



HAMMER
NUTRITION

ENDURANCE NEWS

The endurance athlete's comprehensive knowledge resource since 1992

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Off-season supplement suggestions

Steve Born

Note: The original version of this article first appeared way back in 2000, in EN #29, with updated versions appearing in EN #48 (2005), EN #52 (2006), and EN #56 (2007). As I mentioned when introducing this article in EN #52, I don't usually like to recycle articles. However, this one's always been one of my favorite. I believe the information provided is useful and worth repeating, especially at this time of the year.

For many of us, the competitive season is fast coming to a close. If that's the case for you, as your in-season training and racing schedule is winding down, you know it'll soon be time to look back and evaluate all the things that went right as well as the things that need improvement; it's an ideal time to set your goals for the next season. Dr. Bill Misner has suggested that "preseason goals should be realistically set at 1-3% above personal bests at each distance with planned training peaks set to meet those goals methodically." If you're like most athletes, you'll probably be doing some form of aerobic cross training outside your primary sport as well as weight training. But the day-to-day training, the accumulation of several hours spent running, cycling, swimming, or whatever your training involved, is definitely on the decrease. Many years ago, when I lived in Southern California, the off season simply meant fewer miles on the bike. But when I moved to colder climates I discovered the benefits of cross training and began using Nordic skiing and weight training during the winter to prepare myself for the upcoming competitive cycling season. As of now,

and has been the case for the past couple years, I am retired from actively competing in ultra cycling. However, I still want to maintain fitness for

general health purposes (and so I don't hurt so bad come Highline Hammer time!) so I try to stay active all year round even if the duration and intensity is less than during my main season.

But whether or not you choose to be active year round, once your main competitive



season ends does that also mean the end of your supplement program? I don't believe it should be and later in the article you'll find my supplement suggestions for the off season. If you plan to remain active, training frequently and racing occasionally, I wouldn't hesitate to remain on pretty much the same program you followed during your main competitive season. There's no reason to stop supplementation if you're going to remain active because you will still want to provide your body with the nutrients it needs so that you can get the most benefits out of whatever type of training you do. Now, you may find it desirable to cut back on the dosages if you're not training as heavily, but I would

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Photo - Greg Elizondo

From the office of Brian Frank



Welcome to the 60th issue of Endurance News!

In this issue, as with every issue, you'll find information that you won't find anywhere else.

Information that will benefit your

training, racing, and overall health, not to mention encouraging and heart warming stories of clients and sponsored athletes doing great things all over the world. As we have been doing since the inception of this publication—and my entire business really—every issue represents a refinement and improvement as far as content and layout. However, issue #61 will be more than a slight refinement and will begin a new era as we are going from a quarterly schedule to bi-monthly. So, beginning next year you won't have to wait three months in between issues, as a fresh new issue will be landing on your doorstep every 60 days.

We have some really strong contributing writers that bring a fresh point of view and their own unique writing style. In particular, I hope you'll pay special attention to the articles by my long time friend and mentor, Bill Nicolai, and Jim Bruskewitz, another person I hold in the highest esteem for his athleticism, but even more for his easy going and humble demeanor. You are going to be hearing more from Jim in the upcoming months and in future issues of Endurance News as we continue to educate and enlighten you about the importance and value of employing EMS (Electro Muscle Stimulation) as a complimentary adjunct to traditional training. I've been a devout believer for five years now and

just cannot understand why one of these is not already in everyone's gear bag.

On to other news. The new flavors have been a bigger hit than we thought they'd be. So much so that we've had trouble keeping up production on the Strawberry Recoverite. If you haven't tried it or the new Melon and Strawberry flavors of HEED, ask for a sample on your next order. The overwhelming popularity of the new flavors of these two products has encouraged us to redouble our efforts to come up with another flavor of Perpetuem. Look for news on that in the next issue.

Not much to report on the lawsuit. A trial date has been set for late September of 2009. Their tactics have not changed, as many of you have probably noticed in various media outlets. Nor has our confidence diminished that we are being falsely accused and will be exonerated in court. I am heartened to know that most of you can see the forest through the trees on this one and I thank you all for your words of encouragement and continued support. Despite this distraction and the other economic challenges we face as a nation, our growth has continued unabated. Overall sales are up over 30% year to date, with the biggest increase coming in our wholesale business, which is up over 50%. Our new Director of Retail Accounts, Tom Kern, has been instrumental in guiding our retail growth. However, it's due mainly to so many of you supporting us at the retail level and your local shop at the same time. It is a testament to our grass roots marketing efforts via sponsorship of upwards of 2000 events all over the country. I've not forgotten that you deserve our gratitude and the credit for our continued growth and success.

Thank you!

By the time you read this, we'll be roughing it in Kona at the IM open house providing last minute fueling and nutrition assistance to those fast enough and lucky enough to make the show. I hope you have a wonderful fall and look forward to the January issue, which will be full of exciting announcements.

Enjoy the Read!

Brian Frank
Proprietor

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Our Mission

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 for 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, Endurance News will include articles highlighting new and existing Hammer Nutrition 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.

Back issues are available at www.hammernutrition.com

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Headquarter Happenings

The Hammer staff in action



Tony Siorek - Shipping

Special congratulations to Tony for reaching a milestone that has never been accomplished before. Tony recently celebrated his 10th anniversary of employment with the company. When he's not working, Tony is an avid hunter and outdoorsman who enjoys ice fishing, snowboarding, and big game. He can often be found in the great outdoors with his dog, Buckshot.



Bill Misner - Director of Research & Product Development Emeritus

National Masters News has awarded "All American" honors based on time recorded in a 5K event (actually 3 minutes 11 seconds under the All American Standard for men over age 65). It was a very difficult hill course to get a good time on due to the first 1.5 miles elevation gain, though in spite of the hills I had an exceptional day placing 12th overall.

Bill

Dr. Bill is a humble man by nature and will probably be embarrassed by his newsletter coverage, however, we are incredibly proud of him and wanted to share his accomplishments with a larger audience. Congratulations Dr. Bill!



Jake DeNeui - Shipping

Jake spent a recent Saturday hiking in Hammer Nutrition's "backyard", the Bear Tooth Wilderness. Here he is at the top of 12,799' Granite Peak with his Hammer Gel in tow!



Hammer Nutrition had a strong showing at this years' Whitefish Lake Triathlon, a local sprint race. Jason Keister (Dealer Relations), Ginger Yachechak (Shipping), Dustin Phillips (Client Advisor), and Brendan Halpin (Client Advisor) all took part. Jason and Dustin competed in their first tri, Ginger joined her father and sister on a team, and Brendan took 1st place overall. Nice work everyone!

Another pat on the back for Dustin who won the recent 50k Swan Crest Ultra Run.

From The Saddle Of Steve Born

Bike close-up / Photo - Angela Nock

Steve Born



Although this is the autumn issue of Endurance News, it's hard to "think autumn" when it's still August and the TV

weatherman is forecasting near-record temperatures (98°+) for today. Still, by the time this issue hits the mailbox, the long summer days here in Northwest Montana will have ended, giving way to the cooler temperatures and shorter days that undeniably signal summer's departure and autumn's arrival.

It's been a great summer season here at Hammer Nutrition, with this year's Highline Hammer being the highlight. Every year it seems to get better and better, and this year's edition—in my opinion—was the best one yet. We enjoyed four outstanding days of riding in the company of some really great people, and the weather couldn't have been better. I hope I won't sound too boastful in saying this but I think all of this year's attendees left here thoroughly satisfied with not only the riding but also the full Highline "package" of:

- Superb SAG support
- Group discussion & one-on-one technical support
- Free Hammer supplements and fuels to use during the event
- Globus EMS sessions and/or available massage therapy after each day's ride
- The availability of special product and clothing discounts
- Super high quality and utterly delicious meals

We are currently deciding on dates and details for the 2009 event and will post that information on the Hammer web site as soon as it becomes available. In the meantime, if you would like to be contacted once this information becomes available, please call Kadidja at 1.800.336.1977 to have your name put on the list.

PAC Tour

Another highlight of my summer was having the opportunity to ride with my wife, Cassie, on the first five days of the PAC Tour "Ridge of the Rockies" tour. Because this particular PAC Tour starts in Kalispell, MT (just south of Hammer headquarters), it was super easy for us to join our friends (and ultra cycling legends) Lon Haldeman and Susan Notorangelo, who graciously invited us to be a part of the tour. We covered 608 miles and climbed 20,900' in these first five days (plenty for me!), and we had a great time catching up with old friends and making new ones.

Both multiple RAAM champions, Lon and Susan started PAC Tour (Pacific-Atlantic-Cycling Tour) in 1981 and their multi-day long distance tours are more popular than ever. Because of their tremendous experience—they've raced across America over twenty times, winning or setting records during 12 of those races—Lon and Susan know firsthand how it feels to be in the saddle for a long, long time. As a result of their many years of experience, they also know how to put on some great tours, ones that many, many cyclists feel are the premier tours in the country. Although this was an abbreviated PAC tour for me, I have done a few of the various tours they offer—including the Northern Transcontinental, Southern

Transcontinental, and Eastern Mountains tours—and I can testify to how challenging, yet thoroughly enjoyable and satisfying, doing a PAC Tour is.

Hammer Nutrition is honored to provide product support for PAC Tour and I want to thank Lon and Susan for inviting Cassie and me to take part in a portion of this year's "Ridge of the Rockies" tour. If you have a passion for long distance cycling and are looking for an epic adventure, outstanding support, and the opportunity to see this great country while getting to meet and ride with some wonderful people, you need to do a PAC Tour. Check them out online at www.pactour.com

Upcoming Races

As of 11:00 a.m. today (August 18, 2008), we have 1856 races listed on our Master calendar—and that number is likely to change by 5:00 p.m. today. It appears that this is a record-breaking year for us in terms of event sponsorship/support, and the magical 2000 mark is most likely going to fall by year's end. Sponsoring 2000+ events means over 1,000,000 samples and race bags, along with thousands of containers of HEED and a nearly-countless number of HEED cups, plus product for use as awards/raffle prizes. Now that's a lot of swag!

Obviously, our busy season is the summer and here's how it looked in terms of numbers of events sponsored:

June – 293

July – 202

August – 256

September – 199 (tentative; we're sure to

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be adding more)

Even after eight+ years of heading up the event sponsorships for Hammer Nutrition, when I look at those staggering numbers I am blown away. I am also reminded that without the great assistance of Carole Arthur, managing all of these events simply wouldn't be possible. I want to therefore take this opportunity to say, "Thank you, Carole, for all of your tireless help... I couldn't do it without you!"

Some of the key races to close out the year include:

- 10/18 – Pumpkinman Olympic & Half Iron Triathlon (Nevada)
www.bbsctri.com/pumpkin.html
- 10/18 – 24 Hours of Boulder... The Run (Colorado)
www.geminiadventures.com/24Hrs_of_Boulder.htm
- 11/01 – Helen Klein Ultra Classic (California)
www.ultrarunner.net/raceseries/Helen_classic.html
- 11/01 – Beach2Battleship Half and Full Iron Triathlon (North Carolina)
www.beach2battleship.com
- 11/07-09 – GoLite USARA Adventure Race National Championship (Georgia)
www.usaranationals.com
- 11/09 – Silverman Half and Full Iron Triathlon (Nevada) *Note: I'll be attending this event*
www.silvermannv.com
- 11/14-16 – The UltraCentric Experience 48/24/12/6 Hour Races (Texas)
www.ultracentric.net
- 12/13 – Sunmart Texas Trail Endurance Run (Texas)
www.sunmart.net

In addition, Cyclocross season is upon us, and in 2008 Hammer Nutrition is sponsoring more events than ever. Be on the lookout for our presence!

Special "shout out"

My special "shout out" athlete for this issue, Bill Nicolai, deserves his own article so check it out elsewhere in this edition of EN. What I'd like to say here



in this column was that it was a great honor to help support you, Bill. What you accomplished in this year's Race Across Oregon—and, even more so, how you accomplished it—was most impressive indeed. I also want to thank Bill's other crew members, Dr. Michael Frommlet and Guntram Jordan, for the absolutely awesome job they did (in addition to putting up with my idiosyncrasies!) during the 47 hours and 17 minutes that Bill was racing. There's a saying in the ultra cycling world that the crew can't win the race for the rider but they can certainly lose it for the rider. Well, with these two great people on Bill's crew he had nothing to worry about. Ever. Sincere thanks to you, Michael and Guntram, for all you did to make Bill's race a success, and congratulations to you, Bill, on a great effort!

Have a great autumn!

This issue of Endurance News contains some really interesting and informative articles that I know you'll enjoy reading. I'm especially appreciative of the time, energy, and talent that our contributing writers have put into this edition of the newsletter... thanks to you all! This is also the issue where I include my annual "Off Season Supplement Suggestions" article, updated where

necessary of course, which has important information regarding your supplement program. Whether you're a competitive athlete or you exercise for fitness, you want to stay healthy. I firmly believe that the consistent use of an intelligent supplement program—to augment a healthy diet—is essential, and this article will give you some good information as to what Hammer Nutrition products you should consider using first and foremost during the off season.

Have a great autumn, stay fit and healthy, and thanks for being such valued clients of ours!

HOT TIP

Satisfying hydration requirements prior to a workout or race

Here are a couple recommendations for ensuring that you're properly hydrated prior to the start of a workout or race:

*** 80-100 ounces (roughly 2.4 - 3 liters) of water during the four hours prior to the start of the race; ceasing consumption about 20 minutes prior to allow the stomach to empty.

*** 500 ml (about 17 ounces) of water about two hours before exercise.

*** One liter of water (about 34 ounces) in the two hours prior to the start of the race (about 17 ounces per hour), ceasing consumption about 20 minutes prior to the start.

Each of these recommendations has at least some research backing. Still, you need to determine what works best for your system and the particular logistics of the race or training session ahead. Also, if your workout is in the 2+ hour range or longer, make sure you're drinking water only (no calories for 3 hours prior to the start!). If it's under 2 hours then the use of HEED is perfectly acceptable.

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definitely continue your supplement program. I do not believe there is any reason to cycle off supplements, especially the three Daily Essentials—Premium Insurance Caps, Race Caps Supreme, and Mito Caps—during the off season.

Free Radical Neutralization – Important All Year Round!

Louis Pasteur, recognized as the father of modern medicine, once said, “The key to medicine is host resistance,” and this is where antioxidants excel. Antioxidants strengthen our immune system, increasing our resistance to many types of toxins, bacteria, viruses, and degenerative diseases. They accomplish this primarily through the neutralization of excess amounts of free radicals. Over half a century ago Dr. Denham Harman first proposed the theory of free radicals and the role they play in age-related diseases. Back then, when aging was primarily believed to be more of a mechanical issue, due simply to many years of wear and tear on the body, Harman’s theory on free radicals was... well, radical. Now, however, while there are many factors that contribute to the aging process, the Free Radical Theory of Aging is widely accepted as one of the primary, if not THE primary concept as to the cause of accelerated aging and/or age-related diseases.

Researchers Bradford and Allen write, “A free radical is simply a molecule carrying an unpaired electron... All free radicals are extremely reactive and will seek out and acquire an electron in any way possible. In the process of acquiring an electron, the free radical... will attach itself to another molecule, thereby modifying it biochemically.” [R. Bradford & H. Allen. Oxidology. Chula Vista CA: R.W. Bradford Foundation, 1997. Pp. 64-65.] Leibovitz and Siegel state: “However, as free radicals (FRs) steal an electron from the other molecules, they convert these molecules into FRs, or break down or alter their chemical structure. Thus, FRs are capable of damaging virtually any biomolecule, including proteins, sugars, fatty acids and nucleic acids.” [Leibovitz, B. & Siegel, B. (1980) “Aspects of free radical reactions in biological systems: aging” J Gerontol 35: 45-56.]

So even though some free radical activity

in the body is actually a beneficial thing, allowing free radicals to accumulate and go unchecked—which they easily do, overwhelming the body’s built-in antioxidant defenses—is definitely not beneficial. Dr. Misner says, “The human body uses free radicals to destroy specific microbes; however, when free radical volume accumulates in time or in high volume, mutagenic activity or degenerative disorders may occur.” Free radicals are now believed to be a primary culprit behind a tremendous range of diseases including cancer, cardiovascular disease, Alzheimer’s disease, Parkinson’s disease, and others.

A good portion of free radical damage results from the process of oxidation, which is somewhat of a double-edged sword. For example, whenever our bodies convert food to fuel it is done by oxidation, a vital, life-sustaining process. The down side is that the process is not 100% efficient and the metabolism of food, especially foods that are high in fats, can cause high amounts of free radicals to be produced. Dr. Misner elaborates: “Oxygen has the capacity to be both friend and foe. When energy fuels are metabolized in the presence of O₂, 5% of them create molecules that contain an odd number of electrons. The conversion of blood sugar, muscle glycogen, and fatty acids occur by oxidation. During this process pairs of hydrogen atoms are released like guided missiles, resembling a minute micro-level war causing devastating destruction to underlying tissues and cells. If FRs are not neutralized by on site antioxidant body stores immediately, tissue damage occurs to absolutely every cell membrane touched by these imbalanced molecular wrecking machines.

In other words—and I’m paraphrasing this from a source I can no longer recall—“the very thing that helps give life (oxygen), is also what’s killing us.”

Free radicals are higher in people who:

- Exercise beyond 90 minutes duration
- Exercise above 80% VO₂ Max
- Have a high body fat percentage
- (above 15% males, above 20% females)
- Eat Animal Meats and Dairy Products
- AGE-->Older (above 40) = More Free Radicals
- SIZE-->Bigger (above 200 lbs) = More Free Radicals



The take-home message is that even though oxidative damage occurs at higher levels during intense and prolonged exercise, it occurs at ALL times—during easy workout days and non-workout days—simply through the process of making energy. In addition, free radicals are also produced from environmental pollutants and ultra violet radiation. Also, stress of any kind creates free radicals. So even though you may be taking some well-

earned time off from full-time training and racing, free radical production NEVER takes a day off and neutralizing them is the primary reason for the supplement suggestions I’ve made.

One last note: I strongly recommend you read or re-read our article “Antioxidant Supplementation—It will shorten your life!” It’s a real eye-opener of an article, outlining some of the “scare tactic” headlines and news reports that resulted from very questionable conclusions derived from certain “studies” on antioxidants. It’s an article that will very much help “clear the air” about these dubious studies/conclusions, while also explaining why antioxidant supplementation is so important. You’ll find the article at <http://www.hamnernutrition.com/downloads/ENews/ENissue54.pdf> beginning on page 8.

Supplements

1) Premium Insurance Caps - Every athlete I’ve designed a supplement program for or given supplement advice to knows that I consider a multivitamin/mineral supplement the foundation of any program and that I consider

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Premium Insurance Caps to have no peer in that category. It's especially important during the competitive season because you're depleting these basic nutrients at very high rates – nutrients that are important to maintaining the optimal performance of many bodily functions, including the protection and enhancement of the immune system. It's also important to replenish our bodies with these basic nutrients during the off season as well, if only because our food supply is severely lacking in these important vitamins and minerals. I often recall something Dr. Misner wrote and his words have been instrumental in why I believe supplementation with a multivitamin/mineral product is so important: "Athletes today ingest only 11% of the organic nutrients from their food sources that the athletes of the 1940's enjoyed. Modern science has concluded that marginal nutritional deficiency and imbalance is directly responsible for 644 diseases or disorders."

One of Dr. Misner's most recent studies, "Food May Not Provide Sufficient Micronutrients to Avoid Deficiency," which was published in the prestigious *Townsend Letter for Doctors and Patients* (April 2005 #261, pages 49-52), along with the paper (NIH State of Science Conf., Bethesda 14-16 May 2006, for *Am J Clin Nutr*) by another of nutritional science's brilliant minds, Dr. Bruce Ames, provides supporting evidence that food alone does not supply all the micronutrients we need to prevent deficiency. The key thing to take away here is that there is an ever-growing body of research indicating that food alone may not provide enough of the micronutrients needed to prevent a deficiency. When you think about that it's pretty sobering: Our food supply may not provide enough of the nutrients needed to prevent a deficiency disease, let alone enough to promote optimum health. That, in my opinion, makes supplementation a necessity.

For the replenishment of vitamins and minerals, supplying what the diet cannot, and to provide the basics of antioxidant support, taking Premium Insurance Caps on a daily basis is an excellent idea. You may not require the full two-packet/14-capsule dose (which is the amount we suggest for athletes weighing >150 pounds who are doing

workouts over 1.5 – 2 hours) but the consistent intake of 4-7 capsules a day, in divided doses if possible, will help provide the nutrients your body needs that it cannot get in adequate amounts from our food sources.

- Antioxidants in Premium Insurance Caps: beta carotene, vitamin C, vitamin E, manganese, selenium, and zinc

2) Race Caps Supreme - This product is a "must have" during the competitive season as its nutrient components powerfully support enhanced energy production, endurance, and recovery. The primary nutrients in Race Caps Supreme—Coenzyme Q10 (CoQ10) and idebenone—are vital for the production of adenosine triphosphate (ATP), the basic energy molecule of each cell, and this is but one reason why it's such an important "during season" supplement.

However, I believe that as good as the athletic-specific benefits are, the general health benefits of this product (especially from CoQ10 and idebenone) outshine them, which is why Race Caps Supreme is on my year-round supplement list. Entire books have been written on just CoQ10's antioxidant benefits and you could spend an awfully long time on the Internet reading about the other numerous benefits of this incredible nutrient. Here are but a few of the ones attributed to CoQ10:

- Improves blood circulation and aids in lowering blood pressure
- Alleviates asthma and allergies
- Helps alleviate chronic fatigue syndrome
- Prevents the oxidation of lipoproteins, thus potentially reducing the risk of arteries from forming plaques and getting damaged
- Used as a preventive and therapeutic agent for heart disease, cancer, periodontal disease, neurodegenerative diseases, such as Alzheimer's disease, and Huntington's disease

Now, as important as CoQ10 is, and with such tremendous benefits, there are some experts who feel that idebenone, the synthetic variant of CoQ10, is an even more powerful antioxidant and a substance that yields even greater benefits. Dr. Misner explains, "Idebenone supplies all of the same benefits as

CoQ10 [acting as a "spark plug" for the production of energy (ATP), as well as being a potent antioxidant] plus some distinct advantages based on its more complex chemical structure." In fact, the antioxidant power of idebenone is so potent that it is used to protect organs from damage when they are removed from a donor for transplant.

While CoQ10 is perhaps the most important substance one can take for the prevention of cardiovascular disease and certain cancers, idebenone also provides superb nutritional support in those specific areas, while appearing to have even greater brain-specific benefits. Dr. Misner writes, "Idebenone protects the brain from the detrimental effects of serotonin deficiency and facilitates endogenous serotonin production. Serotonin deficiency compromises sleep and may contribute to chronic depression. Idebenone favorably affects blood flow in the brain, reproducing verbal fluency, creativity, and memory. Idebenone enhances endogenous norepinephrine production by facilitating cellular uptake of tyrosine. This suggests that idebenone may indirectly improve the uptake and reproductive role of tyrosine in thyroid hormone production. Thyroid hormone deficiency is a factor in performance and body mass index."

Other "brain benefits" attributed to idebenone include improved cognition and mood, reduced damage from Parkinson's disease and Alzheimer's disease, and a role in the prevention of damage caused by excitotoxins (a class of substances produced from the consumption of substances such as MSG and some artificial sweeteners), which can impair neuronal functioning. On top of that, idebenone appears to positively affect liver mitochondrial function, which suggests that it would support and enhance the detoxification functions of the liver.

With Race Caps Supreme you have two powerful substances, which, along with the vitamin E in the product, have some outstanding general health benefits. All three substances—CoQ10, idebenone, and vitamin E—are premier antioxidants and cardiovascular health nutrients.

Speaking of cardiovascular health, Race Caps Supreme also contains

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Trimethylglycine (TMG), which not only has antioxidant properties but, even more importantly, is involved in the process of methylation, which is vital for, among other things, helping lower elevated homocysteine levels, which are implicated in cardiovascular disease. TMG, plus vitamins B12, B6, and folic acid, all of which are found in Premium Insurance Caps, are the key components (methyl donors/methylating factors) in the methylating process. One nutritional scientist writes, “If your body runs low on methyl donors or methylating factors, the body’s essential detoxification and repair functions are impaired. Among other things, the body begins to have difficulty keeping up with the job of recycling homocysteine back into [the amino acid] methionine. The accumulation of homocysteine in the blood is a clear danger signal that methylation is impaired. It is also a direct threat to your health in and of itself.”

The specific dosages suggestion in the Hammer Nutrition product usage manual (<http://www.hammernutrition.com/downloads/Manual.pdf>) would be very applicable during this time of the year.

- Antioxidants in Race Caps Supreme: CoQ10, idebenone, vitamin E, Trimethylglycine (TMG)

3) Mito Caps – I think the most exciting anti-aging research I’ve read in many years was that of Dr. Bruce Ames regarding the effects of two nutrients—Acetyl l-carnitine (ALC) and r-alpha lipoic acid (r-ALA)—on the health of the mitochondria. Ames’ landmark studies found that both ALC and r-ALA (both of which are contained in Mito Caps) played vital roles in improving mitochondrial activity and cellular metabolism, which is beneficial not just for athletic performance but even more so for general health. The anti-aging implications of the ALC/r-ALA combination are staggering when you think about the potential they have for delaying, and even possibly reversing, mitochondrial aging, which would mean that the millions of energy-producing “furnaces” in our bodies might possibly be restored to more youthful levels.

ALC is probably the most widely

researched form of carnitine, one that not only enhances the use of fatty acids for fuels in the mitochondria (helping to make more energy available to cells and tissues), but also the form that most readily crosses the blood-brain barrier, helping support a number of brain and nerve functions and helping prevent neurodegenerative diseases.

r-ALA is one of the most potent antioxidants discovered and what makes it so unique in that regard is that it is both a water-soluble and fat-soluble antioxidant, able to neutralize free radicals in both the fatty and watery regions of the cells. In addition, it has the unique ability to boost and recycle other antioxidants such as vitamins C and E, CoQ10, and glutathione. In fact, r-ALA can stimulate the production of glutathione, which may be the most important antioxidant there is. No wonder so many nutrition experts refer to it as “the universal antioxidant.” In addition, r-ALA plays an important role in controlling blood sugar, thus helping with the prevention of type 2 diabetes.

What Dr. Bill wrote when we first introduced Mito Caps is at the heart of why I recommend taking the product every day of your life: “The longer you can stimulate the lifespan or health of the mitochondria, the longer you will live and the better you will perform in endurance events. The athlete who has the most healthy/efficient active mitochondria is the athlete who performs at their best.” As with Race Caps Supreme, the dosages suggested in the Hammer Nutrition Product Usage Manual would very much be appropriate during the off season.

- Antioxidants in Mito Caps: r-Alpha Lipoic Acid, vitamin C (as ascorbyl palmitate), vitamin E, DMAE (Dimethylaminoethanol), PABA (Para Amino Benzoic Acid)

4) Carlson Norwegian Salmon Oil - If there were ever a group of nutrients that I would classify as being essential all year round, it would be the Omega 3 fatty acids. Among their many benefits related to athletic performance, the components of fish oil (DHA/EPA) improve endurance by increasing mitochondrial efficiency via their positive effects on coenzyme Q10 and idebenone, two key substrates involved in energy production. The absorption rate of these

two fat-soluble nutrients is greatly increased in the presence of a fat source and there’s arguably not a healthier fat than fish oil.

