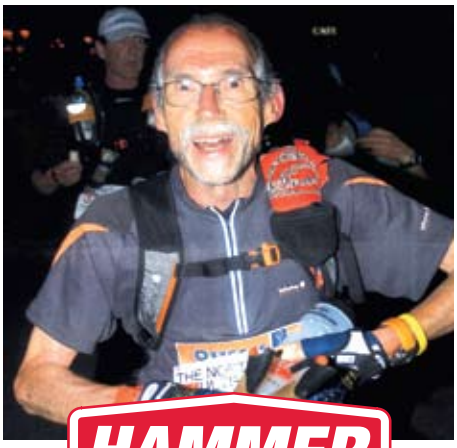


ENDURANCE NEWS

October 2007 : ***Issue 056***

The endurance athlete's comprehensive knowledge resource since 1992

Over 40,000 mailed quarterly!

Hammer Camps in Tucson - save the date(s)

Brian Frank

Remember all of the fun and lifelong memories from summer camp when you were a kid? Or maybe you are like me and never got to go to camp and felt like you missed out on a rite of childhood. Or maybe you've been wishing someone would start doing fantasy camps for cyclists and triathletes like they do for baseball fanatics. Maybe you are just looking for a really fun way to take your training and sport of choice up a few notches while enjoying some beautiful desert weather. In my estimation, the Hammer Camps are all of the above!

Why is Hammer doing camps? What are they all about and how are they different from the growing number of camps that are being promoted these days? My goal is to answer these questions for you so you can decide if our camps are

see CAMP on page 6

Hammer Balm - The ideal transdermal analgesic

Bill Misner, Ph.D.

The skin is a barrier designed to protect against entry by a number of foreign substances. Some areas are more permeable than others. Nasal, oral, genital, axillary (armpit), and ocular areas are vulnerable to external entry. Feet, hands, elbows, and forearms are resistant and poorly permeated by foreign substances. These comments are intended to describe the background for developing a transdermal, pain relieving compound, Hammer Balm.

Topical applications - the problem

A number of creams, lotions, and salves have been tested for reducing muscle soreness and inflammation following extreme exercise sessions. Most of us have experienced strong menthol odor and hot red skin, convincing our senses that "something must be going on" to improve recovery or reduce pain, when in fact our red-hot skin and a strong menthol odor was all that was going on. Most topical applications fail to permeate deep through the skin barrier to capillary beds so they can affect inflamed muscle areas.

Hypothesis

I hypothesize that if a specific anti-inflammatory compound permeated the skin barrier to the capillary bed level, then inflammation in overworked muscles associated with exercise would be reduced significantly. DMSO's permeation rate was the model compound selectively studied to duplicate permeation without producing DMSO's side effects: pungent odor, halitosis, and skin irritation. DMSO is a membrane penetrant with the ability to pass through every tissue and cell membrane of the body except the enamel of teeth, fingernails, and hair

see BALM on page 3

ABOVE : Long-time client Werner Schweizer of Switzerland hammers the Ultra trail of Mt. Blanc. Read his story on page 43.

Welcome

Hammer headquarters Photo - Angela Nock

From the office of Brian Frank

Welcome to the 56th issue of Endurance News, especially our new readers! At the rate our circulation is growing, we'll be over 50,000 copies by issue #58 next spring. This is the last issue of the year but it's bursting at the seams with informative, interesting, and fun content.

I've had some time recently to ponder heady issues like our position in the marketplace and our direction in the growing and evolving endurance market. What I realized is that over the past twenty years, we have consistently done four things:

1.) Sold extremely effective products
2.) Provided superlative customer service
3.) Given you volumes of free knowledge
4.) Allowed you direct access to our experts

These four pillars are rooted in my supreme motto: Under promise and over deliver. All of you who have been with us for 5, 10, 15, and even 20 years know this to be true.

Hopefully, those of you who have discovered our brand more recently can see it in everything we do: From a simple card thanking you for your business, to this publication, to the Endurance List discussion group on Yahoo, to the Endurance Athlete's Guide to Success, to all the information available on our web site, to our grass roots event sponsorships, and beyond.

While great products and friendly service are certainly key, it's the knowledge component that is most important. It's a simple fact that no matter how good the products are, if they are used incorrectly, less than optimal results or downright failure will result. Many athletes think that this whole fueling and nutrition thing is too complex and they'd just prefer someone tell them what to take, when to take it, and how much to take. Some want even further simplification so that they just drink one thing and take one pill.

While the subject may not allow for quite that much simplification, with a minor investment of your time and a pivotal change in your approach to the fueling/nutrition issues, you can become an expert in knowing how much fluids, calories, and minerals you need in order to train and race at your highest potential. The ability to be empowered and completely confident in your fueling and nutrition is easily within your reach because, chances are, you already know more than you think you do. Additionally, we provide a tremendous wealth of information resources for free; they're accessible via our web site and are there for the sole purpose of benefiting you. And, of course, we are also available via phone or email…we're here waiting to assist you.

The paradigm shift in your thinking boils down to a few key areas, such as embracing the fact that no one knows what works best for you better than you, the ultimate expert on you. Next, let your own personal experiences be the filter for what makes sense and what does not, whether you read it here or anywhere else. Ask yourself "Does this ring true for me and is it consistent with my experiences?"

A couple more changes in your thinking will also prove most helpful. Instead of thinking of and acting on the concept of "I'm a calorie burning machine, so I can eat anything I want" your line of thinking should be: "I expect so much from my body; therefore, the quality of every single calorie I put into it is of critical importance." If you want to eat a cheeseburger, that's fine, but at least own up to the fact that it's an indulgence and is not likely to further your goals of optimal health and performance, and keep it and all other junk food intake to an absolute minimum. Emphasizing high quality, whole foods in your diet as much as you possibly can will get you where you want to go.

When it comes to fueling, instead of thinking "What is the maximum amount of calories, fluids, and minerals I can ingest without getting sick?" switch to a "What is the minimum amount I can put into my body that will sufficiently fulfill energy requirements?" approach. I guarantee that you will see noticeable improvements in your workouts and races by adopting the "less is better" concept of fueling, adjusting as necessary to meet your individual requirements. A good thing to always keep in mind is that it's a lot easier to resolve an "I've slightly under-dosed my fueling" issue (you simply increase your intake) than it is if you've overdosed your fueling (once that fuel's in your body, you can't take it out). By the way, any of you who train more than 4-6 hours per week, but still have an extra 5, 10, or 15 pounds of unnecessary weight you'd like to get rid of, are prime candidates for this shift. As you read the articles in this issue, as well as the other material that we

see BRIAN on page 3

BRIAN from page 2

provide on our web site and in various publications, keep these things in mind and really give it a chance. Your success is my goal and reward.

So, getting back to plotting our direction for the future, the resounding conclusion is: "Stay the course – Continue to refine, innovate, and improve, but stay the course." That's what I have been doing for 20 years and that's what I intend to continue to do for a long, long time to come.

Endurance News Staff

Editorial : Steve Born, Dr. Bill Misner, Brian Frank

Editorial Contributors : Jim Bruskewitz, Sonia Frank, Lowell Greib, Chris Kostman, Nate Llerandi, Al Lyman, Tony Schiller, Jonathan Siegel

Copy Editor : David Levin*

Layout : Angela Nock

**Articles written by Dr. Bill Misner are not edited by David Levin*

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 amatuer 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 of Endurance News are available at www.hammernutrition.com

Legal Disclaimer : The contents of Endurance News are not inteded to provide medical advice to individuals. For medical advice, please consult a licensed health care specialist.

BALM from page 1

without destroying the integrity of these tissues and cell membranes. DMSO also facilitates passage of a number of compounds across the barriers of cell membranes. DMSO is readily absorbed when administered topically onto human skin; peak levels occur after 4-8 hours. DMSO is used for massage, sore muscles, and injury application on horses and humans.

DMSO is a sulphuric compound with a center occupied by a sulfur atom containing two methyl groups, an oxygen atom, and a non-binding electron pair located at the points of the tetrahedron. Its permeation rate, while attractive, also has several drawbacks such as skin irritation and free-radical increases when exposed to sunlight. Evidence of DMSO's permeation potency is demonstrated by a putrid garlic-like odor in breath, nasal passages, and sweat.

Hammer Balm trial results

Over a 9-month period, multiple topical formulations were tested to select common anti-inflammatory ingredients for attaining skin permeation similar to DMSO, but with positive effects. Several of these tests resulted in skin permeation failure. A proprietary process was developed in trial/error methodologies based on consulting topical skin permeation drug delivery research. The first Hammer Balm prototype was tested by dropping several grams on multiple layers of differing types of paper without additional pressure. Surprisingly, Hammer Balm permeated these layers impressively deeper than a popular commercial balm. In fact, Hammer Balm was so permeation-potent that special containers were finally recruited to protect against leakage in transit.

Over 100 test applications in clinical and home settings were applied to subjects ages 35-67 with inflamation-associated arthritis, trauma, and muscle strain. Not a single subject reported any negative side effects. All subjects reported positive anti-inflammation results ranging from "a little" to "completely resolved" benefits. One common question the subjects asked was, "How come it does not burn my skin or create the overwhelming menthol odor like other topicals?"

Hammer Balm permeation - home test

You can demonstrate Hammer Balm permeation at home. Have someone rub one fingertip amount on your foot or ankle, away from olfactory (nasal) detection. Within 2-5 minutes, you will notice the fragrance of cloves in your nasal passages, indicating permeation of the skin barrier, i.e., "Hammer Balm has entered the building," delivering anti-inflammatory effects without a burning-ointment odor. Hammer Balm should be only applied in a small, thin two-finger tip layer, just enough to cover and disappear into 2" X 2" skin square in one minute of gentle massage. Any Hammer Balm left on the skin surface indicates overdose. Overuse of Hammer Balm may increase the lingering clove fragrance from continual permeation. Hammer Balm's hypoallergenic ingredients are anti-inflammatory and result in significant analgesic effects. One application lasts from 5-8 hours and can be repeated as necessary.

A testimonial received by Dr. Bill: "A physician recommended to a highly respected friend who I have not seen for several years to try Hammer Balm since everything else she had rubbed on the arthritic areas failed to reduce pain. She is a diabetic with limits on what oral dose substances she can take. She called me at home enthusiastically raving about the analgesic effects she experienced after application of Hammer Balm."

Feedback

I tried Hammer Balm after a pretty intense workout and secondly on a nagging back injury. Smells good and my legs felt very recovered for the next day work out. I was pleasantly surprised at the duration of how long the product seemed to work.

- Jon Wirsing
Rite Aid Pro Cycling

That stuff is outrageous! I've been beating up my legs pretty consistently throughout the summer, with typical flare-ups in my calves, hamstrings, and multiple tendons. Working in the Hammer Balm in the evenings has basically eliminated most of the aches and pains overnight.

- Mike Llerandi

From the Saddle of Steve Born

Athlete silhouette / Photo - Matt Wingate

From the office of Steve Born

I know I'm repeating myself every year at this time, but I can't help it... where did the summer go? To me, it seems like we've gone from having warm temperatures-and a lot of days of them (this year's summer season had the longest string of 90°+ days that I can recall)-to the cooler and oftentimes wetter temperatures that undeniably signal summer's departure and autumn's arrival. Anyway, I hope that if your season is over, it's been a great one. If you're mainly a summer athlete with a race or two still left on your schedule, I hope that those races are hugely successful for you. There's nothing like heading into the off season with a good race under your belt!

Once again, I've enlisted the services of some of our top experts to contribute to this issue of Endurance News. These guys definitely know their stuff, and I know you'll find their wisdom timely and useful. This is also the issue where I include my "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. One of the reasons that I mention in the article is the ever-growing body of research (including a paper by Dr. Bill) that indicates that food alone may lack sufficient micronutrients needed to prevent deficiency. If our diets might not even prevent a deficiency disease, what does that say about the optimum health needs for the hard-training athlete? Pretty eye opening, if you ask me, and it makes a convincing argument of the necessity of supplementation.

Another reason why I believe consistent supplementation is so important is free radical production. The damage these unstable molecules can cause never takes a day off, even when you take a day off from training. You can read the details in the article, but for now let me just say that your body needs a wide variety of antioxidants. You can ignore the completely unmerited antioxidant bashing in the press (don't get me started on that!). Be sure to check out that article for off-season supplement and diet suggestions.

Upcoming races

By the time you receive this issue, this year's Furnace Creek 508-a race that's near and dear to me, and one that Hammer Nutrition is honored to again sponsor-will have already been completed. After looking over the roster for this year's race, it appears that no one's crazy enough (not to say that anyone entering the race isn't somewhat crazy) to go after that Double 508 record, so it's safe for another year... whew! Seriously, though, many ultra cyclists rate the Furnace Creek 508 as the race to do. We'll have a full recap of this year's competition in the next issue.

We're fast approaching 2000 events sponsored for the year, and we'll probably exceed that mark by year's end. In terms of free product, that will come to nearly 1,000,000 samples and race bags. Now that's a lot of swag!

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

October 27
World of Hurt 50k/25k Ultra Run
Nevada

October 28
Iron Star Half Iron-distance Triathlon
Texas

November 2
USARA National Championships
Missouri

November 10
Helen Klein Ultra Run Classic
California

November 10
Ron Herzog 50k Ultra Run
Washington

November 11
Silverman Half & Full Iron-distance Triathlon
Nevada

November 11
MiamiMan Half Iron-distance Duathlon/Triathlon
Florida

November 17
JFK 50k Ultra Run
Maryland

December 2
OTHTC High Desert 50k Ultra Run
California

In addition, Cyclocross season is upon us, and Hammer Nutrition is sponsoring several events, so be on the lookout for our presence!

see STEVE on page 5

STEVE from page 4

Did someone say skiing?

At the end of September a bunch of us ("Brian's Posse" is the label I gave us) had just flown into Salt Lake City from Las Vegas, after another great year at the Interbike Trade Show. As the plane taxied to the terminal, we noticed these white flakes falling out of the sky. No, it couldn't be, could it? Yes... snow! OK, it's still mega-early for any significant amounts to accumulate, but it's not too early to think about winter and the great sports available during that time of year. For many of us, that means Nordic (a.k.a. cross-country) skiing, which, after many years of doing it, I believe is about the best workout you can get. In fact, while it's definitely a "technique, not brute strength" sport, you can get an amazing workout just by slogging around the course, good technique or not. I soberly rate an hour on skis equivalent to two on the bike; the workout is that good. Trust me, you'll recruit pretty much every muscle in your body. If you live where "winter" means "snow" and haven't yet taken up Nordic skiing, definitely give it a try.

Hammer Nutrition has sponsored a variety of winter sports events over the past several years, with Nordic skiing being #1. We sponsor a number of regional Nordic races throughout the Snow Belt, including the American Ski Marathon Series, which is (according to their website) "North America's longest-running and largest citizen's racing and touring series." I've had the opportunity to compete in a few of these races (hopefully more this year), and they're a blast. Here is the tentative list of ASM races on our sponsor list:

January 19, 2008
Pepsi Challenge
Biwabik, Minnesota

January 26, 2008
Subaru Noquemanon Ski Marathon
Marquette, Michigan

February 2, 2008
Boulder Mountain Tour
Sun Valley, Idaho

February 2, 2008
Craftsbury Marathon
Craftsbury Common, Vermont

February 2-3, 2008
City Of Lakes Loppet
Minneapolis, Minnesota

February 9, 2008
North American Vasa
Traverse City, Michigan

February 16, 2008
Minnesota Finlandia
Bemidji, Minnesota

March 16, 2008
California Gold Rush
Soda Springs, California

John Spurgeon makes his way across the country on his single-speed bike during the 2007 Race Across America.

Special "shout out"

In the previous issue of Endurance News (#55), we listed all the Hammer Nutrition clients who had finished this year's Race Across America (RAAM), including one John Spurgeon, who completed the 3042.8-mile race in a time of 12 days, 2 hours, and 11 minutes. Okay, that's not one of the fastest times in the annals of RAAM, but we want to "single" out John for a "singular" performance. Why? Because John became the first and only person to complete (or even attempt, as far as I know) RAAM on a single speed bike. That's right, one speed. Having done RAAM several times, I can honestly say there where many, many times when it felt like I needed several more gears than the 18 I had. Doing RAAM on a single speed bike? That is flat-out incredible, so I wanted to give props to John on his awesome accomplishment.

Down under!

As you read this, I'll be down under in Australia and New Zealand, doing fueling seminars again. Last year was such a blast-the Aussies and Kiwis I met were just great people-and I've been looking forward to this trip for quite awhile. As I write this column, I'm about two weeks out from my departure date, and it's kind of hard to believe I'll soon be on my way ("on that big silver bird," as my wife refers to airplanes) back to these fantastic countries. My Aussie wife, Cassandra, will again accompany me. This is great in many ways, one being that she'll do the driving so I don't have to learn how to drive on the left side of the road... now that could be disastrous! Seriously though, the Hammer products have really taken off in Australia and New Zealand, and with the feedback from last year's seminars being so positive, I'm eagerly looking forward to heading back there.

I hope you've had a great season this year. Have a great autumn, stay fit and healthy, and thanks for being such valued clients of ours!

HOT TIPS

Corner like a pro

In order to corner aggressively, confidently and quickly, you need to do three things. First, all of your upper body weight should be on the inside hand. Second, all of your lower body weight should be on the outside pedal in the six o'clock or bottom position. Really aggressive cornering requires actually standing on the pedal and forcefully pushing down on it. The third thing is to look all the way through the corner to the point where you want to exit and resume a straight line. For example, if you are turning right, your right hand and left pedal is where ALL of your bodyweight is resting and your head is up sighting ahead as far as the radius of the corner will allow. This is how motorcycle road racers do it and they corner really fast. Experiment with this technique first at a slow speed and gradually increase your speed as you get more comfortable and confident in your handling.

CAMP from page 1

something you'd be interested in.

First of all, I've participated in several camps put on by other organizations and have done several extended European cycling tours (80-100 miles per day going from town to town for 10-14 days, with a group of Italian cyclists). We've also supplied product to many others as well. Of course, I have also created and hosted 6 Highline Hammer events, which are really like mini training camps, here in Whitefish. This has given me a unique perspective on the camp model in terms of how I'd like to do things differently and what elements are most important.

For me, the main drawbacks to the traditional camp model are the hotel environment, the food and the lack of "experts" in the diet and fueling areas. The hotel room is too tempting to hibernate in when not doing organized activities (i.e. rides), which reduces "sponge" time (that's when you are soaking up all kinds of new information and sharing ideas!). Also, eating continental breakfast and restaurant food for lunch and dinner is far from ideal in terms of learning how to best nourish and fuel your body. Lastly, while many of the training camps being offered are run or lead by big names in terms of athletic accomplishments or coaches, they tend to be very limited when it comes to diet and fueling advice, if they cover it at all - Certainly this is part necessity due to the hotel/restaurant food options.

