, but I decided that this would be good enough.

When I finally got off of Hwy 180 at the 317 mile mark out of Weatherford, Lanie leaned out of the window and shouted, "it's going to be a great night for riding, and the winds have stopped." Well, they had died down a bit but hadn't stopped. I was so happy to finally be off 180 and was in a good mood but still had to kiddingly reply, "Lanie, look at those flags up there. They're still flapping around a lot. The wind hasn't stopped!" Without missing a beat, he replied, "It's not really windy, Steve. The town folk in all Texas towns starch the flags on purpose to make it look like the wind's still blowing!" I laughed so hard I nearly rolled off the road.

The night was great, the roads

were awesome to ride on, there were small towns every hour or so up the road to focus on, and I made excellent time through the night, rarely dipping below 18 mph. My crew of two must have been getting tired but they never faltered once in their efforts to keep me fed, motivated, and on the right route. I reached 400 miles in 22:23, and at the 24 hour mark I was at 430 miles, a 17.91 mph average. If I could maintain a 15.15 mph hour average the remaining 144 miles, I would just go under the record. I wasn't sleepy but was definitely feeling the effects of my efforts. When the police stopped us in the middle of a deluge, I was a little annoyed, but it wasn't too long before they decided we weren't all on drugs. One of them couldn't resist and looked at me saying, "Boy, I'm sure glad I ain't you!" Yeah, no kidding.

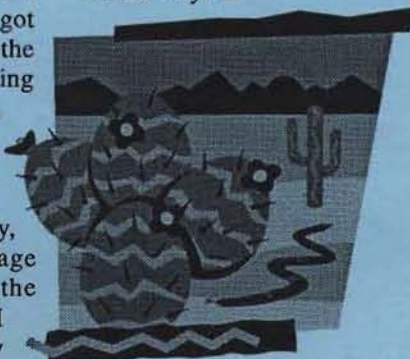
The rain was intense, a real mother of a downpour but it lasted less than an hour. The sky became noticeably brighter by the time I reached the city of Athens. From here on in, I would be on the exact same route I rode in RAAM '91. I'm usually pretty good at remembering a lot of the roads from RAAM but none of this looked at all familiar. Soon the sun came out and it got hot and humid. Really humid. That stuff just drains me and I could feel the heat radiating off the pavement. I reached the 500 mile mark in 27:55 and had to keep telling myself, "Don't think about the end, you've still got a few hours to go. Keep on the same path you've been doing all along. Stay focused, keep the momentum." With only 74 miles to go I finally felt that I could ease up just a little bit, at least mentally, as I only needed to average 13.45 mph to go under the record. However, I felt I owed it to myself and my

crew to put out my best effort. This was certainly proving to be my fastest ride ever over this sort of distance and since I wanted to set a record that would be really tough to break, I forced myself to keep up my pace.

Eastern Texas is littered with lots of tough rollers; that much I remember from RAAM. The heat was increasing as was the humidity. My crew made sure I was still eating enough but they pounded the fluids on me. I drank so much those last few hours...

After the last couple tough rollers were crested, I could see the "Welcome to Louisiana" sign ahead. All of a sudden a wave of relief poured over me and I felt all the skin on my body tingle. A goal which seemed so hard to attain and seemingly took a long time to arrive at, was finally here. At 1:14 PM, Central time on Sunday, July 11th, I crossed into Louisiana and set a new record of 32 hours 19 minutes for a distance of 574 miles. To this date, I feel this is the best I've ever ridden and is perhaps the most satisfying ride I've ever done. I would like to thank my crew, the officials, and my sponsors again and again. Without them, this would never have been possible.

And as it turned out, our botched wake up call was the only mistake we made the whole way! ■





HAMMER GEL DEALERS NEAR YOU

Numerous bike shops across the country have gotten wise and started selling Hammer Gel. You now have the option of buying your favorite flavor of Hammer Gel through your local dealer to avoid all shipping and handling fees. Feel free to frequent these shops to purchase your Hammer Gel. Although you may still order gel through us directly, please be sure to support your local bike shop.