For general health purposes, fish oils provide one of the absolute defenses against cardiovascular disease. For example, an ever-growing body of research suggests that atherosclerosis, angina, heart attack, arrhythmias, stroke, and congestive heart failure may be prevented with the consumption of fish oils. Fish oils help to reduce blood pressure, maintain arterial wall elasticity, and prevent blood clotting... they really are the heart’s “best friend.”

Research shows that fish oils have a positive influence on brain function and mood, including the alleviation of anxiety, insomnia, and other symptoms of depression. In addition, Omega 3 fatty acids from fish oil have been shown to provide impressive anti-inflammatory benefits by reducing specific pro-inflammatory cytokines and Series 2 prostaglandins, while increasing the level of anti-inflammatory Series 3 prostaglandins.

There are two essential fatty acids (EFA) that we need for life itself – the Omega 3 fatty acids and Omega 6 fatty acids. Our bodies cannot make either of them so it’s necessary to obtain them from dietary sources. However, while most of us consume an overabundance of Omega 6’s, our Omega 3 intake is woefully lacking. In fact, while research points to a 1:3 Omega 3 to Omega 6 ratio as ideal, most people’s diets show a 1:20 ratio, which is obviously very much out of balance. The bottom line is that we need Omega 3 fatty acids and the best source for them is fish. However, consumption of certain types of fish (such as salmon, mackerel, and sardines) two to three times a week, while being an extremely wise strategy, is simply not possible for most of us. That’s where the Carlson Norwegian Salmon Oil supplement comes in. Two soft gels twice daily is a super easy way to make sure you obtain the essential O-3 fatty acids.

5) Phytomax - I wish I could say that my diet is excellent all the times. The truth is that it’s not always possible to obtain substantial amounts of vegetables, especially in the winter where I live. I have found this product

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to be a real benefit for helping provide additional nutrients not found in other foods or supplements. The vitamins, minerals, enzymes, and phytochemicals in Phytomax (I suggest 2-3 capsules twice daily), along with the vitamins and minerals in Premium Insurance Caps, will very much fulfill your nutritional “basics” and augment the nutrients you obtain in your diet.

One of the benefits of Phytomax is its ability to help promote optimum alkalinity in the body, which helps create the best environment for the health of the cells. Other benefits that can be obtained with consistent use of the product (and we hear these frequently from regular Phytomax users) are increased energy levels (but without the unpleasant side effects of stimulants), faster recovery, improved immune system function, improved moods and mental clarity, and a higher quality of sleep.

NOTE: See the “Product Spotlight” article in this issue of Endurance News for more information about Phytomax.

6) Super Antioxidant – This was a new entry in my off-season supplement list in 2006 (when the product was known as Super AO), and it remains on the list for two reasons:

- **Additional antioxidant support** – As mentioned earlier, free radical production never takes a day off and with the extraordinary antioxidant profile in this product—nutrients that augment, but don’t replicate, any of the other antioxidants in the above-listed products—you have even wider-ranging support for the neutralization of free radicals.
- **Cognitive function support** – Two of the primary nutrients in Super Antioxidant—Ginkgo biloba and vinpocetine—are arguably the two most well known “brain” nutrients in use today, believed to enhance memory and alertness. In addition, both nutrients (along with Gotu kola, another nutrient in the product) are believed to help increase circulation. A potential benefit of increased circulation is the ability to speed delivery of antioxidants throughout the body in addition to helping eliminate metabolic wastes more quickly.

So for increased antioxidant support, plus support for enhanced cognitive function and circulation, taking a Super

Antioxidant capsule at breakfast or lunch is good idea, in my opinion. At the rate of one capsule a day, a bottle will last you two months, not a bad investment for all the benefits you’ll receive.

Summary

One of the pieces of advice that has had the most impact on me comes from sports nutrition expert Dr. Michael Colgan. In his book, *OPTIMUM SPORTS NUTRITION* [Advanced Research Press, 1993] Colgan suggests that we should, while we have the opportunity, make our athletic goals a major focus of our lives. In doing so, however, he urges that we understand that achieving excellence is not possible by doing things halfway or by moderation.

Excellence in athletics is a year round proposition so even though the off season may be a time for cutting back on heavy training, I believe it still requires a full time commitment to your athletic goals, especially as the focus shifts more towards general health requirements than it does actual training. A year round supplement program is vital for making positive increases in both fitness and health and I believe the one outlined in this article covers a tremendous amount of nutritional “bases.”

The Daily Essentials

If you are serious about your performance and health, you should take these three supplements daily throughout the year. These products provide a comprehensive foundation for optimal health maintenance and key nutrients for increased energy and endurance, improved recovery, and faster race times!

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Premium Insurance Caps - 30 packets of 7, \$31.95, 210 capsules, \$29.95, 120 capsules, \$17.95
Race Caps Supreme - 90 capsules, \$49.95, 3 or more \$47.95 ea.
Mito Caps - 90 capsules, \$24.95



PRODUCT SPOTLIGHT

Phytomax

Live green food to support peak energy



Steve Born

Although Phytomax is most definitely a product to be taken all year long, I've selected it to be the "spotlight" product for this issue of Endurance News, primarily because, for many of us (depending on where we live), the availability of fresh, organic vegetables diminishes as autumn turns into winter.

All summer long I enjoy eating lots of vegetables; most every night (when I'm at home) my dinner includes a salad containing organic mixed greens, broccoli, cauliflower, red/yellow/orange peppers, and tomatoes (I also add some organic walnuts and almonds). Unfortunately, during the winter months here in Montana the availability of these veggies, especially those grown organically, is minimal, if not altogether non-existent. That's not to say that I still don't try to consume adequate amounts of vegetables during the fall and winter months; it just becomes more and more of a challenge to find them during this time, which is when I really make sure I'm taking Phytomax consistently.

It's important for everyone, and especially athletes (because their requirements for nutrients are much higher than the average person), to consume adequate amounts of vegetables. A primary reason is because there are substantial amounts of important nutrients—aside from vitamins and minerals—that are only obtainable via the consumption of whole vegetable foods. These "phytonutrients" are naturally occurring plant compounds that have numerous benefits and make an undeniably significant contribution to overall health. Without adequate vegetables in the diet the body does not receive the nutrient support and protection it needs, which means that health and performance

suffers as a result.

Problem #1 - We all fall short of the mark!

As athletes and health conscious individuals, we place a lot of emphasis on both peak athletic performance and peak health. Most of the time we watch what we eat and try to consume a healthy diet. Unfortunately, like the overwhelming majority of Americans, it's almost certain that we fall well short of the mark in terms of vegetable intake. In fact, we at Hammer Nutrition have discovered that nearly 100% of the athletes we've worked with over the course of several years have diets that are severely lacking in vegetables... not just marginally lacking, severely lacking! The USDA recommends 5-6 servings of vegetables daily, but it's almost guaranteed that none of us come close to that. Dr. Bill Misner, who has been conducting dietary analyses for many years, states, "Only 7% of the dietary analyses performed between 1996-2002 were consuming adequate amounts of dietary plant foods." Now, this is just one person who has done dietary analyses but still, he's done several hundred over the course of seven years and only 7% were consuming adequate amounts? That's a pathetically low amount!

Problem #2 - Vegetable nutrition is NOT what it used to be

As mentioned earlier, vegetables contain numerous phytochemicals, which science is continually discovering and showing to be powerfully beneficial for optimum health. Unfortunately, while vegetables are key components in the daily diet, today's food supply isn't what it used to be. As Dr. Misner points out, "Some authors from the food science

industry argue that even five servings a day of fresh vegetables do not provide the organic substrates necessary for optimal cellular health. In the past 50 years, chemo-agricultural farming has depleted 90% of the soil's original minerals. Today's 'veggies' contain only 11% of the organic minerals found in produce during World War II. To get what we once got from 3-5 servings of vegetables per day, we would have to consume 40 servings per day, or approximately the amount consumed by a medium-sized horse. What are we really missing? Plant sterols and phytoestrogens, which have been shown to protect us against cholesterol absorption, tumor formation, colon cancer, radiation poisoning, and the side effects of most allopathic medicines. Most of these protective phytonutrients, phytosterols, and phytoestrogens are lost during processing, degumming, refining, deodorizing, canning, bottling and packaging; we simply are not getting enough."

Phytomax helps solve the problem

So while vegetable intake is still important—and of course we highly recommend the consumption of organically grown produce—most of us rarely eat enough to begin with, and the majority of the produce available simply doesn't contain the quantity of nutrients we need. This is where Phytomax comes in. Three capsules of Phytomax will provide higher quality vegetable nutrition than blue-green algae, spirulina, chlorella, wheat grass juice, barley grass juice, or any other similar product. In addition, Phytomax is a concentrated source of enzymes, phytosterols, and phytonutrients, which are so important for overall health but

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are unfortunately no longer available in appreciable amounts in our food supply.

Here's what Dr. Misner has to say about Phytomax...

The nutritional advantage for consuming *Hydrilla verticillata* [the plant used in concentrated form to produce Phytomax, which is sometimes also spelled "verticillata"] presents an exceptionally potent phytonutrient from a wild noxious plant growing in unpolluted fresh waterbeds in Florida. The means by which it is processed preserves the enzymatic profile, making it one of the only green products with both enzyme integrity and free of toxic waste byproducts from competitive "greens" harvested from polluted lakes [such as Klamath Lake] in Oregon.

Because the *Hydrilla* plant is rooted, it easily accesses high amounts of organic minerals, vitamins, enzymes, and trace micronutrients found in the prehistoric lakebed's soils. After harvesting "live" *Hydrilla* by cutting the plant just above its root structure, an exclusive non-cooking, non-freezing, and non-organic-altering process is carefully applied. This five-stage pressure wash, which includes an ozone injection for removing only bacteria and microorganisms, is applied in order to extract the raw foods found within the plant's green stems, stalk, and leaves. A drying process is then applied using jet turbine blowers at a maximum of 88 degrees to remove the moisture without damaging the "living" enzymes and rich nutrients stored in the harvested plant. After drying, the *Hydrilla* is fine-ground, encapsulated and bottled to prevent degradation or contamination from its "live" state. *Hydrilla* presents in a 2% solution a pH of 12.0, which contributes to increasing otherwise acidic pH generated during exercise.

Phytomax's phytosterol benefits

Dr. Misner writes, "Phytosterols may decrease cholesterol absorption by displacing cholesterol from bile salt micelles. Cholesterol analogs found in plants may be protective against colon cancer. Superoxide dismutase (SOD), a free radical fighter, antioxidant and enzyme found in most plant life is being seriously studied for its plausible

positive effects in halting the aging process. SOD has been shown to provide a natural defense against the potentially damaging superoxide free radicals generated during exercise or aerobic metabolism. Including a source of "green" foods may not only enhance recovery, but also prevent the side effects from radiation, carcinoma formation, and the initiation of leukopenia. University studies report that milk production from dairy cattle and the egg-laying capacity of chickens were significantly enhanced when these animals were supplemented with this form of *Hydrilla* (Phytomax). The assumption is that carry over to human physiology is obvious, though not yet confirmed by reliable research. Some studies do suggest that the nutrients from this plant may have direct application for free radical scavenging, anti-arthritic effect, stress management, remediating aging disorders, promoting healthy skin, and energy recovery."

Summary

We at Hammer Nutrition definitely believe that athletes and active people need to address the diet first and foremost because, more than any supplement pill, diet is the foundation from which optimal health and performance can be achieved. Still, even our best efforts at consuming healthy foods on a consistent basis usually falls short more times than not. That's why supplementation in general is so important—to close the gap between what we need nutrient-wise and what we actually obtain in the diet—and it is especially true when it comes to vegetable intake. This is where Phytomax really shines. Dr. Misner writes, "If you chose to supplement all of the micronutrient profile found in *Hydrilla* from food sources you would require 5 tossed salads, 1 cup of tomato juice, 1 cup of spinach, 1 cup of lima beans, 1 cup of green beans, and 7 glasses of whole milk. Such a food volume would also yield 41 grams of fiber, 36 grams of saturated fat, 234 grams of cholesterol, 110 grams of sugar, and 2,486 grams of sodium."

No, taking Phytomax doesn't replace eating vegetables. Instead, it efficiently and effectively bridges the gap between what we should eat and what we actually do eat. It's an important

product that wonderfully complements the vitamins and minerals provided in Premium Insurance Caps. Phytomax, a powerhouse of enzymes, fatty acids, antioxidants, RNA, DNA, chlorophyll, sterols, and phytonutrients, helps "complete the puzzle" when it comes to vitamin/mineral supplementation. During the fall and winter months, when availability of fresh, organic vegetables may be at a premium, daily supplementation with Phytomax is a definitely a wise strategy to employ.

*References
Available upon request*

Live Greens For Peak Energy

- Non-stimulant energy boost
- Strengthen immune system function
- Improve moods and mental clarity
- Enhance quality of sleep



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Phytomax - 90 capsules \$24.95 / 3 or more, \$22.95



Steve Born

Chris Kostman, the man behind the epic ultra distance races, Badwater Ultramarathon and Furnace Creek 508, is now producing what are sure to be some great camps, all of which Hammer Nutrition is enthusiastically supporting.

The first camp, CORPScamp Death Valley, took place February 16-20, 2008 in what Kostman likes to call "Mother Nature's Greatest Sports Arena," Death Valley National Park. The newest camp, and location, was CORPScamp Shasta from July 30 to August 3, and was by all accounts a smashing success.

According to Kostman, "Hammer played a central role and I've never seen a group of riders as eager to use and learn about the products, except at Hammer Camp Tucson! We converted a lot of people to Hammer products and turned quite a few people onto 'the four hour bottle.' The end of the camp concluded with the Shasta Summit Century, a ride that rivals the Death Ride in intensity and exceeds it in beauty. The night before, riders were lining up to fill their bottles, and baggies, to use two consecutive four hour bottles."

The CORPScamp concept is for athletes to enjoy cycling and other complementary sports and activities in beautiful, one-of-a-kind locations, with an emphasis on getting fit, while also focusing on rejuvenation, relaxation, and recharging of the body and mind. Each CORPScamp features a specific route each day, with route sheets, support vehicles on the course, two or more ride leaders, and of course, Hammer products.

A unique feature of the various CORPScamps is "The Yoga Social," which is according to Kostman, "a rejuvenating CORPSyoga class taught

by a fellow cyclist who has been trained at the world renowned White Lotus Foundation and holds a Yoga Alliance RYT 200 instructor certification. The 'Yoga Social' is designed for all camp participants, regardless of yoga background, or lack thereof, and is designed to help each camper unwind and prepare for the next day's adventure."

Here's the 2009 CORPScamp schedule:

CORPScamp Shasta Snofari Sat., January 17 - Wed., January 21

This "It's not all about the bike!" camp takes place on and around Mt. Shasta, in northern California with the focus being on cross-training via the winter sports cross-country skiing, snowshoeing, and ice skating.

CORPScamp Death Valley Sat., Feb 21 - Wed., February 25

This CORPScamp features five days and up to 400 miles of cycling in and around Death Valley National Park at a time of the year when the park is at its best, scenery-wise. Although the camp ends on the 25th, participants are invited to stay longer to ride the Spring Death Valley Century or the Spring Death Valley Double Century, both of which take place on Saturday, February 28 (separate entry fee required).

CORPScamp Wildflower Sun., April 19 - Sat., April 25

Based in Paso Robles, CA, cyclists will enjoy the variety of terrain and scenery that this special area along the Central Coast area of California offers, not to mention all the local wineries. Entry in this CORPScamp also includes entry in the Wildflower Century (50, 75, or

100mi) on April 25.

CORPScamp Shasta Wed., July 29 - Sun., August 2

Mt. Shasta provides the backdrop for superb cycling in a gorgeous, alpine region with dramatic lakes, rivers, forests, and memorable climbs. Shasta is a bit remote, but that helps protect its quiet, wondrous setting. Entry in this camp also includes entry in the Shasta Summit Century (58, 100, or 135mi) on August 2.

We at Hammer Nutrition are pleased to provide product support for these exciting new camps. For more information visit the CORPScamp web site at www.adventurecorps.com/corpscamps/.

Premium Clothing

Volier short sleeve jersey with mid-level collar, 3 rear pockets, and full-length exposed zipper.



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Short Sleeve Jersey - \$34.95

Omega-3 Fatty Acids

A safer alternative to NSAIDs for neck and back pain?

Steve Born

In a study involving 250 patients who were diagnosed by a neurosurgeon as having non-surgical neck or back pain, daily supplementation with omega-3 fatty acids was found to significantly alleviate pain and reduce the need for prescription NSAID (non-steroidal anti-inflammatory) medications. At the start of the study, all subjects were taking prescription NSAID medication. Subjects were asked to take daily fish oil supplements totaling 2,400 mg/day omega-3 fatty acids (EPA and DHA) for the first two weeks. They were then asked to cut the dose in half, to 1,200 mg/day.

Results from questionnaires filled out by half of the subjects (125) after an average of 75 days on fish oil reported significant improvements in pain, as compared with prior to fish oil supplementation, and found that 78% of subjects were taking 1,200 mg/day, while the remaining 22% were taking 2,400 mg/day. 60% of subjects reported improvements in overall pain; 60% reported improvements in joint pain; 59% reported discontinuing their NSAID medications; 80% reported satisfaction with their improvement; and 88% reported that they would continue taking the fish oil

supplement. No significant side effects were reported.

Although the study was not placebo-controlled, these results suggest the safety and effectiveness of omega-3 fatty acids in the treatment of non-surgical neck or back pain. The authors point out that their findings mirror the results from other controlled trials, which have showed the effectiveness of omega-3 fatty acids as compared to ibuprofen, for the treatment of arthritic pain. Given the prevalence of discogenic pain, such as back and neck pain, and the side effects and complications associated with the use of NSAIDs (such as gastric ulcers and myocardial infarction), these findings are promising, and warrant appropriately designed studies to further investigate the potential of omega-3 fatty acids in the treatment of non-surgical neck and back pain.

REFERENCE:
"Omega-3 fatty acids (fish oil) as an anti-inflammatory: an alternative to nonsteroidal anti-inflammatory drugs for discogenic pain," Maroon JC, Bost JW, Surg Neurol, 2006; 65(4): 326-31.

Note: Hammer Nutrition carries two sizes of the super high quality Carlson Norwegian Salmon Oil.

Essential Fatty Acids



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www.hammernutrition.com

Salmon Oil - 60 capsules \$7.95 / 180 capsules, \$19.95

HOT TIPS

Keeping premixed bottles of Sustained Energy or Perpetuem cold at Special Needs

Thanks to Al Lyman and Tony McCray for these tips!

If you're doing an iron distance triathlon and are making a multi-hour bottle of SE or Perpetuem for use during the second half of the bike course, the challenge you face for a hot-weather race is how to keep that second bottle cold. An ideal way to do achieve this is to wrap the bottle in a damp/wet face cloth or dish towel, and then freeze it the

night before the race. The damp/wet towel literally sticks to the bottle and creates an additional layer, helping it to stay frozen longer. If it's possible to keep that second bottle of concentrated SE or Perpetuem on ice and in a cooler that will extend the "shelf life" and palatability factor significantly. If having a cooler at Special Needs is not possible, wrapping packs of Blue Ice around a bottle to keep it cold while sitting in a transition area is an excellent alternative.



Photo : Michael Frommlet

2008

Race Across Oregon

Bill's most excellent adventure

Steve Born

It's been quite awhile since I've crewed for anyone competing in an ultra cycling race. In fact, the last time was a full four years ago when my future wife, Cassie Lowe, won the women's division of the 2004 Race Across Oregon (RAO). Since Cassie had such a great end-of-career race, finishing in 4th place overall, I figured that'd be a good way to end my direct involvement in the sport of ultra cycling.

However, in a classic case of "Never say never," a year or so ago when my good friend Bill Nicolai (who's done RAO on both a two-person and four-person team) expressed interest in doing this race solo and becoming the oldest official finisher in history, I unhesitatingly said, "If you ever do decide to do it I'll crew for you." After what he accomplished in this year's RAO, I'm glad I did – what an epic adventure!

Although I have not raced in both races, and thus can not judge them via personal experience, I believe the Race Across Oregon is more difficult than the enormously popular Furnace Creek 508 (which I have done three times). Don't get me wrong, the 508 is by no means easy, it is extremely difficult (trust me on that). However, after experiencing the RAO course from behind the wheel of a support vehicle, and seeing what its 538 miles does to a competitor, I am convinced it is about as hard an endeavor as one could put themselves through. In addition to the sheer distance, RAO contains 40,000' feet of climbing (and probably feels like double that). Also, the various weather conditions that one can run into during the course of the race—rain, snow, 90°+ degree temperatures, sub-freezing temperatures—makes it even more difficult. The Race Across Oregon, which

is probably more accurately described as a race around Oregon (or at least a good portion of it), is difficult to the point of cruelty.

None of that had any impact on Bill and his goal of finishing the race officially and being the oldest person (at age 63) to do so. So, starting at the Holiday Inn parking lot in Portland at 5:00 AM on Saturday, July 19, Bill set off on his quest, along with his support crew of Dr. Michael Frommlet, Guntram Jordan, and myself. And although none of us had crewed together before, as the race progressed it would become apparent that Michael, Guntram, and I worked like we'd done this dozens of times. These guys may not have had any crewing experience but that wasn't at all apparent based on how smoothly they handled the various tasks involved in supporting a rider in such a difficult endeavor. No doubt that Bill has himself a heck of a crew!

But this race was about Bill and his determination to complete a course so difficult that it's reduced many a competitor to tears. As the first portion of the race progressed it became obvious—not only by his super-toned physique, but also how well he rode and the discipline in his pace—that Bill had prepared well. I'm pretty convinced that being fully prepared for a race of such difficulty is an effort in futility, but if anyone was prepared as best they could be it was Bill.

Speaking of discipline, as we on the crew would learn throughout the course of the race, Bill Nicolai is machine-like when it comes to taking his supplements and consuming his fuel. What I mean is that he rarely, if ever, needed prodding from us to make sure he was taking his

supplements and drinking his liquid fuel & water consistently. Like clockwork, Bill would take his hourly allotment of 1 Race Caps Supreme, 1 Mito Caps, 1 Anti-Fatigue Caps, and 2-4 Endurolytes. This was washed down with water and a portion of his 3-hour bottle of fuel, which consisted of 4 scoops of plain Perpetuem mixed in with a precise amount ("fill up the water bottle with 5/8 of an inch," Bill told us ahead of time) of raspberry & vanilla Hammer Gel or raspberry & espresso Hammer Gel. The amazing thing is that Bill followed this exact supplement/fueling protocol every single hour for the nearly two days he was on the bike; he never deviated from this protocol once (I know, I was there!).

There are so many climbs in the race that it's almost too hard to keep track of all of them. In fact, the RAO course profile (www.raceacrossoregon.com/rao_main/rao-route) shows how intimidating it can be for the riders... it looks like the blade of a table saw, and a vicious one at that! The first climb comes not too long after the start; the 10 miles up to Government Camp is but a prelude to what the riders can expect for the next several hundred miles. After that come numerous difficult climbs – Barlow and Bennett Passes are but a few that need to be negotiated before the first time station in Maupin (122.5 miles) is reached, which Bill does at 2:16 PM.

Less than two miles after the Maupin time station the climb up the ominously (and usually appropriately) named Bakeoven Road begins. The first four miles of the climb are fairly steep, with many switchbacks. That's hard enough, but the summit of the climb doesn't actually occur until nearly 23 more gradually uphill (and usually

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windy) miles have passed. Bill is riding smoothly, however, and has no problems at all as he works his way up the climb, then onto Hwy 97 towards the tiny town of Shaniko. A quick right onto Route 218 and it feels as though we're heading pretty much into the middle of nowhere. A few miles later, after about 160 miles since the race start, Bill passes through the town of Antelope. The course description on the RAO web site is pretty clear cut as to what to expect after that: "It's 36 miles between Antelope and Fossil. There are no flat sections. 'Nuff said." Boy, are they right. There's so much climbing throughout here, including an absolute brute, before the time station in the town of Fossil (192.6 miles) is reached.

As Bill cruises past the time station in Fossil, he is fully aware that he's not on record-breaking speed, and that's OK. Far too many ultra cyclists are "first day heroes" who go out too hard only to find they've spent all their energy long before reaching the finish line becomes a realistic possibility. Bill's plan is to meter out his strength on this first day so that he has enough strength to tackle the latter part of the race... that's what we're all hoping for anyway. During late afternoon, and prior to reaching the Fossil time station, Bill takes a short catnap, which seems to revive him tremendously as we begin our journey into the night.

Another thing that impressed me so much about Bill's effort was not just how precise he was in his supplement/fueling intake, but also his attitude. In fact, at one point during the evening, while we were handing off a fresh bottle of fuel, he commented to us, "How lucky am I to be doing this?" Clearly, Bill on a bike is like a kid in a candy store; the man simply loves to ride. However, from this point on, he will be tested and severely so, if only because he'll be going further on a bike than he's ever gone before.

Unfortunately, while the 79+ mile section from the time station in Fossil to

the time station in Long Creek seems to indicate fairly mild-to-moderate terrain, a viciously difficult 10-mile climb (that looks and must feel a lot longer) lies in between. As well as Bill has been riding, and as positive as his attitude has been, this climb, in addition to the long and ever-increasingly cold night, seems to be taking a toll on him. He's definitely getting tired and his overall



Photo : Michael Frommlet

pace since the start of the race has noticeably slowed. A short sleep break is a necessity.

After a fairly nonexistent downhill (one would expect so much more after such a difficult climb), and after 272 incredibly tough miles, Bill checks into Time Station #3 in Long Creek at 3:38 AM. He's a couple miles past the halfway point and has taken roughly 22.5 hours to get there. Through everything that the course and conditions have thrown at him so far, he has been riding just great and has been spot on with his supplement and fuel consumption. And he certainly has the will to continue, of that there's no doubt. However, he is definitely weary and experiencing what the accumulated effects of nearly a full day of nonstop riding on such a difficult course can do to the body, mind, and spirit. He, and we on the crew as well, are now concerned that his pace will continue to deteriorate to the point where an official finish (48 hours) may no longer be possible. We decide to take a couple minutes to assess the situation. Bill doesn't want a pep talk, he wants a data-derived analysis of his chances for an official finish, and so I am bluntly honest with him. "Bill, based on

your current average speed we are in a position where we don't have much in the way of a time buffer. Pace-wise, we're getting really close to the edge in terms of being able to achieve an official finish; there's not much of a margin for further decay in your average speed."

Bill assimilates the information and snaps back into his pedals. Collectively we decide to continue, taking it mile by mile and assessing the situation along the way. Unfortunately, the next several miles offer no respite, which is really cruel given the fact that he'd just completed an extremely tough 10-mile climb without much of a reward. The description on the RAO web site doesn't make one feel terribly optimistic about

this upcoming section of the course either, especially when the first couple of sentences read, "This part is uh...scary. In five miles you reach one of the highest elevations of the race – an unnamed summit (elevation 5,075 feet). Two miles later you descend into Fox only to climb to another unnamed summit (elevation 4,687 feet)."