So, why would I get into the camp game? Because I really enjoy the entire experience of getting to know the participants in a saturation environment, it provides me with invaluable information that helps me keep my finger on the pulse of our clients, and it reinvigorates and reminds me why I've devoted half of my life to this business. Having an excuse to go to Tucson for a week to ride bikes and get out of the snow doesn't hurt either. Since we are only charging a few dollars more than the regular Cycling House rates, making lots of money is not much of a factor or motivation. In fact, the "profit", once Cycling House gets paid, barely covers travel expenses for Jim, myself and the other staff who will be there.
The difference in our camps comes from my approach to doing business and wanting to remedy the shortcomings of the typical camp experience that I mentioned earlier. This means over the top service and pampering. Literally, your only out of pocket expenses will be our airfare, bike transportation cost, and optional massages. Instead of putting you up in a hotel, we'll all be staying in a large "trophy home" in north Tucson near Mt. Lemon. This allows us to be together and function as a group pretty much from the time you lift your head off the pillow until you put it back down at night. The comraderie component was one of the most liked aspects of our first camp. Several said that while the riding and everything else was great, it was the rest of the time, hanging out together and "talking shop", that they enjoyed the most and felt provided the most "take away" benefits.

The private house format allows us to handle all of the food ourselves, which is absolutely key. One of the participants in the camp last February remarked "I can't believe how good I feel just from eating nothing but healthy foods for the past five days!" This is where we "practice what we preach" in this publication and elsewhere when it comes to eating a high quality, whole foods based diet. It's still going to be delicious and totally gourmet, but without all of the salt, bad fats and so on.

New Rides

In addition to all of the local ride routes and loops, including the 6,000' +, 36 mile climb up Mt. Lemon, from the house, we'll be doing several "out of town" rides that will involve a short drive to and from our base. Here's a brief description of each:

Madera Canyon: Located south of Tucson with little to no car traffic on a nice, clean road. The ride can vary in distance from 50 to 100 miles. It's an out and back but it's sweet. Once you arrive at the actual canyon it starts out with a gradual 1-2% grade that eventually gets to 10% by the end. There is only 3 or so miles of real climbing but when you add in the gradual incline it becomes about 8 miles or so, feels like you're out in the middle of nowhere.

Kitt Peak: Located 56 miles SW of Tucson. This ride can be anywhere from 50-90 miles depending on where we start. It's also an out and back but the climb is very cool. There is an observatory at the top which people will like and obviously provides amazing vistas.

Oracle ride: This is a somewhat flat, out and back ride to a town called Mammoth. The road drops into the town so you have to climb out but other than that, is nice and chill. This ride goes north of Tucson and can be up to 100 miles if needed. The shoulder is huge so traffic doesn't matter. 2-3 riders abreast is fine on this one.

Gates Pass: We can start this ride on the west side of Tucson and climb over Gates pass. The cool thing about it is once you go over the pass and drop down the other side, there are so many loop options and random roads so it never gets boring and the traffic is minimal. Ride lengths can be up to 75 miles, depending on starting and ending points.

Camp Features recap

- Serious one-on-one and group time with Brian Frank, Steve Born, and Jim Bruskewitz
- Based in a nice "trophy home" in north Tucson
- Airport pick up and drop off
- Bike assembly/mechanic services/ disassembly
- All gourmet healthy meals and snacks included
- Full sag support
- Pro domestiques
- On-site massage (extra cost)
- Electro stimulation (E-stim) usage
- Unlimited access to all Hammer Nutrition suels and supplements
- Plenty of delicious 53x11 Coffee

Due to the overwhelmingly positive response we received from the first Hammer Camp (Camp I) in February of 2007 at the Cycling House in Tucson, Arizona, we've added three more to the calendar for 2007/2008. With our habit of under promising and over delivering, we're absolutely certain you'll find any of these camps to be a great way to get ready for the 2008 season.

Camp II Dates & Format:
December 4-9, 2007
The "pre-Christmas, post-season, de-stress" Camp

see CAMP on page 7

CAMP from page 6

Join Brian Frank as we host this loosely structured, base miles/endurance building camp; the perfect "cycling fantasy camp!" Hammer Nutrition sponsored athlete & coach, Jim Bruskewitz, will be on hand to provide coaching assistance, season review and analysis, as well as goal setting and training strategy for the upcoming season. Daily rides will range from 3-8 hours at conversation pace (no hammer-fests!), with wide route variety and a major emphasis on taking in the scenic landscapes. Of course, there will be plenty of time for one-on-one consultations with Brian and Jim throughout. Pool time, runs and possibly a hike in Sabino canyon will be offered as well. Plenty of slots left.

5 days - $225/day = $1,125 per person

Camp III Dates & Format:
January 15-20, 2008
The "New Year's resolution/base miles" Camp

What better way to "kick start" your 2008 training? Join us for long daily rides, with extra miles optional for anyone who wants them. Higher pace temp rides, hill climbs, and intervals will be offered to those who want it. Run and swim coaching will be offered as well. One-on-one goal setting and nutrition/fueling/supplementation strategies will also be emphasized at this camp. Currently, this camp is wide open, so sign up now.

5 days - $250/day = $1,250 per person

Camp IV Dates & Format:
February 15-20, 2008
The "putting it all together" Camp

A great way to enter the season with greater confidence, this camps structured format is centered on one-on-one coaching, nutrition/fueling/supplementation guidance, goal refinement, and objective evaluations. Most attendees from the inaugural camp are planning to return, so this one only has 4 slots left .

5 days - $300/day = $1,500 per person

Hopefully you at least have a clear picture of what is going on with us down in Tucson this winter. If this all sounds like as much fun to you as I think it is, I hope you'll make plans to join us. However, time is quickly running out and we need to hear from you sooner rather than later. Our February camp is almost full and the December and January camps will likely fill up soon after this newsletter reaches 40,000 plus readers. To reserve your slot at any of these camps, or if you have any questions, go to www.hammernutrition.com/camp or call one of our friendly client advisors. You can also click on www.cyclinghouse.com to learn more about the Cycling House and what Owen is doing this year.

Hammer Camp Sample Week

Tuesday 2/20/07
11:00 AM : Campers begin arriving - transportation to house & assemble bikes
3:30 PM : 90 min. spin & bike check
6:00 PM : Dinner
8:00 PM : Roundtable discussion: Review camp itinerary, discuss pre-ride meals & fueling on the bike

Wednesday 2/21/07
7:30 AM : Breakfast
8:00 AM* : Core workout & mat pilates with Evan & Jim or Run option (form issues) w/ Jim
10:30 AM : Roll out for 1st bike-3 hr. flat spin
2:00 PM : Lunch - main meal
3:30 PM : Siesta time with Compex active recovery; massage option-reserve slots (rates to be determined)
6:30 PM : Light dinner (mostly protein, salad and vegetables)
8:00 PM : Roundtable discussion:Season goal setting /your calendar

Thursday 2/22/07
7:30 AM : Breakfast
8:00 AM* : Core workout & mat pilates with Evan & Jim or Swim option (technique issues) with Jim
10:00 AM : Roll out for 2nd bike-4 hr. flat @ fat burning pace
2:30 PM : Lunch - main meal
3:30 PM : Siesta time with Compex active recovery; massage option-reserve slots (rates to be determined)
6:00 PM : Light dinner
7:30 PM : Roundtable discussion: eating habits, nutritional requirements, lifestyle choices, fasting/cleansing etc.

Friday 2/23/07
7:30 AM : Breakfast
8:00 AM* : Core workout & mat pilates with Evan & Jim or run option (form issues) with Jim
10:00 AM : Roll out for 3rd bike-hr. slow pace ride w/ 27 mi. 6,000ft climb up Mt. Lemon. Optional bail out @ mi 13/windy point (Campers should have 27t rear cog or larger)
3:30 PM : Lunch - main meal
5:00 PM : Compex active recovery session/ massages
7:30 PM : Light dinner
8:30 PM : Round table discussion: Periodizing your season - developing adaptations needed for performance

Saturday 2/24/07
7:30 AM : Breakfast
8:00 AM* : Core workout & mat pilates with Evan & Jim or Swim option (technique issues) with Jim
10:30 AM : Roll out for 4th bike-3 hr. flat spin fat burn pace with 2 gradual aerobic/ anaerobic passing zone builds - recovery dependent
2:00 PM : Lunch - main meal
3:00 PM : Siesta time with Compex active recovery; massage option-reserve slots (rates to be determined)
6:00 PM : Light dinner
7:00 PM : Round table discussion: recap topics & camp objective/question & answer etc.

Sunday 2/25/07
7:30 AM : Breakfast
8:00 AM* : Core workout & mat pilates with Evan and Jim or swim/run option with Jim
9:00 AM : Packing, breaking down bikes, etc.
11:00 AM : Leave for airport to catch 1-2 pm flights

** Out of town rides will replace 8:00-10:30 activities*

Whole wheat with PB&J

Lowell Greib, MSc ND

Work hard. Play harder! This philosophy is one that resounds through virtually all those that are involved with sport. It becomes more relevant to those of us who enjoy participating in endurance sport. By nature, we work hard at most everything we do - relationships, professions, and, of course, the sport we love. Do we, however, work equally as hard at taking time to reflect on who we are and what we are doing to our bodies? Do we fully integrate a "wholistic" view of ourselves, or would we be more apt to define it a "holistic" approach? By definition, whole relates to that which constitutes the full amount. It is not divided or disjoined. On the other hand, "hole" is an opening, a cavity, a fault, or a flaw. As human beings, we are responsible to view ourselves as dynamic and malleable creatures who are able to adapt to our surroundings.

Whole

I use a wholistic and complementary approach with the athletes I coach and train. Personal empowerment and understanding of oneself will make an individual stronger in all aspects of life. I challenge all of you to think in a similar fashion. Ask yourself, "How does what I do as an athlete affect me from biochemical/physiological, psychological, and spiritual perspectives?" If you are not able to answer these questions, is it possible that you are not fulfilling a wholistic view of yourself?

After a long summer training/racing season, we are entering a perfect time of year to take inventory of ourselves and really mold the perspective that will ultimately make us better athletes and even better people. The first step to this process is to grab your training log and have a read through it. Are you logging exercise by frequency, intensity, and time? Did you record how you were feeling physically before, during, and after exercise? What about your psyche? Were you emotionally prepared to train or race? What about recovery? Did you log what constituted this vital component to athletic performance?

On most accounts, the athletes that I work with, initially, have at least one glaring omission from the list above. Now let's take this information and use it. Our coaches and mentors ask us to do all this work, why not use it for personal growth?

The basic physiological principle of training is to incrementally stress the body physiologically and psychologically through exercise, and then adapt to these stresses. As long as adaptation is possible, performance will improve. Traditionally, appropriate recovery will allow for adaptive responses, however, "pre"covery can also play a role. Before we train, we need to psychologically prepare ourselves for exercise. We need to want to go out and stress ourselves. Physically, we need to warm-up appropriately so that stress is not immediate and sudden. Without an adequate warm-up we are shocking our bodies to immediate and sudden stress that we might not be able to adapt to. Appropriate recovery, including rest, sleep and relaxation, will also lead to adaptive responses. Make sure that you allot enough time to enjoy the simple pleasures of life. It may be as simple as going out for a walk with a loved one, curling up on the couch with a good book, or enjoying a relaxing bath with a few candles lit for relaxation. Sleep plays a critical role in adaptation. Recent work has suggested that inappropriate sleep patterns may influence some of the following hormones: hGH, TSH, cortisol, insulin, leptin, and ghrelin. Needless to say that when hormones are not responding appropriately, neither is the human body.

If you are not already viewing yourself as a whole entity, with all variables of life affecting your sport, now is the time to incorporate this perspective into your lifestyle.

Wheat

How do we fuel the human engine? Sure we need macro-nutrients to survive, but to function optimally we also need minerals, vitamins, and a vast array of other natural compounds found in our food. By ensuring appropriate fueling before, during, and after exercise, you can achieve a maximum adaptive response. A diverse diet and use of whole foods will help propagate a healthy biochemical response.

Diet plays a critical role on how the human engine performs. What we put in our mouths directly affects how we function on a daily basis. Foods can, and will, affect both the sympathetic and parasympathetic nervous systems. Again, by taking a look at your training and eating logs, you may be able to identify a pattern of dietary habits that might be deleterious to both athletic ability and general health.

How we eat has just as much impact on our bodies as what we eat. Including a variety of foods throughout the day will lead to a better biochemical response to how the body utilizes food. As a general rule, we should include grains, vegetables, fruits, oils, dairy, meat, and

see LOWELL on page 9

Supplements

Take them with or without food?

Bill Misner, Ph.D.

Take with carbohydrates

Substances that permeate muscle cells affect the absorption of water-soluble vitamins C, B1, B2, B3, B5, B6, B12, & Folate.

Take with specific amino acids

Some amino acids produce special effects because they cross the blood-brain barrier. Amino acids are required to carry dietary minerals across intestinal membranes for specific assignment as anions or cations for metabolism, cellular electrolytes, or bone matrix building-blocks.

Take with fat-containing food

Fat-soluble nutrients such as coenzyme Q-10, and vitamins A, D, E, and K.

Take without food

Most medicines, hormones, and pro-hormones absorb at their highest percentage without food present. Food can compete with and inhibit maximum absorption, reducing potency proportionate to food volume and ratio of carbohydrates to protein in the conflicting meal. Organic herbs contain natural enzymes that enhance optimal absorption without food. Herbals that produce too much potency should be taken with food to reduce potency for compatibility.

Take with food

Any prescription or over-the-counter medicine that imposes gastric stress when taken alone. Precautions from pharmacist, physician, or drug label should indicate the necessity for taking with food.

LOWELL from page 8

beans in our everyday diet. Variety is the spice of life. A variable diet will ensure that you ingest an array of vitamins, nutrients, and biochemical compounds that will positively affect your overall health. A guideline that I promote is what I refer to as the "5 Color Rule". It helps us get at least one serving of 5 different colors of fruits and vegetables daily. The color groups are green, red, orange/yellow, white/brown, and blue/purple.

We eat for both nutritional and psychological purposes. Our current society, unfortunately, tips the proverbial scales more toward the psychological end. However, I recommend consuming 85% of your daily food because you need it and the remaining 15% because you want it.

Athletes require specific dietary supplements. In certain circumstances it may be physically impossible to ingest enough food to replenish the nutrients that are catabolized during the metabolic process. Certain supplements may also be able to enhance recovery or assist in re-establishing hormonal controls and balance. Diet and supplementation will also affect sleep

PB & J

The final component to your seasonal review should be a critical evaluation of performance and training time. Did you achieve the Personal Best (that's the PB) that you hoped to attain? Remember, you do not have to reckon a personal best performance based strictly on time. It may be an intensity workout where you managed to get that negative split that you were never able to previously achieve. What about the extra hill repeat that you thought was impossible? Performance can also be evaluated outside of the competitive arena.

We also need to look at how many "junk" hours were spent training. Time spent in the outdoors need to be quality. We need to be fully involved in what we are doing. Remember, what makes us whole is a combination of biochemistry, psychology, and spirituality. Ask yourself, "When was the last time I felt absolutely amazing, physically, while training and got lost in that moment?" Training should feel like this all the time! Junk hours will not lead to personal bests. So, in the future, you may want to just take the PB and ditch the J.

Now that you have been versed in the fundamentals of your wholistic "sandwich," you may be in a better position to evaluate your purpose as an athlete. I hope you will have new skills and outlook that will positively affect your whole being.

Lowell Greib is a naturopathic doctor and biochemist with an interest and expertise in sport medicine, injury prevention and athletic nutrition. He is the chief medical officer for Mahigan Medicine (www.mahiganmedicine.com) and operates private clinics in Ontario, Canada, as well as acts as director and supervisor for the sport medicine specialty rotation at the Canadian College of Naturopathic Medicine. Lowell has competed in endurance sport for much of his life and now lends this expertise, clinically, to all athletes from weekend warriors to national team members. To contact Lowell, you can reach him at info@mahiganmedicine.com or at 1-877-624-4633.

PRODUCT SPOTLIGHT
Boron
The 'missing link' mineral

Steve Born

I can't recall, but we may very well have featured boron in a previous issue of Endurance News. However, I had recently put together an Athlete Education Series piece that featured boron, and while I was doing some investigating on the product, I was mildly surprised to see some new benefits attributed to this humble trace mineral. That's why it's this issue's Product Spotlight supplement.

Boron isn't as well known as other minerals, but you ought to familiarize yourself with this under-appreciated but highly beneficial trace mineral. Unfortunately, boron is not plentiful in the diet, with only a few foods containing appreciable amounts of it. Unless we supplement, we could have a boron deficiency, and that would leave us without its many health benefits.

Endurance training and hormone levels

It is often suggested that, among other benefits, regular exercise will improve one's sex life by improving strength and stamina. While this may be true when comparing a sedentary person to one who exercises moderately, it is certainly not true for most serious athletes, those who train upwards of 15-20 hours a week or more. In fact, research confirms that heavy training may reduce sex drive, not necessarily through fatigue, but rather from depleted hormones. What you may not be aware of is that depressed hormone levels also negatively impact athletic performance, especially in regards to recovery. Be honest: one or both of these-reduced sex drive and negatively affected athletic performance-has to catch your attention!

Decline in athletic performance and decreased sex drive are arguably the reasons that athletes have sought to elevate hormone levels artificially through the use of steroids or pro-hormones. Of course, our stance on not interfering with the endocrine system via the use of steroids or prohormones is well known... Hammer Nutrition is absolutely anti-steroid and anti-prohormone! But is there a safe and effective alternative to regulating hormone levels? The answer to that is yes, a specific trace element named boron may be the athlete's best hedge against exercise-induced hormone irregularities.

Boron supplement sufficiency associated with hormone regulation

While boron's role in sex hormone status is not completely understood, research shows that boron is required for the formation of these hormones, and that it affects/influences human steroid hormone levels, primarily testosterone and estradiol. That said, supplemental boron does not lead to overproduction of these anabolic hormones (as was once suggested by some bodybuilding-specific supplement manufacturers), but taking enough boron does result in adequate production and levels of these hormones, improving and maintaining optimal hormonal "status" in the body. As a result, boron supplementation is believed to aid in:

- Optimizing recovery between workouts
- Normalizing libido
- Alleviating inflammatory arthritic symptoms
- Maintaining/improving prostate health
- Maintaining/improving postmenopausal symptoms dependent upon minerals and estrogen: testosterone hormone balance

Here's some of the science behind boron supplementation:

FEMALES (17 beta-estradiol and testosterone increases)

Boron supplementation markedly elevated the serum concentrations of 17 beta-estradiol and testosterone; the elevation seemed more marked when dietary magnesium was low. Nielson [1] examined the effects of aluminum, magnesium, and boron on major mineral metabolism in postmenopausal women. It reports the effects of dietary boron on 12 women between the ages of 48 and 82 housed in a metabolic unit. A boron supplement of 3 mg/day markedly affected several indices of mineral metabolism of seven women consuming a low-magnesium diet and five women consuming a diet adequate in magnesium; the women had consumed a conventional diet supplying about 0.25 mg boron/day for 119 days. Boron supplementation markedly reduced the urinary excretion of calcium and magnesium; the depression seemed more marked when dietary magnesium was low. Boron supplementation depressed the urinary excretion of phosphorus by the low-magnesium, but not by the adequate-magnesium women. Boron supplementation markedly elevated the serum concentrations of 17 beta-estradiol and testosterone; the elevation seemed more marked when dietary magnesium was low.