Speedway Cycle 3013 East Speedway Tucson, AZ 85716	Moo Cycles 117 1/2 North 13 th Boise, ID 83702	Rocky Mountain Outfitter 135 Main Street Kalispell, MT 59901	Foot Fitness 654 Thames Street Newport, RI 02840	Mountain Cycology 5 Laemer Square Ludlow, VT 05149
Renaissance Fitness 4460 La Jolla Village Dr. San Diego, CA 92122	Sun Summit South P.O. Box 3547 Hailey, ID 83702	Open Road Bicycles 517 South Orange Missoula, MT 13318	Bike Town 1433 South First Street Abilene, TX 79602	Tacoma Bicycle 1934 Pacific Avenue Tacoma, WA 98402
Cyclesport 222 West 2 nd Street Chico, CA	Bicycle Station 1005 25 th Street Columbus, IN 47201	True Wheel 1628 Otoe Street Lincoln, NE 68502	Fleet Feet 6408 N. New Braunfel Ave. San Antonio, TX 78209	The Radical Edge 386 Queens Street Fredericton New Brunswick, Canada
Martinez Cyclery 4990 Pacheco Blvd. Martinez, CA 94553	The Bicycle Shop 3315 Highland Road Baton Rouge, LA 70802	S&W Sports 238 South Main St. Concord, NH 03301	Bike World 5911 Broadway San Antonio, TX 78209	If you work at a bike shop or even own one and you have interest in retailing Hammer Gel out of your store, then please feel free to give us a call (800) 336-1977 and ask for your "dealer sample packet." ■
North Rim Adventure Sport 346 Broadway Chico, CA	Peak Performance Sports 59 Middle Street Portland, ME 04101	Sport Loft 141 Root 101 A Amherst, NH 03031	B&J Bicycle Shop 8800 Broadway Ste. #2000 San Antonio, TX 78209	
S & J Sports 13624 Norris Ave. Sylmar, CA 91342	Striders 4045 Chicago Drive S.W. Grandville, MI 49418	Health and Fitness 2500 West Albany Broken Arrow, OK 74012	Roger Solers Sports 2589 Jackson Keller San Antonio, TX 78203	
Bills Bike Shop 225 Harrison Ave. Leadville, CO 80461	Finn Sisu 1841 University Ave. St. Paul, MN 55104	Fitness Factory 671 Castle Creek Dr. Ext. Seven Fields, PA 16046	C&J Bicycle Shop 11781 West Avenue San Antonio, TX 78216	
Mid-Valley Athletic Club 1629 Dolores Way Carbondale, CO 81623	Great Divide Cyclery 336 North Jackson Helena, MT 59601	Bicycle Therapy 2208 South Street Philadelphia, PA 19146	Peytons Bikes 4712 N. Midkiff Road Midland, TX 79705	

(HGH SUPPLEMENT 5 continued from page 5)

HGH IS A PRESCRIPTION DRUG, REGULATED BY THE FDA

If it contains HGH, then the FDA regulates its prescriptive dispersion by law. If it is not FDA-regulated, then it does not contain HGH. After a Physician determines a patient's need for injectable HGH, the minimal dose effects are given in single units of at least 300,000 nanograms or more per day; 350,000 nanograms or 0.375 milligrams equals a single 1-unit of prescription unit of HGH. A 4-unit vial has 1.52 mg. HGH MG or 1,520,000 nanograms.

WHAT 2 MEDICAL DOCTORS SAY ABOUT HGH ORAL-NASAL DOSE PRODUCTS

I don't believe that any product claiming it contains real HGH does in fact contain any growth hormone at all... at least, not any that is going to do you any good... except, of course, recombinant human growth hormone, the kind taken by subcutaneous injection. Your question reads as if you expected that perhaps they are bad... rHGH certainly is NOT bad, it is all good and only

good, if taken in the proper doses and not abused.

REFERENCES

Ron Kennedy, M.D.'s comment at www.medical-library.net/ and Dr. G. Browning M.D.'s comment at www.medical-library.net/
Date: July 25, 1999 at 12:52:31
Subject: All HGH Products Aren't Bad, Are They?

Reply: Anyone interested in HGH should read Dr. Cranton's statements, as he is, in my opinion, 100% accurate. There is NO oral or nasal formula of HGH known at this time; there is NO oral or nasal HGH in ANY product. If one wants HGH it is ONLY available in injectable form as an Rx drug.