Slowly, Bill turns the pedals as he makes his way to the summit of this first climb. For us in the support vehicle, it is so very difficult watching our friend try and squeeze whatever he can from his increasingly-diminishing energy supply as he works his way up this relentless climb. Finally, the first summit is reached and Bill pulls over to the side of the road. When he whispers to us, "I'm having a hard time staying conscious," we know it's time to put him down for a sleep break. We're in kind of a tough position because if Bill is going to have a shot at finishing officially, he's got to stay on the bike as much as possible; we don't have a lot of off-the-bike time available so we can't make this a lengthy sleep break. On the other hand, and much more importantly, Bill's safety comes first; he has to have enough sleep

see RAO on page 16

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time to provide some recuperation so that he can continue safely. We discuss the options and once a decision is made regarding how long Bill will be off the bike, he crawls on to the passenger seat of the van and is out within seconds. Team Nicolai seems to be at a very low point right about now and the prospects of continuing are dimming.

Fortunately, after Bill wakes up and is helped back on his bike, he has a nice long downhill to enjoy. That, as well as the end of a very long night, provides hope for the team. As we head into the town of Fox, Bill's wife Jane drives up, pulls ahead of us, and then parks alongside the road. Jane has been helping provide support for Team Aardvark, the first junior team—and one that includes Bill's son Lito—to participate in RAO. Unfortunately, Team Aardvark couldn't find a 4th person to complete their team and thus competed with only 3 riders in the 4-person division. That disadvantage, especially given the difficulty of the RAO course, has caused them to withdraw from the race. If there is a bright spot to be found amongst the team's DNF, it's that Jane can now spend a few moments with Bill to provide encouragement prior to the start of the next climb. As she briefly runs next to Bill, we continue to follow in the support van but can't hear what she's telling him. However, whatever they're talking about appears to be working because Bill's pace seems to improve. He makes the summit without much difficulty and enjoys a nice descent as he enters the town of Mt. Vernon.

Our dilemma now is that we know that the majority of the course from here to the next time station in Prineville (408.4 miles) is extremely difficult. Bill's ridden over 300 miles but the remaining 230-or-so miles will arguably be the hardest of the race. Additionally, his time buffer that would allow him to finish officially has dwindled a bit more. Bill's still riding and we're still crewing—we're all definitely in it for the long haul—but things really aren't looking too bright for that coveted official finish. The day is absolutely beautiful but Team Nicolai is in somewhat of a funk, with no solutions in sight. Then, a couple of things happen that would change the course of Bill's race.

Shortly after we make the left turn onto

Hwy 19, we stop for a “nature break,” which apparently is something all four of us have been dying to do for several miles, though none of us has mentioned it for that long or longer. For a variety of reasons, none of which are worth mentioning, our group “pit stop” turns out to be a hysterically funny comedy of errors, so to speak, which causes us to start laughing uncontrollably (it's one of those “you had to be there to understand” kind of things). As it turns out, though, when Bill eventually gets back on the bike and when we eventually get back in the van to follow, we realize that this short break has provided much more than physical relief. It's been a bit of a comical departure from the sometimes too-serious nature of the race, which no doubt will help all of us. Make no mistake, we are still very much in race mode and we're definitely not throwing in the towel. On the other hand, we're now much more relaxed mentally, which we know in our hearts will yield positive results. So while Team Nicolai may not finish officially, we're going to make the most out of this momentous experience and vow to continue to have as much fun as possible.

A very short while later, former RAO winner Gregg Geser, who is one of the officials in this year's race, drives by us and stops alongside the road a ways ahead of us. “I need to talk to Gregg,” Bill tells us, and while we wait in the van, wondering what they could be talking about, Bill stops his bike and has a short chat with Gregg. Once completed, Bill starts riding, then waves us up to inform us what their discussion was about. Bill tells us that he had asked Gregg exactly what speed he needed to average between here and the end of the

race in order to finish officially. Gregg apparently crunched the numbers and gave Bill the answer: 11.5 mph from here on in. Bill looks at us and flatly states, “I can do that.” Then he starts riding.

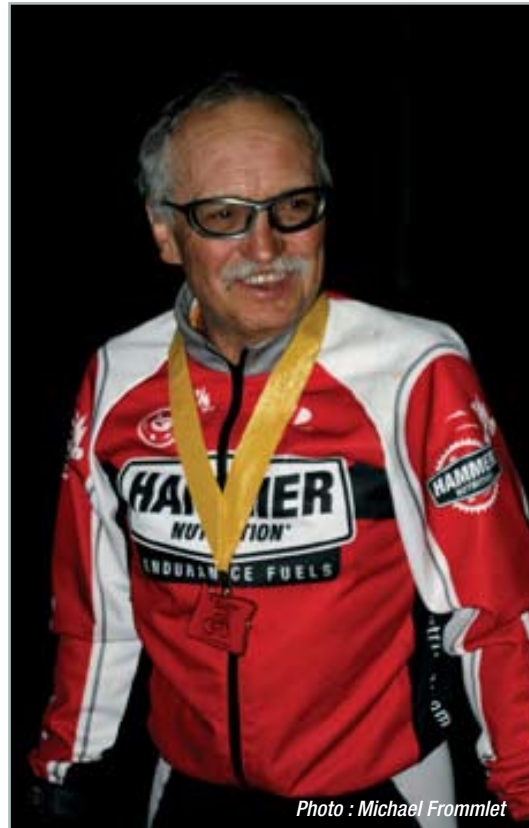


Photo : Michael Frommlet

I have to admit that we on the crew, while admiring Bill's determination and resolve, aren't so sure his statement is truly realistic. Ahead lie two monstrously difficult climbs: Keyes Creek (elevation 4,369 feet) and Ochoco Pass (elevation 4,720 feet) that will surely lower his average speed even more. They are just nasty-hard climbs, simple as

that. After that, as the finish line starts appearing tantalizingly closer, the course just continues to punish the rider even more.

Bill is a different man now, however. He's on a mission and is determined to systematically meet his time goals for various sections of this race; all with an official finish being the proverbial “carrot on a stick” dangling in front of him. The increase in his already-positive demeanor is undeniably noticeable, as is his pedal rhythm, which is even smoother and more efficient than it was 24 hours ago. Also, with the exception of an occasional “nature break,” Bill is glued to the bike; he is simply not stopping. And he is continuing to amaze all three of us on his crew with his flawlessly precise timing of his fuel consumption and supplement intake. As Bill methodically tackles these vicious climbs, bottle after bottle of his Perpetuem + Hammer Gel fuel is

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consumed, and his intake of Race Caps Supreme, Mito Caps, Anti-Fatigue Caps, and Endurolytes remains rock solid.

At 3:02 PM, 34 hours after the race began, Bill checks into the time station in Prineville. He is the last of the riders in the male solo division to reach this time station, which may sound like not-so-great news on the surface. However, 1/3 of the men's solo field has already dropped out by that point while Bill's still riding... and that's worth celebrating. What's also worth celebrating is the fact that, despite all odds, he's been able to add some minutes to his time buffer, which improves his chances for an official finish. We're not out of the woods, not by a long shot, but Bill's stellar effort on the tough roads into Prineville are paying off in a big way. Talk about a transformation... amazing!

The next 40+ miles from Prineville through Madras to Warm Springs are my least favorite of the race, primarily because of the monotony of this particular section of the route, as well as the traffic, primarily on Highway 97. Thanks to the guidance of Michael and Guntram, Bill makes it through this unpleasantly difficult section unscathed. Prior to the sharper-than-sharp right turn off this busy highway and onto Route 3, Michael and Guntram assist Bill with a much-needed change of clothing. Ultra cycling races are quite long, of course, but every minute counts so both rider and crew need to be conscious of the amount of time that is spent off the bike. Still, after you've been on the bike for umpteenth hours, a well-timed clothing change—even if it takes a few extra minutes to accomplish—is time well spent. Comfort is a major key for success in ultra cycling races, and putting on a clean jersey and cycling shorts definitely helps.

The RAO web site describes this next section on Route 3 as “a desolate landscape with some really challenging climbs.” Well, they've got the desolate part right but “challenging” doesn't seem to be an appropriate enough description for the climbs... they are relentless and steeper than steep. Throw a strong wind into the mix (the wind, of course, never blowing in the direction you want it to) and Bill's got his work cut out for him. Still, his determination is stronger than

ever and not once do we hear a word of complaint from him. As dusk turns more and more into dark, it's decided that a 10-15 minute catnap at the top of the last climb on this section is merited. Bill's got a few extra minutes in the bank and we agree that a short break will be beneficial prior to him riding into his second night on the bike.

Throughout the race, Bill has impressed us with his ability to know exactly when he has to wake up. What I mean is that when he says, “I'm going down for a 10 minute catnap,” he wakes himself up precisely 10 minutes later, with minimal-to-no assistance from us. The same is true on this, his last (we hope) short sleep break for the duration of the race. We have a bit of a time buffer and since this next section is, for the most part, flat-to-downhill, we believe that this buffer will increase. Still, there are many tough sections left in the race so we can't fritter away time carelessly.

Bill knows this because he's on his bike and rolling almost before we're ready to follow behind him in the support van. The night is peaceful and serene, the wind that was swirling around Bill while negotiating those tough climbs has calmed, and knowing that this next section of the race can help add to Bill's official finish time buffer, a sense of peace—a cautious one, though—has permeated the atmosphere in the van. It's yet another opportunity for Guntram to blow us away with his culinary skills. Most of the time when one crews for ultra events, eating is a “catch as catch can” kind of thing, and when you do eat the choices are pretty meager at best. As an example, most of the time a “gourmet” sandwich simply consists of a slab of sandwich meat in between two slices of bread (and, if you're lucky, there's some mustard or mayo as well).

Long story short, Guntram is a master chef and his food/snack offerings throughout the race have been nothing short of magnificent. I admit that when he showed up with a sizeable ice chest full of food, I was unsure as to whether it was necessary and whether it'd fit in the limited amount of space available (even in a gutted out mini van). But, as he's done throughout the race, Guntram has proven me 100% wrong; we've been eating like kings (good and healthy food, too). Tonight he, Michael, and I are indulging in a five-course meal that I'd wager no other crewmember in any

other cycling event has ever come close to enjoying. Happy crew = happy rider and Guntram's set a new standard for crew food in ultra races, of that I have no doubt.

For most of the five miles after the left turn onto Rte 216 has been made, the route is a pretty mellow; Bill is able to increase his speed, adding precious minutes to his time buffer. I get the feeling that for however long it's been since he had his short chat with Gregg Geser, he's been fixating on the 11.5 mph speed he was told he needed to average to achieve an official finish. That's why every once in awhile we remind Bill that even though the average may dip a little when he's climbing, he'll more than make up for it on the downhills and flats. That's exactly what's been happening, and with every passing mile Bill's confidence is increasing.

Good thing, too, as this next section of approximately 40 miles is loaded with ups and downs. I imagine that for many a rider, this section can be quite demoralizing for a couple of reasons. First, when you're going up and down all the time, it's difficult to get into any kind of a decent rhythm (and especially so after nearly 500 miles). Second, if you go through here at night when it's quite cold (or anytime on a foul-weather race, such as was the case with Cassie), it can get frustrating clothing-wise. If you're not wearing a lot of gear you're fine on the uphill but freezing on the downhills. Vice-versa if you're wearing lots of clothing... you're fine going down but can quickly overheat going up.

Michael, who knows this course better than Guntram and I combined, gets behind the wheel of the support van and guides Bill through this very dark and cold section of the course. The finish line is getting so close and the team just needs to keep it together for the final push, which is not going to be easy. In fact, the “final push” is kind of sadistic, no matter how you look at it, because it involves 2000 feet of climbing in the last 5.1 miles. That's right, the last 5.1 miles of this race go straight up, with no let up, which is why we've been so anxious to accrue as many minutes in the bank... we didn't want Bill to have to time trial up the road to the finish line at Timberline Lodge in order to finish officially.

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Get The "F*!" In!

Marshall Opel rides hard at the Fish Trails Criterium.
Photo : Angela Nock

Dr. Lowell Greib, MSc ND

Peak season

As we enter a busy summer season of training and competition, it is easy to become focused on the physiological aspects of sport. Most of us don't have the privilege to be professional athletes and have the ability to dedicate our lives to sport, thus we need to balance our commitment to training with work, family and other lifestyle choices. It is, however, easy to forget the important effect that diet and proper food choices make on sporting performance. Many of us compete in summer sport and have a more rigorous training regime through the summer months, but think little of modifying nutritional components that relate to exercise. As training intensity and volume increases, it is vitally important to increase nutrient intake to accommodate for the increased metabolic load and requirement for increased daily caloric intake. Maintaining an isocaloric diet (as estimated using your basal metabolic rate, lifestyle factors and quantity and type of exercise) will effectively allow for weight maintenance and ultimately improved physical performance over the course of a season. Nutrient deficiencies, as we all know, can lead to fatigue and potential injury.

We need ALL Macronutrients

In general, athletes have a great understanding of the important biologic values of carbohydrate and protein in their diet. We have been inundated with information and research that indicates that as endurance athletes we should be maintaining caloric intakes of 60% and 10-15%, respectively. Not a problem! These caloric requirements can readily be achieved by consuming a balance

diet consisting of whole grains, quality proteins (whether meat or vegetarian) and fruits and vegetables. What about the remaining 25-30% of daily caloric intake? Oh no! The loathed "F" word... fat!! Whether we like to admit it or not, fat is a necessity! It is your primary energy source during physical activity (especially during lower intensity) and is more abundant as a fuel than the other two macronutrients. In fact, average non-obese males range between 9 and 15 kg of triglyceride storage (up to 140,000 kcal of stored energy). Certain lipids (omega-3) have been shown to be anti-inflammatory, antithrombotic, antiarrhythmic, antilipidemic, have vasodilatory properties and even affect cell integrity. Remember that, in essence, every single cell in your body is encapsulated in a double layer of fat!

Lipids are a group of insoluble compounds that are categorized as either simple, compound or derived. Simple lipids are those that include free fatty acids and triglycerides. Compound fats are comprised of a triacylglycerol molecule combined with other chemicals (i.e. LDL, HDL, phospholipids). Finally, derived lipids are made from simple or compound lipids. The most famed derived lipid is cholesterol.

General nutrition guidelines from a variety of sources outline the following as intake recommendations: (Table 1)

Data suggest that not having enough fat in ones diet may also be problematic! Research indicates that females runners who consume a diet of 27% fat (versus 30%) may have a significantly increase risk of future injury. It is also recognized that low fat diets (~20%)

blunts the normal rise in plasma testosterone following a short-term bout of resistance exercise.

There are good fats!

Polyunsaturated fatty acids (PUFAs) are those with more than one double bond in a carbon chain. Omega 3, 6 and 9 long chain fatty acids all fit into the category of PUFAs. At some point in time, we have all heard the suggestion to try and include "oily" fish into our diets. These fish (including herring, mackerel, salmon and sardine) contain higher concentrations of omega-3 fatty acids which are generally regarded as beneficial for health.

Responsible inflammatory control

The purpose of exercise (from a biochemical/physiological perspective) is to create tissue stress and to a certain degree, damage. Improvements in performance arise when our bodies adapt to these physiological changes efficiently. Of course, whenever any tissue in the body becomes damaged, inflammatory mediators are released at the site injury to assist with recovery. In general, there is an abundance of inflammatory processes occurring simultaneously in the body and thus need to be managed. Alpha-linolenic acid, its metabolic biproducts, and to a certain degree, linoleic acid can all promote the formation of anti-inflammatory prostaglandins (PGE₃, PGE₃ and PGE₁, respectively). Oils that are found in fish (eicosapentaenoic and docosahexaenoic acid) are especially useful, since there is little enzymatic conversion required,

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before the synthesis of prostaglandins can be achieved. Research supports the use of 1-2 g of combined EPA and DHA daily to reduce inflammation in active individuals. Moderated use of omega-6 fatty acids needs to be adhered to, however, since arachidonic acid can be formed, which tends to promote inflammation through the synthesis of PGE₂. Our western style diet leads to omega-6 to omega-3 ratios somewhere in the range of 10:1 to 20:1. Suggested levels are recommended to be 1:1 or 2:1. This massive discrepancy can be achieved by consuming much more omega-3 containing foods. (Table 2)

In essence, fats are NOT the other “F” word! They are not only recommended for athletes to maintain performance, but are imperative to optimize general daily health and promote optimum recovery.

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Table 1

Total Dietary Fat	~30% (as calculated by caloric intake)
Total Unsaturated Fats	> 70% (of total fat)
Total Cholesterol	< 300mg daily

Table 2

Sources of Omega 3 fats	Sources of Omega 6 fats
Fish	Safflower
Flax	Poppy seed oil
Chia	Evening primrose oil
Butternuts	Borage oil
Walnuts	Sunflower oil
Pecans	Corn oil

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Time Station #5, and the last one before the finish line, is at the right turn onto Timberline Drive. We call in Bill's arrival at 3:07 AM, which means that he has one hour and 53 minutes to complete the final 5.1 miles. Barring the most bizarre of bizarre incidences, Bill is going to earn his coveted official finish. The pressure is off now, which allows Bill to enjoy the ride as slow as he likes up the climb, taking it all in. It also allows us all to reflect—both in silence and to each other—just what has transpired over the past several hours. No matter how hard we try, though, none of us can adequately describe what we've been through. I get the feeling that it'll be that way for quite some time.

Throughout the race, be it shouting from the side of the road or shouting through the van window, I have been talking with Bill about pretty much everything, from race strategy to plain ol' trash talking (the latter all in fun, of course). Now, my voice is shot, there's almost nothing left to it (or my energy, for that matter), but I have one last race-related message I need to convey to him. I lean over and get his attention, then say in a peaceful, quiet voice, “Bill, you have exactly one mile to go.” It is a statement

that, for a long, long time, none of us were sure any of us would be making. But now we are and it darn near brings me to tears because I've been able to watch an athlete make a transformation that, quite frankly, I cannot ever recall witnessing before.

Bill had reached a point where the race's difficulty left him so exhausted that it didn't appear he'd have much of a chance to complete the course, let alone officially. Then something just clicked and he decided—via sheer will and determination—that the achievement of his goal was not going to be denied. That, along with his remarkable adherence to stick to his fueling and supplement regimen—giving it the opportunity to do exactly what it was designed to do—allowed him to “rise from the dead,” so to speak. At 4:17 AM, after 47 hours and 17 minutes, and 537.5 miles of an unbelievably difficult course, Bill Nicolai breached the finish line tape and became the oldest official finisher of the Race Across Oregon. A remarkable accomplishment and an incredible experience!

HOT TIP

Staying alert at night during ultras

If you're doing an ultra distance race, one where you'll be racing through the night and into the next day, chances are you'll need something to help you stay alert. We have two suggestions:

1) Use one of the caffeinated versions of Hammer Gel on occasion. Each serving of the espresso Hammer Gel contains 50 mg of caffeine and each serving of tropical Hammer Gel contains 25 mg. By using these specific flavors of Hammer Gel you will be providing your body with complex carbohydrates, as well as a sufficient but not too-high dose of caffeine.

2) Take a capsule of Super Antioxidant every 1-2 hours during nighttime hours. The Ginkgo biloba and vinpocetine components in the product not only provide antioxidant support, they also have circulation-enhancing benefits and are purported to have cognitive/alertness-enhancing benefits as well.

Fuels

The proper use of fuels in maximizing performance while staying below the crossover point



Randy Profeta fuels up during the Highline Hammer.
Photo : Angela Nock

Bill Nicolai

Despite acknowledgement by athletes that nutrition during long events is critical to success, there is still a lot of confusion and mistaken information on exactly how this is best done. Steve Born, Dr. Bill Misner and others have written extensively on this, but even among highly experienced ultra-endurance athletes, the subject remains misunderstood. This article seeks to explain the process from my perspective as an age group athlete who has become increasingly successful in these events. Hopefully application of these ideas will make your long training days more productive and your racing much more successful.

The Secret of High Energy Output

To be successful in ultra events, you must be able to produce more energy than you can create from the food that is consumed as you exercise.

You can only digest food at the rate of about 250 Calories per hour, but it is necessary to produce about 600 Calories per hour of energy to proceed at a reasonable speed in a long event. To do this you must understand both how to fuel and to carefully manage the other energy sources your body is using as you proceed.

Most athletes do not know that they can control the physiological processes that are taking place in their body to their advantage. This lack of understanding causes many sub-par performances and even DNFs. To understand how you can produce more energy than you consume lets review how energy production in the body works.

Of the three energy producing systems in the body, the aerobic system is by far

the most important for ultra-endurance sports and most of this article will how to activate and use this remarkable system. But first, lets talk about all of the systems available while exercising:

- The phosphocreatine energy production system is good for about 10 seconds of very high-energy production and does not come into play at all unless maybe you are in a sprint finish.
- The anaerobic system, sometimes referred to as the lactic acid cycle, is a powerful but inefficient way to produce energy. It is the primary source of energy for shorter events like sprint triathlons, 10 K runs or 40 K cycling time trials. But, you must not rely on this system for most of your training and you must minimize its use during an ultra distance race if you wish to be successful. The anaerobic system can be readily activated at any time by increasing effort. More speed will result for an hour or so, but this will result in lactic acid build up in the muscles when stored glycogen runs out. Then the athlete will be depleted and unable to produce high levels of energy for a long time. There is a sort of anaerobic "hangover" that appears as soreness in your muscles. Once you have depleted your glycogen stores it is not possible to get back to mostly aerobic energy production for a long while. Activating this system must be avoided during an ultra race.

Rookie competitors sometimes

lose patience and sprint up a hill. Or they react to getting passed by a competitor and go off in chase. These impulsive acts will provide short-term gratification of greater speed at the cost of loading up muscles with lactic acid. Once you go anaerobic, the byproducts of your efforts will inhibit energy production for many hours thereafter. No amount of fueling as you exercise can effectively restore your ability to continue racing or training that day at a high level of output.

- The aerobic energy production system is the key to doing longer races and training days. The major objective of training is to develop the capacity to activate this much more efficient energy production system. As with anaerobic exercise, this involves using of the glycogen to ATP energy production system, but in a very different way. When glycogen is used aerobically, which means you are converting it to ATP by using oxygen, you have the potential for long term endurance lasting many hours. But there are only a couple thousand calories of glycogen stored in the muscles and liver. Care must be taken during an ultra-endurance event to avoid quickly depleting glycogen stores.

So, the underlying principle of endurance exercise is that you have to maintain glycogen a high level in your body so that ample amounts are always available to be converted into energy as your race or training day proceeds.

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How to replace the glycogen you consume while exercising

There are two ways to replace the glycogen (energy) you are consuming as you exercise:

- 1) Consuming and digesting food which becomes glycogen
- 2) Accessing previously stored energy by digesting your own body tissues.

For success in longer events you must do both. It is by tapping into both of these two ways of getting energy that enables you to produce energy at high levels of output for lengthy periods of time.

In order to get into the mode of consuming body tissues, it is important to start the process before you consume food. This is done by beginning exercise at a moderate rate which gradually lowers the glycogen level in your body. When this happens physical processing are set in motion whereby your body starts searching for more fuel and begins to access energy by consuming your own fat stores as a source of fuel. This is called catabolysis. Since even a lean athlete's body contains over 100,000 Calories stored as fat, there is no shortage of such fuel available. Once this process is begun, then you can start to consume calories by eating and both sources of energy will be actively contributing glycogen to your muscles.

Many strong athletes do their training in a manner that does not teach their body how to create energy efficiently. They ride or run as hard as they can as long as they can. This certainly will create a high level of basic fitness, but by training this way, the athlete will eventually reach a plateau. The very best endurance athletes get past this plateau; they do it by observing proper training levels and in their fueling. In order to get even better at ultra events, you probably need to back off from large volumes of high intensity tempo training and to add a lot of moderate level exercise at so that you train your physical systems to effectively utilize your stored body fat. You will need to keep a limited amount (10-20%) of very high-level work in your training to maintain your elevated lactic threshold. The point is to avoid the non-productive

middle ground.

Certain very successful athletes, notably Matt Brick and Mark Allen developed this method a couple decades ago, and it was the foundation of their respective success as the best Duathlete and Triathlete of their era. But even today this method is not well understood by most athletes. This article is not about training levels, but when you combine correct fueling with training at the right levels you will see a remarkable improvement in ultra results. In my own case, a careful optimization of training levels and fueling has resulted in about a 10% improvement in my racing speed in the last year and this is after 20 years as an endurance athlete.

Within the aerobic range of effort, which occurs at less than 70 % of maximum, there is an important level at about 50% effort. This is the level of effort where you are maximizing the consumption of your body fat and the sum of the glycogen liberated from the conversion of fat stores into glycogen plus the fuel you are digesting results in replenishing your total glycogen stores at the same rate as your overall energy output. Some people have termed this the "cross over point." If you have trained properly, you can sustain this level of energy output almost indefinitely, certainly for several days. The fraction of energy coming from the anaerobic system at this level is sufficiently low that the by products are reabsorbed by your cells as they are produced. While exercising at this level you will be utilizing about 350 Calories of body fat per hour and 250 Calories through the use of fuels. Knowing where this boundary is in your own body is the key to maintaining energy to the end of a long event. If you go above that line, you will eventually deplete your glycogen system and "hit the wall". If your carefully stay below that level, the replenishment of glycogen through the consumption of fuels plus the burning of fat will allow continuous effort for up to several days.

The fuels you use are very important. They must contain readily digestible complex carbohydrates, not simple sugars, and there must be a significant amount of protein present in easily digestible form. The protein you are taking in limits the catabolysis of your body's muscle tissue, and helps to maximize catabolysis to your fat stores.

The Hammer Nutrition endurance fuels are specifically designed to supply you with optimum nutrition while you exercise. They are much more effective than using regular food over long training days or ultra races.

Summary of the Principles of Effective Fuel use in Ultra Events.

- Do not consume food within three hours of commencing exercise
- Start out gradually to gently lower glycogen stores and get fat burning started
- Do the majority of your endurance training at about 50% level
- Consume fuel at the rate of 250 calories per hour, no more
- Avoid sudden increases of effort that get you out of fat burning mode
- Use properly formulated fuel: complex carbohydrate with 15% protein.



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Dr. Bill On The Paleo Diet

Steve Born

Dr. Bill recently received this email from a client...

Hi Dr. Bill,

I have so much respect for all your research and wanted to share some recent concerns I have regarding nutrition. First of all, I have been planning my nutrition along with my training/supplementation for the past year to see how this fourth discipline can affect performance. Quality in = quality out. I am exclusively using Hammer fuels during exercise and my day-to-day nutrition is where I look for some advice.

Over the past five months I have adopted a more paleo-type lifestyle, courtesy of Joe Friel, who coached me briefly. I have read various books on sports nutrition and know that paleo eating goes against the general high carb approach. What persuaded me to do this was my talk with Mr. Friel and other long distance ironman athletes. Their theory is that eating this way enhances fat burning and promotes recovery. During the first four weeks I felt miserable, but over the past four months I have experienced lower hunger (due to increase in fat/protein) and also improved recovery. However, my nutritionist colleague wants me to convert back to traditional eating habits of including grains frequently and greatly reducing the fat intake.

What are your views on this? The work of Friel/Cordain in the recent book Paleo Diet for Athletes seems to address the needs of endurance athletes. I am open to anything as long as it is healthy and always look for advice from people more experienced. I am looking to start a focused marathon training segment, shooting for 2:30-2:40, and know that over the next 16 weeks the training

intensity will be higher than half-ironman training. With higher intensity I understand carbs are burned whereas long slow distance will burn a higher percentage of fats.

My goal is to go into these workouts fresh and optimally prepared to perform. From your research can you offer me any advice or approaches that have worked for you?