MALES (estradiol & testosterone increases)

Two studies [2, 3] were reported that quantified the urinary boron concentration of subjects consuming their habitual diet. In addition, the

see BORON on page 11

BORON from page 10

effect of supplementation on plasma lipoprotein cholesterol concentrations and susceptibility to oxidation and plasma steroid hormones were determined. Boron excretion, obtained on two different occasions from 18 healthy male subjects, was found to be in the range 0.35 - 3.53 mg/day, with no significant difference between the two occasions. Supplementation with 10 mg boron per day for 4 weeks resulted in 84% of the supplemented dose being recovered in the urine. Plasma estradiol concentrations increased significantly as a result of supplementation (51.9 +/- 21.4 to 73.9 +/- 22.2 pmol/L; $p < 0.004$), and there was a trend for plasma testosterone levels to be increased.

A key mineral for bone health

When it comes to bone health, boron isn't as well known as other minerals such as calcium, magnesium, and phosphorus; however, they can't do their job without boron. Boron is vitally important for maintaining and improving bone health because of the role it plays in assisting with the bone-building effects of the above-mentioned minerals and vitamin D. Studies show that adequate intake of boron reduces the loss of calcium and magnesium excreted in the urine. That ensures that more of these two important minerals stay in your body!

An aid for hypertension and arthritis as well

Both hypertension and arthritis are due, at least partially, to abnormal calcium and magnesium metabolism and balance. Because of boron's function in helping maintain correct levels and metabolism of calcium and magnesium, this trace mineral may aid in preventing and/or reducing these two diseases.

Boron's benefits for brain health and enhanced cognitive function

Did you know that boron might also play a role in preserving cognitive function? It's true! Subjects involved in one study were placed on either a boron-deficient diet or a diet that contained ample amounts of boron. The results showed that the subjects on the boron-deficient diet performed worse on "cognitive-specific" tasks that included hand-to-eye coordination, manual dexterity, and short- and long-term memory. Another study showed that inadequate boron intake could contribute to decreased mental alertness and focus. The results of these studies suggest that boron plays an important role in human brain health and cognitive function/performance.

Ammunition against kidney stones

If you've ever suffered from this most painful malady, it's a bridge you want to cross but one time only (meaning: you'll take whatever steps are necessary to prevent having to go through it again). One study showed a decrease in total urinary oxalate following boron supplementation, which suggests that boron may play a role in helping prevent this unpleasant condition.

Summary

Boron is rapidly gaining status as a crucially important nutrient for supporting numerous areas of general health, with more potential benefits in antioxidant free radical reduction pathways. It is also a key nutrient for supporting enhanced recovery from long, hard workouts via its safe yet effective hormone-enhancing/regulating effects. Additionally, many of our clients have reported to us that boron noticeably increased libido; this again is through boron's influence/effect on specific hormones.

Dr. Bill Misner writes: "In general, most sport science nutritionists recommend no more than 3-6 milligrams boron per day, stating the body has only a micro-appetite for this hormone-enhancing mineral. However, Michael Colgan, Ph.D., known internationally for his research in sports nutrition and in aging, takes 8 mg boron daily. There is no RDA for boron. A safe and adequate daily intake is estimated between 1 and 10 mg. Toxic effects appear at intakes of about 100 mg." [Steve's note: As far as toxicity/toxic effects of this mineral are concerned (the effects being manifested as loss of appetite, nausea, diarrhea, and skin rashes) I've looked at several different sources, most of which list varying amounts. Some have suggested doses around 50 mg daily, while others suggested doses as high as 500 mg daily. The most common level I saw, which concurs with Dr. Bill's assessment, was for daily intakes of around 100 mg/day.] Unfortunately, few diets generate enough of this mineral in significant amounts, and those amounts can vary greatly depending on the soil levels of boron where the food is harvested. An ever-increasing number of nutritional scientists believe that widespread boron deficiency exists throughout the United States, which is why supplementation with boron is so important. Each 7-capsule packet of Premium Insurance Caps contains 2.5 mg of boron. Each capsule of our Boron supplement contains 5 mg of the same highly absorbable form of this important mineral plus 12 mg of Hammer Nutrition's Proprietary Enzyme Enhancement System for even greater absorption. Using ample amounts of Premium Insurance Caps, perhaps adding to that an additional capsule of boron daily, is a wise strategy to consider employing.

Boron is the "missing link" supplement with anabolic implications; this nutrient can very well improve the quality of your workouts, while also providing a plethora of general health benefits. In the words of one nutritional scientist, supplementation with boron may positively affect many aspects of health.

Next season

Plan for some long, slow distance training

Jim Bruskewitz

Most of us have a season of training and racing behind us now. A few of you have the big race for the year still ahead.. In either case, it's hard to imagine having the perfect season where everything went extremely well. While we mull over the weeks and months of training, we should take advantage of the fact that we can't hold onto the edge of fitness we've worked hard to achieve. We need to let it go. Trying to hold on will eventually result in a physical or emotional letdown, and that will exact its price: a forced vacation from your normal training regime. Unfortunately, this usually happens at a time when you'd normally be picking up the base training for the coming year's campaign. While you ponder the next move after a break from focused training that you just have to take, consider how you want to periodize your upcoming training. I'd like to put in a plug for the long, slow distance training phase used to build a base the likes of which you've never had.

Just to encourage and remind you of the benefits of a big, strong base, remember what it will deliver to you. Endurance events, and let's include events lasting an hour in that category, rely very heavily on aerobic energy delivery to meet the metabolic demands. Over 99% of the total energy delivered in a hard, one-hour effort comes from aerobic energy delivery. I keep telling myself this because I am amazed how uncomfortable I can get in one hour with an anaerobic energy contribution of <1% to the total energy produced. These efforts smack of an uncomfortable anaerobic beat-down. Although we know we're working hard when our senses are flooded with discomfort, we should keep in mind that the lion's share of what we need to develop, the aerobic component, doesn't cause these uncomfortable sensations. Furthermore, when we are feeling the burn in the muscles and the searing in the lungs, we are inhibiting what we are so dependent upon: the aerobic component.

A well-developed aerobic energy delivery system gives us real advantages when the competitive season comes around. Recovering from any kind of a training load involves some metabolic work. We stress our bodies and tear them down while we train. We are less fit at the end of a workout than we are when we begin it. Our improvement comes while we rest and recover. Our good friend, aerobic energy delivery, is the energy system used to recover from our training. A well-developed system leads to a faster rate of recovery. We can increase our training load if we can recover faster. Look at the lengths people go to attempting to speed the recovery process by taking competitively illegal substances like anabolic steroids, erythropoietin (EPO), and hGH, as well as a host of legal methods like hyperbaric chambers and various concoctions. You can't beat a well-developed aerobic energy delivery system into doing the job. It takes some time to develop through sound training, but it's legal, ethical, and very effective.

For those that are engaged in very long races like Ironmans, marathons, and century rides, a well-developed aerobic energy delivery system is essential. Measuring the hourly caloric energy demands of athletes involved in events that last six or more hours reveals that they burn upwards of 1,000 kcal per hour. We're well schooled on stomach emptying rates and the top end of calories that one can assimilate per hour (~280-350kcal/hour) while occupied with these long efforts. There is only one way to bridge the gap between the rate at which we can supply calories to the working muscles and the rate at which those muscle burn them, and that is by burning fatty acids. The fatty acid supply that even the skinniest athletes have is not limiting. We cannot rely on this source unless the effort can be supported with a very large aerobic energy delivery component because we can't utilize this energy source while delivering energy anaerobically. A well-developed aerobic energy delivery system can make use of this essential fuel and bridge the caloric deficit. The only way to develop the aerobic energy delivery system to this point is to build a base at low intensity for long periods of time. The phrase "slow down while training to get faster" comes to mind. It's spot on. Training at too high an intensity while intending to develop the ability to burn fatty acids won't work. The larger anaerobic component will inhibit the aerobic enzymes' function. You'll end up inhibiting what you are trying to promote.

While you plan your upcoming season, set aside a large block of time devoted to long, slow efforts. Don't worry about the pace. As you develop your ability to deliver energy aerobically, the perceived exertion of a long, slow effort will stay the same, but the pace will improve. This is the best indication that the desired adaptations are taking hold. Some athletes begin their training a bit late and don't feel they have the luxury of a nice block of time to gain these adaptations. Their season isn't as productive or as satisfying as it could be if they could rely on those adaptations that support the easy and the hard and the short and the long training and racing that we love to do. Give it a try and have fun while you're out there!

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

Helping ward off "Love Handles"

Is melatonin a possible solution?

Bill Misner, Ph.D.

Visceral fat is adipose tissue that accumulates around the body's major internal organs (especially round the midsection of the body). Men are more prone to accumulate visceral fat than women. Hormone changes associated with age, genetics, and/or excess carbohydrates (especially simple sugars) are probable contributors.

Pineal melatonin secretion declines with aging, whereas visceral fat, plasma insulin, and plasma leptin tend to increase. Rasmussen et al. demonstrated that daily melatonin administration at middle age suppressed male rat intra-abdominal visceral fat, plasma leptin, and plasma insulin to youthful levels; their study investigated mechanisms that mediate these responses.

Melatonin (0.4 microg/ml) or vehicle was administered in the drinking water of 10-month-old male Sprague Dawley rats (18/treatment) for 12 weeks. Half (9/treatment) were then killed, and the other half were submitted to cross-over treatment for an additional 12 weeks. Twelve weeks of melatonin treatment decreased ($P<0.05$) body weight (BW; by 7% relative to controls), relative intra-abdominal adiposity (by 16%), plasma leptin (by 33%), and plasma insulin (by 25%) while increasing ($P<0.05$) locomotor activity (by 19%), core body temperature (by 0.5 C), and morning plasma corticosterone (by 154%), restoring each of these parameters toward more youthful levels. Food intake and total body fat were not changed by melatonin treatment.

Melatonin-treated rats that were then crossed over to control treatment for a further 12 weeks gained BW, whereas control rats that were crossed to melatonin treatment lost BW, but food intake did not change in either group. Feed efficiency (grams of BW change per g cumulative food intake), a measure of metabolic function, was negative in melatonin-treated rats and positive in control rats before cross-over ($P<0.001$); this relationship was reversed after cross-over ($P<0.001$).

Melatonin treatment in middle age decreased BW, intra-abdominal adiposity, plasma insulin, and plasma leptin, without altering food intake or total adiposity. These results suggest that the decrease in endogenous melatonin with aging may alter metabolism and physical activity, resulting in increased body weight, visceral adiposity, and associated detrimental metabolic consequences.

SEE: Rasmussen DD. et al. Daily melatonin administration at middle age suppresses male rat visceral fat, plasma leptin, and plasma insulin to youthful levels. Endocrinology. 140(2):1009-1012, 1999.

I am not saying melatonin will cause the love handles to disappear. Adequate deep REM sleep and consuming adequate complex carbohydrates necessary to replace expenditures may reduce the rate at which love handles increase. People who do not get adequate sleep have been identified as subjects whose lack of sleep is associated with gains in fat weight.

Note: REM Caps contains melatonin along with a number of other safe, yet effective sleep-enhancing nutrients.

HOT TIPS

Hammer flask uses

When your Hammer flasks get too gross to use anymore, or if you've just collected more than you need for fueling, they also make ideal travel-size containers for fluids such as hand cleaner, shampoo, sunscreen, and the like. Just remember to pack them in your checked luggage if you're traveling by plane!

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) and EN #52 (2006). 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 favorites, I believe the information provided is useful and worth repeating, especially at this time of the year, and I believe it augments the other off-season specific article contributions nicely.

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 currently 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 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 (FR) 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 Gerontal 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

see SUPPLEMENTS on page 15

SUPPLEMENTS from page 14

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 Free Radicals (FR's) 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.hammernutrition.com/downloads/ENews/ENissue54.pdf

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 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 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 research, "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) of another of nutritional science's brilliant minds, Dr. Bruce Ames, provides evidence that supports the notion 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 that is 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 will help provide the nutrients your body needs that it cannot get in adequate amounts from our food sources.

* Antioxidants in Premium Insurance

see SUPPLEMENTS on page 16

SUPPLEMENTS from page 15

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-enzyme 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 ones 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:

Suzy Degazon

* 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, Huntington's disease

Now, as important as CoQ10 is, and with such tremendous benefits, there are some experts that feel that idebenone, the synthetic variant of CoQ10, is an even more powerful antioxidant and a substance that yields even greater benefits. In fact, the antioxidant powers of idebenone are so potent that it is used to protect organs from damage when they are removed from donor for transplant to patient.

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 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 play's 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-R Caps: r-Alpha Lipoic Acid, vitamin C (as ascorbyl palmitate), vitamin E, DMAE

see SUPPLEMENTS on page 17

SUPPLEMENTS from page 16

(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 athlerosclerosis, 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 that we 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. 2 soft gels twice daily is a super easy way to make sure you obtain the essential O-3 fatty acids.

Elizabeth Moore shows what keeps her going during Primal Quest
Photo - Jennifer Johnson

5) Phytomax - I wish I could say that my diet is excellent all the times. The truth is that it's not always possible, especially in the winter where I live, to obtain substantial amounts of vegetables. I have found this product 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 3 capsules 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.

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 AO-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.

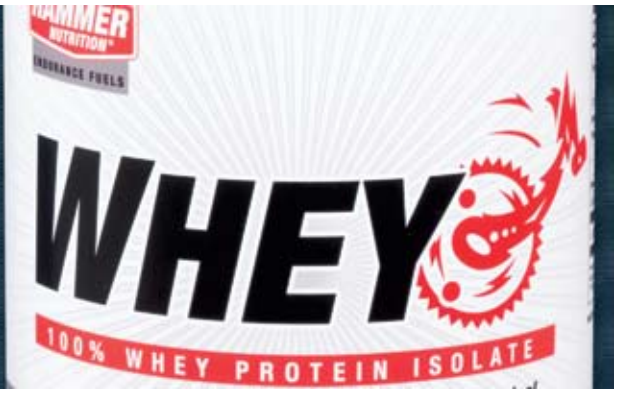
So for increased antioxidant support, plus support for enhanced cognitive function and circulation, taking a Super Antioxidant capsule at breakfast is not a bad idea. At the rate of one capsule a day, a bottle will last you two months, not a bad investment for all the benefits you'll receive.

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."

More about Whey & hGH



Steve Born and Bill Misner, Ph.D.

One of our clients recently wrote us saying, "I have noted your suggestion in EN about a daily bolus of whey before sleep to increase hGH. The whey protein seems to have a good effect, but of course it is hard to untangle from the effects of good training, nutrition, and rest. I'd like to share the concept with others, but would like further information on the research on which you base the suggestion. Please provide me with the articles or citations."

Dr. Bill replies:

The quote in EN originated from Brian Frank, however, I support this report from the information published in the literature. We're defending his statement; this is a progressive line to evaluate:

1.) Whey stimulates muscle growth rate by increasing the body's retention of nitrogen due to proteins (whey peptides) contained in whey. Nitrogen retention from whey peptides is believed to be 16 times higher than free amino acids and twice that of whole foods. Whey protein possesses the highest biological value [a measure of availability to the body] of all known foods. The biological value of high quality whey protein may be as high as 159 (nearly double most others).

2.) Animal studies (Zaloga 1991) demonstrated the ability of whey protein to increase IGF-1 levels. IGF-1 is in the hGH pathway involving increased muscle mass growth through hormone mechanisms. (Zaloga GAR. et al. Effect of enteral diets on whole body and gut growth in unstressed rats. J PEN. 15(1):42-47, 1991.)

3.) Human studies (Burke 2001) also demonstrated that whey protein generates strength gains. (Burke DG. et al. The effect of whey protein supplementation with and without creatine monohydrate combined with resistance training on lean tissue mass and muscle strength. Int J Sport Nutr Exerc Metab. 11(3):349-364, 2001.)

4.) The optimal dosage of whey protein for facilitating muscle growth in endurance athletes is 25 grams per day. However, some researchers recommend a higher dosage for athletes, ranging from 40-80 grams per day. If this latter statement is true, it is due to higher nitrogen turnover during strength exercise because of increased number of muscle fibers recruited. However, the consequence of protein overdose can be premature bonking, since too much ammonia is released into the system. I recommend between 25-40 grams per day, ideally in divided doses taken after exhaustive workouts and/or prior to sleep.

During sleep 85% of hGH is released, and 6g glutamine in each serving Hammer Whey is adequate to cross the blood-brain barrier to potentially raise nocturnally-released hGH. The upper dose recommendation is therefore two servings Hammer Whey post-exhaustive workout (especially strength work) and one more serving 1-hour prior to bedtime, taken with REM Caps if you want to maximize sleep and protein benefits on nocturnal muscle growth.

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 and no flavors or sweeteners 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.

References (for further review)

Rieu I, Balage M, Sornet C, Debras E, Ripes S, Rochon-Bonhomme C, Pouyet C, Grizard J, Dardevet D. Increased availability of leucine with leucine-rich whey proteins improves postprandial muscle protein synthesis in aging rats. Nutrition. 2007 Apr;23(4):323-31. Epub 2007 Mar 23. PMID: 17367997 [PubMed - indexed for MEDLINE]

Cribb PJ, Williams AD, Stathis CG, Carey MF, Hayes A. Effects of whey isolate, creatine, and resistance training on muscle hypertrophy. Med Sci Sports Exerc. 2007 Feb;39(2):298-307. PMID: 17277594 [PubMed - indexed for MEDLINE]

Cribb PJ, Williams AD, Carey MF, Hayes A. The effect of whey isolate and resistance training on strength, body composition, and plasma glutamine. Int J Sport Nutr Exerc Metab. 2006 Oct;16(5):494-509. PMID: 17240782 [PubMed - indexed for MEDLINE]

Anthony TG, McDaniel BJ, Knoll P, Bunpo P, Paul GL, McNurlan MA. Feeding meals containing soy or whey protein after exercise stimulates protein synthesis and translation initiation in the skeletal muscle of male rats. J Nutr. 2007 Feb;137(2):357-62. PMID: 17237311 [PubMed - indexed for MEDLINE]

Candow DG, Burke NC, Smith-Palmer T, Burke DG. Effect of whey and soy protein supplementation combined with resistance training in young adults. Int J Sport Nutr Exerc Metab. 2006 Jun;16(3):233-44. PMID: 16948480 [PubMed - indexed for MEDLINE]

Kerksick CM, Rasmussen CJ, Lancaster SL, Magu B, Smith P, Melton C, Greenwood M, Almada AL, Earnest CP, Kreider RB. The effects of protein and amino acid supplementation on performance and training adaptations during ten weeks of resistance training. J Strength Cond Res. 2006 Aug;20(3):643-53. PMID: 16937979 [PubMed - indexed for MEDLINE]

Tipton KD, Elliott TA, Cree MG, Aarsland AA, Sanford AP, Wolfe RR. Stimulation of net muscle protein synthesis by whey protein ingestion before and after exercise. Am J Physiol Endocrinol Metab. 2007 Jan;292(1):E71-6. Epub 2006 Aug 8. PMID: 16896166 [PubMed - indexed for MEDLINE]

Coburn JW, Housh DJ, Housh TJ, Malek MH, Beck TW, Cramer JT, Johnson GO, Donlin PE. Effects of leucine and whey protein supplementation during eight weeks of unilateral resistance training. J Strength Cond Res. 2006 May;20(2):284-91. PMID: 16686554 [PubMed - indexed for MEDLINE]

Morifuji M, Sakai K, Sanbongi C, Sugiura K. Dietary whey protein increases liver and skeletal muscle glycogen levels in exercise-trained rats. Br J Nutr. 2005 Apr;93(4):439-45. PMID: 15946405 [PubMed - indexed for MEDLINE]

Borsheim E, Aarsland A, Wolfe RR. Effect of an amino acid, protein, and carbohydrate mixture on net muscle protein balance after resistance exercise. Int J Sport Nutr Exerc Metab. 2004 Jun;14(3):255-71. PMID: 15256687 [PubMed - indexed for MEDLINE]

Belobrajdic D, McIntosh G, Owens J. The effects of dietary protein on rat growth, body composition and insulin sensitivity. Asia Pac J Clin Nutr. 2003;12 Suppl:S42. PMID: 15023655 [PubMed - in process]

From *Soni's Kitchen*

Sonia Frank

When we first started publishing Endurance News back in 1992 a regular feature was a page of good for you, great tasting recipes direct from the kitchen of Sonia Frank. We thought it'd be fun to reprint some of our favorites and perhaps include more in upcoming issues. Let us know what you think!