I have had many patients tell me about HGH products in both oral (sublingual) drop and nasal spray forms for about \$90.00/month compared to injectable HGH for \$100.00/week. Their "knowledge" comes from a bulk-rate flyer, or unfortunately, from a chiropractor who is selling the product. It's the old story of people believing a Yugo can do the exact same thing as a Rolls Royce at a fraction of the

price...IT AIN'T SO. If people want the real thing it's available through an M.D.'s Rx after evaluation, which would include lab work with IGF-1 levels prior to and during therapy.

Rather than listing all the reasons why it's unlikely that a pill or spray that says it contains HGH will help you, please see Dr. Cranton's article at the link listed below. ■

REFERENCES

"HGH Oral Or Nasal Spray? I Doubt It!" See www.dr-cranton.com/hrt/hghspray.htm.
Special thanks to Dr. Ron Kennedy, M.D.
Medical Doctors quotes Reprinted by permission www.medical-library.net/
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Last modified: April 19, 1999.
Send questions or comments to mrc@dr-cranton.com
(*Article-"HGH Oral Or Nasal Spray? I Doubt It!" see www.dr-cranton.com/hrt/hghspray.htm)
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Article at www.medical-library.net/





SUGGESTED DOSE FOR E-CAPS & HAMMER NUTRITION PRODUCTS

The dose use for the following products is included below; please keep me informed if you have any problems or negatives with these suggested applications. This dose protocol is positive in 99.9% of the athletes using these products. Let us hope you are not in the 1/10th of a percent or less of those who do not experience positive results. The differential range due to fitness level, gender, age, height, weight, and genetics is +/- 4-7%.

HAMMER GEL (HG)

Take 3-4 servings per hour, "chased" by 1-2 mouthfuls or 4-5 ounces fluid intake. (1 mouthful equals 4-5 ounces fluid)

SUSTAINED ENERGY (SE)

Take 3 scoops SE for each 12-20 ounces distilled water. The more hot-humid weather requires a 20-ounce solution, while the cooler weather may tolerate the 12-ounce solution.

ENDUROLYTES

Take 2-6 Endurolytes every hour with fuel source and fluids. Larger athletes or those who are predisposed to electrolyte depletion or dilutional hyponatremia may want to take 6 capsules mixed with water per hour, while those less predisposed may do well on lower intake. **CAUTION:** Always shake container vigorously when premixing endurolytes with energy drinks or water because heavier electrolytes tend to settle to the bottom of the container while lighter electrolytes tend to suspend. It is always wise to give trial to dose use during hyperthermic conditions of at least 60% of the race distance at race pace 3-6 weeks prior to a peaked-performance event competition.

PREMIUM INSURANCE CAPS (PIC)

Take 1 packet with evening meal for less intense workout sessions (under 2 hours or less than 75% VO2 Max Rate). Take 1 packet with AM meal and 1 packet with PM meal on those days when doing interval sessions or longer than 2 hour duration.

SUPER AO

During first month take only 1 capsule with post-workout meal; after first 30 days use, take 1 capsule with AM meal and 1 capsule with PM post-workout meal.

TISSUE REJUVENATOR (TR)

Take 2 capsules with each of 3 meals per day during symptomatic stress, then take for 7-10 days post asymptomatic stress (after pain is gone), then discontinue unless pain or symptoms return. Save them for when you need them.

ENDURO CAPS (EC)

Take 4 each 90 minutes prior to workout and again every 2 hours during workout (2 per hour).

RACE CAPS (RC)

Take 2 each 90 minutes prior to workout and again every 2 hours during workout (1 per hour).

LIQUID ENDURANCE

For hyperthermic events only in a 3-day loading format during "Taper" prior to the event. Take 2-3 tablespoons then sip 24 ounces water for 3 hours, then repeat this process 3 more times each day for 3 consecutive days prior to the event. If you workout to stay loose, fine, but do not go beyond an easy stretching and/or a mild workout as it will cancel the extracellular water stores from glycerol ingestion. LE is not that good for during an event, stick with the fuel and fluid intake that have worked so well for you in the past. It is a good idea to weigh during the 3-day load in hopes of monitoring a 2-5 lb. water weight gain. If you do not gain weight (water) with this product, it is not working in you for the ergogenic advantage from extra water stores and DHA (fuel metabolite from glycerol metabolism during exercise).

The DOSE-variance (+ or -) is between 4-7%, so do not be too shy about varying your dose that amount. Some, if not most, of the above may be preconfirmed-predetermined during training protocols of up to 70% of the race distance at race pace. Larger athletes may need more, while smaller athletes need less. ■

(JOE continued from page 1)

enhancing post-workout recovery during the replenishment cycle.