Dr. Bill responds:

I respect Joe Friel's views though they are not completely in agreement with mine.

I read your goal focus is performance in the marathon based on your word order. I hear you saying the word "Health" with paleo diet and performance, but I sense it is performance you desire most. You may correct me. Dietary focus for health is not as compatible with prolonged endurance as it is with the shorter events lasting under 90 minutes at a higher pace. The longer events require a higher post-workout intake of high-glycemic calories with proteins. Application of a chronic dose of high glycemic calories will fill muscle glycogen stores, but it is not the best choice for health, including blood glucose and blood lipid pathways.

Once a human consumes a carbohydrate source that has been processed out of its original plant food removed from fiber, vitamins, minerals, and plant enzymes, it will raise blood insulin markers too high too fast and that begins a cascade of things that oppose the ideal blood serum messengers that balance health in terms of "Optimal." The chronic endurance athlete diet using a high glycemic carbohydrate during high blood glucose turnover (exercise) is less likely to have

compromised health of blood glucose/lipid issues. It is during sedentary meals that elevating blood glucose with a processed low fiber, no enzymes, high glycemic carbohydrate diet that in time and with dose the blood serum environment is less than what I know to be best.

Following your workouts lasting longer than 90 minutes, if performance is the goal, you need to replace protein and muscle glycogen at a high rate during the 3-hour window following that prolonged effort. If health is the goal, then protein alone with low glycemic carbohydrate foods, ideally natural raw fruits or vegetables, should be consumed. Take note, this will not replace spent glycogen; it will only replace proteins lost to exercise-induced amino acid cannibalization. Boosting muscle glycogen replacement will not be optimal, but health markers will be.

I hope I make this point clear and I am sure Friel would agree. We are talking about two ideal goals: Health or Performance. To gain ideal health, some of the performance factors will be less than optimal. To gain performance, some of the health ideals will not be optimal. In the off-season, training and exercise can apply the "health ideal diet practice" for health. During peak performance training protocols, when 90 minute or longer workouts are completed, the 3-day replacement of carbohydrates using high glycemic carbohydrates is the only method that glycogen stores are topped off. Topping off glycogen stores takes a minimum of three days after a depletion workout, which improves the quality of performance on subsequent training designed to improve performance.

see PALEO on page 23

PALEO from page 22

The ideal optimal performance or health state is difficult to achieve simultaneously. The Paleo diet is a healthy diet, but it is not the best menu for endurance performance, because it does not refuel muscle glycogen stores as well as a modified high glycemic protocol does.

This answers your question and perhaps where I differ from Friel is that a higher glycemic effect from a relatively large carbohydrate portion is required to keep muscle glycogen stores full. In my opinion, the Paleo diet does not accomplish topping off glycogen stores as well as is possible from protocols not part of or were available to Paleolithic age man. We know what Paleo Man was eating by examination of stomach cavity contents. Those contents were actually very low in carbohydrate glycemic value and quantity and therefore, though health-enhancing supporting low BMI values positively, Paleo man did not have his glycogen stores topped off for the marathon.

You get to decide on what you want to adapt based on your goal.

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Winter sports

Steve Born

As I write this article, it's already 75 degrees outside, with the expected high to be in the mid 80s...it's kind of strange to be writing about sports that take place on snow! Still, by the time you read this it'll be early autumn and, if you're lucky enough to live where winter means snow, you know that'll (hopefully) be here sooner than you think.

Speaking of winter-specific sports, Hammer Nutrition has been enthusiastically sponsoring many of them for a number of years, primarily Nordic skiing and snowshoeing races, and we're looking forward to supporting these great sports again in 2009.

We're once again honored to be partnered with the United States Snowshoe Association as the Official Energy Product of the USSSA. We'll be providing product support for the races that make up the 2009 PowerSox U.S. National Snowshoe Championship Series, as well as the 9th Annual United States National Snowshoe Championships. For more information on the Championship Series events, visit www.snowshoeracing.com/events and for information on the Championship race visit www.snowshoeracing.com.

As far as Nordic ski races are concerned, we are excited to once again help support

the majority of the races that make up the American Ski Marathon Series. Here are the races that we plan on supporting again in 2009:

- Pepsi Challenge - Biwabik, Minnesota - Saturday, January 17
- Subaru Noquemanon Ski Marathon - Marquette, Michigan - Saturday, January 24
- Craftsbury Marathon - Craftsbury Common, Vermont - Saturday, January 31
- City Of Lakes Loppet - Minneapolis, Minnesota - Sat/Sun, Jan 31/Feb 1
- Boulder Mountain Tour - Sun Valley, Idaho - Saturday, February 7
- Minnesota Finlandia - Bemidji, Minnesota - Sat/Sun, February 14/15
- North American Vasa - Traverse City, Michigan - Sat/Sun, February 14/15
- California Gold Rush - Soda Springs, California - Sunday, March 22 (Tentative Date)

For more information about these events visit www.xcskiworld.com.



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Race Day Boost



Steve Born

Race Day Boost (RDB) is one of the most powerful ergogenic supplements available; the research on its main component, sodium phosphate, having been thoroughly studied and tested over the course of many years. It's super easy to use, though there have been solubility issues raised over the years, which is why we recommend mixing each teaspoon serving in 3-4 ounces of warm/hot water. After the powder dissolves consume immediately followed by 2-4 ounces of fruit juice or other carbohydrate source (liquid or solid).

Here is some other information that will help you get the most out of RDB...

1) When To Use While Tapering – As everyone knows (or should know!), the four days prior to a race—the time when you'll be using Race Day Boost—is NOT the time for high-intensity or long-duration training. Still, some athletes like to (as an example) get out for a 30-60 minute easy spin on the bike a couple days prior to a race. The question is, "If I do one or more of the loading doses prior to a workout, keeping in mind that these are shorter, lower-intensity workouts, will that negatively affect the benefits received from the product?" The answer

is yes, at least some of the effects/benefits will be somewhat diminished if you use the product prior to a workout.

Therefore, if you do any workouts prior to a race (and definitely keep them to a minimum and make sure they're short and easy – DO NOT TRAIN!) it's best to do the majority-to-all of the loading doses of RDB afterwards. In other words, if you do (for example) one or two of the four loading doses prior to a workout, you're going to deplete at least some of what you loaded with during the workout. So, as much as possible, do as many of the doses after your workout so you don't "use up" any sodium phosphate in RDB that you've taken prior to a workout.

2) Diet Modifications – When you do a loading dose of RDB you'll be consuming a teaspoonful four times daily for four days. Each teaspoon serving contains 1000 mg of the sodium phosphate compound, 193 mg of which is comprised of sodium. Four servings daily will give you 772 mg of sodium per day. Over the course of four days that's an additional 3088 mg of sodium you'll be consuming. Therefore, if any diet modifications are to be made, lowering your sodium/salt

intake to accommodate the additional amounts you'll be receiving from a four-day load of RDB makes perfect sense. The main thing is to not do what far too many athletes do and increase your salt intake the days leading up to your race. Doing that ("sodium loading") will not provide any benefits and will most likely create problems come race day.

3) Mixing RDB Ahead Of Time For Consumption Later – This is not recommended due to the glutamine component in the product. Glutamine is not a very stable nutrient once mixed in solution; a portion of it degrades into ammonia. As a result, RDB (and Recoverite as well, as it contains glutamine) should be consumed as soon as possible after mixing.

4) Using RDB To Enhance Alkalinity In The Diet - Dr. Bill Misner states, "I do not recommend using RDB as a daily alkaline-enhancing supplement; diet is the correct answer. The pH of body fluids, including urine, saliva, and blood, varies with function and is tightly regulated [via] systems to keep the acid-base homeostasis. The pH of blood is known to be slightly basic,

see RACE DAY BOOST on page 28

HOT TIPS

Be vigilant with dietary sodium intake when using RDB

Most everyone consumes 6000-8000 milligrams of sodium per day, an amount that's two to three times the upper recommended daily dose for sodium. Therefore, the practice that some athletes follow, which is to consume extra amounts of salt in the in the days prior to a race in the hopes of "topping off sodium stores," is without merit and a practice we vehemently do not recommend. When you're using Race Day Boost (RDB) in a four-day loading cycle prior to a race you need to be even more cognizant of your daily sodium intake. This is

because each teaspoon serving of Race Day Boost contains 1000 mg of Sodium (tribasic) phosphate, 193 mg of which is comprise of sodium. Therefore, if you load RDB at the rate of four divided doses each day your net sodium intake is 772 milligrams per day, or roughly 32% of the upper recommended daily dose for sodium. Our recommendation: When you use RDB in a four-day loading dose prior to a race, lower the amount of sodium that you're obtaining in your diet to accommodate the amount of sodium you're receiving in RDB.

Hammer Camps

Jumpstart your 2009 cycling season

Steve Born

With a couple months still remaining in 2008, perhaps it's a bit early to be thinking about the 2009 season. However, it's definitely not too early to sign up for one of the five upcoming Hammer Camps, if only because space is limited to 12 campers per camp.

Based on the feedback we've received, these camps have been an absolute hit. And how could they not be? When you come to a Hammer Camp you'll not only get in some great riding and coaching assistance, you'll be pampered with full SAG and professional domestique rider support, on-site massage, Globus EMS demos, endless supplies of Hammer Nutrition fuels and supplements, and plenty of tasty 53x11 Coffee products.

CAMP 1

Our first camp, which we call the "pre-Christmas, post-season, de-stress" camp, takes place from December 9–14, 2008. This loosely structured, base miles/endurance building camp features Hammer Nutrition proprietor, Brian Frank, along with Owen Gue and the crew at The Cycling House... it's the perfect "cycling fantasy camp!" Hammer Nutrition sponsored athlete and coach, Jim Bruskewitz, will also be on hand to provide coaching assistance, season review and analysis, as well as goal setting and training strategy for the upcoming season.

If you're not yet ready to hang the bike up for the year, join us for five days of epic rides, amazing gourmet food, and beautiful Tucson weather; it doesn't get much better than that! Cost is \$300.00/day = \$1500.00 per person.

CAMP 2

If you're looking for some solace from the long winter, our second camp, and

the first of 2009—the "Putting it all together" Camp #1, which begins on February 2 and goes through February 8—is just what you need! This is a great opportunity to join Hammer Nutrition Senior Advisor, Steve Born, and coach Jim Bruskewitz at The Cycling House for six days of non-stop learning, training, eating, and relaxation! This camp's structured format is centered around one-on-one coaching, nutrition/fueling/supplementation guidance, goal refinement, and objective evaluations... it's a superb way to enter the season with greater confidence!

Most attendees from the inaugural camp are planning to return, so this one fills up fast. Cost is \$300.00/day = \$1800.00 per person.

CAMP 3

The third Hammer Camp, the "Putting it all together" Camp #2, takes place from February 23 through March 1, 2009, and is similar in structure to the early-February camp, this one with Brian and Jim at the helm. As is the case with the first "Putting it all together" camp, many attendees from the February 2007 and 2008 camps will be returning, so this one fills up fast. Cost is \$300.00/day = \$1800.00 per person.

CAMP 4

The fourth Hammer Camp to be held at The Cycling House is the "Season Launch" camp, which happens from March 3 through March 9. Hammer Nutrition Senior Advisor, Steve Born, Hammer Nutrition sponsored athlete/coach, Jeff Cuddeback, and The Cycling House crew are your hosts for six days of non-stop, learning, training, eating and relaxation! As is the case with the "Putting it all together" camps, if you want to enter the season with greater

confidence, you'll want to find room in your schedule to attend this camp. Like the "Putting it all together" camps, you'll receive one-on-one coaching, nutrition/fueling/supplementation guidance, goal refinement, and objective evaluations.

We expect this camp to fill fast, so even though March 2009 seems like a long time from now, you'll want to plan and sign up for this one sooner rather than later. Cost is \$300.00/day = \$1800.00 per person.

OTHER CAMPS

One other Hammer Camp that we need to mention is the "Hammer Singletrack Camp, Southern California," produced by Hermosa Tours. This mountain bike-specific camp takes place from November 9 through November 15. You can find more information about this camp at <http://www.hermosatours.net/hammersocal.html> or on the Hammer Nutrition web site.

No matter which Hammer Camp you attend, you're in for a treat: great riding, great food, great support, great everything! These camps are sure to fill up so if you've been thinking about signing up, don't delay. More information about the Hammer Camps can be found on the home page of the Hammer Nutrition web site. Just click on the "CAMPS" link on the navigation bar at the top of the page.





Steve Born

Our “spotlight” athlete for this issue of Endurance News is long-time customer Randy Beckner of Helena, Montana.

Randy, who recently celebrated his 56th birthday, is a most versatile athlete, having first been involved in running, then road cycling. After that, he caught the triathlon “bug” and has competed in numerous triathlons of varying distances. Since his semi-retirement from the sport in 1998, Randy has gone back to the sport he calls his “first love”: Nordic skiing. Just recently, he’s given Xterra racing a try. We caught up with Randy in between his busy schedule...

STEVE: Randy, with a client number under 3000 and an order history that dates back to 1989 it’s safe to say that you’re a longtime Hammer Nutrition product user. When did you first hear about Hammer Nutrition products and what was the impetus for you to give the products a try?

RANDY: Steve, you’re really testing my memory here but I think I must have seen Hammer Nutrition products advertised in the old publication Triathlon Today. To be honest, I’m not sure what prompted me to give them a try but I’ll tell you I’m glad I did. I was logging big miles that year on the bike and on the track and within a couple of weeks of starting to use Hammer supplements I noticed my recovery time increased remarkably. In the fall of 1989 I took a year off to train over in Hawaii. I planned on racing in New Zealand in the spring and Kona in the fall. Several of the top triathletes that I met over there used Hammer products and you know, you compare notes and I just kept hearing more good feedback that reinforced my own experience with your product. I guess I’ve never looked back. I know how much R&D goes into Hammer

products and I know they work so I’ve just stuck with a winning product.

STEVE: If you can recall, which of the products—which were under the “E-CAPS” name back in the day—did you start using?

RANDY: Man you are making it hard on an old guy! As I recall, the Race Cap Supreme evolved from two products, Race Caps and Enduro Caps. I used both of those extensively as well as liquid Xobaline.

STEVE: I know that you have been using and continue to use the products religiously. Would it be safe to say that you’re satisfied with their efficacy and if so, what makes them your products of choice?

RANDY: As I mentioned before, I have a tremendous amount of respect for the amount of research and testing that goes into Hammer products. A perfect example is the fact that Hammer reduces or eliminates the use of simple sugars in their fuels. There are a lot of products out there and they are all claiming to be the ultimate supplement. Hammer, on the other hand, shows you the product, shows you the testing, and lets you decide. I simply know that by using Hammer Nutrition products I am giving myself every opportunity to achieve everything I am physically able to.

STEVE: Which of the Hammer Nutrition supplements do you use daily?

RANDY: Premium Insurance Caps, Race Caps Supreme, Boron, Mito Caps and Tissue Rejuvenator.

STEVE: What Hammer Nutrition fuels do you use regularly?

RANDY: HEED, Hammer Whey, and Recoverite every day. On longer workout days I use Perpetuem and Hammer Gel.

STEVE: You did your first Hawaii Ironman in 1989. Was that your first Ironman or had you done any previous Iron distance races (or any other triathlon distances) prior to that one?

RANDY: I did my first triathlon in 1986. I had done quite a bit of distance running, (my marathon PR is 2:39) and that had evolved into road cycling. I was working at a ski, bike, and run shop at the time and, having grown up swimming, I decided to give it a go. Like everyone else, you start running you want to do a marathon, you start skiing you want to do a 50K, you start triathlon you want to do an Ironman. I used 1987 to build up to half IM distance and then in the fall of 1988 I committed a year of hard training to racing the Ironman the following October.

STEVE: You finished that first race in 9:22:00, which placed you 7th place in age group and 68th overall. You had to be pretty pleased with that.

RANDY: I really was. I had told a friend of mine (and experienced IM racer) that I was going to go under 9:30 and he just shook his head. I don’t think I’ve ever had a better experience racing. I just went out not knowing what to expect and it turned out great. I have to say, it was a bit humbling. I had raced my heart out and could only manage 7th in my age group! Little did I know that the two Americans in front of me were Cliff Rigsby and Rubin Chappin, two of the best age group competitors to race that distance. When I moved over to train in Hawaii, Cliff and I became great friends

see RANDY on page 27

RANDY from page 26

and training partners.

STEVE: Was that the race that made you think, “You know, I may have a future in this sport?”

RANDY: Without a doubt. I had had a great season up to that point. I won my age group at the Long Course National Championship at the tough Hill Country Triathlon in Texas and was undefeated in my division at any distance. This race, the Ironman, put it all in a new light. Wow! This was racing. I mean, every person out there is riding right on the edge. The pros, the amateurs, everybody is pushing their physical limits. Ironman Hawaii will always be, for me, the most amazing athletic contest there is.

STEVE: What other Iron distance races have you done since then?

RANDY: I went on to compete in five more Hawaiian Ironman’s, the Canadian Ironman, and the New Zealand Ironman. I had seven Iron distance races under 10 hours and finished on the podium three times in my division. All three times I was the top American in my division. Additionally, in the years between 1988 and 1998 I won the National Long Course title twice in my division and went four years without a loss in my age group. I semi retired from the sport in 1998.

STEVE: Is that when you went back to Nordic skiing?

RANDY: It is. There were a couple of factors that that affected my decision to retire from triathlon and pursue Nordic skiing again. While I had always used Nordic skiing as a way to supplement my training, I hadn’t done much racing for a while. The sport had gone to skate skiing and we were still just grooming for classic. By 1998 we had reorganized our local cross country ski club and we were grooming for skating. It just happened that our son Landen was born in 1996. I decided then to give myself two more years before hanging it up and devoting more time to being a Dad and less time to pounding the pavement. It all worked out great. I got back in a sport I truly love and eliminated

some of the balancing act that every family goes through when there is an endurance athlete in the house. I love to compete but family should always be first. You know, I don’t think I’ll let my wife edit this; she may have a different perspective on all those years!

STEVE: You’ve had some pretty good success in that sport, for sure.

RANDY: Yes, I’ve been able to put together some pretty good performances. In the



American Ski Chase Marathon events that I compete in (the Birkebeiner, Boulder Mountain Tour, Yellowstone Rendezvous) I am undefeated in my division. I ski in the elite wave at all national level races and have placed as high as 8th overall among the best skiers in the country. In 2005 I raced in four National level ski marathons (50K) in four consecutive weeks and won my age group at every race. In 2006 I captured the National title for my division in the 30K freestyle (skate) race and in 2008 I won the World championship in the 30K skate, silver in the 45K skate, and bronze as part of the 4x5K American relay team. I was named to the U.S. National Masters team in 2008. I currently ski for Atomic as a member of their Nordic team.

STEVE: Obviously, there are a number of differences in the training required for doing an Iron distance triathlon versus a marathon Nordic race. Do you prefer the training for one sport to the other? If so, why? Also, how much more did you

have to train for triathlon than you are for Nordic racing (if this is, in fact, the case)?

RANDY: I have to say that I love them all but yes, I would rather be skiing than anything else. It’s hard to explain but in Nordic racing there is always a recreational aspect that is missing in triathlon. I don’t know how many times I have been at the line in a ski race, trying to calm the nerves, telling myself “Hey, it’s skiing.” The same goes for training. I love to run and swim and bike but I LOVE to ski. Every training session is just skiing. As far as the amount of time spent training, Ironman takes the cake. That was the main reason I walked away when I did. While I think a person can race Olympic distance races and juggle family, friends, and work, Ironman is a different story. It’s an event I would like to see every triathlete aspire to but one that, for a certain period of time, is going to be your life. That said, training is training. To race at an elite level you have to put in the time. My philosophy is go as hard as you can for

as long as you can every day. I have over distance days, technique days, anaerobic workouts, and have fun with friends days, but it’s all about going longer, harder, and better. I guess I rambled on a bit. I would say I get the same results training about a third of the time.

STEVE: What kind of dry land training do you do in preparation for the Nordic ski season? In season, what does a typical training week look like for you?

RANDY: I try to vary my summers. One year I might do a lot of climbing. Another I might focus on mountain bike racing. Last summer was weight room and roller skiing. This year at the urging of my son I’ve been doing some Xterra races. In season I ski every day. Two days a week are over distance with intensity, usually 2-4 hours. One day is race simulation, 1-1.5 hours, and the rest of the week consists of technique drills, steady skiing, descending and climbing. In a

see RANDY on page 29



Shanna Armstrong, and crew, head toward the finish line at Badwater. Photo - Chris Kostman

Steve Born

The 31st anniversary of this amazing ultra running race, once again sponsored by Hammer Nutrition, took place on July 14th-16th. According to race director Chris Kostman, "Covering 135 miles (217km) non-stop from Death Valley to Mt. Whitney, CA, the Badwater Ultramarathon is the most demanding and extreme running race offered anywhere on the planet. The start line is at Badwater, Death Valley, which marks the lowest elevation in the Western Hemisphere at 280' (85m) below sea level. The race finishes at the Mt. Whitney Portals at nearly 8,300' (2530m). The Portal is the trailhead to the Mt. Whitney summit, the highest point in the contiguous United States. The Badwater course covers three mountain ranges for a total of 13,000' (3962m) of cumulative vertical ascent and 4,700' (1433m) of cumulative descent."

This year's winners were Jorge Pacheco of Los Angeles, CA and Jamie Donaldson, of Littleton, CO, who set the second fastest men's and fastest women's times in the history of the event, 23:20:16 and 26:51:33 respectively. Donaldson's time was fast enough to place her 3rd overall among the 80 starters in the race.

In fact, the women's field was so strong this year that eight women finished in the top 15. Among those in this elite group were Hammer Nutrition sponsored athletes Shanna Armstrong of Lubbock, TX (3rd female, 7th overall) and Lorie Hutchison of Salt Lake City, UT (4th female, 8th overall). Armstrong's Badwater finish is especially notable in that it is the first accomplishment of her ambitious goal to complete an incredible ultra endurance "Triple Crown" that includes the Furnace Creek 508, a 508-

mile ultra cycling race (October 4th), and the Ultraman World Championships (November 23-25), which consists of a 6.2 mile open ocean swim, a 261.4 mile cycling leg, and a 52.4 mile run.

Lots of information about the Badwater Ultramarathon, as well as complete race results, can be found at www.badwater.com.



Lorie Hutchison finishes her Badwater. Photo - Chris Kostman

RACE DAY BOOST from page 24 and at a value of 7.4. pH, is vital in maintaining the functioning of cells. For example, enzymes are heavily affected by changes in pH, and have an optimum pH at which they operate. Outside a small range they can denature and cease to catalyze vital reactions."

"Most plant food contains weak organic acids and salts; however, when they enter a medium of acidified water or acidified dilute salt brines and become heated, they create a buffering action to maintain their original pH. Natural, raw, vegetables and fruit juices are alkaline-producing. (Fruit juices become more acid-producing when processed, especially when sweetened.) A diet containing 60-75% vegetables and fruits will raise pH to higher alkaline values. Exercise, especially endurance exercise,

lowers pH to acidic levels."

"Athletes should alter their diets to a high pH food menu, plan longer recovery

time, and only use RDB loading dose protocol prior to events."

The Ultimate Race Day Advantage

No matter what duration your event may be, a four-day loading dose of Race Day Boost prior to a key race can make a noticeable difference in your performance. This is a special product for special events, but if you intend to meet or exceed your race day expectations, you better have Race Day Boost in your arsenal.

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RANDY from page 27

really good week prior to race season I try to get in 12-15 hours of skiing. I usually do two weight workouts a week in the afternoons prior to the start of the full race season. Once I start racing I quit lifting.

STEVE: When you say “semi retired” from triathlon are you’re suggesting that you’re perhaps not yet through with the sport? If not, what race(s) would you like to do?

RANDY: Well, as I mentioned, my son has started doing Xterra races and he persuaded me to do one this summer. Oh man, I got completely hooked. We then went down to do the mountain zone championship in Ogden, UT and the Wild Ride Xterra in McCall, ID. I ended up qualifying for Nationals at Lake Tahoe in October. I’m really excited about this race. I have a feeling I’ll be outmatched but I love the idea of racing the top competitors in any sport and this one is no different. The top two qualifiers in my division from each region, as well as the other division leaders and top pros, all race on Sunday, October 5th. The all comers race is the day before. This race, along with the Xterra World Championship in Maui, are the two on my radar right now. We are going to Nationals but Maui and our bank account don’t quite jive for this year.

STEVE: Which race in your triathlon career was your most satisfying?.

RANDY: Without a doubt the 1989 Ironman. I had a lot of dreams and expectations but no experience. The day was just incredible. A close second has to be the Long Course Nationals the same year. I new I was having a great race but I just wasn’t catching anyone in my age group. I hammered the bike and then in 90 degree heat ran a sub one-hour 10 mile run. I went to the awards that night thinking I was out of the money. When they announced third and it wasn’t me my heart sank. When I wasn’t second I thought that was it. Boy was I surprised when they called my name for the win!

STEVE: Of the Nordic races you’ve done, which one do you like the best? Why?

RANDY: Before this season it would have to be the American Birkebeiner. To me it is the National Championship. There are 6000 to 8000 skiers there and every top skier in the country races it. The organization and competition are second to none. After racing in the World Championship, though, it left me blown away. In every division, skiers of unbelievable talent and ability vied for a top spot on the podium. It was as close to an Olympic experience as I’ll ever see.

STEVE: When I was training for RAAM and other ultra cycling races I found



Nordic skiing to be the best way to cross train. While most of my competitors were riding year round, I was putting in a lot of kilometers of skiing. When I did get back on the bike in spring I may have been a little stale at first; however, since I was so fit from skiing it didn’t take long to “transfer” that Nordic fitness over the bike. Plus, I wasn’t burned out from too much riding, which I felt gave me a definite advantage. Do you feel similarly?

RANDY: Exactly the same. I can come off of ski season and into the pool and feel like I’ve been skiing all winter. You’re right in that it takes a few weeks to transfer to bike legs but the overall fitness more than makes up for it. While I think swimmers and cyclists benefit by adding Nordic skiing to their winter program, it is runners that really do themselves a favor. Not only is it better total body conditioning, the stress free training will add years to your running career.

STEVE: You’ve also done some mountain bike racing, is that right?

RANDY: Yes, I have raced in the expert division in mountain biking and just recently decided to give Xterra racing a try. At the Mountain zone championships recently held at Snow Basin, Utah, I won my division and qualified for a spot at the Xterra World Championships in Maui, Hawaii. I used a mixture of Perpetuem, Hammer Gel, and Endurolytes in my water bottle on the bike and then just water on the run. I had great fuel.

STEVE: Your son is a pretty darn good athlete as well. Could you tell us a little about him, what sports he’s doing, and what he’s accomplished so far?

RANDY: Our son Landen is 12 and proudly (he won’t take it off all day) wears the Hammer colors at every race. He is one of the top swimmers in the region and swims for the Lions Swim Team in Helena. He started doing a few of the kid’s triathlons the year before last before moving to the sprint distance last year. In 2007 he completed three sprint distance races. This year he competed in the Helena

sprint tri, finishing 13th overall out of 60 competitors. It helped to be one of the first out of the water. Next, we tackled the Wild Horse Creek Xterra. He won the swim, won his age group, and placed 8th overall. His last multi event of the year was another Xterra, this one the regional championship in Ogden. He got in by special exemption and raced the short course along with 295 other competitors. He was third out of the water, 5th in the 15-19 age group, and 90th overall out of 296! He is turning some heads. He’s a great swimmer and mountain biker. His goal is to qualify for Maui when he turns 15 in three years.