Potato Leek Soup

Ingredients:
1 bunch leeks (3-4 good size ones)
1/2 cup finely chopped yellow onion
2 tablespoons canola oil
8 cups white potatoes, diced
5 cups water
3 teaspoons chicken bouillon
1 teaspoon salt
1 teaspoon dried dill or 2 tsp. fresh
Pepper to taste

Yield: 2 quarts, about 5 1/2 servings

Preparation:
Chop white part of leeks and discard the rest. In a large pot, sauté leeks and onion in canola oil until transparent. Add potatoes, water, bouillon and salt. Cook until potatoes are tender. Blend 3/4 of the soup in a food processor or blender, and return to pot. Add dill and pepper; Stir well and serve.

Note: This soup tends to thicken overnight, so some water and salt may need to be added when reheating.

Nutritional facts per serving: *Calories 62.25; Protein 1.3g; Carbohydrates 7.5g; Fat 3.5g*

Marinated Flank Steak

Ingredients:
1 flank steak
2 tablespoons low sodium soy sauce
1 teaspoon honey
1/2 teaspoon sesame oil
1 clove garlic
1/2 teaspoon grated ginger*(optional)*

Preparation:
Flank steak usually comes between 1 1/4 and 2 lbs. If this is more than you need, cut in half and freeze one of the steaks. Allow about 1/3 lb. of (raw) meat per person. In a small saucepan, combine all ingredients, except meat, and heat on low stirring constantly until honey melts. Pour over meat and let marinate for 20-30 minutes. Broil or barbecue meat until desired wellness.

To serve slice thinly at an angle, cutting across the grain.

Nutritional facts per serving:
Calories 274; Protein 30g; Carbohydrates 2.6g; Fat 14.7g

Seasoned Spaghetti Squash

Ingredients:
1 medium spaghetti squash, cut in half
1 tablespoon unsalted butter (preferably raw)
1 tablespoon Parmesan cheese
1 1/2 teaspoon salt-free seasoning (lemon-pepper, Italian style or Vegit)

Yield: 4 side-dish servings

Preparation:
Cut half of spaghetti squash in half again, steam for about 25 minutes or until tender. Remove from steamer, let cool for 5 minutes. Using a large spoon remove squash meat from skin and put in bowl. Discard skins. Add butter, Parmesan cheese and seasoning; stir gently. Cover bowl with lid to keep hot.

Nutritional facts per serving: *Calories 270; Protein 5g; Carbohydrates 50g; Fat 3.75g*

Rice Flan

Ingredients:
3 cups rice milk (we us Rice Dream brand, Original Lite)
4 eggs
1/2 cup honey
1/2 teaspoon cinnamon

Yield: 6 servings

Nutritional facts per serving:
Calories 190; Protein 4.6g; Carbohydrates 35.5g; Fat 2g

Preparation:
Preheat oven to 350 degrees. Add all ingredients in blender, or large bowl, and mix well. Pour into individual custard cups, and place cups in a casserole dish. Add water to casserole dish to about 1 inch high. If you don't have custard cups, pour liquid into small baking dish, and place in a larger baking dish with water in it. Bake for approximately 45 minutes, or until top starts to brown and get firm. Remove from oven. Allow about 2 hours for the flan to cool and finish firming up before serving. Refrigerate any unused portions.

Making a successful transition

In-season to off-season

An unidentified athlete catches up on some sleep at the end of the season

Al Lyman, CSCS

The time of year from October through December means different things to different athletes. With the autumn colors exploding in many places and the weather cooling off, it can definitely be a great time of year to enjoy your endurance sport of choice or to try your hand at something completely different and way out of your comfort zone. For example, many road cyclists take to the dirt for 'cross or mountain biking, while many multi-sport athletes narrow their focus to a single sport such as running or paddling for fun and relaxation, or to get ready for a late fall/winter race. What's more, if you are one of those who can now look back at their "A" goal race or event, it can be a lot of fun to be able to head out the door whenever you like, without the pressure of a "must-do" workout. You can flat-out enjoy all of that hard earned fitness with no worries and with a big smile on your face!

A Different Kind of Transition

Whatever your focus is right now, one thing that seems universal for most endurance athletes is that this is a time of transition. In this context, I define transition as meaning:

You are beyond your "A" focus/goal event(s) of the season, you have taken some time off to rest and rejuvenate, and are feeling healthy and enthusiastic about training. You may have already started thinking about jumping into next year's preparations, yet you know it is still way too early to begin actual off-season preparation for next season.

If this describes some of what you are thinking, you are "in-between" seasons - you are in transition. Most of us in the northern hemisphere reach this stage between September and December.

Assuming you have taken the requisite time off to rest, recuperate, and recharge your batteries, you will soon be saying to yourself, "OK, that was fun, but what's next?" (If you haven't taken that down time yet, or if you have another race on your calendar such as Ironman Hawaii or Florida, put this article off to the side and come back to it later!)

Where Have You Been?

At some point, either right after that "A" goal event is in the rear view mirror, or during this transition phase, most of us naturally begin to look back at the season and wonder what might have gone wrong or what we could have done better. On the flip side, we plan how we can repeat our successes and reach even higher, taking our performance to a new level.

The first thing to do when you reach this stage is to sit down and thoughtfully assess what you did and where you have been this past season. For example, did you arrive at the start line of the events you had hoped to, ready to perform? What did you learn about your physical and mental preparation, as well as your strengths and weaknesses? Did you have all of the "tools" in your toolbox that you needed to succeed?

I ask the athletes that I coach to fill-out a Season Summary Questionnaire that helps us work together to assess all that happened during the season so we can evaluate it objectively. In the box below, I have included some of the questions in that questionnaire. I invite you to take some time during the next few days or weeks (or whenever your transition phase into the off-season occurs) to ponder these questions and answer them in detail. Don't rush this process, as it is entirely possible that taking your time and thoughtfully working through these questions at this time may well be the key step you take that allows you to go to the next level of performance next season.

1. What do you consider to be your greatest success or highlight this past season? Why?

2. What do you consider to be your greatest disappointment? Why?

3. What things (skills/technique/strength/endurance in any area) do you think you should change or could improve upon in preparation for next season and beyond? Be specific.

4. How could you have better prepared mentally?

5. How could you have better prepared with regard to race nutrition?

6. What about day in/day out eating habits and nutrition?

7. How would you have changed race tactics and strategy to improve your race performance?

8. List at least three specific goals you would like to accomplish for next year. Again, be specific! An example might be: "finish the Timberman 70.3 in less than 5 hours."

9. In your opinion, what do you consider to be your biggest weakness or limiter as an athlete?

10. What do you feel is the single most important thing you should do in preparation for next season to increase your chances of going to "the next level"?

Where Are You Going?

As you begin to analyze your answers and make plans for the off season and beyond, there are some things you can

see AL on page 21

6th Annual Highline Hammer

The best yet

2007 Highline Gang
Photo - Matthew Wingate

Steve Born

This year's edition of the Highline Hammer was a wild success and all of the veterans agreed that it was the best yet. We had a great group of participants and, though there were wildfires happening in nearby areas, we were able to avoid the smoke for the most part. Plus, for the first time ever, we conquered the 75-mile Flathead Lake loop on Sunday, our third day of riding. Coming the day after the legendary (and mountainous!) 136-mile ride through Glacier National Park, that's quite an accomplishment!

In addition to four days of fantastic riding-which included great sag support and all the Hammer Nutrition supplements and fuels one could need-everyone enjoyed plenty of wonderfully prepared, ultra healthy, and delicious food. First-time participants also took part in a highly informative round-table discussion and Q & A session with Steve Born.

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 2008 plans. Speaking of which, the tentative dates for the 7th edition of the Highline Hammer are July 9-13, 2008, which is the earliest we've held the event. We're moving it up from its traditional time frame (the first week of August) because the event has been smoke-affected 3 out of the past 5 years.

Updates will be posted at www.hammernutrition.com/highline as well as in future editions of Endurance News.

AL from page 20

do during this transition phase that will ensure that you have your best season ever in 2008. Here are some tips and suggestions that will hopefully bring you closer to that end:

* Ideally, you will have stepped back and gotten enough total rest after your last "official" event to ensure that you are physically and mentally ready to get the most from this period. Keep in mind that sometimes rest is the best medicine, and very often, you do need to take a step back before you can take two steps forward. Bottom line: Are you enthusiastically looking ahead? If not, you may need to take another week or two completely off and see if your enthusiasm for training returns.

* Along the same lines, be sure to allow enough time to "unload" the year's training from your legs. Right now would be a great time of year to try something like myofascial release using a foam roller; that's just one example of how you can improve the health of your muscles so they "bounce back."

* Invest time in reading something new to expand your horizons and give yourself a new perspective, both in and out of your sport.

* Be sure that all of your training related injury treatments are completed such that they won't interfere with your future training, or vice versa, so that training will not interfere with your complete recovery. Don't try to train through injuries at this point in time. Rest and repair first before moving on.

* Get your life organized if needed, by making sure any big projects are off your plate. If you need to paint the house, now may be the time to do it.

* Shift your focus to learning a new skill or doing a completely different kind of activity that you would normally never do during the season, to have fun and also grow personally and athletically. One example that comes immediately to mind is developing the power of your breath using a program like Graeme Street's Cyclo-Breath, contained inside his Cyclo-Secrets: http://cyclo-core.com/onthego-secrets/ Think outside of the box!

* Nail down an outline of your races and/or events for next season so you have a general idea of when your competitive season (if that applies to you) will begin. That way, you can work your schedule backward, allowing enough time for transition and off/pre-season preparation.

* Feel free to email me at any time if you would like any additional information about the above topics. I am happy to help if I can.

In summary, use this transition phase to have some fun by using your residual fitness to embark on some athletic endeavors that expand your horizons. Whether it is focusing on improving a limiter to boost your base capability, or trying a new sport, get out there and enjoy! As for me, I think I'm going down to the lake and paddle my kayak while watching the sunset! :)

Coach Al Lyman, CSCS, is the owner of www.Pursuit-Fitness.com, a coaching company for endurance athletes. Besides being an Ultrafit Associate and certified with USA Triathlon, USA Cycling, and the NSCA, he is the creator of Runner-CORE, a NEW fast, effective, time-saving program for triathletes and runners of all levels. For more information and tips: go to: www.Runner-CORE.com. Email: coachal@pursuit-fitness.com

ATHLETE SPOTLIGHT
Lynne Smith
Swimming across the English Channel

Lynne makes her way across the English Channel
Photo - Brad Smith

Steve Born

Our "Spotlight" athlete for this issue is Lynne Smith, from Austin, Texas. Lynne's been a sponsored athlete of ours for about four years and has a pretty impressive athletic resume in triathlon. However, that resume now includes a successful crossing of the English Channel, which she completed on August 20th. In fact, until very recently, Lynne's time of 9 hours and 50 minutes was the fastest Channel crossing by a solo swimmer this year.

Steve: Lynne, congratulations on a great effort on your English Channel crossing; that's a superb accomplishment and, unless I'm mistaken, that's still the fastest crossing by a female this year... correct? Also, from what I gathered (I believe it was from a newspaper article) you would have been happy with a 12-hour crossing (heck, most people would be supremely happy to just make it) so I would imagine you're pleased with your time. How happy are you with your results?

Lynne: Thanks so much, Steve. I had so much fun out there. It was the kind of day you usually only dream about. My goal was to swim from England to France, and I had planned on staying in the water for as long as that took. You can't predict how long your swim will take as there are so many factors out of your control, primarily the tides. I've seen some extremely talented athletes not make it; the English Channel and time pick you. The only reason I had ever mentioned time was to give my crew some indication of how long they'd need to be awake. I was conservative with my estimate, but I am also a completely different athlete now (training and Hammer products work!). I am still the fastest American Channel swimmer of the year. Am I happy? I had fun from the second I started until the moment I finished. Everything fell into place for me. I am ecstatic about my results! I am a Channel swimmer!

Steve: Before we talk about the crossing, could you give us a little history of your athletic background?

Lynne: I did my first triathlon when I was 14 years old. It was an Olympic distance race in Tulsa, OK- part of the Bud Light Series. I remember people changed clothes in the transition area. I actually ran up to the public restrooms to change into my cycling clothes after the swim! I was the overall female winner. Consequently, I've been a triathlete for 25 years. I was also recruited to swim distance free for the US Naval Academy. My coach used to tease me because my 1650 splits were pretty close to my all out 100 and 200 splits. I've done triathlon for as long as I can remember. The last big triathlon for me for the Hawaii Ironman in 2004, where I finished 8th in my age group.

Steve: You've obviously had a long history in the sport of triathlon... which race would you say is your favorite one to do or have done?

Lynne: That is hard for me answer because each race is so different. I tend to really like the races I win <laughs>. In my 20's and early 30's my goal was to win. As I have matured as a person and an athlete, my focus had shifted. I now view successful as doing the best I can with the cards I am dealt on race day. My favorite races are the ones that are the most challenging, whether it is the Danskin triathlon or the Hawaii Ironman. I don't ever want it just handed to me.

Steve: Still talking about triathlon, is there one race in particular where you felt as though everything just clicked, as though you were "running on all cylinders"? Which race would that be and could you describe how you felt?

Lynne: Buffalo Springs Half Ironman in 2004. A few days before the race a good friend had asked me to try to qualify for Kona so we could race together. It was as if something switched in my brain and I knew I would have a great race; I had zero doubts or apprehension. All of my energy was used to propel me forward. My race day execution was perfect. It was over 3 years ago and I still vividly remember how I felt during the race and some of the key turning points during the day.

Steve: Conversely, is there a race where - aside from the "I learned a lot from it" factor - that you'd like to forget? What race was that and can you describe what it was like?

Lynne: No. I've never had a bad race. My mantra is "You run with what you've brung." I've had to adjust my goals and expectations based on where my training is, but I wouldn't say I've had a race where nothing has gone right. Sometimes people try to impose their goals or expectations on others. The biggest lesson for me in those cases is to deflect their judgment and stay with my own race strategy and goals.

Steve: How long have you been involved in long distance swimming? Had you done other long distance swimming races before or did you consider yourself to primarily be a triathlete?

Lynne: Triathlon is part of my DNA, so I am a triathlete first, marathon swimmer second. I took 2 years off from being a triathlete to focus on the English Channel. I have swum many Alcatraz swims, and my other long swim was the Catalina Channel in September 2006. I

see LYNNE on page 23

LYNNE from page 22

swam the English Channel, and I swam it well, but marathon swimming is not a lifestyle I can sustain.

Steve: What motivated you to do an English Channel crossing attempt and when did you first decide that you were going to do it?

Lynne: I met a man by the name of Davis Hart at a triathlon clinic in Feb 2005. Davis held the record for his English Channel swim in 1972. When I asked Davis what it was like when he reached France, he had this look about him that was indescribable. It was as if he swam it yesterday, and his smile was so vibrant. I wanted to know firsthand what that feeling was like.

Steve: Was there a specific reason you picked the date you did?

Lynne: I picked the boat pilot with the highest success rate, and then asked what dates he had available. Due to the uncertainly of the tides, his job of navigating was just as important as my job of swimming. Mike Oram was my pilot.

Steve: Once you made the decision to do the English Channel crossing attempt did you stop training for and competing in triathlons? Did you focus solely on swim training for the crossing?

Lynne: I thought I could do both triathlon and marathon swimming, but I was mistaken. When I first started training, I would do a long swim on Saturday (4-6 hours) and then try to do a long bike and long run on Sunday. Physically, it wasn't too bad, but the long swims were really hard for me mentally due to the sensory deprivation. I also had a hard time acclimating to the cold. I stopped running about 4 months before my swim to keep my weight up and I stopped riding 8 months out because I was afraid of falling and hurting my arms.

Steve: I would assume that the training for these two disciplines-triathlon and long distance swimming - are completely different (though, of course, you do have to do swim training in preparation for triathlons). If that's the case how did you train for the English Channel crossing and how different was it as compared to training for a triathlon? In the end, did you find training for one to be more difficult that the other? Please describe and, when you were training for the English Channel crossing, what did a "week in the life of Lynne Smith's training" look like?

Lynne: It was more different than I would have imagined. With Ironman training, my lower body was always exhausted by Sunday night. You know the feeling; it is just hard to stand up. With marathon swimming, my lower body felt great but I could barely lift my arms by Sunday night. The fatigue in my shoulders, neck and arms was unbelievable. I literally got to the point at times where I couldn't lift my arms up. Seriously! I had a hard time brushing my hair, putting a blouse on, answering the phone. I had to just plop my hands on my steering wheel to drive sometimes! The mental was different as well. My initial approach was to apply Ironman training to marathon swimming - negative split my swims, or build different sections of my key endurance sessions.

Sitting on the rocks in France!
Photo - Brad Smith

I eventually got to the point where I could do this, but it took about a year and a half to learn how to deal with the mental side. Imagine being on a 10-hour swim where there is nothing to see but murky in front of you, no one to talk to, nothing to listen to, and you are freaking freezing! Yes, the mental was the hardest part for me. Initially I tried to just be tough and force my way through it. No one can be that tough for that long. Yoga and mediation changed my life. Once I learned how to just be and embrace my environment, a new world opened up to me. I began to look forward to the quiet and "just being".

Also, after a cold swim, I was so exhausted. Even 20-30 minutes in 50 degree water can knock you out for a few days if you aren't used to it. I had to let go of my training expectations and learn to listen to my body first and foremost. I had to learn how to trust in my training.

The nutrition was key for my success. A lot of marathon swimmers told me to consume at least 500-600 calories an hour. I knew that just wasn't smart, so I always stuck with 280 calories an hour. When I first started acclimating, I tried to limit my feeds to hourly because the stops took so much time. Every time I stopped I would start shaking uncontrollably and sometimes couldn't recover from the fuel stop. Eventually, I acclimated and started stopping every 30 minutes. I learned to love my Hammer Gel/Perpetuem "jungle juice" combo at 112 degrees!

I periodized my training, so I build up for 3 weeks and rested my fourth week. My easy weeks were about 45,000 yards and my longest week was 61,000 yards. Typical training week for me:

Monday: ~5300 master's workout-Longhorn Aquatics at University of Texas or day off if I needed it
Tuesday: ~5300 master's workout + strength work + ice bath
Wednesday: ~5300 master's workout
Thursday: ~5300 master's workout + strength work + ice bath
Friday: ~5300 master's workout
Saturday: long swim - anywhere from 4 hours to 7 hours + yoga + ice bath
Sunday: ~10,000 + strength work + sometimes yoga

Monday was my rest day. I would either swim, take the day off, or kick with fins. Saturday was the lever to either swim more or swim less depending on where I was in my training cycle.