JOE #2 - BIOCHEMISTRY IN ULTRAMARATHONERS

In the August issue of the British Journal of Sports Medicine, Dr. K. E. Fallon, Australian Institute of Sport in Canberra, and colleagues presented data on seven male and two female ultramarathoners. "Four of them completed 1,600 km, three completed shorter distances in the 16 day period of the event, and one completed over 1,000 km in almost 15 days of running," according to the report.

Dr. Fallon's team measured biochemical variables before the run, after 4 and 11 days of running, and at the conclusion of the event.

"Serum sodium remained within normal limits throughout the event, except for one runner in whom it reached a level of 130 mml/L on day 11," the researchers report. They find it likely that "...intake of solid food, utilization of glucose-electrolyte drinks, and avoidance of large weight increases are protective factors."

Serum levels of potassium, chloride, bicarbonate, and creatinine stayed within the normal range in the runners. The urea concentration was elevated at days 4 and 11 and at the end of the event.

The research team found all serum enzymes tested were significantly higher than pre-event values by day 4. These included alkaline phosphatase, gamma-glutamyltransferase, alanine aminotransferase, aspartate aminotransferase, lactate dehydrogenase, and creatine kinase. Values of alanine aminotransferase, aspartate aminotransferase and lactate dehydrogenase were persistently above normal.

"The postulate that enzymatic indicators of muscle damage would peak early in the event and that duration of exercise would not be the primary determinant of such increases has been supported," the authors note. "Indirect evidence for possible hepatic damage has been provided but definitive evidence...will only be found by studying liver-specific enzymes."

Dr. Fallon and colleagues also measured bilirubin, haptoglobin, total protein, albumin, globulin, glucose, uric acid, cholesterol, triglycerides, calcium and phosphate. They detected a significant change in all of these, except triglycerides, at least once during the event, but only serum levels of haptoglobin.

(continued on page 11)

SUCRALOSE - A NEW "SAFE" ARTIFICIAL SWEETENER

by Dr. Bill Misner, Ph.D.

Although it is just making its way to the market, Sucralose is not a new sweetener in the USA. It has been researched for over 20 years, and is approved for "safe" use by CSPI (Center for Science in Public Interest). But is this new generation of artificial sweetener really safer than all of the supposedly "safe" artificial sweeteners that have preceded it? To answer this question, let's review some of the facts collectively on the dietary sweetener, sucralose.

Sucralose is supposed to be less harmful than Aspartame, Saccharin, Cyclamates, and Acesulfame-K. The problem with this supposition is that the massive data collected on the former have not been collected on the latter. We may need more research on sucralose based on the number of studies listed below. (BioMedNet)

Saccharin, 2374 studies; Aspartame, 598 studies; Cyclamates, 459 studies; *Acesulfame-K, 28 studies and Sucralose 19 studies.

*(Acesulfame-K was found to cause clastogenic activity [may cause chromosomal damage] in one of its earlier studies, which is why it was reviewed conclusively by only a small amount of research to be a harmful if consumed as a dietary substance.)

Should a dietary sweetener be approved without its being completely tested for long-term toxic side effects in human metabolism? The 19 studies listed in my sucralose search were broken down into the following categories: general analysis-review (9 each), tooth decay (5 each), taste (2 each), clastogenic (1 each)*, diabetes (1 each)* and renal mineralization (1 each)*. Only 3* of these studies directly addressed the question of relative health safety of sucralose.

Perhaps the "Scheme" is not to "poison" us, but rather sales of dietary sucralose may be to achieve corporate profits, producing diet drinks, solid foods, or gels from a combination of taste-enhancing qualities and caloric restriction, with less concern for the absolute safety to the general public.

SPLENDA, also known as SUCRALOSE, an artificial chlorinated sucrose derivative sweetener, was first approved in Canada in 1991, then in the USA in mid-1998. Sucralose is 600 times sweeter than table sugar; therefore you use much less than some of the other synthetic low-calorie sweeteners.

Natural health advocates suggest avoiding most synthetic, man-made additives, tainted by unproven, unanswered questions regarding their safety for long-term human use. Earl Mindell, Mark Gold, and myself do not subscribe to the entire "SAFE" additive list published by CSPI, Vol. 26, No. 2, March 1999.