STEVE: Wow, it sure seems like Landen is following in the footsteps of his Dad! Thanks for taking the time to chat with me, Randy, thanks for being such a great client these many years, and good luck to you and Landen in all your upcoming races!

Hammerbuck\$ Winners!

Read about the winners on the facing page.



The inception of our Hammerbuck\$ program has proved to be a winner. It seems like we are receiving reports almost weekly from athletes all over the country who are making it onto the podium at eligible events. Way to go!

- 1. Greg Taylor**
1st place finish in the 50-54 age group at Ironman Arizona
- 2. Heather Pryor**
3rd place finish in the age group at Ironman Coeur d'Alene
- 3. Amy Rappaport**
3rd place finish in the ... age group at Ironman Lake Placid
- 4. Thane Wright**
2nd place finish at the Firecracker 50
- 5. Lorie Hutchison**
4th female, and 8th overall at the Kiehl's Badwater Ultramarathon
- 6. Andrew Loeb**
2nd place finish in the 60-64 age group at Ironman Arizona
- 7. Eric Skaden**
1st place finish at the USA 100 Mile Championships (Tahoe Rim Trail 100 Mile Endurance Run)
- 8. Margaret Thompson**
2nd place finish in the 50-54 age group at the USA Cycling Master Road Nationals (Time Trial)
- 9. Chrystie Hjeltness**
3rd place finish in the 40-44 age group at Ironman Coeur d'Alene
- 10. Randy Profeta**
2nd place finish in 50-54 age group at 24 Hours of Adrenalin World Solo Championship
- 11. Jeff Linder**
1st place finish in 60+ age group at 24 Hours of Adrenalin World Solo Championship
- 12. Wendy Skean**
1st place finish in 60+ age group at 24 Hours of Adrenalin World Solo Championship

HAMMER BUCK\$

Cash contingency program

What it is:

A cash and credit contingency program open to all age group athletes competing in eligible triathlons, mtb races, road, and running races, who use Hammer Nutrition products and wear our kit.

Eligibility:

ANY Hammer Nutrition sponsored athlete, any member of our TEAM Auto-Resupply program, or any other Hammer Nutrition client wearing our kit.

Requirements:

You must complete the entire race and awards ceremony wearing a 2007 or newer Hammer Nutrition cycling, triathlon, or running kit and should be using Hammer Nutrition fuels and supplements in training and on race day. Win or podium in your age group or overall, send us a high resolution digital photo of you on the podium and you'll get PAID in cash or Hammer products.

Eligible Events*:

ALL U.S. Ironman™ iron-distance triathlons
USA Triathlon National Championships
USA Cycling National Championships
Select 100-Mile trail running events
Race Across Oregon
Badwater Ultramarathon
Furnace Creek 508
Race Across America
Select 100 Mile MTB events
Select 24-Hour MTB events

This is just a partial listing of eligible events and requirements. Complete list, prize payout listing, and more details can be found on our website. If an event, or division, is not listed on the website, it is not eligible.

Pay out as follows*:

1st place = \$1,000 in cash or \$1,500 in Hammer credit
2nd place = \$500 in cash or \$750 in Hammer credit
3rd place = \$250 in cash or \$375 in Hammer credit
4th place = \$150 in cash or \$225 in Hammer credit
5th place = \$100 in cash or \$150 in Hammer credit

Go to [www.hammernutrition.com/buck\\$](http://www.hammernutrition.com/buck$) for complete listing of events, prize payouts, and more details.

Email photo and information to [hammerbuck\\$@hammernutrition.com](mailto:hammerbuck$@hammernutrition.com)

*Void where prohibited. No double payments for age group and overall finishes – you get paid for the higher of the two placings.

What We Can Learn From Immortals

Tony Schiller

We'll grow to appreciate what they did even more in 40 or 50 years. What most impresses me though about what Michael Phelps and Usain Bolt did in Beijing is how they handled the pressure.

As athletes we all deal with pressure but imagine being Michael Phelps these past four years. Training every day under the burden of this... become the greatest single Olympic champion of all-time or go home in failure as the poster boy for underachievement. He accepted this knowing that as the best swimmer in the world already, he still had to get better for all 4 years and be at his all-time best to qualify #1 for all 8 races at the trials while still saving room to peak to be even better again 6 weeks later at the games. And then there was that little matter of the media frenzy and the entire world watching his every move in bigger-than-life close-ups for 9 straight days.

For Bolt, it was much the same with a country so counting on this very raw and untested 21-year old to lift and carry the hopes of their entire nation. Unlike Phelps, Bolt was new to this stage still years from his prime so he could have hung low. But hang low he didn't, declaring, "Watch out world, I am here." In blasting Michael Johnson's "untouchable" 200 world record, Bolt tossed aside a mark that took the world's greatest long sprinter 15 years of being possessed with perfection and an obsession to break "that" record. When he finally achieved it in Atlanta, it was the crowning moment of his career. And Bolt broke it while running "ugly" in a sport he's just beginning to learn.

So how did these guys do it in the midst of such enormous expectations? A simple and helpful explanation is they

did what so raced with a "want to" vs. a "have to" mentality. This is to say, they wanted the excitement of the quest and lived to race in it despite knowing second place was utter failure. It's easy to say you want the pressure; another thing all together to pull it off (think Jeremy Wariner). But the two facing the greatest expectations did. They received the pressure as a gift they wanted and mastered turning pressure into adrenaline for epic achievement.

So what can we learn from them?

For starters, honestly assess yourself. Do you compete in your big events like them – wanting the pressure? Or do you race more from a "have to" place? I have to get 8 hours sleep. I have to eat and drink x every y minutes. I have to split at x interval. I have to stay focused. I have to beat x-time. I have to win. I have to qualify.

And then there's the biggest "have to" of all... I have to avoid letting _____ (fill in your name/s of choice) down." Whether it's a parent, spouse, coach, friend, kid, sponsor, the media, your support group, or all of the above, there's nothing as debilitating as the fear that comes with worrying about letting others down. This I've learned the hard way. The fact is, most of us just aren't good enough (not even Michael Phelps) to carry the burden of living up to others' expectations and still turn in our best performance.

How to Course-Correct

Here's a reality check. Most people aren't losing any sleep over how you do. I learned this at the 1998 Ironman when 24 friends and family came to Kona to cheer me. I was sure their vacation success depended on me winning and

raced with a "have to" not let them down mentality. It worked great... until it stopped working. As I approached them all at the 8 mile mark of the run walk, it was one of the lowest moments of my racing life. But then my buddy Bill walked a few steps with me and said a simple but life-changing line, "Tony, we're disappointed for you, not in you." They were with me regardless and admired me as much for how I was persevering through my struggle than they had for any previous races I'd won.

Not having to win anymore revived me and helped turn around those last 18 miles. It became a defining moment where I began to race less often from a "have to" do well to prove myself place to a "want to" do well to improve myself place. As you prepare for your next big race, think about these simple ideas and it might make all the difference in the world.

In 2008, Tony Schiller won his 6th ITU age group world title. Besides his work as a corporate motivator, he directed over 1000 kids this summer in the MiracleKids Triathlon which raised over \$175,000 for cancer kids.



Two New Flavors!

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Recoverite & Hammer Whey

Usage suggestions



Steve Born

While athletes appreciate the benefits derived from consistent use of Recoverite and/or Hammer Whey after exercise, a handful of athletes don't care for the flavor of the product(s), which can increase the potential for skipping the use of these great fuels. Here are some tips that I've come up with to help eliminate this particular problem:

Use less water when mixing Recoverite

I'm not fond of drinking large volumes of flavored drink mix in general, whether it be during or after exercise. That's why during long bouts of exercise I almost always use Sustained Energy or Perpetuem in concentrated, multi-hour bottles or flasks... that way I get to drink and enjoy plain water and take care of my hydration needs while taking care of my calorie requirements via significantly less flavored fluid. When I am done with a hard workout I still want and need to use Recoverite, and I do enjoy the flavor. However, as it is with my during-exercise intake, I don't usually want to drink large volumes of flavored liquid after a workout. Therefore, I'll make a serving of Recoverite using smaller amounts of cold water, sometimes as little as 4-5 ounces, and I'll drink plain water from another source to help replenish fluid requirements.

Use Strawberry Recoverite

If you haven't yet tried this new flavor of Recoverite you definitely need to... it's really good! In the latter part of August I rode five days of the Ridge of the Rockies PAC Tour and, among other Hammer fuels, we supplied them with strawberry flavor Recoverite. The feedback from riders was unanimously positive as it has been with the overwhelming number of athletes who've tried this particular flavor.

Use fruit juice or frozen fruit with Hammer Whey

If you are using Hammer Whey to make your own recovery drink you will, of course, need to add a carbohydrate component. Many fruit juices, such as orange juice, cranberry juice, pomegranate juice, and multi-berry juices are great choices and will flavor the drink nicely. I am particularly fond of pomegranate; this particular fruit has been getting a lot of ink in the past year or so because of its remarkable antioxidant power (from multiple polyphenols), which gives it a very high ORAC (Oxygen Radical Absorbance Capacity) score. What's great is that there are now super concentrated pomegranate products, such as the PomeGreat product made by Jarrow Formulas. Every tablespoon of this particular product contains 9 grams of carbs so 3 tablespoons (27 grams of carbohydrates) of PomeGreat + 1/2 scoop

of Hammer Whey (9 grams of protein + 3 grams of glutamine) mixed in cold water will give you the 3:1 carbs to protein ratio that you're looking for in your recovery drink.

Another option is to make a smoothie using Hammer Whey and frozen fruit (I like using Cascadian Farms frozen organic fruits). As an example, 1 cup of Cascadian Farms frozen blueberries (another high ORAC fruit) contains 17 grams of carbohydrates. Blend 1.5 cups (25.5 grams of carbohydrates) in water along with 1/2 scoop of Hammer Whey (9 grams of protein + 3 grams of glutamine) and you've got a great tasting post-workout recovery drink that's very close to the desired 3:1 ratio of carbs to protein. This combination also makes an excellent meal replacement drink.

Hammer Whey at bedtime? Try Vanilla or Chai flavors

If you simply cannot tolerate the flavor of the original Hammer Whey product, you should try the vanilla or chai flavors. Each scoop still provides a full 18 grams of protein and 6 grams of glutamine, but just a miniscule amount (20 milligrams) of carbohydrate. You get all the benefits of the whey protein and glutamine (for hGH release, as mentioned in several issues of *Endurance News*) but without the carbohydrate "interference."

Don't just recover well, recover right!

How well you perform tomorrow depends on how well you recover today, which is why you can't cut corners when it comes to your post-workout fueling. Make sure you're recovering right with Recoverite!

1.800.336.1977 www.hammernutrition.com

Recoverite - 2 flavors - single \$2.49, 32-serve \$49.95





Nate Llerandi



Discipline vs. Compulsion

I read something the other day that defined a compulsive athlete as one whose sole focus in training was to control his/

her weight and physical appearance. I thought, “What a load of crud.”

Compulsion is certainly NOT limited to obsessing over your physical appearance. Likewise, in my mind, there is no overlap between dedication and compulsion. You can't be both dedicated and compulsive. Once you cross the line, your dedication morphs into compulsion. Make no mistake here. You cannot be both.

Here are some examples that may help you differentiate between the two—dedication and compulsion—and help you make sure you have proper perspective in your own life and training regimen.

- A dedicated athlete will get up at 5:15 every morning to workout because “you gotta do what you gotta do”. A compulsive athlete will get up at 5:15, see that it is -20 degrees and sleeting, and still go out the door to run because he just “can't skip a workout.”
- A dedicated athlete will realize that skipping a workout due to another commitment is OK and won't worry about “making it up.” In the master plan of building up her program, she will realize that a missed

workout will not negatively affect her preparation. A compulsive athlete will either do whatever it takes to fit in the workout or bite his nails down to the quick because he's fretting about the ill effects of a missed workout rather than enjoying his son's baseball game.

- A dedicated athlete will finish a 3-hour ride in 2:45 and call it good because the ride was solid. A compulsive athlete will tool around the neighborhood that final 15 minutes just to hit 3:00.

Dedication is knowing what needs to be done and doing it. The thought process is realistic and rational. Things are not etched in stone, but rather flexible and open to being constantly changed if/when need be. Reality and rationality get thrown out the window with compulsion. Everything is “do or die.” “I must do (whatever) because that's what my schedule dictates I have to do.”

A dedicated athlete will shrug his shoulders if he feels too lazy to go out the door for a specific workout. A compulsive athlete will not honor that feeling of laziness; or if he does, then again he will fret over the dire consequences of missing a workout and beat himself up about it.

Dedicated athletes work very hard to excel. You can see the fire in their eyes and see the determination on their faces when they train and race. But they also know when to “turn it off” and leave their sports behind them. Compulsive athletes are always “turned on”, always talking about their sports, their training, what they've done and have to do, etc.

They run the risk of becoming one-dimensional and rigid.

Compulsion is neither good for an athlete or for those around him/her. Add some relaxation to your weekly grind. Skip a workout to take the kids to the park and ENJOY playing with them. Sleep in with your spouse one morning JUST BECAUSE. Go out to lunch with a co-worker rather than heading to the gym. Whatever.

When we realize that our worlds don't fall apart if things don't go exactly according to plan, that can give us a huge sense of freedom and flexibility that the compulsive athlete will never realize. And, with that flexibility and freedom will come more enjoyment and better results.

Nate Llerandi is a former national champion class swimmer/world class triathlete. He has been coaching since 1990 and creates programs for athletes of all sports and ability levels. You can contact him at natellerandi@yahoo.com



Furnace Creek 508

The classic ultra cycling race turns 25!

AVOID OVERHEATING
 TURN OFF A/C
 10 MILES

Marko Baloh begins the ascent to Townes Pass.
 Photo : David Nelson

Steve Born

This year marks the 25th anniversary of what is arguably the most popular ultra cycling race in the world, the Furnace Creek 508, a race we at Hammer Nutrition are honored to continue supporting. The popularity and growth of the race has been astronomical over the years. In fact, due to permit constraints, as well as traffic and safety issues, the race field is now limited to 200 racers and determined through a selection process, with potential racers having to submit an application by April 22. And although this year's edition doesn't begin until October 4, the race roster was filled immediately following the application cut off date and announced on May 2.

In celebration of its 25 years, the race founder, John Marino, and the original winners, Michael Secrest and Kitty Goursolle, will be on hand. In addition, race director Chris Kostman has encouraged former champions, from 1983 through 2007, to compete. (And no, this former champion, circa 1994, will not be competing!). Another nice touch by Kostman is the scholarship program for younger ultra cyclists, who pay just a \$100 entry fee.

A most interesting addition to this and future editions of the 508 is the "Classic Rendezvous Category." The requirement to compete in this division of the race—be it solo, tandem, or team—is to race on technology from 1983 or older. That means:

- The frame and fork must be lugged steel (but built in ANY year, including brand new)
- No more than six cogs on the rear wheel
- 32 spokes per wheel minimum
- Friction shifting on the downtube or bar-ends (must be true

friction shifters; not clickables set in friction mode)

- Toe clips and straps

This year's edition is shaping up to be an awesome race. Although faced with many formidable challengers, the clear favorite to win the men's solo division is two-time champion and course record holder Michael Emde of Spokane, Washington. This Hammer Nutrition sponsored cyclist will be looking to "three-peat," having won the race in both 2006 and 2007.

The women's solo division could prove quite interesting as well, with two Hammer product users/sponsored athletes—2006 champion, Shanna Armstrong, and 2007 champion, Karen Armstrong—both expected to compete.

In the 60+ division, Hammer Nutrition sponsored ultra cyclist, David Jones, this year's RAAM champion and 60+ RAAM course record holder, will face a major challenge from multiple 508 finisher and 60+ course record holder, Reed Finrock.

Having personally completed the race three times, including history's only Double Furnace 508 back in 2002 (thankfully, so far no one's been crazy enough to try and break the record), this race is one that's near and dear to me. Chris Kostman's description of the race provides a good explanation why...

"This 508-mile bicycle race is revered the world over for its epic mountain roads, stark desert scenery, desolate roads, and its reputation as one of the toughest but most gratifying endurance challenges available, bar none. The course has an elevation gain of over 35,000', crosses ten mountain passes, and stretches from Santa Clarita (just north of Los Angeles), across the Mojave Desert, through Death Valley, to Twenty Nine Palms."



Michael Secrest and Kitty Goursolle, winners of the 1983 Furnace Creek 508 (then called the John Marino Open)
 Photo : courtesy Kitty Goursolle

The Furnace Creek 508 is indeed a uniquely difficult, yet utterly satisfying endeavor, a race with special qualities about it, both tangible and intangible. For the past several years Hammer Nutrition has been a major supporter of this epic race, and we congratulate it on 25 years of excellence. You can find more information about the Furnace Creek 508, as well as follow this year's race via webcast, at www.the508.com.

FURNACE CREEK 508



"The Toughest 48 Hours in Sport!"



Steve Born

Riding over Triple Arches in Glacier National Park. Photo - Greg Elizondo

It's hard to imagine that an already-great event could be even better but I'd have to say that of all the Highline Hammer events we've been putting on, this year's edition was the best one yet. We had another great group of participants joining us for five days, four of which included some fantastic riding. Everyone enjoyed wonderfully prepared, ultra healthy, and delicious food (and lots of it!), absolutely fantastic SAG support, plentiful supplies of all the Hammer products, and the opportunity for massage and/or Globus active recovery sessions after all the rides. Plus, the conditions this year were ideal: great riding weather (the temperatures couldn't have been better) and, with no fires in or anywhere near the area, no smoke to deal with.

Wednesday kicked off this year's Highline with a welcome party at the Hammer headquarters, which allowed us to catch up with previous Highline participants and meet new ones. Thursday's activities began with breakfast at Hammer HQ, followed by a 2+ hour easy-paced ride through the Flathead Valley. After that, participants enjoyed a great lunch while participating in a round table question/answer session with Brian Frank and Steve Born. After a couple hours of down time, a wonderful dinner took place at Hammer HQ.

Friday started off super early as riders were shuttled from Hammer HQ to West Glacier for the epic 136-mile loop through Glacier Park. This truly is a one-of-a-kind ride, with scenery that's beyond beautiful, 10,000 feet of climbing, four mountain passes, and two trips over the Continental Divide. Riding just doesn't get any better than this! Once everyone had finished, we were all shuttled back to Whitefish to shower and get changed. That evening we enjoyed

another superb meal at Hammer HQ.

Saturday's 75-mile ride around Flathead Lake was terrific. Many of us on the Hammer staff have done that loop several times over the years but this one was particularly enjoyable, thanks to the great company and very cooperative weather. Once completed, everyone enjoyed the beautiful scenery, mellow atmosphere, and a lakeside lunch in the town of Somers before being shuttled back to their hotel for some R&R. Later that afternoon, we all met up at City Beach in Whitefish where lawn chairs were set up for riders to enjoy Globus Active Recovery sessions before and during yet another fabulous dinner. After two particularly tough days of riding we were all tired but the endorphins were definitely flowing!

Sunday offered the participants the choice of a two-hour recovery ride or the 55-mile ride to the end of Star Meadows, which is a lovely, nearly car-free out-and-back ride. After everyone had returned, a delicious brunch was served at Hammer HQ (have I mentioned that we ate r-e-a-l-l-y well every day?) to conclude this year's Highline Hammer festivities.

The combination of great riding, food, knowledge, and just plain having-a-good-time is what the Highline Hammer is about. If you'd like to experience all of that, and in the beautiful scenery that defines Northwest Montana, you should definitely make it part of your 2009 plans. Speaking of which, we are currently deciding on dates and details for the 2009 event. In the meantime if you would like to be contacted once this information becomes available, please call Kadidja at 1.800.336.1977 to have your name put on the list.

HIGHLINE FEEDBACK

Many thanks to Brian and his staff for a great time. I came to Whitefish to learn about Hammer products and for the opportunity to ride Glacier Park. My expectations were exceeded. Great rides, great food, great riders, great support, great learning opportunity, great time!
- Paul Von Guerard

How can it get any better? What an excellent experience I had at the Highline Hammer! Gracious hosts, fantastic food, gorgeous landscapes, epic rides, good friends, and perfect weather. I feel like a part of the Hammer Family after this adventure. Sign me up for 2009!
- Rob Landes

Thank You to everyone for a great weekend. I enjoyed myself, learned about nutrition and successfully completed the ride through Glacier National Park. Everyone with Hammer worked hard to provide a great experience. While I enjoyed riding with Brian, Steve and Brendon, I want all those hard workers behind the scenes who took photos, fixed bikes, drove shuttles and fixed food to know that their efforts were appreciated. Everyone went the extra mile for us including washing and lubing our bikes after the mud on the Going to the Sun Road. I hope to join another Hammer Camp in the future and I'm looking forward to using Hammer Products for my nutrition and supplement needs in the future.
- Dave Bradshaw

Steve – Let me reiterate how much FUN I had this weekend at Hammer Highline... it was by far more fun than I even anticipated! And it was especially great to have access to you and Brian to pick your brains about the Hammer products. And being able to try some products (Race Caps Supreme, Mito Caps, Anti-Fatigue Caps) for the first time was an added bonus!
- Jennie Phillips



7
**HIGHLINE
HAMMER**
JUL 9-13, 2008
WHITEFISH, MT.
Burn baby, burn



The Endurance Path

Pain and Suffering : A blueprint for mastery

Photo - Chris Kostman

Chris Kostman

Gonna ride across the river deep and wide

*Ride across the river to the other side
- Dire Straits, Brothers in Arms,
"Ride Across the River"*

Regardless of sport, all athletes must cross rivers. These metaphorical rivers represent the one experience, the one feeling, the one thought, the one focus of awareness that is central to every athlete's experience: the pain through which we must all suffer. For to be an athlete is to know pain, and through pain we know suffering. And by crossing that river of pain, we come to know victory of the body and of spirit.

Our rivers may be crossed by pedaling or paddling, by running or crawling, by pushing or pulling, by swimming or surfing, by digging under or jumping over, or sometimes by circumventing circuitously. But in sport as in life, the best way out is through, so through the river of pain we must go in order to get to the other side. Finish lines, and sometimes transcendence, await us there.

For many athletes, pain is the source of unhappiness, of dismay, of defeat. It's the reason for slowing down, for backing off, for going easy, for going home. Pain challenges every one of us without discrimination or prejudice, for it is the great universal of athletics. And thus suffering is the day-to-day common denominator of all athletes.

It is this suffering that unites us, teaches us, ennobles us. Through many long hours of suffering, we learn to rise to the occasion as we battle "higher, faster, further" in a continual march of athletic expression.

The secret is to see beyond the pain and push ahead, regardless of how we feel. We do this by looking beyond the point of pain to that place where it does not impede our progress, does not slow us down, does not matter. In that place, pain is purely perception, a self-limiting mechanism for failure. In a society of victims, pain is a cop-out. But for an army of truth-seeking athletes, pain is the drill sergeant.

When the pain doesn't matter, when we can live with it, then we are unstoppable. And then, as unflagging, unyielding life-forces, we are champions of the inner and outer universes.

There is one important caveat here: The wise and noble athlete always pays the utmost attention to pain in one important way, which is to determine if it will cause serious injury. It takes time, trial, and error to learn to know the very real distinction between damaging pain and purely painful pain. Trust your instincts, not your ego here. Seek professional advice. And always, well, almost always, err on the side of prudence. DNF beats CPR, every time.

(Personally, I make a distinction between muscular pain and joint pain, for example. Muscles usually feel better as soon as you stop, while joints can take a long time. For an important race, I'm willing to allow up to a month to recover from the abuse. That's where I draw my line in the sand.)

If the decision is made that pain is non-injurious, but rather simply disturbing, then go into the pain. Getting to the other side, well, that takes time, patience, and practice. You don't just snap your fingers and make it go away after reading one article.

Finally, don't judge the pain. Don't take it personally. Don't get angry about it. Don't get attached to it. Pain is like the weather; it's just busy being itself, without concern for how it affects our day. Everyone's feeling it, so just forget about it, breathe, and enjoy what you're doing instead. Focus on both the process and on the goal of what you're doing. Put your heart and soul into getting to the finish line and, most importantly, enjoying yourself along the way. En route, you can relish the territory you are covering, the pleasure of movement, and the joy of being in control. Across that river lies your finest destiny, after all.

Chris Kostman has lived on the endurance path since 1982. Besides competing in races as diverse as the Race Across America, the Triple Ironman, and the 100-mile Iditasport Snowshoe Race, he also organizes endurance events such as the Badwater Ultramarathon and Furnace Creek 508 and a series of five- to seven-day cycling and yoga camps. This is his fifth article for Endurance News. Learn more at www.adventurecorps.com.

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REM Caps - 60 capsules \$19.95, 3 or more \$17.95 ea.

Tools For Transcending - Chris Kostman

Desire: You must really want the goal that you are working to attain. Wanting overcomes almost everything.

Pleasure: You have to really enjoy, in fact, love, the act and the process of what you are doing. The Beatles had it right: "Love is all you need."

Happy stomach / Happy thoughts: Nutrition dictates brain chemistry, so you have to be eating right, and consistently, in order to think and manipulate both your body and brain.

Game Plan: Enter every race or workout with well-defined goals on a sliding scale. For example: to finish, to go faster than before, to place top five, to win.

Experience: Several years of far-flung experience in the world of outdoor athletics will render you ever-adaptable and ever-comfortable. Little or nothing will scare you. It's not beginner's luck that's helpful; it's veteran's experience.

Expertise: A really strong background in a singular athletic pursuit will give you an edge, or at least an amount of confidence, not only in that sport but in others, too. Plus there is a universalness to outdoor athletics that transcends the imaginary barriers between different sports.

Wisdom: It can grant patience, preparedness, nutritional know-how, savviness of your body's finer workings, and even biomechanical and ergonomic shrewdness. Once again, it comes with time invested in regular training and racing done with a high level of awareness.

A Flowchart for Crossing the River - Chris Kostman

Get out there and start to exert yourself.
Go long or go hard or both.
Begin to experience pain.
As you go further and/or harder, the pain increases.
The pain starts to annoy you.
You assess the pain: is it injurious?
If not, then you make a conscious decision to accept the pain.
You don't mind the pain.
You don't care about the pain.
You are not attached to the pain.
Finally, you accept the pain.
The pain just is.
After acceptance, you realize that the pain doesn't matter.
Without it mattering, it can't contain or control you.
You have transcended the pain.
Now you can do anything.
Here's the critical part: As you go further or harder, the cycle can either be repeated, or not.
You decide.
It's your pain.
Go with it.

Techniques for Getting Through - Chris Kostman

Lively Breathing: Focus on your breath. Let it be relaxed, efficient, and powerful, literally inspiring you with energy. Depending on the intensity of what you're doing at the moment, perhaps you can breathe in and out through the nose only, even using Ujjayi breathing as in yoga.

Supple Posture: Relax! Line your body up properly and precisely for the activity you are doing. Only perfect practice makes perfect.

Form Focus: Break things down, body part by body part, and relax each one of them. Remove energy blockages and tightnesses that can cause injury or discomfort. Be certain that you are moving and working with your body in the most relaxed, efficient, and effective manner.