I think Ironman training is more wear and tear on the body and English Channel training is more mental (you have to be mental to get in that cold

see LYNNE on page 24

LYNNE from page 23

water!). One isn't easier - they are just different.

Steve: What Hammer Nutrition supplements and fuels do you use regularly in your training? Could you provide some detail as to your daily supplement/fueling program?

Lynne: I trained like I raced, so I used the same Hammer supplements throughout the two years. I use 280 calories and hour, and mix half of the calories from Hammer Gel and half of the calories from Perpetuem. One scoop of Endurolytes Powder per hour. For my long swims, I took Race Caps Supreme and Anti-Fatigue Caps before (4 of each about 2 hours before I stepped off). Post swim I drank Recoverite and took Xobaline. I take 1 Mito Caps daily.

Steve: For those of us who aren't completely familiar with English Channel crossing attempts, what are some of the rules/guidelines that one has to follow in order for the crossing to be considered "official"?

Lynne: Matthew Webb was the first person to swim the English Channel. He was quite the pioneer in 1875! The official Channel rules require swimmers to follow the same rules Matthew used. This means, no wetsuits, no fins or paddles, you cannot touch the boat, and no one can touch you. You can wear one silicone swim cap, ear plugs, and a standard "kit" (regular Speedo). To start the swim, you have to clear the water in England and to officially complete the swim, you have to clear the water in France.

Steve: I know this answer could & should be longer than we have room for, but if possible, could you give us a short synopsis of how the crossing went for you from beginning to end?

Lynne: It was like mediating for 10 hours. I can't get over how quickly it flew by for me. I just swam from feed to feed, and felt like I was having a party in between each stop. I had so much fun!!! I think I was caught up in the moment that I was actually swimming the English Channel. When I jumped into the water to start, I had wanted to say "Hey ya'll! Hold my beer. Watch this!" but it was too serious a moment, so I kept it to myself. I embraced the start and felt so lucky to be able to have the opportunity to make the attempt.

The biggest moment for me was actually seeing France. I didn't look up until I was about a mile out. The view will be in my head forever. The cliffs were so green and powerful looking. I could see the large boulders below and white birds flying around. It was spectacular! My crew told me I squealed after my first glance.

Steve: In an email to me you said that "so many factors were out of my control." Could you elaborate on that?

Detemined to make it
Photo - Brad Smith

Lynne: the tides and wind are the key variables that make the swim unpredictable. The tides turn every 6 hours in the Channel. I know countless people who have missed France by less than half a mile because the tides turned on them. They ended up swimming in place for hours until hypothermia set in too deep. Once you get cold, it is really hard to warm back up again. The wind can also be a deterrent. Headwinds are hard to swim against, and the windier it is, the colder you are. The Channel gods were looking out for me; I had a tail wind for a lot of my swim.

Steve: Did any of those "factors" (or problems) happen to you? If so, how did you deal with them?

Lynne: I wanted it hard, so that I would earn my swim. When I jumped into the water, it was dark (3:22 AM), it was raining and the water was rough. This was the only time I was nervous about the swim. I had wanted it hard, but the conditions were a bit much! It was also the first time in my life I was seasick! After I had swum for about 2 hours, my boat pilot asked my crew if they wanted to pull me due to the conditions (the water was pretty rough and kept crashing on top of me). I don't think anyone would have wanted to be the one to tell me I had to get out so they let me keep swimming <laughs>. That is when the waves and wind started to be in my favor.

Steve: Did you always feel in control or was there ever a point in the attempt where you thought, "Whoa, this is a long, long, long way; maybe I've underestimated this"?

Lynne: Never during the actual swim. I had those moments in training, especially when I was in the beginning of my acclimation process. It was fun to see the progress as my body adapted, but it was also challenging for me to let go mentally. For example, one Saturday I swam in 62 degrees and it was a shiverfest. The following Saturday, I went back for another cold swim. As I stood on the boat dock getting ready, my mind and body remembered how 62 degrees had felt the week before. I had to learn to let go of those memories because my body had adapted from the previous week. 62 degrees did not feel the same week after week. It got easier. My body adapted faster than my mind did.

During the actual swim, I had fun every second of the way. I didn't want it to end. I swam the Catalina Channel in September 2006 and it rocked my world. My pulse was 58 when I finished and I shivered uncontrollably for about 6 hours during my swim. It was a lot harder than I had expected, so I think it scared me into training more for the English Channel. The English Channel was a perfect swim for me.

Steve: In that same email to me you mentioned that "the one factor I could control was my nutrition plan." Could you share what that plan was?

Lynne:
Upon Arrival in England
- REM Caps to help with jetlag

see LYNNE on page 25

LYNNE from page 24

- Race Day Boost starting 4 days prior to swim. Took 4 times a day for 4 days.
- 1 Mito Cap each day

Pre-Swim - 2 hours before I swam (the moment I woke up)
3 scoops Sustained Energy
4 Anti-Fatigue Caps
4 Race Caps Supreme
1 Endurolyte

Pre-Swim - 1 hour before I swam
4 Anti-Fatigue Caps
4 Race Caps Supreme

During Swim
- 280 calories an hour, feeding every 30 minutes.
- 1/2 calories from Perpetuem + 1/2 calories from Hammer Gel (Espresso flavored!)
- 1 scoop Endurolyes Powder

Post-Swim
- Recoverite
- Tissue Rejuvenator (4 each night)
- Guinness

Steve: Ah, of course... a Guinness! Well, you deserved it, that's for sure (though we're of course happy to see that you took Recoverite!). Aside from feeling tired (you did feel tired didn't you?), how did you feel after the attempt - physically, mentally, and emotionally?

Lynne: I learned of this thing called "the Channel Smile". Every successful Channel swimmer has it and I wanted one. I've been wearing that smile everyday!

Physically, I was okay. I had lung aspiration, which I think is the beginning stages of drowning. I had inhaled so much salt water that I had a hard time breathing for a few weeks. My hip flexors were my limiter during my actual swim. Emotionally, I've felt great. Everyone is warning me about the post-triumph depression syndrome, but I feel great. My nutrition has been very clean post swim, so I am sure that has helped tremendously. Mentally, I need a break though. I am exercising, and I've started running and cycling again, but I am not putting any pressure on myself. I am very belly up when it comes to racing or pushing the limits. This morning my swimming lane did 100's on the 1:05. I was so proud of them and happy for their success when they made them all, and I politely got out of the way when they lapped me. I want nothing to do with it right now!

I will pick another goal in November so that I can have something to focus on. It won't be anything crazy or extreme-probably just a half Ironman or Ironman triathlon.

Steve: How many people did you have on your crew and how much of a factor are they in helping a swimmer achieve a successful English Channel crossing?

The English Channel smile
Photo - Brad Smith

Lynne: Your crew can make or break you as they are your life line. I could NOT have made my swim had it not been for my crew. They were so incredible. I picked a team that had the ability to think for me, take action for me, and tough enough to deal with the cold, rough conditions on the boat.

David Blanke, my swimming training partner, and 2-time English Channel swimmer was key. David stood on the side of the boat every second of the way, making sure I was okay. We were eye to eye for the duration. He helped with my feedings and was my lifeline.

Christine Bath-Zachery, my roommate from the US Naval Academy, was my Communication Officer. I had ear plugs, so I couldn't hear anything. Chris had a white board and wrote messages to me as needed: "5 minutes to feed", "the waves in your favor", "suck it up princess", "the water is warmer towards France", "1 more mile", "the boat pilot gets paid overtime in 20 minutes". She had t-shirts made for everyone with inspirational sayings. What a great friend to have!

Michelle Garel, a triathlete from Austin, helped with my feedings. She had to climb up and down the boat to keep the bottles full. No small task with the rocky conditions. She also made sure I took my Recoverite when I got back onboard. Very key!

Brad Smith, my brother. He called back to the newspaper every 30 minutes to give them my position, and he took hundreds of photos, which he turned into a book for me. The historian.

Davis Hart, The first channel swimmer I ever met. Davis held the record in 1972. He stood there all day cheering for me and waving me on.

Yes, my crew was essential - I could NOT have done it without them.

Steve: With you having so much success in this particular English Channel crossing, do you think this will be a "one time only" thing or do you have the desire to do it again? Do you have any other long distance swims planned or are you going to concentrate more on triathlon? What are your plans for 2008?

Lynne: I had so much fun becoming a marathon swimmer. I did it, and I did it well. But it was a one-time swim for me. I loved the lifestyle, but it is not a sustainable lifestyle for me. It was very spiritual and introverted, and that just isn't me long term. I need more social interaction than 61,000 yards a week and cold water swimming can offer!

I have not decided yet what 2008 will look like. I am headed back to England to crew for a friend for his English Channel swim. That is my first priority. After that, I will probably do a half Ironman, or maybe a full Ironman. Nothing too extreme.

Steve: Lynne, we again want to congratulate you on such a great result in your English Channel crossing and we wish you the very best for success in 2008 and beyond. For our readers: Details about Lynne's English Channel crossing can be found at www.itisnicetohaveaninterest.com

5-HTP and hGH

5-HTP, a key compenent in REM Caps

Bill Misner, Ph.D.

As you can imagine, we receive a lot questions from clients via email and phone, and we endeavor to answer each and every one of them in a timely fashion. All of the questions are, of course, important to us and we strive to provide as much information as possible. Some of the questions, however, are particularly interesting and the information provided in the answers is, well...quite informative! So much so that we are going to include more of them (in article form, of course) in Endurance News, beginning with this issue. Remember that you can send your email questions to us at **support@hammernutrition.com** or **letters@hammernutrition.com**

QUESTION : Thanks for the wealth of information you provide via your website, your flyers and your newsletters. In your Summer Newsletter article on glutamine, Dr. Bill mentions 5-HTP as a supplement that appears safe for increasing natural anabolic hormones. Would you please expand on how 5-HTP increases anabolic hormones?

I am interested in the 5-HTP because I take it regularly, but did not know about the hormone increasing benefit. Like many folks, I suffer Seasonal Affective Disorder in winter and began taking 5-HTP several years ago to offset lack of sunlight. What I did not realize, however, is that I was cycling through depression on a regular basis. I'd feel good and train like an animal all winter, but when the sun began to provide daylight for longer hours in April, I'd stop taking the 5-HTP, thinking I no longer needed it. By Memorial Day every year, I would feel like total crap.

What I thought was a recurring virus was actually my serotonin levels dropping below the equator, so to speak. I couldn't comprehend how I could be so strong in winter and be completely unable to finish a simple crit in summer. It was maddening and obviously, extremely frustrating. I finally figured it out this year and began taking the 5-HTP again in June. Things are well and I am racing better than ever now. Your mention of 5-HTP as a natural anabolic hormone stimulator caught my interest for obvious reasons, and I bet many others would like a more in depth discussion on this topic.

Steve writes:

According to Dr. Bill: Human Growth Hormone (hGH) contributes to both performance and recovery from extreme endurance exercise. The two highest daily levels appear during exercise and late night sleep. Growth hormone release is known to be associated with sleep onset, and particularly with slow wave sleep in sleep stages 3 and 4. The most significant hGH comes in the last three hours of the night.

Reference

Prinz PN et al., "Plasma Growth Hormone During Sleep in Young and Aged Men," H GERONTOL, 1983, 38:5,519-524.

In addition to glutamine, other amino acids have been suggested to stimulate hGH release when they are not competing for blood-brain barrier transmission with other amino acids in their same class.

ACIDIC CLASS:
Aspartic Acid, Glutamic Acid

BASIC CLASS:
*Arginine, *Ornithine, Lysine
LARGE NEUTRAL CLASS:
*Tryptophan, *Phenylaline, *Tyrosine, Methionine, Histidine, *Leucine, *Isoleucine, *Valine

SMALL NEUTRAL CLASS:
Asparagine, *Glutamine, Proline, Serine

**Suggested by some sports scientists that when taken as free-form single amino acid supplements, will elevate hGH or anabolic hormone levels.*

The key one to look at from the above list is tryptophan, which research suggests causes the pituitary release of hGH in moderate amounts. Regarding 5-HTP and its relation to l-tryptophan, James South wrote, "5-hydroxytryptophan (5-HTP) is the less well known cousin of SEROTONIN (5-HT), one of the most important brain neurotransmitters. Tryptophan is first converted to 5-HTP in nerve cells by a vitamin B3 dependent enzyme, and then 5-HTP is converted to 5-HT by a vitamin B6 dependent enzyme. Yet thanks to modern science, we can now take preformed 5-HTP, with many consequent advantages. 5-HTP passes through the blood-brain barrier into the brain far more easily than tryptophan, and getting tryptophan through the blood-brain barrier is the main bottleneck, which in many people leads to inadequate brain serotonin levels. Also, 5-HTP is not used to make proteins in the body, while tryptophan is, so there isn't competition by cells outside the brain for 5-HTP, as there is for the body's scarce tryptophan supplies."

So unless I'm mistaken, the anabolic hormone that is referred to in the article is hGH, and that 5-HTP, because it crosses the blood-brain barrier more

see 5-HTP on page 27

5-HTP from page 26

easily than tryptophan, may be an ideal way to maximize hGH levels during sleep.

Dr. Bill adds:

"Tryptophan is converted to 5-HTP by the tryptophan hydroxylase enzyme. Supplemental 5-hydroxytryptophan is used by many people as an alternative to tryptophan supplementation (due to 5-HTP being "one-step-closer" to the desired end-product serotonin). 5-HTP increases in total sleep time with an increase in slow wave deep REM sleep. Deep REM sleep is a key to higher releases of hGH. Human growth hormone is manufactured in and released by the pituitary gland during slow-wave sleep; the largest quantity of hGH is released during the first 45-90 minutes of slow wave sleep. Human study demonstrated the ability of melatonin (12 mg per night) to increase blood hGH levels by 500%. Researchers hypothesize that melatonin-induced increases in hGH levels may occur via the inhibition of somatostatin.

If you are planning to use 5-HTP alone, most orthomolecular-oriented physicians recommend 300-600 mg of 5-HTP per day for the treatment of disorders. That dose sounds high to me, and since I have not experimented with that dose, I am not recommending any more than 150 mg per day, since that is the highest dose personally tested. The REM Caps dose (2-6 capsules one hour prior to sleep) produces high quality sleep as it increases hGH release because it includes both 5-HTP and melatonin.

2007 USAT Age Group Triathlon National Championship

Steve Born

This year's Olympic distance race took place on June 30 in Portland, Oregon, and Hammer Nutrition client-athletes certainly made an impression. Topping the list are the following age group champions:

Stacey Richardson - Chapel Hill, NC - Female 35-39
Brian Bich - Duluth, MN - Male 40-44
Tony Schiller - Chanhassen, MN - Male 45-49
Jim Bruskewitz - Madison, WI - Male 55-59
Charley French - Ketchum, ID - Male 80-84 *(Note: there were three competitors in this age group and Charley won by over an hour, in a time that would have been a Top 10 finish in the 70-74 and 75-79 age groups.)*

Other Top 10 finishers included:

Kelsey Markham - Collierville, TN - 10th place - Female 01-19 age group
Nicholas Dason - West Point, NY - 4th place - Male 20-24 age group
Chris Ganter - Doylestown, PA - 10th place - Male 25-19 age group
J.J. Bailey - Des Moines, IA - 5th place - Male 30-24 age group
Kathleen Allen - Evergreen, CO - 9th place - Female 35-39 age group
John Reback - North Palm Beach, FL - 5th place - Male 35-39 age group
Dave Campbell - Newport, OR - 9th place - Male 35-39 age group
Lisa Colvin - Monroe, LA - 9th place - Female 40-44 age group
Brenda Simril - Two Rivers, WI - 10th place - Female 40-44 age group
Darrin Rohr - Reno, NV - 10th place - Male 40-44 age group
Pippa Michaels - Far Hills, NJ - 6th place - Female 45-49 age group
Kathleen Johnston - Nashville, TN - 10th place - Female 45-49 age group
Patrick High - Sebring, FL - 4th place - Male 45-49 age group
Kyle Welch - Sunnyvale, CA - 5th place - Male 45-49 age group
Steve Pyle - Riverside, CT - 6th place - Male 45-49 age group
Scott Dix - Chicago, IL - 8th place - Male 45-49 age group
Nancy Abraham - Steilacoom, WA - 9th place - Female 50-54 age group
Dean Harper - Walnut Creek, CA - 2nd place - Male 50-54 age group
Lincoln Murdoch - Peoria, AZ - 9th place - Male 50-54 age group
Tim Kerr - Charlotte, NC - 8th place - Male 55-59 age group
Patricia Kimper - Solana Beach, CA - 2nd place - Female 60-64 age group
Cindy Rach - Woodinville, WA - 5th place - Female 60-64 age group
Lee Cannon - Pleasanton, CA - 5th place - Male 60-64 age group
Sharon Blount - Saint Simmons Island, GA - 6th place - Female 65-69 age group
William Marshall - Santa Rosa, CA - 7th place - Male 65-69 age group
Bill Reese - Pacific Grove, CA - 8th place - Male 70-74 age group
Molly Hayes - Bozeman, MT - 2nd place - Female 75-79 age group

CONGRATULATIONS to you all!

Thank you for supporting the 2007 USAT Age Group National Championship. The annual championship is our cornerstone event, and this year's race was a record breaking success. Hammer Nutrition product was in every race bag and was touted in front of a wide and dedicated audience and your support helped to make the event the success that it was. Thanks again for you continued support of USA Triathlon. - Tim Yount, Senior Vice President, Marketing &

Tissue Rejuvenator & Shellfish Allergies

Bill Misner, Ph.D.

QUESTION : Does the glucosamine sulfate or chondroitin sulfate in Tissue Rejuvenator come from shellfish sources? If it does come from shellfish, would someone who has shellfish allergies have to refrain from using Tissue Rejuvenator?

ANSWER : There is a fine line between shellfish allergens and crustacean generated allergens. The likelihood of shellfish allergy reaction from taking Tissue Rejuvenator ranges from remote to nil. However, here is some information to assist you in making well-informed decisions.

What are shellfish and what is the risk of Tissue Rejuvenator (TR) causing an allergic reaction?

Shellfish are molluscs, crustaceans, and echinoderms. Shellfish allergens originate mainly from clams, oysters, and mussels. However a number of saltwater and freshwater invertebrates are considered shellfish or crustaceans, which may raise the risk of a shellfish allergic reaction. Shellfish are among the most common food allergens. An allergy to shellfish rarely occurs from taking glucosamine sulfate (GS), because glucosamine sulfate is extracted from chitin, a carbohydrate, whereas shellfish allergies are most often caused by protein substances. Shellfish poisoning is associated with bivalve molluscs, namely mussels, clams, winkle, oysters, and scallops. Glucosamine is also found as a major component of the shells of crustaceans and other arthropods, in fungi and many higher organisms and is one of the most abundant monosaccharides. Supplemental GS is produced commercially by the hydrolysis of crustacean shells. Clinical studies of glucosamine have consistently reported that glucosamine appears safe. Since glucosamine is usually derived from shellfish, those allergic to shellfish or who have kosher concerns should avoid consumption. However, since glucosamine is derived from the shells of these animals while the allergen is within the flesh of the animals, it is "probably" safe even for those with shellfish allergy. For customer safety issue, anyone with a shellfish allergy is advised NOT to take Tissue Rejuvenator.