Internationally, millions of consumers have been using sucralose since 1991 in hundreds of reduced-calorie and reduced-sugar products such as carbonated soft drinks, shelf-stable fruit drinks, jams, processed fruit products (e.g. apple sauce), yogurt, and baked goods. U.S. consumers can expect to see more products sweetened with sucralose appearing on supermarket shelves during the next 1 to 2 years. Diet RC was the first USA product with a sucralose sweetening-additive in May of 1998.

Lord & Newberne (1990) were the first scientists to question the safety of sucralose from their published animal research. Specifically they stated, "Renal mineralization is a commonly encountered lesion in old rats and its presence at times complicates the interpretation of data derived from chronic rat studies. The feeding of sucralose, a new and high-intensity sweetener under regulatory review, resulted in caecal enlargement and an increase in the incidences of renal mineralization and pelvic epithelial hyperplasia. These responses prompted a review of the literature focusing on the relationships, if any, between the caecal and renal changes. The literature supports the contention that caecal and renal changes occur frequently in response to feeding poorly absorbed osmotically active substances to rats." If a substrate is poorly or slowly metabolized, consequences may result in living organisms.

Summarized warnings published on the internet on this artificial chemical were first

authored by holistic health advocate, Mark Gold, from his website listed at the bottom of this article.

PRE-APPROVAL RESEARCH

Pre-approval research showed that sucralose caused shrunken thymus glands (up to 40% shrinkage) and enlarged liver and kidneys.

RECENT RESEARCH

A possible problem with caecal enlargement and renal mineralization has been seen in post approval animal research. (Lord & Newberne 1990)

SUCRALOSE BREAKS DOWN

Despite the manufacturer's misstatements, sucralose does break down into small amounts of 1, 6-dichlorofructose, a chemical that has not been adequately tested in humans. More importantly, sucralose must break down in the digestive system. If it didn't break down and react at all (as the manufacturer claims), it would not chemically-react on the tongue to provide a sweet taste. The truth is that sucralose does break down to some extent in the digestive system.

INDEPENDENT LONG-TERM HUMAN RESEARCH

NONE. Manufacturer's "100's of studies" (some of which show hazards) were clearly inadequate and do not demonstrate safety in long-term use.

"It is clear from the hazards seen in pre-approval research and from its chemical structure that years or decades of use of sucralose may contribute to serious chronic immunological or neurological disorders."

CHLORINATED PESTICIDES

The manufacturer claims that the chlorine added to sucralose is similar to the chlorine atom in the salt (NaCl) molecule. That is not the case. Sucralose

may be more like ingesting tiny amounts of chlorinated pesticides, but we will never know without long-term, independent human research.

MARK GOLD'S CONCLUSION

While it is unlikely that sucralose is as toxic as the poisoning people are experiencing from Monsanto's aspartame, it is clear from the hazards seen in pre-approval research and from its chemical structure that years or decades of use may contribute to serious chronic immunological or neurological disorders.

(continued on page 10)

It is very important that people who have any interest in their health stay away from the highly toxic sweetener, aspartame and other dangerous sweeteners such as sucralose (Splenda), and acesulfame-k (Sunette, Sweet & Safe, Sweet One).

SPECIFIC SWEETENERS RECOMMENDED TO AVOID:

Gradually reduce or eliminate:

- White Sugar
- Brown Sugar: Brown sugar is usually white sugar mixed with molasses or sprayed with caramel coloring.
- Raw Sugar: Raw sugar is often white sugar with coloring.
- Fructose: Beware the "natural" products with fructose. It's not much better than white sugar (IMO).
- D-tagatose: Far safer than neotame/aspartame, sucralose, etc., but best used as a transitional sweetener to healthier ones listed above.
- Corn Syrup
- Dextrose
- Artificial Sweeteners (NutraSweet [aspartame], Equal, (Sucralose), Sweetener 2000 / NutraSweet 2000): Avoid these like the plague. Please don't become a guinea pig for another poorly tested toxic sweetener only to find out years from now that it contributed to the destruction of your health.