Observe and Enjoy: Regularly take a moment and actually notice where you are and what you are doing. Appreciate it. Find something unique about your environment to enjoy.

Count Blessings: Remember, while you and five, or a hundred, or a thousand of your fellow competitors are out there doing what you're doing, the rest of the six billion inhabitants of the planet are probably less happy and less fortunate than you are in that particular moment. Many of our fellow athletes are injured or sick or battling disease; think how much they wish they could trade places with you.

Reflect: Retrace your steps in the race and see how far you've come. Picture mental snapshots of the event as it has unfolded and see yourself overcoming the obstacles that have been in your path. Let these recent memories empower you to continue boldly.

Feel the Kindred Spirit: Think about your comrades who are out there with you, each experiencing the same event differently in the details, but the same in the big picture. Of course, remember, if they can do it, then so can you! Appreciate and respect their efforts, as they do yours. "Brothers in arms" are we.

Predict: Mentally trace your route ahead in the event. See, in your mind's eye, where you're headed. Plan ahead. Don't get caught by surprise.



The Challenges Of Love For The Sport



Suzy Degazon

It is midnight and I find myself writing about the challenges of being an Ultra distance triathlete! So far this year my racing season looks like a train wreck, I've had an injury, cancelled races due to exorbitant plane fares, and lost a major sponsor due to economic hardships. Yet, like a phoenix, I rise from the ashes and begin juggling the training for my 11th Ultraman Hawaii in November with teaching scuba diving! As I reflect on my 16 year career as a World Class Ultra Triathlete I realize that the challenges for the Love of the sport come with a high price tag!

Imagine swimming 7 miles, cycling 336 miles and then running 78 miles... now imagine doing that non-stop! In 1997 that is exactly what I did, becoming the 9th female in 10 years to finish such a feat in 51 hours and 41 minutes! When I was asked how I was able to run 78 miles my reply was that I did not run 78 miles but rather I ran 1 mile 78 times. Getting to that race had been difficult. I remember spending 3 days scraping barnacles off the hull of a 100 ft. barge in full scuba gear. In return I was given a plane ticket to France where I would participate in the world championships in Nice just 2 weeks before I would attempt the Triple. As I was competing in Nice, where I managed a 10th place finish, I injured a ligament in my left foot. I arrived in Fontanil, just outside Grenoble, with a serious limp. In 1996 I had been fully sponsored and had not finished the triple due to slipping on my bike in light snow during the night and bruising a few ribs! I was staying with the same French family who immediately referred me to the race doctor. I was told on the eve of the race that I would not be able to run as my foot would not heal in time. They even

treated my foot like a pin cushion and stabbed it what seemed like a 100 times with anti-inflammatory medicine. In my mind I would be resting the foot while swimming and cycling! So the next morning I swam 222 laps, (7 miles) in a heated outdoor pool with the backdrop of the Alps. After a massage I took to my bike for 336 miles of cycling. I remember in the middle of the night wondering if I was doing the right thing. My foot was aching but just as I thought I could not cycle anymore, I finished the grueling miles and gratefully was allowed to sleep an hour before putting on my running shoes. The cutoff for this race was 52 hours and time was running out. The first marathon went smoothly, the second marathon had its challenges. Finally I had only 13 miles left and I needed to see the doctor about my foot. He looked at me and said that I would not be able to make 13 more miles. As he finished taping up my foot I said I would run just one more mile.. that mile turned into 13 as all the villagers of Fontanil turned out to cheer and support my decision to finish. The French hospitality was amazing! I finished the race in third position, barely able to walk, and had made the cutoff with 19 minutes to spare! The pain of getting there, the hard work to get flights, and the sacrifices I

had made were all worth it even if the consequence was not running well for 6 months afterwards. During the awards ceremony my life was to take a different path as I met an athlete who suggested that I try the Ultraman in Hawaii in 1998.



So, in 1998 I found myself on the big island of Hawaii preparing for what would become my first of ten Ultramans. It has become again the challenge of the love of the sport. It is costly and every year I make sacrifices to be in Kona over Thanksgiving weekend to swim that 6.2 mile ocean swim

followed by a 90 mile bike to the volcano on Day 1. Day 2 serves up a 171 mile bike ride around the island and Day 3 is a wee 52.4 mile run. Does it ever get easier? NO! Does it ever get harder Yes! Unlike that first time in 1998, I know now that the suffering is all part of the equation. Ultraman to me is so much more than just a race, it has become my signature race. Every year I have had to look for sponsorship, find a crew, and look for housing. During all of that I have made wonderful friends on the island who support and challenge me to return each year to compete in this 3 day event making me the only woman in the world to do this 10 times in a row. Every year has had its unique challenges, from a kidney stone, to a 6 hour swim, from climatic changes to body aches! During these last ten years I have also

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become a much more balanced athlete and realize that without adequate rest and good nutrition I cannot keep on doing Ultra distance events. Since discovering Hammer Nutrition products I can honestly say they have given me the fuels needed to be able to continue competing in this demanding discipline. Not only is running, swimming, and cycling important, but also good nutrition and recovery.

All the hardships I endured while living a single life in Puerto Rico have given me the base I need to now live a happily married life in Southern California, continue competing in Ultra Distance events, and making myself available to various triathlon groups as a motivational speaker. Sometimes we have to make sacrifices in our lives, and push ourselves to new levels. When I think back to the misery of scraping that 100 foot barge with a paint scraper I never thought for one moment I would be an Ambassador for Hammer Nutrition with a race resume of over 350 tri events!

HOT TIPS

Caffeine reduction prior to racing

Thanks to Hammer Nutrition client Dr. Michael Cohen for this information:

Tolerance does develop with chronic caffeine use, even if it is only 1-2 cups per day. Caffeine stimulates adenosine receptors in your nervous system and with chronic use your body creates more of these receptors, creating the tolerance. This is called up-regulation (more of the receptors need to be stimulated for the desired effects which results in more caffeine needed). True that the half-life of caffeine is 6 hours, which means it takes 30 hours - 5 half-lives - to be completely gone from your body; however the receptors take a bit longer to down-regulate. This can take anywhere from 1-5 days, differing per individual and based on the amount of routine caffeine intake. I routinely recommend people refrain from caffeine for 5 days before races for the maximal effects of caffeine if you plan to use it during your race.



The following is a press release written by the staff at Race Across America.

DAVID JONES EARNS IAN SANDBACH INSPIRATIONAL AWARD

Boulder, CO - August 13th, 2008 - Race Across America, RAAM, Executive Race Director, Terry Zmrhal is pleased to announce the recipient of the 2008 Ian Sandbach Award which is presented to the most inspirational rider in the Race Across America. This year, the award goes to David Jones, who at age 61, completed his second consecutive RAAM and also earns another place in the record books as RAAM's oldest solo male finisher.

Before the race began, Jones requested that he be able to start with the men's solo division riders aged 25-59 instead of a day earlier in his own age classification. The request was granted with the stipulation that Jones must now finish within the shorter time limit. Jones responded by finishing 18 hours faster than the youngest solo finisher.

Beyond the obvious mental and physical

attributes that David Jones displayed during his third solo RAAM campaign, it was his gracious and generous demeanor that marked his presence in RAAM 2008. Often reflective, he focused mainly on his crew and other racers and at all times demonstrated a genuine concern and interest in all participants.

In his three RAAM attempts Jones has always embodied the spirit of RAAM. Even literally being blown off the course 1,300 miles into RAAM 2006, did not deter this aerospace engineer from Canoga Park, Calif., from getting back in the saddle in 2007 and setting a record in the men's solo 60 + division. In 2008, wearing a specially made jersey adorned with all the names of his crew, David Jones crossed the finish line almost a full day ahead of his 2007 pace.

--- END ---

We want to congratulate David again on not only a superb showing in this year's RAAM, but also for being the recipient of this year's Ian Sandbach Award. Way to go, David!



Globus *Fit E-stim Into Your Training*



Jim Bruskewitz

Electrical muscle stimulation mimics other activities that we do, but it is accomplished with a twist. Rather than packing up your gear and heading out somewhere, you can do a better job of building strength and pinpointing the right kind of muscle endurance work to deliver the adaptations you're looking for in your home, office or anywhere you choose with E-stim. Globus E-stim can be controlled to get just the right amount of muscular contraction to speed your recovery from tens of hours to minutes of activity. Although it is not meant to be a substitute for the sports you love to do, it can enhance your performance when doing your cherished activities.

A question I am asked frequently is how to fit the various programmed Globus E-stim sessions into a normal training week. When close to competitions we eagerly look for additional pieces of the fitness puzzle that will make achieving our goals even more likely. No doubt another helping of strength and endurance in the last six weeks before a big event would be a welcome addition to our fitness. Presumably we are spending as much time and effort performing our chosen discipline to develop fitness. Supplemental training is difficult to add in the final stages if we plan to recover from our efforts.

Currently we find ourselves in a position to add pieces to the fitness puzzle without jeopardizing an upcoming event. This is the time to work on general adaptations that will improve our performance this upcoming season. Once we become accustomed to building strength and then endurance off the bike or trails with E-stim, we can incorporate these valuable training tools into a

typical training week that allows for proper recovery.

We benefit from recovery after every training session we do. The Globus E-stim active recovery program is easy to fit into any training plan. Also, the massage and stretch/relax programs can be inserted daily in a typical training week. These programs are not adding to the training stimulus but rather are helping you get ready for your next training session more quickly.

Globus E-stim units have a great many programs that will add to the weekly training stimulus. Like any training session, the stimulus is most advantageously administered when your capacity to absorb a training load is high. The stimulus needs to fit with the collection of workouts you do in a week's time. Globus E-stim programs allow you to adjust the training load and they can pack a wallop if that's what you choose. Just as you shouldn't go to the track every day and run a bunch of very hard quarter miles, you shouldn't challenge yourself with a strength or endurance Globus E-stim program daily and expect to have the capacity to absorb other training sessions that week.

Since it will take a couple of weeks to adjust to the new training stimulus delivered with a Globus E-stim, now is a great time to take a couple of weeks, get over that adaptation hump, and add E-stim to the training tools you regularly use to enhance your fitness.

I've charted out a model training week for three different types of athletes. Although the weekly schedule will likely not look exactly like the week

you've crafted for yourself, look at the relationship between the kinds of workouts performed and when you could integrate various E-stim programs. Some of the E-stim work aids your recovery from training while some adds to the training load for the week. (Table on facing page)

I've listed strength 1 as the strength program to try at this time of year. After three weeks of using this program, it makes good sense to progress the load and step up to strength 2 for another three weeks. Following this type of progression one could move through the endurance programs progressively.

Keep in mind that you should look for gradual gains with a Globus E-stim unit just as you should with your bike, skis or a knee board. The stimulation should be comfortable and periods of soreness following E-stim work indicates that you should reduce the training load during the initial adaptation phase by turning down the level of stimulation. Select intense sport-specific programs following aerobic easy exercise 2-3 days prior to or after intense exercise.

E-stim is a very efficient and effective way of building specific fitness adaptations. Take the luxury of using E-stim during the "off-season" and enjoy a season of great performances.

Jim Bruskewitz (ep1@charter.net) coaches triathletes online www.enduranceperformance.com, and is a Lecturer at the University of Wisconsin-Madison's Department of Kinesiology.

Possible Triathlon Training Week

Monday swim run recover	Tuesday bike	Wednesday swim run	Thursday bike	Friday s/off	Saturday bike long	Sunday run long
e-stim strength 1 active recovery	e-stim active recovery	e-stim active recovery	e-stim streth 1 active recovery	e-stim massage stretch/relax	e-stim active recovery	e-stim active recovery

Possible Cycling Training Week

Monday recovery ride	Tuesday practice crit.	Wednesday group ride	Thursday intervals	Friday off	Saturday race/train long	Sunday race/train long
e-stim strength 1 active recovery	e-stim active recovery	e-stim active recovery massage stretch/relax	e-stim streth 1 active recovery	e-stim massage stretch/relax	e-stim active recovery	e-stim active recovery

Possible Running Training Week

Monday recovery	Tuesday track	Wednesday aerobic	Thursday tempo	Friday aerobic/off	Saturday long-pace	Sunday recovery
e-stim massage stretch/relax	e-stim active recovery	e-stim strength 1 active recovery	e-stim active recovery	e-stim massage stretch/relax	e-stim active recovery	e-stim strength 1 active recovery

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Injury As Opportunity

Shane Eversfield

Picture it: You are mid-way through the racing season, with your eye on a couple of key races and a chance at qualifying for a national championship. While training one day, you crash on the bike, or sprain an ankle while running. Does your training and racing season fall abruptly off the cliff? Depending on the circumstances, you may be able to take flight instead. I was inspired to write this column after the following scenario: In my first season of X-Terra racing, I was chasing down a regional age-group slot for the National Championship in Lake Tahoe – having placed well enough in my first two races to keep me in the running.

On a Wednesday, I traveled the 2½ hours to Grafton Lakes to pre-ride the mountain bike course for Sunday's race – alone. Following a map of the (as yet unmarked) course, I rode well off-course halfway out. After turning around, I took a short, unscheduled flight over the bars, ending with an abrupt and rocky landing. With my ribs broken in two places and a “boxer's” fracture to my hand, I picked myself up off the ground, feeling grateful I had not punctured a lung.

My usual first response to any injury or illness is anxiety over the derailment of my training and the resulting loss of fitness. This time however, I felt calm and accepting. Perhaps it was the impending 45-minute mountain bike ride back out to civilization I still had to complete that prompted my positive attitude – a kind of survival instinct response. Regardless of what caused that shift, I began to transform the injury into an opportunity to respond creatively to my recovery process from the very first moment.

Attitude: How many times have we heard the saying “Attitude is everything”? Attitude may just be the most decisive element in our healing power. Don't believe me on this one – read Lance's “It's Not About the Bike”. Lance has demonstrated to the world just how powerful attitude and mental resolution can be. As we embrace the shock of realization, we can choose to seek out the opportunity that is available to us through any setback.

Injuries present us with great opportunities to hone the power of our attitude and resolve. First we need a clear assessment of the damages. Then we can begin to cultivate a positive attitude by acknowledging all that we are grateful for – the physical, mental, emotional and spiritual strength and fitness we still possess, our supportive family, friends and community, the professional services available to us and the monetary assets we have to support our recovery and rehabilitation (such as insurance, a good home, reliable transportation, access to medical facilities and expertise, healthy food, exercise equipment, etc.) Whenever we find ourselves wallowing in self-pity, we can exercise our power of attitude by reaffirming our gratitude. In the first few days of coping with an injury, this is crucial.

Sharing the Opportunity: A significant element of any injury/recovery experience is how we invite, elicit and accept the support and contributions of others. This begins with our response to the inevitable question, “What happened to you?” Like our attitude, the quality of our response determines whether we are the helpless, angry, vengeful, resentful victim, or the resilient, creative and invincible master

of our destiny.

Each time we share our story, we have the opportunity to empower ourselves with miraculous possibilities that can include genuine support and the powerful prayers and well-wishes of our family, friends and community. Why waste such an opportunity soliciting consensus for our own pity and shame or for blame on others? Be very mindful of the words you choose and the context you create as you share your experience. Is your context one of possibility and empowerment or one of defeat and diminishment? This process of sharing is a powerful extension of your attitude. Humor and compassion are far more empowering than anger and depression – for both you and your audience.

Pain: A significant element associated with any injury is pain. Initially our reaction is to avoid or alleviate pain quickly. This can be beneficial when it allows us to relax and rest – essential to rehabilitation and recovery. It can also be detrimental – when we mask pain in order to train or race at a level that is inappropriate for our current condition. Pain provides valuable feedback and guidance as we resume training for rehabilitation. It is a governor of progress that can appropriately help us to regulate the intensity, duration and frequency of our return.

During athletic training, we strengthen our neurological system as well as our muscular and metabolic systems. A strong nervous system is capable of transmitting signals – whether pain or pleasure – with less fatigue. Neurological strength is essential for neuro-muscular coordination. As we

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let go of our pre-conditioned judgments about pain, we are more able to remain calm and relaxed in its presence. This can be a valuable skill for racing and training hard. Injury is an opportunity to investigate our relationship with pain – including our judgments and responses. It is an opportunity to strengthen our capacity to experience pain without adding tension and resistance to the mix.

Medical Assistance: When appropriate for the injury, it is best to seek necessary medical services through a sports medicine clinic. These institutions appreciate the value and health of mobility and fitness – implementing protocols that return the athlete gracefully and quickly to an active and mobile lifestyle. Physical therapists can be invaluable in this process. They are familiar with a wide range of exercises and approaches that can enhance and accelerate recovery.

Balancing Mobility and Immobility is crucial on the path of recovery. Traumatic injuries may require days or even weeks of complete immobility. On the plus side, this allows the trauma sites to stabilize and initiate repair. With the body at rest, all energy is directed towards recovery. On the negative side, complete immobility limits the removal of waste and toxins from the injured sites and from the body in general. The completely immobile athlete experiences hormonal and chemical alterations that can challenge both psychological and physiological balance and well-being. Mobility is a significant element in our daily health regimen. Withdrawal from the chemical high we enjoy through exercise further challenges our “attitude maintenance” as we recover.

After a traumatic injury, we set out on a tight-rope, balancing mobility and immobility. The two conditions are not absolute – we do not abruptly transition from complete immobility to full functional mobility. Gradually, we orient to general forms of mobility that respect the immobility of the injuries. As our injuries heal, we masterfully introduce mobility to these sites in a way that enhances recovery and rehabilitation.

It's helpful to remember the Law of

Inertia as we balance on that tight-rope: A body in motion tends to stay in motion and a body at rest tends to stay at rest. At the onset of injury, it may be difficult to transition abruptly from a rigorous training schedule to complete rest and immobility. It can be equally difficult to return to an exercise regimen after a period of immobility – even a few days. As a general guideline, for every 1 day of complete immobility, calculate 3 days of mobility to recover to the original fitness level.

It takes a concerted mental focus to transition back and forth between mobility and immobility. Think of this as a great opportunity to practice transition skills and to develop mental flexibility – assets that will improve race performances. These experiences also familiarize us with the processes of tapering and recovery – processes that are essential to peak for a goal race. In the week before an iron-distance race, I see many athletes who simply cannot taper in order to recover for a race peak – and this undermines all of their training efforts. When we are familiar with the chemical/hormonal “landscape” of tapering and recovery, we are less likely to panic when our bodies feel sluggish and dull and our minds are craving the endorphins. We are confident in the knowledge that, come race day, we will be primed and ready. Mastering the balance of mobility and immobility is a valuable asset as we navigate the path of recovery – whether it is recovery from an injury, or recovery from a rigorous training session.

There are two skills that can assist us in this balancing act: 1) “Inner listening” and discernment comprise our ability to listen accurately to our own bodies so that we do not aggravate and prolong an injury. No one can determine more accurately the condition and state of your body than you can. Through inner listening and discernment, you can readily evaluate the positive and negative effects of specific exercises better than anyone. 2) Our creativity and innovation are essential as we navigate the path back to full functional health. Do not undervalue creativity and innovation in your approach to rehab-exercises. As we develop and learn to trust our intuition, we allow our bodies to guide our minds through the process of recovery and rehabilitation. This intuitive approach contrasts starkly

with our usual domination of “mind over matter”. The intuitive skills we develop during our recovery process can be valuable for insuring flexibility as we determine our day-to-day training needs – even when we resume our full training program.

Maintaining Aerobic base: Mobility allows us to exercise our cardio-vascular system and our neuro-muscular systems. Initially, as we recover from injury, we seek out ways of exercising that can help us to maintain aerobic base as well as neuro-muscular strength and function in the uninjured parts of our bodies. This first step back into athletic training returns us to a state of motion – helping to detoxify the body, increase oxygen levels in the blood and body tissues, and renew the body's active chemical state. This last benefit can do wonders for our positive attitude.

To illustrate some of these principles, I provide the following scenario, based on my experience. I want to emphasize the value of our ability to accurately listen to our bodies and to respond appropriately to the body's conditions. Patience, curiosity and creativity are vital as we navigate the sometimes challenging and technical path to recovery. Remember that the goal is recovery. It does not help to implement a strict training regimen at this time – based on numerically measurable output. To repeat, this is a time for flexibility, patience, curiosity and creativity.

Injury Yoga: Use a yoga-based process to initiate rehabilitation: Consciously breathe to/through the affected area while slowly and gently stretching and contracting injured muscles, ligaments, tendons and/or joints. Use this consciously directed breathing process to circulate energy through the injury. This is a very effective “mind-in-matter” technique that can help to release powerful charges of tension and ease trauma. It is also an effective way to manage pain without masking it.

A few days after my bike crash, I spent 20 minutes one evening in a quiet dark room with my eyes closed, directing slow deep breaths into and out of the sites of my broken ribs. Simultaneously, I stretched my arm vertically above my head – lengthening the muscles around

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the rib sites. The first attempt was very slow, perhaps 5-7 minutes. Gradually, I was able to repeat the stretch in progressively less time, releasing knots in the muscles surrounding the break sites and stabilizing those sites. After this injury yoga session, my ribs no longer popped and jumped – eliminating sudden sharp pains.

I closed my eyes during this process, focusing my awareness inward to the injured sites – really exploring the nature of the injury and the extent of mobility at those sites. Progressively over the next few weeks, I was able to mobilize the injured sites with less pain and resistance during these quiet, slow-moving sessions.

The First Training Session: As we resume training, priority number one – regardless of the sport – is a cautious, curious and patient approach. The purpose of the first session is to explore the landscape of your injury – range of mobility for the injured parts, postural misalignment, dynamic imbalances caused by immobility, limits for weight bearing, impact and vibration. No one can assess these factors more accurately than the athlete her/himself – through inner listening. However, an experienced physical therapist can be invaluable in determining appropriate rehabilitation training regimes.

In my case, my first aerobic training sessions were on my bike mounted on the stationary stand. Just straddling the bike was a slow and cautious process. Once in the saddle, I closed my eyes and sat still for a minute, listening attentively to my body. This pause helped to fully engage my inner listening, to kindle my patience, curiosity and creativity, and to dismiss the compulsion to produce some quantifiable output. I was riding towards recovery, not sprinting for the finish line of a race.

I began to pedal very slowly and easily, limbering up my legs and abdominals while gradually increasing my respiration and heart rate. A limiter with broken ribs is often the capacity for vigorous respiration. I was pleased to find that in aero position, my ribcage was closed enough at the injured sites to allow me to breathe fairly hard without inflicting pain. I kept that first

session short – 20-30 minutes or so – even though I felt strong. Remember: patience, patience, patience.

I was elated with the results! Just 4 days after the injury, I had already found an appropriate form of exercise that would allow me to maintain and even increase aerobic capacity. Feeling invincible, I decided to take my mountain bike for an easy 1-mile ride to the health food store. I got to the lip of the driveway. Just the slight “blip” into the road sent wincing pains through my ribs. That should have been enough of an indicator. By the time I returned home from the ride, I was in misery. In my determination, I ignored my inner listening and suffered a minor setback. I felt foolish. A moderately intensive aerobic effort on the stationary was appropriate; an easy carefree ride on the road was not. Lesson learned.

I must mention that I have Power Cranks on my stationary bike – making it necessary to constantly pedal circularly with both legs. I find Power Cranks to be an extremely valuable training tool – one that balances out the leg muscles and provides a complete aerobic workout. They offer an adequate substitute when injury prevents running. Power Cranks also prevent the body from compensating for a weaker side, balancing strength.

We need to keep in mind that proper alignment and balance are essential to a complete healing. Our bodies have an innate ability to compensate and avoid painful patterns. Such patterns alter biomechanics and can hinder the healing process. (This was certainly true with my injury. I had chronic pain in my back near the diaphragm from alignment compensation that hindered my swimming for a full 7 weeks.) During our first training sessions, we must respect the body’s innate ability to compensate, and not force ourselves back into proper alignment and form, and avoid over-training while misaligned.

As creatures of habit, we tend to overlook new and unique alternatives – intent on returning to our normal regimen. Injury provides us with an opportunity to be creative, curious and flexible. The pool is a great place to experiment. Water-based activities – swimming, water running, aqua aerobics – offer opportunities for aerobic

activities that minimize impact and weight bearing. Many health clubs now offer aqua aerobics – don’t rule this out as a training alternative, even if most of the participants aren’t in top physical condition. Water running has served many athletes well during rehabilitation. Many continue to include water running sessions in their regimen after full recovery. It’s a great way to work on cadence and leg speed. Joan Benoit Samuelson gave great credence and endorsement to “Aqua Jogging” to maintain her fitness post-operatively before she went on to win Olympic Gold in 1984.

The locations of my broken ribs limited the range of motion and speed of my swimming. My first sessions in the water were exploratory, brief, very slow and cautious. I used fins to aide in buoyancy, since my shoulder/arm movements were very slow and gentle. Unlike the initial stationary bike sessions, my first water sessions were very gentle and progress was gradual. It was 7 weeks before I could swim vigorously, without pain or re-injury, and with normal mechanics.

Flexibility and Strength: Maintaining or regaining aerobic capacity is the first essential for recovery and rehab – followed closely by flexibility and strength. We discussed flexibility in the context of injury yoga above. When we stretch to maintain flexibility, we are retaining the “intelligent” process of deeply relaxing the muscles and connective tissues, which allows them to lengthen. Proper muscle length enhances neuro-muscular function, improving proprioception and coordination. The conscious relaxation process employed in stretching is valuable for pain management as well as effortless and efficient biomechanics. It should be a part of every training regimen, as well as the rehab process. If you do not have a good stretching practice, use this recovery process as an opportunity to initiate one – slowly, patiently and cautiously.

Strength training may be limited during recovery – depending on the nature of the injury. The emphasis again is on caution, patience and creativity. If you are able to exercise aerobically, rest assured that you will maintain some

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level of strength, even if you cannot manage a comprehensive strength training program. In the case of my injury, the ribs prevented me from any form of strength work for 7 weeks – but I was able to return with minimal regression.

Volunteer: Consider the opportunity to volunteer for a race while your injury prevents participating as an athlete. It can provide inspiration and motivation to “weather out the storm” of recovery. Helping out at a race gives us a refreshing perspective on the camaraderie of racing. Without the self-absorption of our own race performance, we can “take off the blinders” and enjoy the synergy that comes from companionship. This is an opportunity to view competition as a petition for companionship – disarming our typical ego-centric view of competition as “me against you”. After the experience of volunteering, we may return to the role of racing as an athlete with a more relaxed and open attitude that enables us to embrace the empowering synergy of this companionship.

Nutrition: In addition to a healthy diet of whole foods, remember the incredible Hammer Nutrition supplements that can have a significant impact on your recovery: Recoverite, Whey, Premium Insurance Caps, Race Caps Supreme, Mito Caps, Tissue Rejuvenator and, my favorite daily supplement, Super AntiOxidant.

Setting Goals: Even without injuries, goals provide us with motivation and rewards for our training efforts. If we are realistic, creative and patient as we set goals on the path of rehabilitation from injury, we can experience the real joy of the recovery process.

In the case of my broken ribs and hand, I was ecstatic with the opportunity to train on the stationary bike so soon after the incident – in order to maintain aerobic capacity and a positive attitude – and the ability to swim in the lake (slowly and gently) as a way of gradually mobilizing the injury sites. Just twelve days after my crash, I participated in one of our High Peaks Cyclery Monday Night Mini-Triathlons – the last of the season. I swam cautiously and slowly, well away from the pack, then hammered the bike leg – passing more people on the bike than I’ve ever passed in any race – and finished with a very easy 5K jog – to keep my ribs intact.