Unless instructed otherwise by an allergist, people with shellfish allergies should avoid both mollusks and crustaceans because most shellfish allergies are caused by similar proteins. Some patients, though, can be determined through testing not to be allergic to one family and may eat that family safely. This may mean that people who are react allergic to MOLLUSK-SHELLFISH should avoid Clams, Oysters, Mussels, Abalone, Scallops, Cockles, Quahogs, Squid (Calimari), Octopus, Whelks, Snails (Escargot) and Limpets. People who are allergic to CRUSTACEANS should avoid Shrimp, Lobster, Crawfish (Crayfish or Crawdads), Prawns, Crab, Langoustines, & Sea Urchin.

However, there is no evidence that glucosamine contains shellfish proteins, which are the part of shellfish responsible for causing symptoms of food allergy. Two small studies, with a total of 22 people, showed that people with shellfish allergy could take glucosamine without allergic reactions. They suggest that glucosamine does not contain shellfish proteins, and can be safely taken by people with shellfish allergy. However, given the small number of people studied to date, it is prudent to advise people with shellfish allergy to check with their physician prior to taking glucosamine. A referral to an allergist may be warranted, with the consideration of a medically supervised oral challenge to glucosamine.

RECOMMENDATION: People who are allergic to shellfish should consult their physician before taking glucosamine sulfate supplements. "WHEN IN DOUBT, DON'T!"

Glucosamine sulfate/sulphate

Glutamine is a precursor for the endogenous production of Glucosamine. Endogenous glucose (blood sugar) is a precursor for the endogenous production of Glucosamine (after its conversion to fructose). Glucosamine is an amino sugar from glucose in which the hydroxyl group is replaced by a glutamine moiety. It is manufactured endogenously by goblet cells within the intestinal tract. Thus it's named "Glucosaminoglycan Glycosaminoglycan". After oral dose, Glucosamine concentrates in the liver, where it is either incorporated into plasma proteins, degraded into smaller molecules, or 90-98% absorbed % of the orally-administered Glucosamine Sulfate dose. After p.o., GS's half-life is 70 hours! Glucosamine Sulfate is one of the primary components that make up Chondroitin Sulfate.

Chondroitin sulfate/sulphate

Chondroitin Sulfate (CS)contains several compounds. Chondroitin Sulfate is an endogenous Glycosaminoglycan (GAG) consumed in diets rich in meat sources.

see SHELLFISH on page 29

Soy protein isolates

Steve Born & Bill Misner, Ph.D.

A question we receive on occasion is in regards to how the soy protein we use in our products (Hammer Soy, Sustained Energy, Perpetuem) is processed, and whether or not it is "alcohol washed."

Dr. Bill explains:

Processed soybeans are first cleaned, then conditioned, cracked, dehulled, and rolled into flakes. The next step is to remove the soy oil from the flakes. The flakes are then dried, creating the "defatted soybean flakes." This defatted material is the basis for the three major soy protein product categories: flours, concentrate, and isolates.

Solae's Soy Protein Isolates are prepared through a process using water extraction and minimum heat on soy flakes. The product is nearly carbohydrate and fat-free, with no characteristic "beany" flavor. Soy protein isolates prepared this way are 90% protein by dry weight. Isolated soy proteins are widely used as a nutritional, functional, or economic alternative to traditional proteins.

Steve's note:

According to the Solae™ web site, "Solae™ soy protein is processed with a water wash (rather than an alcohol wash) which maintains the integrity of the naturally occurring isoflavones and other bioactive components. It is manufactured under strict specifications in order to guarantee a consistent, high-quality product. When soy is processed with alcohol, most of the isoflavones may be removed. Recent clinical research supports that soy protein with naturally occurring bioactive components, including isoflavones, are necessary in order to deliver health benefits."

SHELLFISH from page 28

Its composition is:

- 52% Glucuronic Acid
- 48% N-acetyl-D-galactosamine + Glucosamine Sulfate

Richest known whole food or dietary sources of CS are:

- Bovine Cartilage
- Shark Cartilage
- Velvet Deer Antler
- Mussels
- Oysters

References

Kelly GS. The role of glucosamine sulfate and chondroitin sulfates in the treatment of degenerative joint disease. Alternative Medicine Review. 3(1):27-39, 1998.
Victoria Groce Shellfish Allergyabout.com website http://foodallergies.about.com/od/seafoodallergies/p/shellfish.htm
Gray HC, Hutcheson PS, Slavin RG. Is glucosamine safe in patients with seafood allergy? J Allergy Clin Immunol. 2004 Aug;114(2):459-60. PMID: 15341031 [PubMed - indexed for MEDLINE]
Wild LG, Lehrer SB. Fish and shellfish allergy. Curr Allergy Asthma Rep. 2005 Jan;5(1):74-9. Review.
Zhang Y, Matsuo H, Morita E. Cross-reactivity among shrimp, crab and scallops in a patient with a seafood allergy. J Dermatol. 2006 Mar;33(3):174-7.
Wu AY, Williams GA. Clinical characteristics and pattern of skin test reactivities in shellfish allergy patients in Hong Kong. Allergy Asthma Proc. 2004 Jul-Aug;25(4):237-42.

HOT TIPS

Hammer Balm

For anything from sore muscles to tendonitis to knee pain. Just rub a tiny amount on the inflamed or sore area for 2-3 minutes, 3-4 times per day and enjoy the pain relief and the smell of fresh cloves. Remember, more is not better and a little goes a long way. Haven't gotten a free sample yet? Ask for one on your next order.

Looking forward with certainty

Tony Schiller

How much certainty do you have right now that your 2008 racing season is going to be a special one?

The question is not offered up to trigger some positive self-talk, mumbo-jumbo. Although a good thing to work on, this article isn't about self-talk. The question is posed to get you thinking about how strongly you sense the upcoming year is going to be a special one?

Here's where I'm going with this: great seasons very rarely shock or surprise any athlete. While an individual performance may itself surpass the athlete's own highest expectations (i.e., Bob Beamon's 29'-2 1/2" in '68, Mary Lou's "10" in '84 or Michael Johnson's "19.32" in '96), with the benefit of hindsight, those same athletes can always recall in vivid detail a point - usually several months before a campaign - when they began to intuitively "know" something special was in the works.

That point for me has always happened during the fall season where I begin to lay down the foundation for the coming year. Looking back at my 35 years in racing, seven stand out as truly special years. In each case I can pinpoint a time in the previous fall that the pieces started coming together and I began to know.

This is not to say that the feeling of knowing guarantees success. It doesn't. For each of those years I knew something special was in the works, there was another where the feeling existed and yet things didn't work out as planned. But I'll take a .500 batting average, especially when none of my special years happened absent the feeling of knowing in the fall.

The first takeaway here is that the fall is a key beginning point to a great summer season. Second, over a long career, the feeling of knowing something special is in the works might happen once every two years, if you are lucky. It's not that you'll have terrible years in between, just ones where the internal forces of high anticipation and the training effect never quite coalesced into that special feeling we as athletes live for - the moment when we know.

Participants at the 2007 MiracleKids Triathlon
Photo - courtesy Tony Schiller

So what can you take from this analysis? Well, a few things:

1) You should from time-to-time get locked into a performance zone where you feel incredible.
2) Unless you're named, Roger Federer, the feeling will go away and leave you seemingly lost trying to regain it.
3) If you play your cards right, it will come back perhaps once every two or three years and each time last for several months.

Over the years I've learned to embrace this ebb and flow. I now realize it's better not to fight the fact that, in my case, I'll have more years of not having the feeling than years when I do. That's ok, and in fact, I now appreciate knowing in advance when an entire year is going to be - by design - more "relaxed" without the pressure to perform at a peak level.

Most really strong master's competitors have learned to balance their year-to-year approach, often by waiting to age up into a new group. It takes special discipline though for a driven athlete to HEED the body's calling for a much needed break. But doing so though is the key to greatness over the long haul. The trick is overcoming the ego's desire to win and prove itself in every battle. The real champions know which battles to pick and that's the key to going from being a consistently so-so performer (or one in severe decline) to one who enjoys the occasional season of pure brilliance.

If it's been a long time since you've enjoyed a season of pure brilliance, maybe it's time for you to take stock. How long has it been since training and racing has been really fun? Do you often finish races feeling you've underachieved? Maybe you could benefit from a fresh start by doing some new races and allowing yourself to simply enjoy the results. Sometimes having

see TONY on page 31

The safety of Sodium Tribasic Phosphate

Steve Born & Bill Misner, Ph.D.

QUESTION : I just had a call from one of our organic stores questioning the use of the tribasic sodium phosphate. I understand that it's used as a buffer for lactic acid, but apparently it is also used as a cleaning agent, and the pharmacists that my customer talked with did not recommend it for a food grade product. What is your reply?

From Steve : The studies on sodium phosphate date back to 1990 [Lenfant 1970, Lunne 1990], with Dr. Richard Kreider's study in 1992 arguably being the hallmark study on this substance. In Kreider's study, subjects loaded with sodium phosphate for five days (1 gram, 4 times daily). During a 40K time trial, mean power output increased by 17%, and oxygen uptake by 17%, netting an 8% improvement in performance time.

As far as safety is concerned, the LD50 of sodium phosphate for rats (the amount of an agent that is sufficient to kill 50% of the rats) is 12,930 mg/kg (nearly 13 grams per kilogram), which is an incredibly high amount, one that indicates that sodium phosphate is remarkably safe. To translate that amount in human terms, that would be an intake of roughly 970 grams (over two pounds) for a 165-lb/75-kg athlete.

And although TSP can be used as a cleaning agent component, according to the information on Wikipedia (en.wikipedia.org/wiki/Trisodium phosphate) "It can also be found as a food additive; it is used as an acidity regulator (buffering agent), emulsifier, thickening agent, nutrition enlargement agent and sequestrant (metal-chelating agent)."

Large amounts of sodium phosphate taken orally can have a laxative effect. Excess amounts of phosphorus along with low dietary calcium intake may lead to a calcium deficiency, which is the primary reason we recommend not using large amounts of sodium phosphate routinely. In our Race Day Boost product, for example, we recommend a 2-4 week "washout" period between loading doses.

From Dr. Bill : There is pharmaceutical or food grade, and also non-food or industrial grade of TSP. All Hammer Nutrition's products contain pharmaceutical grade ingredients. As Steve implied, limited dose applications of buffered pharmaceutical grade TSP are safe to consume and healthy during exercise-associated acid production. This application in limited doses prevents excess bone calcium depletion during endurance exercise for blood serum acid-alkaline balance.

TONY from page 30

a lot of history with an event is more of a burden than not. So why not give yourself a break?

On the other hand, if your heart no longer pounds from pre-race jitters, it could be a sign you've been going through the motions too long. A great cure all for that can be putting yourself on a hook with an exciting goal. Commit to a goal you've put off, one that comes with risk of failure and declare publicly what you seek to achieve. Embrace the pressure and let powerful forces come to your aid.

It all starts with knowing your own ebb and flow and whether 2008 is your year to go for it or one to enjoy a reprieve.

Being born in 1958, the choice was made a long time ago for me and among other events you can find me on June 7th taking on the best half centurions at the ITU world championships in Vancouver. The anticipation of this goal has been a long time coming, and now with less than 8 months to the goal date, that feeling of knowing something special is in the works is starting to seep into my blood.

How about you? What's in store for you in 2008?

At 49, Tony won USA Triathlon's 45-49 national title this summer by almost 2 minutes while besting all 50+ competitors by over 6 minutes. Tony also directed the MiracleKids Triathlon that saw 800 kids race and raise $175,000 for kids with cancer.

Email: ts@tonyschiller.com

Nate's Corner

Mystery athlete!
Is this you? We've got this awesome picture and no name to go with it. If you recognize yourself, please email anock@hammernutrition.com

Nate Llerandi

Steve's note: per usual, I've "dug into the archives" of all of Nate's "Tip of the Day" emails to come up with the material for this month's column. Even though some of the information is several years old (I've got emails on file dating back to 2000), it's still timely, valuable, and worth taking to heart.

Time to Work on Weaknesses

The competitive season is over for most of us, and will be soon for the rest of us. Now is the perfect time to look back on your training and racing to assess your weak points.

As a triathlete, maybe your weakness, compared to your fellow competitors, is swimming. Maybe as a cyclist you lack the power to stay up with the pack on the climbs. As a runner, maybe your lack of speed keeps you from being competitive at the shorter distances, like 5K.

When turning a weakness into a strength, the key is to focus on that weakness while downplaying your existing strengths. In the case of the weak-swimmer triathlete, this would entail 1-2 cycles of training where swimming was the focus. With each cycle lasting 4-5 weeks, this turns into 8-10 weeks of concentrated effort in the pool. Let's say this triathlete swims 2-3 times per week normally. In a Swim Focus cycle, he/she would swim 4-5 times per week. But to keep weekly hours manageable, a cut back in cycling and running is necessary. To keep fitness relatively stable in the other two sports, the triathlete could cut back to two workouts per week per sport.

For the cyclist lacking climbing power, time in the weight room will help, with an extra emphasis on the legs. Also, intense repeats lasting from 20 seconds to 2 minutes will help boost leg power. If you live in a nice climate year-round, then these repeats should be done up a steep climb. These short intervals are potent and should be done 1-2 times per week.

Likewise, the runner lacking speed for the short races needs to increase the amount of interval work he/she is doing. Two workouts a week on the treadmill or at the track, done at 5K race pace, will do wonders to boost your overall speed.

Again, over the course of 1-2 cycles, you can see a significant improvement to your weaknesses. By shifting your focus, you can improve without necessarily training more. It's a matter of training smarter. And this will make you a better athlete in time for next season.

Just Stick with the Program

Now is the time when athletes look toward next season. Enthusiasm is high and we all have grand ideas of what we're going to accomplish. You've laid out a plan for yourself to follow, or you're having a coach do it for you. "I'm going to stick to my plan to the letter," you tell yourself. "Just wait till (blank) sees me next year. He won't believe how fit I am!"

Then, invariably, things unravel as time passes. The best-laid plans get laid to waste. While there are times when flexibility is needed-around the holidays, special events that pop up, etc.-the underlying rule to success is stick with the program!

Otherwise, before you know it, it's spring and your training log looks like Swiss cheese. Not the foundation for success. Stick with your plan. If you need to tweak it, then do so, but don't change things around willy-nilly just because you can.

Sticking with the plan will keep you motivated, lend support to your goals, and help you progress quickly. Too much deviation, and next year may be a big disappointment.

HOT TIPS

Ride straight

One of the skills that roadies covet and use to judge the ability and worthiness of any cyclist is how well they can ride in a straight line. Like anything else, to be a "steady wheel" takes a lot of practice. The easiest way to do this is to find a long stretch of quiet road with a nice white line painted down the shoulder. Now, practice "riding the white line" for as long as you can. Each time you "fall off", regroup and do it again. A good trick is to not look down right in front of your front tire. Instead, look up the road a good distance, only viewing the white line directly in front of your wheel in your peripheral vision. Master this skill and you'll be more efficient (faster) and will be welcomed in any group ride.

Teen specific nutrients

Bill Misner, Ph.D.

One of the questions we recently received from a client was in regards to specific supplement/fueling/general nutrition recommendations for teen athletes in the age bracket of 15-18 years of age. Dr. Bill replies:

The dose directions for teenage athletes using Hammer Nutrition products are 100% dose directions for 154 lb male and 125 lb female. You can subtract dose by using percent body weight, but do not exceed upper dose recommendations without healthcare monitoring assistance.

The daily macronutrient supplement profile for high energy or intense exercise sessions is as follows:

Protein - 1.4 - 1.7 grams protein per kg bodyweight (0.63 - 0.77 gram protein per pound/per day)

Fat - 9 grams Omega-3 fatty acids, 18g Omega-6 fatty acids/day

Carbohydrate - Supplied from complex moderately low glycemic sources whole grains, whole grains cereals, fruits, and vegetables ranging from 5-8 grams per kilogram body weight. Avoid high glycemic carbohydrates except during endurance exercise where blood sugar turnover is elevated.

The research is substantial to confirm the above recommendations. Supplement specific applications for each individual is different. Please keep in mind supplements are intended not to supply all the nutrients from food, but to make up the differences that food may not supply.

My paper "Food May Not Provide Sufficient To Avoid Deficiency," originally published in the Townsend Letters for Doctors and Patients, contains more detailed information that I believe will benefit you. This research determined micronutrient deficiencies in subjects (athletes and non-athletes) based on food intake alone without supplements. A review of this research establishes that food alone does supply the greater portion but not all micronutrient quantity required. You'll find this published paper at www.hammernutrition.com/downloads/diet_deficiencies.pdf

More can be better...
When you're ordering products

Product	Price	Discount
Hammer Gel	$18.95	3 @ $16.95 ea
Endurolytes	$18.95	3 @ $16.95 ea
Endurolytes Powder	$18.95	3 @ $16.95 ea
Sustained Energy (30-serving)	$49.95	4 @ $44.95 ea
Hammer Whey	$24.95	4 @ $21.95 ea
Hammer Soy	$21.95	4 @ $18.95 ea
Liquid Endurance	$22.95	3 @ $19.95 ea
Anti-Fatigue Caps	$17.95	3 @ $14.95 ea
Energy Surge (formerly ATP 100)	$19.95	2 @ $17.95 ea
Phytomax	$24.95	3 @ $22.95 ea
PSA Caps	$24.95	3 @ $22.95 ea
Race Caps Supreme	$54.95	3 @ $51.65 ea
REM Caps	$19.95	3 @ $17.95 ea
Super Antioxidant	$39.95	3 @ $34.95 ea

HAMMER NUTRITION®
ENDURANCE FUELS & SUPPLEMENTS
1.800.336.1977
www.hammernutrition.com

Completing your season

Planning your recovery as a cornerstone for 2008

John Flynn finishes at the top at the 2007 Crocodile Rock

Jonathan Siegel, CSCS

Recovery is central to success in all endurance sports. Without proper recovery, our bodies continually break down until we can no longer train and compete at a sustainable level. For continued peak performance and maximizing endurance training, planning your recovery is as important as planning your training. During the recovery period between training sessions, and also after a season of endurance training, your body adapts to training stresses and makes you better able to perform at your next level. One becomes fitter, stronger, faster, and more resistant to the ailments that endurance athletes are prone to. Many athletes fail to plan their recovery as thoroughly as they plan their training. The transition between your competition season and your base season is not only the perfect time to get rested, it's also the perfect time to evaluate your recovery strategies and tactics.

Sleep on it!

The most basic strategies for recovery are sleep and rest. When we sleep, an increased rate of anabolism (the synthesis of cell structures) and a decreased rate of catabolism (the breakdown of cell structures) occur. You need only 45-60 extra minutes of sleep each night for more Human Growth Hormone (hGH) to be released-just what an athlete needs. Although sleep experts generally agree that most adults need between seven and nine hours of sleep each night for optimum performance, health, and safety, the first thing they will tell you about sleep is that there is no "magic number" of hours of sleep per night. Not only do different age groups need different amounts of sleep, but sleep needs are also individual. Another reason there is "no magic number" for your sleep comes from two different factors that researchers are learning about: a person's basal sleep need, the amount of sleep your body needs on a regular basis for optimal performance, and sleep debt, the accumulated sleep that is lost to poor sleep habits, sickness, and awakenings due to environmental factors or other causes. When we don't get adequate sleep, we accumulate a sleep debt that can be difficult to "pay back" if it becomes too big. Consider lost sleep as lost for good. "Catching-up" on sleep is merely getting rested; it's not getting lost sleep back. Trying to make up for lost sleep in a day or two by "sleeping-in" disrupts the body's circadian rhythm and continues to disrupt sleeping patterns over subsequent days.