Important Note: MSG (Monosodium Glutamate) has some of the same toxicity mechanisms as the toxic sweetener aspartame. In order to cut out MSG, you need to remove foods with the following ingredients:

- Monosodium glutamate
- hydrolyzed proteins (any type of hydrolyzed protein)
- autolyzed yeast
- yeast extract
- caseinate (in many cases)
- "Natural Flavors"

MSG that occurs naturally in tomatoes, cheese, etc. is absorbed and metabolized differently (safely) due to other factors in the food." Reference is below; I have asked Holistic Health "expert," Mark Gold, author of the above, to update us on the sucralose safety issue this week. More research is needed to confirm safety issues for general consumption by children, gender, race, diseased and the aged.

It is also interesting to note the observed metabolic route of sucralose the environment as described by Labare & Alexander (1994): "During the rapid mineralization in soil of sucralose (4-chloro-4-deoxy-alpha, D-Galactopyranosyl-1, 6-dichloro-1, 6-

dideoxy-beta, D-fructofuranoside), a metabolic product was formed. That formed product appears to be the corresponding unsaturated aldehyde. During the slow and incomplete mineralization of sucralose in lake water, which was not increased by the addition of nitrogen and phosphorus, the same compound was produced. Bacteria in culture did not use sucralose as a carbon source but did convert it to the presumed unsaturated aldehyde, 1, 6-dichloro-1, 6-dideoxy-D-fructose and possibly the uronic acid of sucralose. Sucralose carbon was not incorporated into cells of two sucralose-metabolizing bacteria or the microbial biomass of sewage or lake water. The chlorinated disaccharide was slowly metabolized by a galactose oxidase preparation.

It is concluded that the chlorinated sugar is acted on microbiologically by cometabolism."

REFERENCES

Lord GH, Newberne PM; Renal mineralization—a ubiquitous lesion in chronic rat studies, *Food Chem Toxicol* 1990 Jun 28;6 449-55.

See the following web pages for more information.
www.sucralose.com/whatis.html
www.holisticmed.com/msg/
www.holisticmed.com/splenda/

Labare MP, Alexander M; Microbial cometabolism of sucralose, a chlorinated disaccharide, in environmental samples (published erratum appears in *Appl Microbiol Biotechnol* 1995, Apr; 43 (1):194) *Appl Microbiol Biotechnol* 1994 Oct 42:1 173-8.

COMMENTARY

"The chlorinated disaccharide was slowly metabolized by a galactose oxidase preparation, Labare's conclusion (1994), that the chlorinated sugar is acted on microbiologically by cometabolism," leads me to think the similarity to Saccharin, Aspartame, Cyclamates, and Acesulfame-K of slow or incomplete metabolism may be a warning sign that we need more study of a long term metabolic use applications before concluding it to be a completely safe sweet-tasting substrate for humans.

There now exists some debate over the absolute safety of certain synthetic dietary sweeteners, specifically their accumulative effects in the body, which may contribute to a degenerative disease, premature aging, or eventual death. A relevant question for this query is: Do a few single atoms in a minute compound make that much difference to either ergogenic performance or optimal health?

Oxygen is a necessary element and when we breathe it, 2-5% of it produces cellular free radicals, contributing to lipid peroxidation or

deteriorative damages in cell-wall structures. Over the space and time of 30 years or so of inhalation of life-essential O₂, the fast 35-minute 10k at age 25 may deteriorate into a slow, labored 50-minute 10,000 meters. (I am not suggesting breathing is also something we need to stop.) Since accumulative negative effects accrue from the natural life-essentials, what effects may result from unnatural synthetic nonessentials?

When 2 atoms of inhaled oxygen are added to one atom of sulfur, sulfur dioxide (SO₂) may form. SO₂ can be detected by taste at 1 ppm and by smell at 3 parts per million. When SO₂ levels increase to 50 ppm, maximum exposure capacity is 30 minutes. When SO₂ is increased to 400 ppm, a toxic gas effect occurs, resulting in edema of the lungs, glottis, and death from only limited exposure.* This translates into a minute->4/100th percent of SO₂ in typical room air. (*Irving Sax, "Dangerous Properties of Industrial Materials")

Free chlorine does not occur in nature, but its compounds make it the 20th most abundant element in the earth's crust. When electrolysis is applied to harmless salt, chlorine and sodium hydroxide result. Dietary sodium chloride (table salt) is necessary for electrolyte requirements (in micro doses). Too much salt in a diet may cause high blood pressure in some predisposed individuals. Too little salt results in electrolyte shortage and systemic imbalances that may turn an event into a "DNF."