I added a healthy 7 ½ minutes to my best time – something we laughed and joked about at the post race party. Most of my tri-friends were amazed to see me participating. With the exception of a 10-minute ride earlier that morning, it was the first non-stationary ride since my first painful attempt mentioned above. Participating in a race – without actually racing hard – is an opportunity to relax and enjoy the companionship, to disengage from the ego’s strong compulsion to “beat” others – to allow others to claim the glory.

My true post-injury goal race was to be Odyssey Adventure Racing’s Off Road Half-Iron in southern Virginia – 5 ½ weeks after the injury. The bike course was less than 10% technical single track – an important consideration, since I would still have a cast on my hand. The course was hilly – 7,300’ elevation gain/loss on the bike and close to 1,800’ on the technical trail run. The race would be close to a ¾ iron effort and I would attempt it with minimal base training. I focused on training sensibly and creatively, with the intention of finishing gracefully without re-injury during

either the training or the race. The focus of my training consisted of specific workouts on the stationary bike – lactate threshold intervals and muscular endurance sessions – followed with short, steep uphill run intervals, walking or jogging gently back down. (The uphill did not generate any painful impact to the ribs, but maintained running leg strength.) I also conducted two 8-mile hill climb workouts on my mountain bike up the Whiteface Mountain Toll Road (approximately 3,500’ of elevation gain), and a hilly half-century road ride. My swim workouts were slow and easy right up to race-day. Often I included water running sprints to maintain leg speed during these swim sessions. I was able to do a single 12-mile run 10 days prior to the race and followed that with daily 20-30 minute runs for the next week.

Opportunity: Injury provides us with the opportunity to express and manifest our incredible resilience and determination, as well as our amazing and divine power to heal ourselves. It is an excellent opportunity to engage our creativity and ingenuity in order to train smarter, not harder. As we attain well-chosen goals during our recovery, we transform adversity into triumph and affirm our love for this miraculous gift of life. I am pleased to report that I finished the Odyssey race gracefully in just over 9 ½ hours – fifth overall and first over 40. It was the happiest race of my season!

Shane Eversfield (a.k.a. “Zenman”) is founder and head coach of Zendurance Cycling Technique, offering 1 and 2-day clinics that provide an intensive investigation of posture, alignment, biomechanics and riding position strategies for road cyclists and triathletes. He is also author of “Zendurance, A Spiritual Fitness Guide for Endurance Athletes” and a columnist for USA Triathlon Life. Please visit www.zendurance.net. Write to him: ironzen@hotmail.com.
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Training For The Triathlon Swim

Is there a better way?

Al Lyman, CSCS

Participants ready themselves for the Whitefish Lake Triathlon. Photo - Greg Elizondo

"How good is your worst repetition?"
-Stephen Widmer

"Keep doing what you've always done, and you'll keep getting what you've always gotten."
- Unknown

By the time many of you will be reading this article, most of the triathlon season in the Northern Hemisphere will be in our rear-view mirror. At this time, you may find yourself thinking about the off season and how you can train differently to be even faster in 2009. When it comes to swimming easier and faster, most traditionalists feel there is only one way: swim, swim, and swim some more! While there is inherent value in paying your dues with frequency and volume in the pool, there may be a better, more efficient way. In this article, I will share some thoughts and offer a slightly different perspective on how to optimally prepare for the swim.

In March of 2007, I gave a presentation at a USA Triathlon Coaches clinic entitled "Training for the Triathlon Swim Using the Vasa Ergometer." The presentation gave me the opportunity to share some discoveries I had made over the previous year and a half about the most effective ways for the age-group triathlete to prepare for the swim. While the presentation was based primarily around using the Vasa Ergometer, the concepts I presented weren't exclusive to it.

When it comes to swim training for triathlon, I believe many triathletes have either lost their way or are misguided. There is so much conflicting information out there about swimming for triathlon that it is easy for a person seeking guidance to become confused and not know who or what to believe.

Triathlon Swimming For the Age-Group Triathlete

The typical age-group triathlete spends anywhere from six to fifteen or more hours per week training for all three sports, and of that, a large percentage is often spent driving to and from the pool and logging swimming yardage. If you are one of those athletes who swims three times per week and drives 20 minutes to your local pool, then it's possible you could be spending as much as four to six of those six to fifteen hours per week focused only on swimming. If this describes you, and you are finding that your time is limited, or that you are not improving, this is even more frustrating.

When I go to my local pool, I am often dismayed as I watch many triathletes hammering away yet not improving - especially considering the huge time commitment they are making. As each of us looks to 2009 and considers how to most effectively divide our training time among three or four sports, there are three important questions I believe we all need to ask with respect to the swim:

1. Where should the focus of our swim training be?
2. Are we getting the maximum benefit from the time we are spending to specifically prepare for our races?
3. Is there a better, more efficient and effective way?

Likewise, in my experience, for many who are trying to improve, there is often too much focus on these factors:

1. Accumulating yardage to make our training diaries look good, without regard to building effective strength, flexibility, and quality stroke technique, just because it's "what we do."
2. Chasing the pace clock or making

an interval, even when form is deteriorating, which only reinforces poor technical habits.

3. Gliding longer and "perfecting" body position without enough focus on increasing stroke rate and building specific strength, which is key to being able to take control in the open water environment, rather than the other way around.

Similarly, for those who do not have a long-term swimming background (the majority of AG triathletes), there is too little focus on developing the necessary upper/total body flexibility to swim correctly. If there's one thing I've learned in my years as a swimmer and coach, without high levels of flexibility in the arms, upper back, shoulders, and ankles, there is very little chance of swimming effectively and efficiently!

What Are The Challenges We Face?

As a triathlete, you race in the open water, which can present a variety of difficult challenges including physical contact between swimmers, as well as wind chop, currents, and swells. Performing well requires you to put pressure on the water repeatedly without fatiguing. If you are attempting to make progress in as short a time as possible, I believe this progress comes, in part, from training to achieve increasing levels of "swim specific" functional strength and coordination using a variety of mediums such as stretch cords, swimming that includes band / paddle work, and tools like the Vasa Ergometer. As a last piece of the puzzle, training to hold a higher stroke rate for our goal race distance is very important. The bottom line: How effectively you train to prepare to meet these challenges head on will determine how successful you will be in the swim and, consequently, on the bike and in the run.

see COACH AL on page 49

COACH AL from page 48

Where Should You Focus Your Swim Training?

Despite our different levels of swimming experience and the numerous components of swimming that contribute to a triathlete's speed in the water, dealing with these challenges and learning how to effectively put pressure on the water repeatedly without fatiguing comes down to generating more propulsion via a "high elbow" catch, known in swimming circles as an Early Vertical Forearm (EVF). An EVF is one of the most important keys for developing a powerful swim stroke, particularly for triathlon—conditions are often difficult, and you want to kick less, not more. Also, for those who don't come from a deep swimming background (or who come from a running background) and may not kick very effectively, developing an EVF and training to hold a higher stroke rate is even more important, because without these two components, you can't put effective pressure on the water and are left to struggle trying to move forward. The Early Vertical Forearm (EVF) An EVF is among the very first skills that I introduce to beginning swimmers, even if they are still learning to become comfortable in the water. While they won't be able to master it yet, I want them to understand and accept this concept early in the learning process. The graphic below, which was shared with me by noted swim coach and triathlon swim specialist Haydn Wooley, shows a direct comparison between a dropped elbow catch (incorrect and very common among triathletes), a straight arm catch (also incorrect and the cause of many shoulder injuries), and a high elbow Early Vertical Forearm: table shown

- Used with permission from Haydn Wooley – *Future Dreams Swimming*

Assuming you feel you have room to improve your swim training (and who doesn't?), here are some ideas you may want to incorporate into your swimming plan to help develop a more effective EVF, so you can swim easier and faster in 2009!

1. Shift from a mindset of accumulating yardage to one of swimming quality yardage.
2. For the majority of your swimming, avoid chasing a pace clock to make

an interval if it means your form deteriorates as a result.

3. Commit to improving your upper body flexibility. If you can, even a little, you will hold onto water more effectively and be more relaxed.

4. Depending on your developmental level, decide if a Masters program is the right choice for you. Very often these workouts include too much kicking and too much high intensity swimming—at the expense of building correct strength and technique.

5. Start incorporating various dry-land strength training ideas using tools like stretch cords and even the Vasa Ergometer and Vasa-Trainer to effectively build the functional strength and flexibility you need to apply the EVF.

6. Haydn Wooley produced an excellent CD where he personally demonstrates, in fast and slow motion and with pause, correct EVF technique in all strokes and drills. Information on this CD and how to get it can be found here: <http://coach-al.com/products/products1.html>

7. There is no more effective tool for assessing your stroke and improvement than underwater videotaping! Pictures are worth a thousand words! E-mail me if you would like to learn how I use the latest in motion analysis software to review strokes. Visit: <http://coach-al.com/coaching-services.html>

8. I was fortunate enough to attend the USA Triathlon Coaching Conference in

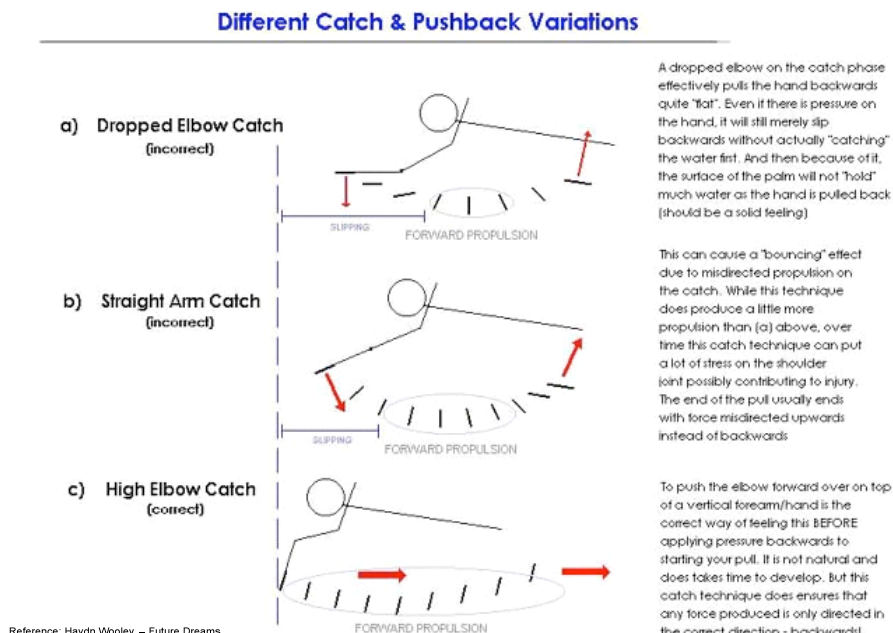
March of 2006. Here, noted swim coach and author Ernest Maglischo made a startling presentation about triathlon swim training, particularly as it relates to stroke rate, front quadrant, and EVF. While it has been two years since that presentation, I believe his ideas are as valid as ever. To read my NOTES from that presentation, go here: <http://www.coach-al.com/maglischo-talk.htm>

9. To receive a FREE DVD of the presentation I made to the coaches CEU clinic in Boston on training for the triathlon swim using the Vasa Ergometer, go to the VASA homepage and click on the link for the DVD: <http://vasatrain.com>

As you approach this off season and begin to think about 2009, remember this quote: "if you keep doing what you have always done, you'll keep getting what you've always gotten." Best of luck as you work this off season to make the changes you need to go faster, easier, in 09!

Coach Al Lyman, CSCS, has developed an easy-to-follow, comprehensive program called Runner-CORE that is a fast, effective, and time saving strength and flexibility program for triathletes and runners of all ability levels. For more information go to <http://runner-core.com> <[http://runner-core.com](mailto:runner-core.com)> . <<http://runner-core.com>> . Coach Al now also offers online video running form analysis and also offers a myriad of training plans for both running and triathlon using Runner-CORE. For more information, go to <http://coach-al.com>, or email Coach Al at: coachal@coach-al.com <<mailto:coachal@coach-al.com>> Also, at <http://coach-al.com>, you can sign up for Coach Al's e-newsletter, the "Endurance Scoop," which is produced bi-monthly and filled with tips, inspiration, and articles for endurance athletes of all abilities.

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Fruit Benefits

Naturally occurring fructose from whole fruit contributes to optimal health

Bill Misner, Ph.D.

Whole fruit fructose (including fruit's health-enhancing fiber and vitamin donors) merits an enthusiastic "THUMBS UP" as evidenced by the peer-reviewed nutrition research. Small amounts of fructose (notably from whole fruit) are health enhancing, but too much processed fructose is just the opposite. Nutritionists argue that the general population fails miserably to get their "5-a-day" minimum servings of fruits and vegetables. Eating whole fruit is reported to produce no negative consequences nor does it generate excess fructose. It is possible, though highly unlikely, that one could eat too much dried fruit or drink too much fruit juice, making their intake high enough to compromise health. Unhealthy disorders occur from either a deficiency when whole fruit intake is low, or excessive from consuming too much sweetener additives found in processed foods and drinks.

People with low consumption of fruit and vegetables present reduced plasma concentrations of alpha-carotene, beta-carotene, and vitamin C, warranting substantially increased consumption of fruit and vegetables. On the basis of comparison with epidemiological data, the concentrations of plasma antioxidants achieved might be expected to reduce the risk of cancer.

Elliott et al., reported, "Concerns raised about the addition of fructose to the diet as Sucrose or HFCS [high fructose corn syrup] should not be extended to naturally occurring fruit and vegetables... the small amount of fructose from whole fruit is probably benign and may present favorable metabolic effects. There are no issues

with whole fruit based on their content of the fructose."

There are a number of products on the market that claim to be "better for you" because they're sweetened with concentrated fruit juice or fructose. Fruit juice contains all the sugar of the original pieces of fruit, and some vitamins, but none of the fiber. Once fructose is processed from fruit, the nutrient-rich fiber and vitamin content is removed. How many apples' worth of juice is in one cup of apple juice? Now, imagine a single cup of juice concentrated down, with most of the water, vitamins, and all the fiber removed (but none of the sugar) so that it takes up less space. A processed concentrate from fruit fructose is what's used when something is fruit-juice sweetened; it is essentially simple sugar.

Once fructose intake exceeds 50 grams/day, excess triglycerides (fats) begin to be produced by the liver. Since the average piece of whole fruit contains only 6-8 grams of fructose (not including other sugars), it would require considerable volume of whole fruit to generate 50 grams fructose. Eating a few pieces of whole fruit daily supplies the nutrient-rich fiber and vitamins and controls fructose overdose.

Summary

Whole fruit contains healthy fiber, several vitamins, and antioxidants known and shown to enhance human health. Rarely do people eat enough whole fruit to exceed 50 grams fructose, which, when accompanied by fiber and vitamins, is healthy, not harmful. Diet patterns characterized by fruit/

vegetable/whole grain/fish consumption are emphatically reported to generate a micronutrient profile associated with a reduced risk of disease. This inverse association from healthful dietary patterns with all-cause mortality and cardiovascular disease risk is supported by reliable sources from research.

Note: References available upon request



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The HOTTEST TIP

Elevating hGH while you sleep revisited

In previous issues of Endurance News we discussed the benefits of taking whey protein prior to bed to help elevate hGH levels by as much as 400% (*read the original Hot Tip below*). The key for this to be successful is to take Hammer Whey in water only, as carbohydrates will hinder the process. Note that Hammer Whey contains no added carbohydrates so it's going to be somewhat bland tasting. However, the benefits derived are anything but bland!

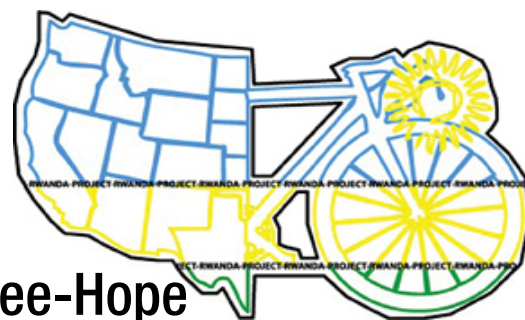
From Endurance News 54

Elevating Human Growth Hormone (hGH) levels is the surest way to enhance athletic performance and shorten recovery time. This is why some athletes resort to risky injections. To safely raise hGH levels without risk to your endocrine system, try this - just before bed, take 1 scoop of Hammer Whey protein in 4-6 ounces of water, not juice or milk as those carbs will hinder the process. This practice may safely raise hGH levels while you sleep by as much as 400% compared to the usual nightly spike. That's enough to have a noticeable effect on anabolic, muscle building/maintaining activity in the body, and that's a good thing.



Ride for Rwanda

Bikes-People-Coffee-Hope



This summer 6 college students set out on the trip of a lifetime and Hammer was proud to support them. Riding across the country to raise awareness and money for the people of Rwanda, Alex Manion, C.J. Eckman, Leighton Cusack, Greg Christian, Luke Tubergen, Jason Burkholder, and the ever important support driver Ben Biondo, set out on June 16th in Anacortes, Washington. They finished 6 weeks and 6 days later, on August 3rd, in the waters of Long Island Sound in Norwalk, Connecticut.

As their website states "The purpose of the ride is to raise awareness and funds for Project Rwanda. Project Rwanda is an organization committed to furthering the economic development of Rwanda through initiatives based on the bicycle as a tool and symbol of hope."

In a recent email from Leighton Cusack, he wrote of some of the more memorable parts of their trip ... "All of the highlights of the trip were really based around the people we met and the hospitality they showed us. We went into the trip planning on camping out every night but we ended spending six nights outside and we didn't have pre-arranged lodging. We were able to find free lodging on a day to day basis, mostly in churches or homes. Stopping at Hammer and

meeting everyone there was also a highlight of the trip for us." (Editor's note : we truly enjoyed meeting these guys and were happy to help them out with clothing, product, and a place to stay for the night.)

"There were definitely some hard times on the trip as well. It often seemed like we wouldn't be able to go on. There was one day that was especially hard for everyone. We had a morning thunderstorm and weren't able to hit the road until late. We ended up doing over 100 miles that day and we had a head wind for the majority of it. We ended up finishing after 8:00pm. After having days like that it was very hard to recover and be ready for the next day's ride. Those days were when our supplements from Hammer really helped us out."

By the end of the ride, these young men raised over \$75,000 towards the purchase of bikes for the people of Rwanda. These bikes will provide a better form of transportation to get coffee beans from the field to the market. Nice work guys!

For more information about Project Rwanda, or to become involved, visit www.projectrwanda.org.



Photo - Angela Nock



Eating Healthy

With magnesium-rich foods

Steve Born

The importance of magnesium is hard to overstate; in fact, one nutritional expert calls it “the key to health and life.” Magnesium is involved in more than 300 enzyme systems in the human body, more than any other mineral. Muscle contraction, nerve conduction, blood clotting, carbohydrate metabolism, ATP activation, B vitamin activation, and protein synthesis are but a few of the processes this essential-for-life mineral is crucial for. In addition, magnesium increases HDL (good) cholesterol levels and lowers serum LDL (bad) cholesterol levels while inhibiting the oxidation of LDL cholesterol. A deficiency in magnesium is associated with many ailments such as cardiovascular disease, hypertension, hypoglycemia and insulin resistance, Type 2 diabetes, kidney stones, osteoporosis, asthma, and depression.

Endurance performance is highly dependant upon optimal stores of magnesium and the following studies indicate that magnesium deficiency is associated with reduced endurance:

- *Hirneth HD. et al. Swimming performance of rats in relation to magnesium intake. Magnesium Research. 1, 98, 1988.*
- *Keen CL. et al. Dietary magnesium intake influences exercise capacity and hematologic parameters in rats. Metabolism. 36(8):788-793, 1987.*
- *Kubena KS., et al. Historical review of the effects of marginal intake of magnesium in chronic experimental magnesium deficiency. Magnesium Research. 3(3):219-226, 1990.*
- *Lukaski HC. et al. Micronutrients (magnesium, zinc, and copper): are mineral supplements needed for athletes? Int J Sport Nutr.*

5(Supplement):S74-83, 1995.

- *Zorbas YG. et al. Magnesium loading effect on magnesium deficiency in endurance-trained subjects during prolonged restriction of muscular activity. Biol Trace Elem Res. 63(2):149-166, 1998.*

The Optimal Daily Intake (ODI) of magnesium is 500 - 750 mg, with even higher amounts (upwards of 1200 mg/day) being used, primarily to treat the above-listed conditions. Magnesium toxicity is rare because, unless there are problems with kidney function, the body eliminates excess amounts. One study [Recheigel M, ed. Nutritional Disorders Vol 1. Boca Raton, FL: CRC Press, 1978] showed no evidence of toxicity of magnesium in doses up to 6,000 mg daily. That’s an amount that no one ever needs to approach. Magnesium absorption decreases rapidly when more than 200 mg is consumed at one time; hence it is advisable to take small divided doses during the day. High doses of magnesium have a laxative effect, which is why the most common complaint from too-high doses of magnesium is loose stools and diarrhea.

Unfortunately, while magnesium is contained in a variety of foods, the overall degradation of our food supply has caused the average American intake to decline to amounts significantly below ODI levels. Therefore, to ensure you’re obtaining adequate amounts of magnesium, select foods that contain substantial levels of this vital mineral, and augment your intake with additional amounts of magnesium via supplementation.

Magnesium-rich food sources

Nuts and seeds are excellent sources of

magnesium, so it’s a good idea to include them in your diet. Two ounces of these particular foods provide the following amounts of magnesium:

Almonds – 156 mg
 Brazil nuts – 128mg
 Cashews – 148 mg
 Pine nuts – 132 mg
 Walnuts – 114 mg
 Pumpkin Seeds – 304 mg
 Sesame Seeds – 64 mg
 Sunflower Seeds – 200 mg

Other foods that are good sources of magnesium include:

Artichoke – 1 cup provides 101 mg
 Avocado - 1 medium size provides 70 mg
 Banana – 1 medium-size provides 34 mg
 Black beans (boiled) – ½ cup provides
 Fig – 4 figs provide 44 mg
 Spinach (Boiled) – ½ cup provides 79 mg
 Spinach (Raw) - 1 cup provides 44 mg

A complete list can be found at www.dfwnetmall.com/veg/magnesium-content-foods.htm

Magnesium content of Hammer Nutrition supplements

Anti-Fatigue Caps – approximately 30 mg of elemental magnesium/capsule

Endurolytes – 25 mg of elemental magnesium/capsule

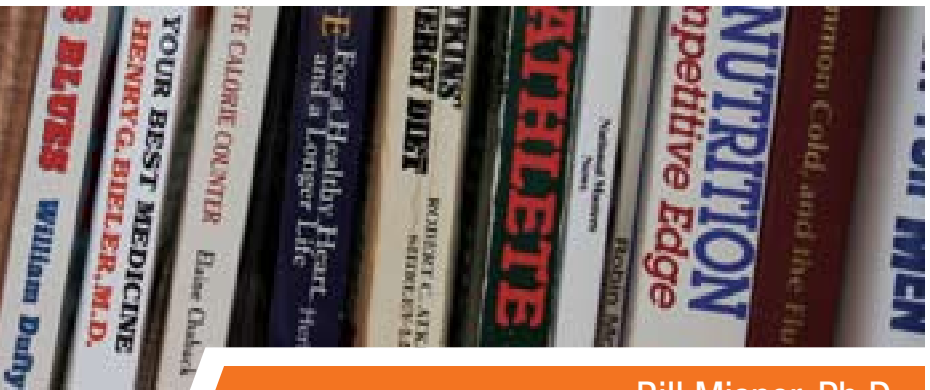
Phytomax – approximately 3.5 mg of elemental magnesium/capsule

Premium Insurance Caps – approximately 18 mg of elemental magnesium/capsule

Race Caps Supreme – 17 mg of elemental magnesium/capsule

REM Caps – 20 mg of elemental magnesium/capsule

From the Archives



Bill Misner, Ph.D.

QUESTION : I know it's not possible to include every prostate-specific nutrient in PSA Caps but I was wondering why Pygeum, which I've heard is a very good nutrient for prostate health, was not included in the formula?

ANSWER : Pygeum is in fact a good prostate supplement, though it's potency is completely dependant upon its Beta-Sitosterol content. The fat-soluble sterols and fatty acids in Pygeum that reduce inflammation of the prostate and draw out toxic substances that bind to the walls of the prostate make it very effective. Its mode of action is likely to be partly similar to and partly different from that of Saw Palmetto. The strength of Pygeum for favorable prostate effects comes from its fat-soluble sterols and

fatty acids due to its anti-inflammatory properties from Beta-Sitosterol and Beta-Sitosterone. Beta-Sitosterol is the micronutrient factor for reducing enlargement factors in the fatty tissues of the prostate.

We went a little further by choosing Beta-Sitosterol and Saw Palmetto Extract than Pygeum. This raises the potency of PSA Caps much higher than if Pygeum were the only source of Beta-Sitosterol. Also, I must mention that Beta-Sitosterols resolve prostate inflammation in fatty tissue sites and in water-soluble sites Epilobium (small flower willow, another nutrient included in the PSA Caps formula), is the only known substance that reduces prostate size in water-soluble tissue sites,

whether it be from hormone metabolism or prostate growth factors. If we added Pygeum the potency effect would not be higher, it would simply duplicate dose volume without effects and raise the cost of PSA Caps substantially. Pygeum is expensive priced from proprietary manufacturer sources.



Bill Misner, Ph.D.
Director of Research & Product Development Emeritus



Photo - Angela Nock

Congratulations!

Congratulations to one of our own, 17-year-old local athlete, Marshall Opel, on his great effort at this year's U.S. Elite, U-23, and Junior National Road Championships, held August 6-10 in Irvine, Anaheim, and Santiago Canyon, CA. Racing for the Hammer Nutrition/Montana Junior Cycling team, Marshall competed against over 100 cyclists in the Men's Junior (17-18) Individual Time Trial. His time of 29 minutes, 20.2 seconds earned him a 9th place finish. A couple days later, Marshall once again competed against over 100 cyclists, this time in the Men's Junior (17-18) Road Race. His time of 2 hours, 40 minutes, 37 seconds was good enough for 3rd place, earning him a coveted podium position.

Great job Marshall! Complete results for all the races can be found at www.usacycling.org/results/?permit=2008-1391

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Resolutions For Insufficient Recovery



Photo - Angela Nock

Brian Frank

The following concerns & questions were posted on the Endurance List by one of our clients. Many of you EL members responded (thank you!), but I felt compelled to offer my thoughts and advice as well...

Q: Recently, after even a couple of days of complete rest from even short runs (6-7 miles), I find that the next time I try to go running or biking my legs feel like lead. I have to start teaching step and spinning classes on top of my own training and am very concerned that I won't be getting the most out of my own workouts, as well as achieving my goals for getting back in decent shape for the fall. And advice as to how can I resolve this current dilemma?

A: A few of those who responded suggested that some time off (no training) might be in order. While I do agree that this suggestion may be helpful, I felt this query needs more investigation. I also agree that not all solutions to our problems can be found in a bottle, Hammer or otherwise. However, I have a suspicion that there may be dietary factors contributing or causing the dead legs and lack of recovery.