The moral of the story: get more sleep on a regular basis. Really. Plan your evening activities to get in bed 30-60 minutes earlier each night than you do now. Take a good look at your pre-sleep and sleep behaviors, that is, your activities leading up to bedtime and your nocturnal activities. Variable bedtimes make a huge impact upon your sleep cycle. Reading or stretching is highly recommended as a regular activity to relax one into sleep. Any activity that stimulates the eyes, such as TV or typing at the computer (especially at 10:13 P.M. two days before a deadline!) is a bad idea. Evaluate your sleep environment, too: ventilation, temperature, sounds, light, odors, all can effect your getting to sleep and staying asleep. A really good mattress is an investment, not an expense. You spend more time in bed than in your car, but did you research your last bed purchase nearly as much as your last vehicle purchase?

Rest is more than sleep

As for non-sleep rest, consider a post-season protocol of two weeks of physical rest, two weeks of mental rest, and another two weeks of cross training. Think of it as two weeks of reverse-taper and four weeks of vacation. In a "reverse-taper" from a race, it is highly recommended that athletes take the day off from work following their race. The days immediately following the race are when the body is most susceptible to a cold or other viral infection, so limit your exposure to others, and plan ample rest time. In the seven-to-ten days post-race, 20-45 minute bike rides or swims are helpful in moving more blood through the muscles and aiding recovery. Sitting or lying with the legs elevated also is helpful. Some marathoners (and ultra-marathoners) like to run on day 4 or 5 post-race, and it is advisable (if your recovery is proceeding well) to incorporate running towards the end of the first week. During the second week post-marathon, you can resume training at any intensity you choose. However, keep your overall workout time or mileage to no more than 50% of the weekly average for your previous four weeks of training.

The above guidelines are the same for endurance and ultra-endurance cyclists, and also translate well for any endurance athlete at season's end. Above all, take it easy! There is nowhere you have to get; enjoy the moment and everything you accomplished over the past season.

Eat right to promote recovery

While we may know it is important to replace the fluid and electrolytes lost in sweat, and to rest and allow muscles to repair and regenerate themselves following the stress of training, practicing that effectively can seem daunting. It really doesn't have to be

see JONATHAN on page 35

JONATHAN from page 34

at all. Post-event rest, recovery, and hydration are what I call "low-hanging fruit." It is simple logistics to take care of your body after training, an event, or a season. Your body just carried you for months, days, miles and hours, how about returning the favor?

Providing your body with the right fuel to replenish muscle and liver energy stores (glycogen) is a huge part of recovery and illness prevention. During the first few hours after exercise, the body is primed to refill these energy stores quickly. By eating large amounts of carbohydrate-containing foods along with some protein soon after finishing exercise, athletes can maximize their body's ability to replenish glycogen stores and prepare for the next training session. Proper fueling and rest will also allow athletes to do more quality training sessions closer together to get maximum benefit from all workouts. So? You know all that, right? How often do you really practice that? The off-season is the perfect time to take a look at how you are caring for your body, and develop a plan to transform your recovery.

Recovery is where the effects of your training and racing make gains towards the goals you set for yourself. The sooner you recover from fatigue, the fresher you are for the next phase of your season, whether it is build, peak, or transition time. Properly attending to the basics-sleep, rest, and nutrition-will yield productive training sessions.

Recovery from a full season of intense training and competition is part of an overall cycle that promotes fitness, wellness, and enjoyment of your sport. Off-season recovery should be as much fun as the preparation for the next competitive season.

Yes, your body does detrain at a rapid rate after the cessation of activity, but it is important to allow that to occur a bit at the end of the season. Your body and mind need the break, so let them have it. This is the perfect time to spend the extra hours reviewing your season, getting a massage, trying out yoga, Pilates, hiking, reading (gasp!) and even having meaningful conversations (yikes!). Enjoy the process of your body re-building, and revel in what you've achieved.

Jonathan Siegel, CSCS, is Director of Coaching for JDS Sportcoaching, LLC. jonathan@jdssportcoaching.com

The good and bad of milk

Bill Misner, Ph.D.

Milk provides a combination of nutritional substances that advance mammalian growth during the first 2-3% of lifespan. After that, the nutrients in milk can raise homocysteine in persons deficient in B6, B12, and Folate. Milk protein presents superb anabolic effects including potent immune system benefits.

William B. Grant wrote, "Multi-country statistical approach involving 32 countries was used to find dietary links to ischemic heart disease (IHD) and coronary heart disease (CHD) for various age groups aged 35+ up. For IHD, milk carbohydrates were found to have the highest statistical association for males aged 35+ and females aged 65+, while for females aged 35-64, sugar was found to have the highest association.

In the case of CHD, non-fat milk was found to have the highest association for males aged 45+ and females aged 75+, while for females 65-74, milk carbohydrates and sugar had the highest associations, and for females aged 45-64, sugar had the highest association. A number of mechanisms have been proposed in the literature that might explain the milk carbohydrate or non-fat milk association. One of the most prominent theories is that animal proteins contribute to homocysteine (Hcy) production; however, milk lacks adequate B vitamins to convert Hcy to useful products. Lactose and calcium in conjunction with Hcy from consumption of non-fat milk may also contribute to calcification of the arteries." [1]

Conclusion

After I read Grant's paper, including the data, I concluded that dairy milk byproducts do not generate the ideal blood lipid profile, mineral balance, and antioxidant scale compatible with robust cardiovascular activity and lifespan extension. I discovered two exceptions in dairy foods: live-cultured yogurt and whey protein isolate. If you drink milk or consume other assorted dairy foods, please review Dr. Grant's hallmark research paper. If you continue to consume milk and an assortment of other dairy foods, be sure to take copious dose of Vitamin B6, B12, and folate to metabolize diet-induced elevated homocysteine.

Typical effects following athletes who give up their seat on the "milk and cheese express" are bodyfat weight loss and performance gain. In spite of the facts Grant has so eloquently presented, it is most difficult to wean adults from a food compatible with a proper diet only during infancy.

Steve's note: Homocysteine causes cholesterol to stick to artery walls; it is implicated as contributing to many diseases, including coronary heart disease, stroke, dementia, and diabetes. Adequate amounts of vitamins B6 and B12 and folate convert homocysteine to beneficial molecules, including glutathione. Premium Insurance Caps supply a superb dose of these B vitamins, while Xobaline supplies additional B12 and folate (folic acid).

Reference

[1] Grant, William B. Milk and other dietary influences on coronary heart disease. Alternative Medicine Review, 3:4, August 1998, @: http://www.thorne.com/media/milk_heartdisease.pdf

From the Archives

Bill Misner, Ph.D.

QUESTION : Have you read the article in a recent issue of a road cycling magazine titled "Road Bike Tips For Summer Hydration?" The author recommends drinking three to four bottles per hour on longer rides with an emphasis on water only. That would mean a full water bottle every 12-15 minutes. What do you think about this?

ANSWER : This is an oversimplification based on a publicized "drink-drink-drink" hyperthermic protocol that increases risk of hyponatremia. Our argument against this practice is that it not only leads to greatly disappointing performances, but it may lead to life-threatening consequences requiring emergency treatment.

Prolonged exercise in hyperthermic conditions (>60% humidity, >60° F) depletes systemic sodium stores faster than total fluid stores. The reason sodium stores are depleted faster than fluid stores is that sodium replacement takes longer than fluid replacement. This means the body has a greater rate of absorbing fluid than sodium.

Our physiology considers water absorption a priority. The stomach (apart from intestines) absorbs water, a few fat-soluble drugs, ethyl alcohol, and aspirin. This same physiology produces hormones that re-circulate or spare urinary sodium excretion. Dietary sodium absorption occurs at its highest rate 25 feet later, in the colon. Interestingly, the colon absorbs fluid as efficiently as sodium (95%).

Isotonic osmolar solutions are preferentially replaced as fluids first, then electrolytes later. Body fluid loss as sweat is typically 1 liter/hr, but has been recorded as high as 3 liter/hr. Noakes' research defends fluid replacement rate ranging from 16-28 fluid ounces per hour. When an athlete consumes more than 1 liter/hr, the risk of hyponatremia increases dramatically depending upon individual biochemistry, BMI, heat index, and individual fitness.

Since the body delays electrolyte absorption in preference to fluid absorption, "drink-drink-drink" protocols must be tempered with a 16-28 fluid ounces per hour ceiling, and be supported by a broad spectrum of electrolytes during exercise and a balanced diet that provides up to 2400 mg sodium in the 24-hours prior to exercise. Over-hydration dilutes serum sodium volume requiring emergency resolution.

References

Advanced Nutrition and Human Metabolism, Sara M Hunt & James L. Groff, West Publishing, St. Paul, Minnesota.

Exercise Physiology, McArdle WD, Katch FI, Katch VL, Williams & Wilkins, Baltimore, Md.

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

HOT TIPS

Mixing Perpetuem

Michael W. called in and to say that he "discovered" a new and exciting way to mix Perpetuem for long rides or when traveling. Here is his Hot Tip.

Measure out scoops of Perpetuem into little plastic baggies then, when you're ready to mix, add water and massage the bag. To fill your flask simply put a hole in one of the corners of the bag and squeeze out the Perpetuem. Clean up is a breeze, just throw the baggie away.

Thanks Michael for your Hot Tip!

The rationale for beta-carotene dosing

Bill Misner, Ph.D.

We recently received the following email from a client...

I read in a consumer news report of a long term study showing high beta-carotene levels to be associated with elevated instances of prostate cancer and recommended a no higher daily dose than 5000 (other forms of vitamin A were not a problem). The daily level of your supplement (if all seven capsules are taken) is 5 times that, all taken from beta-carotene. Please advise as to what studies you have on this subject, if any.

Introduction

Beta-carotene is converted to the retinal form vitamin A within the body. This conversion occurs primarily in the intestinal mucosa and some in the liver. Retinal is then converted to retinol; as the body needs vitamin A, it splits carotene molecules to make the active form vitamin A. The proportion of beta-carotene that is converted into vitamin A is determined by the body's vitamin A need, if any. A 6-mcg bolus beta-carotene is required to produce 1 mcg of vitamin A. Beta-carotene converts to vitamin A more efficiently than any other carotenoid; the nearest competitor is alpha-carotene (which converts only half as efficiently as beta-carotene). Approximately 50% of either natural or synthetic dietary beta-carotene is absorbed by the body (this percentage decreases with higher intakes of beta-carotene). The estimated half-life for beta-carotene is 12 days. Keep in mind only 1.5 milligrams of beta-carotene equals a 2500 IU dose.

Beta-Carotene dose recommendations

Both Michael Murray & Sheldon Hendler recommend 25,000 IU dose for general health maintenance.

1.) Murray, Michael T. The Encyclopedia of Nutritional Supplements: the essential guide for improving your health naturally. Prima Publishing, Rocklin, California, USA. 1996:36.

2.) Hendler, Sheldon Saul. The Doctor's Vitamin and Mineral Encyclopedia. Arrow Books, London, England. 1991:41.

Santos's AJCN paper lead Pearson and Shaw to advise "low" dose of 41,666 IU/day. Santos's dose was determined by clinical trial and demonstrated the ability of beta-carotene to improve natural killer cell function in elderly men:

1.) Santos M. S., et al. Natural killer cell activity in elderly men is enhanced by beta-carotene supplementation. American Journal of Clinical Nutrition. 5(64):772-777, 1996.

2.) Pearson, D. & Shaw, S. Life Extension: A Practical Scientific Approach. Warner Books, New York, USA, 1982:469

Prostate cancer risk decreases with carotenoid intake

Prostate cancer risk declines with increasing consumption of carotenoid-rich substances such as lycopene, alpha-carotene, beta-carotene, beta-cryptoxanthin, lutein and zeaxanthin. Beta-carotene intake was determined to reduce the risk of prostate cancer. Men who consume 83,332 IU of beta-carotene (50 mg) per day are 36% less likely to develop prostate cancer.

References

(beta-carotene decreases prostate cancer)

Binns, C. W., et al. The relationship between dietary carotenoids and prostate cancer risk in Southeast Chinese men. Asia Pac J Clin Nutr. 13(Supplement): S117, 2004.

Bosetti C., et al. Retinol, carotenoids and the risk of prostate cancer: a case-control study from Italy. Int J Cancer. 112(4):689, 2004.

Cook NR., et al. Beta-carotene supplementation and prostate cancer incidence among randomized participants with low baseline plasma levels in the Physicians' Health Study. Cancer. 87:1783-1792, 1999.

Giovanucci E., et al. Intake of carotenoids and retinol in relation to risk of prostate cancer. Journal of the National Cancer Institute. 87(23):1767-1776, 1995.

Jian L., et al. Do dietary lycopene and other carotenoids protect against prostate cancer? Int J Cancer. 2004.

Virtamo J., et al. Beta-carotene, vitamin A and prostate cancer. Annals of Medicine. 24(3):143-144, 1992.

Williams AW., et al. Beta-carotene modulates human prostate cancer cell growth and may undergo intracellular metabolism to retinol. Journal of Nutrition. 130(4): 728-732, 2000.

Wu K., et al. Plasma and dietary carotenoids, and the risk of prostate cancer: a nested case-control study. Cancer Epidemiol Biomarkers Prev. 13(2):260-269, 2004.

Stenson J. Beta-carotene shows early promise for prostate cancer. Medical Tribune News Service. May 19, 1997.

Summary

It is rational to supplement 25,000 IU beta-carotene daily to prevent prostate cancer. If the person is a smoker, I make an exception and advise against beta-carotene intake, but for all others, beta-carotene should be a staple of diet and or supplementation.

My Day In The Sun : Ironman Revisited 2007

Chris Kostman

Steve's note: *Chris & I first met at the 1987 John Marino Open, which served as the western states qualifier for the Race Across America. Chris was already a legend in the world of ultra cycling, having completed RAAM earlier in the year (and becoming the youngest person to do so), and we've remained close friends ever since. He's one of the most ambitious people I've ever known, one of those guys who never seems to sit still (see our interview with him in Endurance News #44 (www.hammernutrition.com/downloads/ENews/ENissue44.pdf). And although a good portion of his time and energy is spent producing/directing, among other events, two of the U.S.'s (if not the world's) most prestigious events-Kiehl's Badwater Ultramarathon and the Furnace Creek 508-he maintains a high level of involvement with a charity that's very close to his heart. His recent "Ironman Revisited Triathlon" is the latest in his efforts to support this cause and, as you'll read, though he wasn't able to properly train for it, he was fueled by Hammer Nutrition supplements and fuels all the way. Great job Chris!*

Aloha! I recently retuned from the Ironman Revisited Triathlon on behalf of Challenged Athletes Foundation. Held Sunday, August 12, it was a remake of the original Ironman on the original route in the original format. Even the legendary Dave Scott, the six-time Ironman champ who first won the race on this very route in 1980, was there. But Ironman Revisited is much more than a race or an exploration of triathlon's origins; it's a fundraiser for Challenged Athletes Foundation.

Our goal this year, here at AdventureCORPS, has been to raise $25,000 for Challenged Athletes Foundation, the organization which was created on the belief that people of all abilities should have the opportunity to pursue a life full of physical activity and of sports. Be they recreational or in pursuit of a gold medal at the Paralympic Games, people with a physical disability are limited only by their access to funding.

Prior to Ironman Revisted, many of you helped us raise over $16,000 for CAF. Thank you for you contributions to that effort! That was just absolutely incredible! Then, just before the race I asked for more support via our email newsletter and the response was overwhelming! By the time the race began we had raised over $26,000 for this incredible cause!

With that show of support, there was no way I was going to let anybody down as I participated in this race. I hadn't trained for this event this year, so I pulled out all the stops in the days leading up to the race and during the race itself to make sure that I crossed the line safely and soundly.

For starters, I was extremely fortunate to round up a phenomenal support crew: 2007 Kiehl's Badwater Ultramarathon entrant Don Fallis, who raced Badwater on behalf of CAF in July of this year, and Rex Vlcek, a veteran of the 2003 Ironman Revisited and the 2004 Hawaii Ironman. They were assisted part-time by Badwater and Ironman Revisited crew veteran Cheryl Loomis and by Badwater journalist Heather Spencer. What a lucky stroke for me!

Next, I asked Hammer Nutrition for a complete fueling and supplementation protocol which I followed to the letter. For the four days leading up to the race, I used Race Day Boost, as instructed, and memorized the exact protocol I would use during the race. This would include supplementation with Endurolytes, Anti-Fatigue Caps, and Energy Surge while consuming Perpetuem and Hammer Gel. (In my daily life, I already take several Hammer supplements on a daily basis: Premium Insurance Caps, Race Caps Supreme, Mito Caps, Phytomax, Chromemate, and Tissue Rejuvenator.

Step three was to attend the two-day triathlon clinic held by the legendary Dave Scott before the race. I learned an incredible amount in just two afternoons with Dave, from swimming technique to running technique to nutrition, hydration, and more. Plus, Dave is an incredibly nice and friendly guy and it was fun, and an honor, to spend two days with him and a small group of triathletes.

Step four was getting into "Magnum Mode" by donning the appropriate Hawaiian shirt and Detroit Tigers hat in the days leading up to the race, plus watching a few episodes of the classic television documentary about Hawaii's legendary private investigator, Thomas Magnum, who used to live literally right on the race route of Ironman Revisited.

You see, almost everything one needs to learn in life was covered in that documentary. Heck, Magnum even did the Ironman in one episode, solving a case in the process. Magnum, P.I. ran originally from 1980 to 1988, but the show, the wisdom, the philosophy, and

see CHRIS on page 39

CHRIS from page 38

the lifestyle, they all live on today!

Finally, it was race day: We would be swimming 2.4 miles, cycling 112 miles, and running 26.2 miles. There would be no road closures, no aid stations, no crowds, no media coverage. But we would be touring a gorgeous Hawaiian island and following in the footsteps of the original Ironman pioneers from 1978 through 1980.

It was a tough day out there: We entered the water at San Souci Beach to swim the length of Waikiki. After heading out from shore a few hundred yards, we turned right and immediately swam straight into a major current for the entire 2.4-mile distance. It took me two hours and fifteen minutes to complete (compared to my usual 1:20 to 1:30). It is a beautiful swim, though, with fish, sea turtles, and corral beds to enjoy along the way.

Chris gets a fresh bottle of Perpetuem during the 2007 Ironman Revisited. Photo - Rex Vlcek

Next was the 112-mile bike course, which circumnavigates the island in a counter-clockwise direction. During that we had a headwind for at least 80 of the 112 miles. (I'm not sure how that is possible while circumnavigating an island, but it's true). I love cycling, though, even when I'm fatigued from swimming and dealing with headwinds.

Back in Honolulu, getting off my bike by the Aloha Tower, I was just plain not looking forward to the marathon, having only run a total of maybe ten, yes ten, miles this year.

But the most amazing thing had been happening all day. My energy was the most consistent of any of these Ironman races I've done. There were no peaks and valleys. My muscles didn't get more and more fatigued as the day, and the heat, and the winds wore on. I just kept cruising along - not fast, my lack of training made sure of that - and I felt amazing! Fuel-wise, I was taking three Endurolytes and one Anti-Fatigue Cap per hour, plus one Energy Surge under my tongue every two hours, while consuming Hammer Gel and Perpetuem at a rate of 200-300 calories an hour. But I was also racing on the "fuel" provided by this great cause and by the outpouring of support I'd received prior to the race.