Long term use of a compound containing 3 chlorine atoms adjoined to 3 select positions in a sucrose disaccharide where 2 natural hydroxyl radicals and 1 hydrogen atom once existed is definitively not known. The jury decision on this dietary "chlorinated-compound" safety will tell in time from our use of "human guinea pigs" volunteered by the recent approval (April 1998) by the FDA of "Sucralose," in spite of what I say, or what we know. If this compound is slowly or poorly metabolized in "old rats," resulting in systemic multiple renal lesions, it may not be the best choice for either old or the young human athletes whose hopes pivot on both optimal metabolic reactions for optimal performance.

One atom in a compound may effect the differences between a slow-normal aging processes, resulting in slight performance degeneration and/or an accelerated aging and rapid performance loss from a premature catabolism from a compromised health disorder. We need to be cognizant and watchful of what we eat, drink, and breathe. ■

bin, calcium and phosphate were persistently elevated.

"Only serum bilirubin on day 4 and serum calcium on days 4 and 11 were above the normal range," the investigators add. "The significance of a number of the findings such as increases in serum calcium and phosphate is currently not known and warrants further investigation."

"The most important message for physicians is to understand just what is 'normal' in the biochemistry of runners undergoing such exercise," Dr. Fallon told Reuters Health. "If they are not aware of these changes, the results could perhaps lead them to suspect incorrect diagnoses."

REFERENCE

www.orthopedics.medscape.com/reuters/prof/1999/08/08_26/cl082691.html Br J Sports Med 1999;33:264-269.

COMMENTARY

This article exemplifies the following:

1. Physiological adaptations occur when training stress and preparation is applied to racing ultra endurance events.
2. Some factors that occur in the body cannot be explained at present.
3. Individual differences account for significant variables, suggesting the need for athletes to apply "trial-and-error" science during training in terms of fluid volume, electrolytes, and caloric choices in order to find out "what works best."

FOODS THAT HEAL

Garlic is a potent antibiotic; broccoli fights cancer. Some of your favorite foods have natural healing abilities. Alternative Medicine Guide Terri Ramacus serves up tasty recipes featuring foods that heal.

www.altmedicine.about.com/library/weekly/blfoods.htm

COMMENTARY

Eating the right food for the right disorder may resolve this issue in favor of a healthy rebound-response.

JOE #3 - SLEEPING WELL...

(It may enhance performance)

A new study in the journal NATURE confirms that if your hands and feet are warmer than the temperature in your bedroom, you're more likely to slumber than toss and turn.

According to researchers at the Chronobiology and Sleep Laboratory in Basel, Switzerland, warm extremities mean that blood vessels in the hands and feet are dilated, releasing excess heat that is redistrib-

uted from the body's core when we lie flat.

The study's senior author, neurophysiology professor Anna Wirz-Justice, has been doing research in this field for the last five years. In this study, eight young men were given small snacks at one-hour intervals while awake, then given a dose of melatonin, bright lights, or both, just prior to lights out at midnight local time. In another group of 10 men, the subjects got a large, carbohydrate-laden meal in the morning or evening.

By measuring heart rate, core temperature, and temperatures of different body areas, the scientists determined which men fell asleep fastest. They found that the men who received either melatonin (a pineal hormone associated with sleep) or a late, large meal experienced a rapid decline in core body temperature and fell asleep very quickly. However, those who were exposed to bright lights did not experience natural melatonin secretion, and their core body temperature fell very slowly. It took a long time for them to fall asleep.

PREPARATION FOR SOUND SLEEP

In our day-to-day lives, we give our bodies many clues that we're preparing for bed, such as having a big dinner, taking a warm bath, and turning out the lights. These behaviors trigger melatonin production and dilation of blood vessels in the extremities, preparing us for sleep. And although no one in the study actually donned socks or mittens, the researchers say that heating the extremities will give your body the message that you're ready for bed.

The trick is that you don't want your feet to remain warm once your core has cooled off. So if you go to bed with socks on or a hot water bottle, you'll want to get rid of them once your feet are warm and your blood vessels are dilated.

"When (extremities) are warm, then they can lose heat to the environment," says Wirz-Justice. "That's why I keep emphasizing that a COOL BEDROOM is necessary. If you live in the tropics, you have very hot feet, but you don't sleep well, because the outside temperature is not letting you sweat and lose heat."