In your original post, you did not mention that you've been doing mega volume training for the past several months, so I'm going to assume that is not the case. You also did not mention abnormal heart readings (elevated resting rate, inability to reach higher zones, etc.), which would likely go hand in hand with muscular over training symptoms, further supporting my thinking that volume alone is not the culprit. Likewise, you did not mention

any difficulties with sleep and/or being unusually irritable, also common or universal symptoms of over training.

With that said, I would like to touch on protein a bit, then look at iron and two important B vitamins, B12 and folic acid, and talk briefly about free radicals & antioxidant supplementation.

PROTEIN – You mentioned that you are trying to increase your protein intake and that you also use Recoverite. I'm not trying to read too much into your statement, but it sounds like perhaps protein deficiency has been an issue for you in the past. If that is correct, then you may just be dealing with the aftermath of low protein intake for the previous several weeks or months.

During periods of training, our protein intake recommendations are 1.4 to 1.7 grams of protein per kilogram of body weight, the amount dependent on your exercise volume and intensity. (To convert from pounds to kilograms, divide by 2.2). As an example, if you're 120-lb athlete your weight in kilograms is 54.5. So, using the 1.4 to 1.7 gm/kg formula, you'll want to consume anywhere from approximately 76 to 93 grams of protein daily; again, the amount will be dependent on the volume and intensity of training you're doing. On your days off, I would suggest you aim for at least ½ of your body weight in grams of protein (60 grams if you weigh 120 pounds). Your protein should come from high quality food sources, with Hammer Whey and Recoverite used as well to help you reach your daily total.

"The Importance of Protein For Endurance Athletes" is one of the articles in The Endurance Athlete's Guide to Success (www.hammernutrition.com/guide) and I'd encourage you to read it thoroughly as you'll find even more valuable information about this important topic.

Iron deficiency/B12 & folic acid supplementation – Anemia is a common condition for female athletes and should also be considered. If you've had blood work done in the past six months, it'd be good to look at your hemoglobin number to see if it's low. With or without the number, though, the solution is simple: seek iron rich foods (NOT iron fortified) – things like spinach, beet greens, and other plant sources rich in organic iron.

However, even if you are getting that much protein and iron, if you are not getting enough vitamin B12 and folic acid, your recovery will lag, as will your body's ability to effectively absorb iron. Among its many benefits, vitamin B12 is known to alleviate the tiredness associated with fatigue. Additionally, B12 is required for the formation of red blood cells. Folic acid is important for a number of reasons, one of which is that it is a required substance for the synthesis of heme, the iron-carrying component of the hemoglobin in red blood cells.

These, and many other reasons, are why we make a sublingual B12/folic acid product – Xobaline (pronounced Zo-buh-lean). Many years ago Xobaline was a stand-alone sublingual B12 product and was dubbed "the cure for dead legs" because that's what it did. The updated B12/folic acid sublingual formula is even better than the original and if you go to the "Product Detail" page for Xobaline on the Hammer Nutrition web site you'll find even more information about the benefits this great product offers.

FREE RADICALS – Free radical

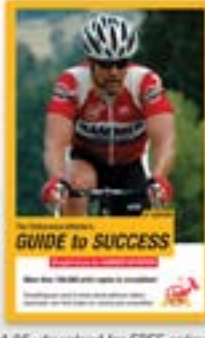
overload can also contribute to sluggish recovery so if you do not currently take a variety of antioxidants—especially the “key players” (beta carotene, vitamins C & E, and the minerals selenium and zinc)—that would be a good idea. All of these antioxidants can be found in one product – our designed-by-athletes-for-athletes multivitamin/mineral product, Premium Insurance Caps.

To really get the upper hand on free radical activity in your body, in addition to the nutrients I just mentioned, I’d encourage you to consider adding even more antioxidants to your intake. Super Antioxidant is a great product because it contains a unique combination of antioxidants that doesn’t duplicate the ones you receive in Premium Insurance Caps or other Hammer Nutrition supplements. We designed this product to help protect your immune system, enhance circulation, and accelerate recovery, which sounds like just the ticket for you.

Lastly, I would encourage you to read the article “Recovery – A crucial component for athletic success,” which is another article in *The Endurance Athlete’s Guide to Success*... you’ll find a ton of useful information in there.

Note: The majority of this article first appeared as an email reply on the Endurance List forum. If you’re not yet a member of the Endurance List you’re not only getting this information a couple months later than list members do, you’re also missing out on a wealth of other useful information. It’s easy to join the Endurance List and there’s no cost whatsoever. Click on the “HAMMER FORUM” link—found in the left column on the home page of the Hammer Nutrition web site—for information on how to become a member.

The Endurance Athlete’s Guide To Success



While finding the solution to properly fueling the body is a very individualized endeavor requiring consistent practice in training, this handbook provides the basic guidelines.

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Guide To Success - 138 pages - \$4.95, download for FREE online!



Nate Llerandi



One Trick at a Time

For most of us, the season is either over or about to be over. If you’re like me, before the season ends you are already starting

to think about next season and looking for places to improve in your approach.

I’ve been doing this for many, many years. What I’ve found is that we need to be careful in how we re-tool our approach year-to-year. I think a “boil the ocean” approach to changing things up is largely a mistake. Best not to throw the baby out with the bathwater so you’re left with absolutely nothing and you are starting over from complete scratch with your approach. Change is good, no doubt. But be sure you properly manage your change.

I look at it as we each have a bag of tricks. Every year, it’s safe to pull one trick out of the bag. Integrating this new trick into your program—if the change is “radical” enough from how you currently do things—will stimulate you in new ways, which will help spur your progress ever forward. The body gets into a rut if we do the same things over and over again. We become predictable and the body starts to yawn and get bored. And extended plateaus occur. Not good. If we can create a managed sense of chaos by continually changing the way we stimulate the body, we have the ability to accelerate our progress rather than retard it.

The risk we run with this approach is

that if we change things too much, then the body loses its ability to tie what you plan to do going forward with what you’ve done to-date. There needs to be enough “carry forward” methodology so your body doesn’t say, “Whoa there, buddy! What in the heck do you think you’re doing?” But if you carry forward too much of what you’ve done to-date, you run the risk of your body saying, “Been there, done that. I’m bored. Wake me up when you’re doing something exciting.” In this case, you risk not reaching your full potential.

So, one trick per year. Change your approach in one way. If you’re a multi-sport athlete, that change can affect each of the sports for which you train. But my suggestion is to risk saying, “I’m gonna change this for swimming, change something else for biking and yet again change something else for my running for 2009.” That’s three changes and could have the opposite effect on your path to progress. If the body gets over-stimulated, it rebels. It shuts that stimuli out. It doesn’t know what to do with it all, so it ignores it. This is why we have to manage the change in stimuli, so the body acknowledges it, accepts it and ultimately welcomes it. This is when our progress can really accelerate.

The fall is an exciting time. Change is in the wind. Manage yours properly and next season could be your most exciting season yet.

Nate Llerandi is a former national champion class swimmer/world class triathlete. He has been coaching since 1990 and creates programs for athletes of all sports and ability levels. You can contact him at natellerandi@yahoo.com



Hammer Athletes

Paul Muething III

I wanted to send a thank you to Hammer for continuing to provide outstanding support and great products. I am currently serving in Iraq and am lucky enough to be in an area where I can ride. Granted, my rides cover the same stretch of road many times, but at least I am riding. I rely heavily on the Hammer Gel and Endurolytes, as well as the Phytomax to make up for the lack of fresh vegetables. We all certainly appreciate Hammer's sponsorship of Team Army.

Once I finish my tour over here, I hope to get back to doing multi-day adventure racing. I have received a lot of help from Hammer regarding products and fueling strategies for everything from 12 hour

to 72 hour races and the advice and products have always kept me strong to the end.

I have attached a picture of me riding in Iraq. This is one of two hills in all of Baghdad. It is a whopping 110 feet high. Not what I am used to in Colorado Springs, but it is better than nothing... and a whole lot better than a trainer!

Thanks always for your support.
Paul

PAUL F. MUETHING III
Captain, US Army



Colin Anderson

Hi Hammer. FANTASTIC Fuel.

At 60+ years I rode for 24 hours (indoor solo Velodrome) and consumed only Perpetuem and Hammer Gel with the odd bottle with HEED added for taste variety. Allowed for around 300 calories per hour, and found I consumed slightly higher. I also was on Endurolytes, Anti-Fatigue Caps, and Race Caps Supreme (2 each per hour), and drank only plain cool water. Cycled 660.5 km solo. My fastest hour was the final one, which included some long sprint laps on the 250 meter circuit.(avg. speed final hour = 34km).

Thanks again Hammer.
Colin Anderson
New Zealand

Darren Thompson

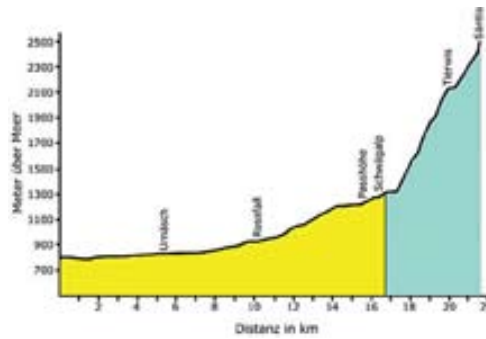
Congratulations to our Canadian distributor on his successful half Ironman! Way to go, Darren.



Adrian Brennwald

Swiss athlete Adrian Brennwald took first place at the recent Sântis Challenge Duathlon. Held in Waldstadt, Switzerland, the Sântis Challenge consists of a 10.5 mile run with 1745 feet of elevation gain followed by a 3.7 mile run with 3776 feet of elevation gain.

Photo by Urs Sutter



Simon van Uytrecht

This is me running my first Marathon & Ultra at once. It was the Rhodes Trail Run (50km) which took place in South Africa (Southern Drakensburg region) on the 12th July 2008. It took me 9 hours to complete and was definitely the highlight of my running year.

Cheers,
Simon



Ron Bateman

We recently received this picture of Ron with the following email...

I was in India with my wife who works for the Kelley School of Business at Indiana University. It's the third year that they have taken a group of sophomores over there to study the emerging economy. I have run on every trip, but it is REALLY difficult due to the commotion. One time we were chased by wild dogs and wild pigs on the same 5 mile run.

Thanks,
Ron



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Race Report



Photo - Angela Nock

Hammer Athletes

Michael Goodman

I'd like to thank everyone at Hammer for your wonderful products. I ran my first 100 in July, the Vermont 100, and came in 24th overall with a time of 21:10. On course I used Endurolytes, Race Caps Supreme, Anti-Fatigue Caps, Hammer Gel, and HEED. My Hammer clothing and Cool Feet also helped me reach the finish line. It was a blast!

Michael Goodman



Jim Bruskewitz

A hearty "Congratulations!" is in order to longtime sponsored athlete, EN contributor, and all-around great guy Jim Bruskewitz, who's not getting slower, he's getting faster! At the recently held Ford Ironman Wisconsin (September 7), Jim won the men's 55-59 age group division and established a new record of 10:14:59, nearly an hour faster than the previous 55-59 age group record (11:09:01 set in 2007 by Douglas Bundy of Canada). Jim's 2006 time of 10:45:11 is still the 3rd fastest time ever in the 50-54 age group division. Way to go, Jim!

Texas Water Safari

I wanted to share photos from the Texas Water Safari (World's Toughest Boat Race) 260 miles from San Marcos to the coast. We were one of three women's teams and placed 22nd overall in just under 70 hours out of 100+ boats that started. Two weeks after the race we were interviewed on live radio in Austin,

Texas and we mentioned that we used Hammer products on the air. We sure appreciate your products and your support! Hammer On!

Debbie Richardson
Ginsie Stauss



Tom Liebl

Just returned from Leadville, Colorado and completing my first Leadville 100. My fueling with Hammer products was perfect!!! Steve, thanks for the earlier advice about reducing my hourly calorie intake because you dialed me in perfectly (had some problems with the heat and nausea/bonking that I posted earlier). Finish time of 10 hours and 18 minutes and ended with good legs (probably should have pushed a little harder, but training at 800 feet and arriving in Leadville (10,200 feet) for a race that climbs to 12,600 feet caused me to set a more cautious pace). Consumed Perpetuem as a batter and Hammer Gel as my only calories with fresh water

(cut out the HEED for this one to not overload the calories) and Endurolytes and Anti-Fatigue Caps at each of the 5 aid stations. Never fails to amaze me how these products can fuel a body for this many hours of intense racing and never feel like the body has hit the empty tank. The fuels along with the fantastic support from the staff and fellow sponsored athletes is one hell of an asset for any racer.

Thanks Again,
Tom Liebl

Kris Bhatti



I run a lot of (slow) marathons and did a few ultras 5-6 years ago. I tried another 50k last spring and had to drop at mile 20. I just wasn't ready for the unseasonable heat that weekend and

all the climbing in the mountains. This time, I wanted to do everything right. I purchased some Liquid Endurance and tried it out before my hot training runs. I got Anti-Fatigue Caps and tried those out in a couple of marathons. I always use Endurolytes and SE, so along with a few Hammer Gels and Hammer Bars, I was ready to go.

I followed the 3 day protocol with Liquid Endurance, took one Anti-Fatigue an hour before the race started and once every hour, and started fueling with SE at the start. Since I had to get up at 3:00am for a 6:30am start, I had a couple slices of bread with a little peanut butter and a latte' before leaving home. I froze 2 fuel bottles, planning 1 scoop of SE per hour. The first loop of the course had a 4 hour time limit and the second loop had a 5 hour limit, so it was pretty easy to figure out how to mix the bottles. The second bottle was still semi-

frozen in my drop bag when I picked it up. I wasn't able to gauge exactly how fast I was consuming the SE because I added ice to the bottle along the way, but I still had a pretty good idea of how it was going. I started out taking an Endurolytes capsule every 30 minutes and that was ok for the first lap though I think I should have taken a bit more. It was really warming up on the second lap, and I went through a little "dark period", doubting that I could really do this. I upped the Endurolytes to every 20 minutes, then every 15 minutes and a couple of times threw in another for good measure. Wow, what a difference! I went from wishing we got pulled at the 2nd cutoff to jabbering away to my friend and plowing up those hills. The only fuel I took in besides SE for that whole race was 1 Hammer Bar that I had cut in half and I never got hungry. Of course I had a packet of Recoverite right after I finished. My friends sometimes think I'm a little crazy, turning down all the goodies at the aid stations, not eating before a race, drinking my "potions", popping my pills, but I always finish the races feeling great. I finished in 8:48 with my usual sprint over the finish line and though I'm a little sore, I feel great today.

Kris Bhatti

Steve Muller

I recently competed in the Glacier Challenge, a six leg multi-sport race held in Hammer Nutrition's hometown of Whitefish, Montana. The race consists of a run, kayak, road bike, mountain bike, another road bike, another kayak, and finishes with another run.

I couldn't imagine doing a 4 1/2 hour race without Hammer Nutrition products. Perpetuem and Endurolytes are my fuel of choice for this long race. I also carry a gel flask filled with HEED on the runs. The Perpetuem keeps my energy levels high, the Endurolytes really help in the heat, and sipping on the Heed keeps me hydrated on the runs. I don't feel the need for any solid food during the race. Recovery consists of a bottle of Recoverite and peanut butter and jelly.

I finished second in the open men's category (fastest old guy, though at 52). Thanks Hammer for your continued support through the years, and I wish you continued success.

Steve Muller



Kay Uibel

Steve, thanks for all of your advice and support over the last couple of years. Recoverite has been a major benefit to recovering well following each successive athletic event. I'm been able to recover from hard workouts and races faster than ever. I used the Hammer Nutrition Guide for the Butte 100 (100 Mile Mountain Bike Race) which was extremely brutal. I was the only female to clear all of the check points for an overall win. More than half of the field DNF. I used Recoverite following the race. I stayed fueled throughout the week just in time to compete in the Whitefish Triathlon. I was amazed my body was recovered enough to pull off another win. Again, I relied on Recoverite (and tapering) just in time for the 38 Special Mountain Bike Race in which I was able to break the course record. I have been able to maintain racing and training due to Recoverite and other Hammer Nutrition products.

Kay Uibel



Athletes...do you want the Hammer Nutrition community to know what you're up to? Have a great, copyright free photo you want to share? Send a short email to anock@hammernutrition.com (please put Race Report in the subject line) about your recent accomplishments and we'll try to include it in our Race Report.



Race Report

Chrystie Hjeltness hammers on at the CDA Ironman.
Photo - courtesy of Chrystie Hjeltness

Hammer Athletes

Kip Koelsch et al.

Attached is a photo (left to right) of Frankie McDermond, Jessica Koelsch, and Kip Koelsch following the Weedon Island Multisport Challenge in St. Petersburg, FL. The race—a 5.25 mile trail run, 5 mile kayak paddle, and 16 mile road bike—was an event of the West Central Florida Adventure Racers (WeCEFAR). Kip finished the race first overall in a time of 2:23, followed four minutes later by Jessica (2:27). Next up for Kip and Jessica—the Colorado River 100 paddling race in Texas, while Frankie heads west for the Pike’s Peak Marathon.

Kip Koelsch



David Rowe



They say a brevet is not a race, but the clock is always running and if you set a goal to beat your personal best, it can certainly feel that way.

On July 23, I rode the Rocky Mountain 1200. Organized by the BC Randonneurs and run every four years, the Rocky’s course is a triangle shaped loop from Kamloops, BC, to Jasper, Alberta, down to Lake Louise, Alberta, and back to Kamloops. I had ridden a 1200K just once before - the 2006 edition of the Cascade 1200 - and finished just under the 90-hour time-limit. For the Rocky, my goal was a sub-80 hour finish. My actual elapsed time was 73:52!

Hammer Nutrition has been core to my riding for about a year and a half, and I’ve relied on it more and more this year. I did the entire Rocky Mountain 1200 using Perpetuem as my main, on-bike food source. I used Espresso Hammer Gel at night to help me stay awake. I also took 2-4 Endurolytes capsules per hour, depending on how much I was working and sweating.

Despite more than 750 miles of riding and 26,000 feet of climbing, I never felt weak or close to bonking.

David Rowe

USAT Junior Development Camps

Thanks for supplying our Junior Development Camps with Hammer product. Zach Stegeman



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Lincoln Murdoch

Hammer - 1st Place Overall - Papillion Mayor's Triathlon, July 26, 2008, Omaha, NE.

Thanks! Lincoln Murdoch



Lincoln Murdoch, 3rd Overall, and 18 yr. old Taylor Foster with his first place 15-19 age group award - Plattsmouth Triathlon, Plattsmouth, NE. Aug. 2, 2008. It was Taylor's first triathlon ever. Hammer helped him nail his first race!



Byron Lane

Before the start of the Joe Kleinerman 12-hour race in Crocheron Park, New York (on August 2nd, a race that Byron won), he, along with four other ultra runners, was inducted into the Broadway Ultra Society Hall of Fame. From all of us at Hammer, congratulations Byron!



Stephen Armes

I raced my first race as an Elite Triathlete at the Carlsbad Triathlon in late July and was absolutely ecstatic to be competing at that level. Sorry, I could not get a podium spot for Hammer Nutrition, but I was not last!! I will keep working on it.

The very next week I raced the Camp Pendleton International Triathlon as a training race and came in as the 2nd Military / and 15th overall.

Yesterday was the Camp Pendleton Sprint Triathlon and I again raced it as a training race, coming in as the 2nd Military / and 13th overall.

Attached is a photo of the 2nd place silver medal from the Camp Pendleton



Sprint Triathlon.

Thanks Hammer for putting me on the podium this year, into the Elite field, and allowing me to have a break out year.

Stephen Armes

Allison Rognlie

Dear Hammer Nutrition,
Thank you for sponsoring the Montana junior bike racers on our trip to Boise for the Tour of Idaho. It really meant a lot to me to be able to do that race and it wouldn't have been possible without your sponsorship.

Sincerely,
Allison Rognlie
Age 14

Congratulations Allison on your third place overall finish at the Tour of Idaho!

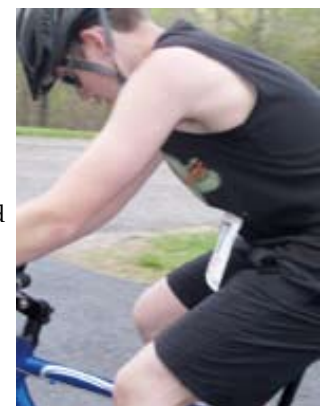


Ben Murray

I am 15 years old and live in Hayesville, North Carolina. The picture attached, my mom took (Kera Murray) of me at the Jackrabbit Duathlon in Hayesville, NC back in April 2008. I placed 23rd out of 57 participants. This was my very first Duathlon

and now I am hooked. This is where I was introduced to Hammer products and now I can't live without them.

Ben Murray





Race Report

Don Moden at the Sageburner 50. Photo - courtesy Don Moden

Hammer Athletes

Rebecca Massmann

Hammer Balm is great! I'm a massage therapist and triathlete. Besides using it on my knees after a long bike or run, I've used it on my forearms and hands during weeks of doing a lot of deep massages. It has really helped my recovery after a long day. After work I'll ice, then rub in the balm. When I wake up the next day, I'm ready to go again! Clients are asking about it too! Great product!

P.S. Attached is a photo of me at this year's High Cliff Half-Iron in Wisconsin - using Hammer products all the way! My top was voted best tri top of the race by the guys at one of the run water stations!

Rebecca Massmann



Rob Squire



HEED is the best sports drink that I've ever used. During my race at National Championships in Mt. Snow, Vermont, I started off strong, keeping a good pace up the climbs and managed to pull a gap on the rest of the competition. For the first three laps, I rode with a strong competitor off the front of the rest of the riders. As the race went on and I continued to use HEED, I gradually got stronger and kept my strength up for all the climbs as my competitor couldn't summon the energy to stay with me. On the last lap I was able to put 3 minutes and 20 seconds between me and the person that had ridden with me the entire race. HEED replenished the nutrients I had lost and supplied me with the energy I needed to not only fend off cramping but to actually help me to ride stronger in the final laps of my race.

Rob Squire

2008 Damn Wakely Dam Ultra



Well we managed to pull off another excellent adventure with the help of our friends at Hammer. Weather was HOT and HUMID. Two guys broke the previous course record in under 5 hours, which amazed me. I was really worried some one was going drop in those conditions. I've attached a couple of photos from the start - you may use them as you see fit. Thanks again for all of your support; it really means a lot to the runners and to me.

Take care,
Jim Houghtaling <http://www.wakelydam.com/>

Pam Michaels

Dear Brian,

Thank you again for contributing to the Fred Hutchinson 2008 Climb to Fight Breast Cancer Mt. Hood team. Wow! We had a great group to kick the season off!

Let me tell you, we all felt very safe on our climb...within this remarkable group were 5 members of the LA County Search & Rescue team, 3 physical therapists, and 2 doctors...and that is just for starters...this was such an outstanding group! One of the climbers was on her 6th Climb to Fight Breast Cancer and another was on his 5th. I was on my 2nd. We all had great spirits and a shared commitment to breast cancer research.

The summit of Mt. Hood was out of reach for us on this particular weekend.

On Friday driving up to Timberline Lodge, there was more snow on the ground than I have ever seen there and it stormed and snowed all night. The weather improved for "snow school" on Saturday, but the upper mountain continued to blow. Due to a combination of high winds and heavy snowfall in the days prior to our summit attempt, the guides determined the snow wasn't stable enough to continue. All of us Hood climbers made it to the 10,500 foot "hogsback" before turning around for home. The mountain during the



climb was clear but COLD and windy. Our water bottles were freezing, and climbers ahead of us who were not so careful to hang onto their bottles, etc., must have watched in horror as the wind picked up everything that was not fixed in the snow and sent it rocketing down the mountain, right into our path. My eyes must have been as wide as saucers

watching these UFOs screaming down the mountain, hoping they would not take a bad bounce. We did come down in beautiful sunshine. A bonus was that everyone got to return to historic Silcox Hut for hot tea and cocoa before heading down the mountain to a celebratory lunch at Timberline Lodge.

Thank you again. These vital research dollars wouldn't happen without your support.

Pam Michaels

Mindy Soranno

Hello Hammer Nutrition -

Yesterday I participated in the Spirit of Racine 1/2 Iron triathlon, a Hammer [sponsored] event, and I cannot tell you how awesome it was to hear volunteers at aid stations on the bike and run yelling out to all participants - HEED at this table, Hammer Gels at this table, and Endurolytes! Of course I was in my Hammer gear and I actually carried my own HEED on the run. And of course my Sustained Energy, HEED, and Hammer Gel on the bike. But still, it was great to

know that it was available and I would not get sick if I needed to take extra! I wish there were more events, especially IM events, that supported such a great product!

As a loyal representative, I will continue to Hammer on!

Mindy Soranno

Bruce Saxton

Since 1994 I have been fueling with a wide variety of Hammer Nutrition products for mountain bike racing and training. My goal at the time was to improve in my overall ability to handle the max efforts associated with racing and the recovery thereafter. I continue to be amazed at the effectiveness of the products you have recommended to me. I recently was coerced by a friend to set out on a 200 mile road ride in Vermont. I said to him "I can't do that, the longest ride of the year has only been 70 miles" and "the most I've ever done is 130 miles". He assured me I could do it so I set out on what was going to be about a 12 hour ride. I am happy to report that I actually rode for 228 miles and over 13 hours. Not only that, since we were chasing light and the fact that it had been raining since mile 101, my last hour was one of my strongest!! I'm still amazed at that.

I would say the only special thing I did to prepare was wear 2 jersey's so I had double the pockets to carry flasks of Hammer Gel, Perpetuem, extra packets of HEED and Perpetuem, Race Caps Supreme, Endurolytes, Anti-Fatigue Caps and a rain coat. I supplemented per your recommendation : Race Caps, Endurolytes, Anti-Fatigue Caps on the hour, shots of Hammer Gel or Perpetuem on the 1/2 hour and with a bottle of HEED or water per hour, thereabouts. The trip took about 15 hours total. So here is proof that one can exceed their expectations with a solid fueling strategy and with the right mind set. The only other trick was I asked my friend not to shout out the miles to me. Though there were a couple of times I needed the fuel to catch back up to my body, I never hated any portion of the ride. Thank you again for being there.

Bruce Saxton

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The Hammer staff in action

- Omega-3 Fatty Acids

A safer alternative than NSAIDS

- Product Spotlight

Phytomax

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Randy Beckner

- Race Across Oregon

Bill's most excellent adventure

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-Get the "F*!"In!

Making the case for dietary fat

- and so much more!!



Get **FREE** Product with our Athlete Referral Program!

The Hammer Nutrition referral program is the easy way to save BIG on all your personal-use product purchases. In fact, some athletes have accrued so many referral credits, they've rarely had to pay anything for the products they need! What could be better than that? Here are the benefits:

- Every time you refer a new customer to Hammer they will receive 15% off their first order with us.
- You will accrue a 25% credit from the subtotal of this first order, which we will keep track of in your client file.
- You can use these credits to save money on your future purchases. Earn enough credits and you may not have to pay anything!

The referral program is applicable for all non-family members and if you refer someone to us, it is absolutely essential that they mention YOUR NAME or CLIENT NUMBER when ordering from us. This is very important because it's the only way we will know that you referred them. So when you talk to friends and athletes regarding our products, please make sure that they know to mention your name or client number to us when they order. To make this more convenient, we have easy-to-use referral cards that are available on the product order form in each Endurance News and in the Hammer Nutrition catalog. You can download and print even more from the Hammer Nutrition web site at www.hammernutrition.com/downloads/referralcards.pdf