More importantly, it may suggest ways of helping older people with sleep disorders resulting from cardiovascular problems that inhibit vascular dilation rather than neurological problems. "It gives a very simple, non-pharmacological aid, perhaps, to some people in getting to sleep," says

Wirz-Justice.

REFERENCES

"The Sleep Well" at Stanford University @ www.stanford.edu/~dement/

sleep.net website. @ www.sleepnet.com/

ABOVE FULL ARTICLE EXCERPTS at www.healthscout.com/cgi-bin/webobjects/Af.woa/10/wo/Mx2000Xg3002w700q4/0.0.7.5.2.1.1.9.0.1.7

COMMENTARY

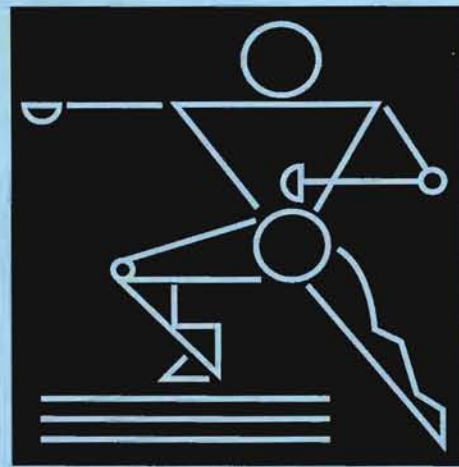
During sleep, human growth hormone (HGH) is produced in nearly as high quantities as during intense anaerobic intervals. During deep sleep, the body attends to repair, rebuilding, and recovery. Major organs slow down accordingly, hormones are set in balance, free radicals are reduced, and general homeostatic balances are reset in preparation for whatever physical or mental stress demands from the day are imposed. Sleep is an absolutely essential ergogenic when induced in quantity and quality during intense training protocols. I rank quality and quantity of sleep 2nd only to sound nutritional protocols, which include timing fluids, fuels, and micro-supplements. The key day of sleep prior to a competition is 2 days before...If you lose some sleep the night before an event, the effects are minimal if any.

PROBIOTICS

(good bacteria activity in your colon)

We have discussed this somewhat; here is a link from someone else showing the benefits of supplementing probiotics. If you've haven't, you almost definitely will. These 'live microbial food supplements' are the buzz in nutrition circles. Although probiotics aren't new - their time in the spotlight has arrived. Lactobacillus Acidophilus are typically better initially tolerated than is the Acidophilus Bifidi. Start dose at 1/2 for the first week then go to full dose thereafter, allowing for colonic balanced adaptation. ■

For more see: www.nutrition.about.com/library/weekly/aa071799.htm



of alertness, but it also produces cramps, dehydration, and excessive fatigue response especially during prolonged exercise in the heat.

According to David Schardt (1999), when referring to performance, Ginseng has the worst track record of any popular supplement on the market today. It does not increase energy performance; it does not enhance memory; it does not enhance sexual impotence; it does not relieve menopause symptoms; nor is it shown conclusively to enhance the immune system response. In 1982, the Colgan Institutes found that 95% of all Ginseng supplements were composed of sucrose, not Ginseng at all! Ginseng suppliers have improved since then. Schardt (1999) reported, "Industry Insiders estimate that 15% of all Ginseng ingredient-labeled products contain NO Ginseng at all.

The question of whether or not the product contains Ginseng may be inconsequential, since what one gets from a "real" dose of Panax Ginseng may be NONE of the effects for which it is purchased. ■

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ENDURANCE NEWS MISSION STATEMENT

The objective of Endurance News is to provide you, the serious endurance athlete, with a valuable resource that you will find to be informative, educational, thought provoking and helpful in your ongoing pursuit of optimum performance and health.

Endurance News features insightful articles on diet, nutrition, training and other topics of interest to endurance athletes - Written by myself as well as professional and elite amateur athletes, and other experts in the area of nutrition and exercise. In addition, EN will include articles highlighting new and existing E-CAPS products and how to get the maximum benefits from them.

In reading this and future issues, please remember that the views expressed in this publication will always be biased in favor of a healthy diet, hard training that emphasizes quality over quantity, and prudent supplementation to improve health and performance. But above all, we at Endurance News believe there are no short cuts, and success can only come from hard work.

Brian Frank
Editor

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