When I hit the marathon course, I started walking. My back was a mess from that rough swim and from fighting headwinds on my aerobars all day. But after ten miles of walking I decided I didn't want to be out there "forever", so I started running. And I was shocked at how good my legs felt and how fast I could run! I've NEVER felt that good while running during the marathon at this race. This was astounding to me. (My feet felt great, too, and remained "happy" and blister-free thanks to my Injinji five-toe performance socks!)

Don and Rex were a fantastic crew, especially during the marathon when they took turns running with me. (Use of the support crew is how the original Ironman was held.) I was extremely fortunate that they are both not only very nice, amiable guys, but also "real runners" who helped me run properly and a decent pace (when I wasn't walking). Having been dreading it all day, the marathon ended up being the most fun part of the race!

And so it was that after nearly 16 hours on the race course, in the slowest Ironman I've done in seventeen years of doing Ironmans, I had a fantastic day "out there" in pursuit of funds and awareness for Challenged Athletes. It was a success in every way and I am grateful for the opportunity to be there and for the tremendous support I received before and during the race.

Thank you, everyone!

Here's the link if you've like to support the Challenged Athletes Foundation cause:

http://www.adventurecorps.com/caf/donate.html

View this story, along with a fully captioned slideshow, a short video, and full race results at this link:

http://www.adventurecorps.com/magnum/2007imr/index.html

HOT TIPS

All-natural remedies

Calendula ointment for scrapes and lacerations

Great for road rash and cuts, promotes faster healing, less scarring and infections. Find it in any health food store. Works as good or better than it's petroleum based counterparts

Arnica for sprains and bruises

The Arnica Montana flower, usually found in ointments, salves or tincture form - Apply it every 3-4 hours to accelerate healing.

2007 World 24 Hours of Adrenaline™ Championships

Steve Born

This year's mountain bike race took place at Laguna Seca, California over the Sept 1-2 weekend, and Hammer Nutrition clients/athletes made their mark, led by Rebecca Rusch's championship win in the Female Elite division. Three other Hammer athletes garnered Top Ten finishes in the Female Elite race: Sally Marchand Collins (3rd place), Monilee Atkinson (4th place), and Bernice Pierson (6th place).

Other Hammer-fueled female athletes put in outstanding performances, including age group wins by Timari Pruis, Heather Moothart, Patty Jo Struve, and Wendy Skean.

The Hammer-fueled men didn't do too shabby either, with three Top Ten finishes in the Male Elite division: Ernesto Marenchin (4th place), Mark Hendershot (5th place), and Steve Schwarz (7th place). Other outstanding performances included William McFadden's 3rd place in the Male 40-44 division, Chuck Wheeler's 2nd place and Dennis Smaggus's 3rd place finishes in the Male 45-49 division, Randy Profeta's 3rd place finish in the Male 50-54 division, and Bob Waggoner's 4th place finish in the 55+ division.

The course was obviously quite difficult as, according to Rusch (via her website), the race "boasted around 2400 ft of climbing per 14 mile lap. I didn't really believe that there could be that much uphill crammed into 14 miles, but from the way my legs feel today, I am a believer. The course had a bit of everything including super high-speed downhills, twisty single track, sand pits, stairs, and of course, LOTS of uphills. My bike odometer clocked speeds as fast as 41 mph on a downhill and as slow as 3 mph on some of the uphills. The only bit of flat trail was coming through the transition pits."

Congratulations to all these great Hammer Nutrition clients/athletes on their outstanding performances!

Female Elite
1st place - Rebecca Rusch
3rd place - Sally Marchand Collins
4th place - Monilee Atkinson
6th place - Bernice Pierson
12th place - Louise Kobin

Female - 30 to 34
1st place - Timari Pruis

Female - 40 to 44
1st place - Heather Moothart

Female - 50 to 54
1st place - Patty Jo Struve

Female - 55+
1st place - Wendy Skean

Male Elite
4th place - Ernesto Marenchin
5th place - Mark Hendershot
7th place - Steve Schwarz
13th place - Greg Martin
16th place - Brian Sevall
17th place - Karl Etzel
21st place - Anthony Ippolito

Male - 35 to 39
8th place - Nick Thelen

Male - 40 to 44
3rd place - William McFadden
6th place - Damon Mann

Male - 45 to 49
2nd place - Chuck Wheeler
3rd place - Dennis Smaggus

Male - 50 to 54
3rd place - Randy Profeta

Male - 55+
4th place - Bob Waggoner
23rd place - David Ambrose
28th place - Jordie McTavish
31st place - Michael Castaldo

Hey everyone!

I have FINALLY won that ever so coveted 24 Hour World Solo Championship jersey that I have been after for all the years that I have been 24 hour racing (for Women 30-34)! It is truly an awesome feeling. The race was tough...an extremely long lap (for a 24 hour race), a HUGE amount of climbing per lap (approximately 2,500 ft.), and uncharacteristically hot weather for Monterey. I want to thank all of my family, friends, and of course...my sponsors for all of their support! Without each and every one of you, none of this would have been possible!

Timari Pruis

2007 PRICE LIST & ORDER FORM

Endurance Fuels

Hammer Gel Jug	$18.95	3 @ $16.95
Hammer Gel Single Serving	$1.15	
Hammer Gel Pouch Sampler	$9.95	
Hammer Gel 12 Pouch Box	$12.95	
Hammer Gel Flasks	$1.50	
Flavors : Apple-Cinnamon, Banana, Chocolate, Espresso, Orange, Unflavored, Raspberry, Tropical, Vanilla		
Hammer Bar	$2.49	
Hammer Bar 12 Count Box	$29.88	
Flavors : Almond-Raisin, Chocolate Chip		
HEED - Single Serving	$1.49	
HEED - 32 Serving	$18.95	
Flavors : Lemon-Lime, Mandarin, Unflavored		
Endurolytes	$18.95	3 @ $16.95
Endurolytes Powder	$18.95	3 @ $16.95
Sustained Energy - Single Serving	$2.49	
Sustained Energy - 8 Serving	$15.95	
Sustained Energy - 30 Serving	$49.95	4 @ $44.95
Perpetuem - Single Serving	$2.29	
Perpetuem - 16 Serving	$21.95	
Perpetuem - 32 Serving	$39.95	
Flavors : Orange-Vanilla, Unflavored		
Recoverite - Single Serving	$2.29	
Recoverite - 32 Serving	$44.95	
Recoverite Shaker	$4.95	
Hammer Whey - 24 Serving	$24.95	4 @ $21.95
Hammer Soy - 24 Serving	$21.95	4 @ $18.95
Liquid Endurance	$22.95	3 @ $19.95

Endurance Supplements

Anti-Fatigue	$17.95	3 @ $14.95
Appestat	$29.95	
Boron	$14.95	
Chromemate	$9.95	
Digest Caps	$12.95	
Energy Surge (ATP100)	$19.95	2 @ $17.95
Mito Caps	$24.95	
Phytomax	$24.95	3 @ $22.95
Premium Insurance Caps - packets	$29.95	
Premium Insurance Caps 210 Count	$29.95	
Premium Insurance Caps 120 Count	$17.95	
PSA Caps	$24.95	3 @ $22.95
Race Caps Supreme	$54.95	3 @ $51.65
Race Day Boost	$14.95	
REM Caps	$19.95	3 @ $17.95
Super Antioxidant	$39.95	3 @ $34.95
Tissue Rejuvenator	$24.95	
Xobaline 30 Count	$12.95	
Xobaline 90 Count	$29.95	
Carlson's Salmon Oil 60 Count	$7.95	
Carlson's Salmon Oil 180 Count	$19.95	
i-Flora	$24.95	

Body Care

Hammer Balm 1 ounce	$14.95
Hammer Balm 0.25 ounce	$4.95

Kits

Short Course Starter Kit
$69.95 *You save $8.64*
1 jug of Raspberry Hammer Gel, 8 pouches of Hammer Gel, 6 Lemon-Lime HEED packets, 6 Mandarin Orange HEED packets, 3 Recoverite packets,1 bottle of Endurolytes, 1 Quick Coin, 1 Flask, 1 Waterbottle and a Fueling Handbook

Long Course Starter Kit
$79.95 *You save $9.44*
1 jug of Raspberry Hammer Gel, 8 pouches of Hammer Gel, 6 Sustained Energy packets, 6 Perpetuem packets, 3 Recoverite packets, 1 bottle of Endurolytes, 1 Quick Coin, 1 Flask, 1 Waterbottle and a Fueling Handbook

Hammer Gel Sampler Kit
$9.95
One pouch of each flavor. Nine total.

Hammer Powder Sampler Kit
$9.95
One packet each of Recoverite, Sustained Energy, Perpetuem, HEED Lemon-Lime, HEED Mandarin Orange, and an Endurolyte trial packet (6 capsules)

Daily Essentials Kit
$99.95 *You save $9.90*
1 PIC, 1 Race Caps Supreme, 1 Mito Caps

3 Month Daily Essentials Kit
$289.95 *You save $49.60*
3 each PIC, Race Caps Supreme, Mito Caps

Technical Innovations

E-Motion Roller System	$795.00
Basic Power Cranks	$899.00
X-Lite Power Cranks	$1049.00
Compex Sport*	$899.00
Compex Fitness Trainer*	$499.00

Compex Replacement Electrode Pads

Small Pads (2" x 2" - 4 per pack)	$9.95
Large Pads (2" x 4" - 4 per pack)	$9.95

While supplies last.
12 packs for $99.95
You save $19.45. Mix & match sizes as needed.
24 packs for $179.95
You save $58.85. Mix & match sizes as needed.

Replacement Parts

Leadwire (Set of 4)	$19.95
Battery pack	$39.95

**Each Compex unit comes complete with 1 set of 2"x2" electrodes, 1 set of 2"x4" electrodes, leadwires, user manual, training planner CD, the electrode placement booklet, battery charger, and a carrying case. Pricing subject to change, please call or go online for best pricing.*

CODE EN56

The following address is: ☐ **Residential** ☐ **Commercial**

Name: _____ Client #: _____
Address: _____
City, State, Zip: _____ Daytime Phone: _____
e-mail: _____ *for order confirmation purposes only*
Method of payment (circle one) *Check/MO Visa MC Discover AmEx* Exp. Date: _____
Card #: _____
Verification #: _____ Signature: _____

Description	Size	Qty.	Price	Amount

Subtotal _____
Shipping _____
TOTAL _____

Ground Shipping Rates

Order Amount	Shipping
$0 - $49	$7
$50 - $99	$8
$100 - $149	$9
$150 - $$249	$10
$250+	**FREE**

Call 1.800.336.1977
Log on to www.hammernutrition.com
Fax 1.406.862.4543
Mail
4952 Whitefish Stage Rd.
Whitefish, MT 59937

2007 PRICE LIST & ORDER FORM

Voler Cycling Clothing

Short Sleeve Jersey w/pocket	$34.95		xs-2xl
Womens Short Sleeve Jersey w/pocket	$34.95		s-xl
Sleeveless Jersey w/pocket	$34.95		s-2xl
Long Sleeve Jersey w/pocket	$49.95		xs-2xl
Long Sleeve Summer Weight Jersey	$49.95		s-2xl
Wind Vest	$44.95		s-xl
Wind Jacket	$59.95		s-xl
Thermal Vest w/pocket	$59.95		s-xl
Thermal Jacket w/pocket	$89.95		s-xl
Cycling Shorts	$39.95		xs-2xl
Womens Cycling Shorts	$39.95		s-xl
Cycling Bibs	$44.95		s-xl
Cycling Skinsuit w/pocket	$79.95		s-xl
Arm Warmers	$29.95		s-xl
Giordana Winter Cycling Gloves	$34.95		s-2xl
Giordana Cycling Gloves	$19.95		s-2xl
Hammer Socks	$4.95	White/Black	s-xl

Pretty In Pink Cycling Clothing

Short Sleeve Jersey w/pocket	$34.95		s-xl
Wind Jacket	$59.95		s-xl
Cycling Shorts	$39.95		s-xl
Arm Warmers	$29.95		s-l
Socks	$4.95		s-xl
Giordana Cycling Gloves	$19.95		s-xl

Voler Tri Clothing

Mens Tri Top w/pocket	$39.95		s-xl
Mens Tri Short	$34.95		s-xl
Mens Tri Skinsuit w/pocket	$69.95		s-xl
Womens Tri Shimmel w/pocket	$29.95		s-xl
Womens Tri Short	$34.95		s-xl
Womens Tri Skinsuit w/pocket	$69.95		s-xl
Womens Sport Top	$19.95		s-l

Multi Sport/Running Gear

Singlet	$19.95	White	s-xl
Trail Shirt w/pocket	$19.95	White	s-xl
Cool-T	$19.95	White	xs-xl
Mens Running Shorts w/pocket	$29.95	Grey	s-xl
Mens Running Shorts w/pocket	$29.95	Red	s-xl
Womens Running Shorts w/pocket	$29.95	Grey	s-l
Womens Running Shorts w/pocket	$29.95	Red	s-l

Patagonia

Mens Capilene 1 T-Shirt	$36.00	White	s-xl
Mens Capilene 1 Crew	$38.00	White	s-xl
Mens Capliene 2 Tank	$30.00	White	s-xl
Mens Strider T-Shirt	$40.00	White	s-xl
Mens Vitaliti Pique Polo	$55.00	Blackberry	s-xl
Womens Capilene 1 T-Shirt	$36.00	White	s-xl
Womens Capilene 1 Tank	$32.00	White	s-xl
Womens Strider T-Shirt	$40.00	White	s-l

Headwear

Euro Style Cycling Cap	$8.95	Red	os
Mesh Race Ready Cap	$12.50	White	os
Ventilator Hat	$14.95	Red	os
Winter Beanie	$17.95	Black	os
Halo Headband	$12.95	Black/White/Blue	os
Halo Headband II	$12.95	Black/White/Blue	os
Halo Protex	$21.95	Black/White/Red	os
Halo Anti-Freeze	$16.95	Black	os
Flex-Fit Baseball Caps	$14.95	Black	s/m-l/xl
Watch Cap	$8.95	Black	os

Casual Wear

Short Sleeve Tee	$9.95	Red/Chestnut	s-2xl
Youth Short Sleeve Tee	$9.95	Red	xs-m
Long Sleeve Tee	$12.95	Red	s-2xl
20th Anniversary Tee	$12.95	Slate	s-2xl
Organic Cotton Retro Tee	$12.95	Natural	s-2xl
Women's Tee	$12.95	White/Blue	s-xl
Hooded Sweatshirt	$29.95	Grey	s-xl

Accessories

Hammer Gel Flask	$1.50	
Double Clip Flask Holder	$7.50	
Bike Mount Flask Holder	$12.95	
Large Water Bottle	$2.50	24oz.
Small Water Bottle	$2.50	21oz.
Pink Water Bottle	$2.50	24oz.
Recoverite Shaker	$4.95	25oz.
Gel-Bot Fuel System	$15.95	24oz.
Gel-Bot Cap	$11.95	
Gel-Bot SoftFlask	$10.95	5.5oz.
Quick Coin	$0.75	
Tattoo	$0.25	
Hammer Gel Decal	$0.50	
30x60 Hammer Gel Banner	$20.00	
5-Gallon HEED Cooler	$29.95	
Hammer Pint Glass	$4.50	16oz.

53x11 Coffee

The Big Ring	$11.95		12oz.
The Early Break	$11.95		12oz.
The Chain Breaker	$11.95		12oz.
53x11 T-Shirt	$18.00	Natural	s-xl
Coffee Mug	$9.95	Black/Yellow	15oz.

Bookstore

Guide To Success Handbook	$1.99
Treat Your Own Neck	$9.95
Treat Your Own Back	$10.95
Sugar Blues	$6.99
Food Is Your Best Medicine	$6.99
Water : The Shocking Truth	$8.95
Healing Back Pain	$13.99
Endurance Nutrition DVD	$29.95

Order today! 1.800.336.1977 / www.hammernutrition.com

International Race Report

Barb Watson in New Zealand

Hammer Athletes Around The Globe

Werner Schweizer - Switzerland

Dear Brian,

I have the pleasure to let you have some news of your Swiss friend. You certainly know that I had a serious setback this year. On April 13th, I underwent a 15 hour surgical intervention taking out of my body a tumor of 17cm, the left kidney and 10cm of the colon. Liposarcome, grade 2 and 4. Some remains inside because the surgeon could not take the risk of leaving me an invalid. The remaining cancer cells cannot be cured by the actual medical knowledge (neither radiation or chemotherapy). After 1 month time (end of May) I had 8 liters of fluid taken out of my belly. It was lymphatic fluid and since then I follow a non fat diet, except that I added the Salmon Oil Caps in July. The last ultrasonic screening made on Sept. 21 shows no more fluid accumulated in my body. Since June, I feel well, as well as before the surgical intervention. Since May, I always supplement with PIC, Mito Caps, Tissue Rejuvenator, Salmon Oil, Race Caps Supreme, Anti Fatigue Caps, Phytomax and since August, Boron and Chromemate. I also use whey protein.

I think that my story of the last months is a testimonial that Hammer products work. With only 2 months of training, I entered the Ultra trail of Mt. Blanc on August 24-25 (162km and +8500m) with a very uncertain feeling. Being too pretentious? And the dream became reality after 30 hours and 11 minutes finishing 127th out of 2300 starters and finishing 1st in the 60+ age group. A miracle thanks to the prayers and support of my friends and certainly also your products. And of course I get so much strength, will, good morale, and joy of life that I only see the sunny side. It is my thank you for your support since almost 20 years. You will also find a picture of the most happiest finisher. I wish you and your family the best. Take care of you and them.

Werner


Werner

Colin Anderson - New Zealand

I recently completed a Solo 2158km ride in New Zealand riding the length of our two Islands, and at 59 years old I broke a 15-year-old record, last set by a 45-year-old triathlete, by 2 hours, 10 minutes. Total time was 4 days, 17 hours, 40 minutes, including flight between islands and 10 hours sleep! I fueled TOTALLY with Hammer fuels.

Colin Anderson
New Zealand


Asuman

Uganda Cycling

Hey Brian,

I thought I'd give you a quick update on our guys in Uganda. They just finished the Tour of Rwanda a 10 day stage race in Rwanda. The Project Rwanda guys (Tom Richey's guys) took the first 5 places and our guys finished 6-10th. So, overall not to bad. I think they struggled in the hills. Plus the Rwandans had a lot of training here in the US that probably helped them out. Still and impressive showing for our guys.

Thanks for all of the support from your guys at Hammer. Tell everyone we appreciate everything they are doing for IC3. It means a lot.

Gary Pennington

Race Report

Hammer Athletes

Jeff Waters

3 months to the day after I'd broken my collarbone in three places, sustained a major concussion and was told I'd miss the entire race season I placed 2nd in the solo division at the Infiterra Sports Spring Fury in Michigan. I used REM Caps, Hammer Whey Protein, Tissue Rejuvenator and Premium Insurance Caps throughout my recovery. I was not only able to come back the same season, but place top five in three of my first four races. All this before I was supposed to be able to have any mobility back in my shoulder. I couldn't have rehabbed my body in any way shape or form, the way I did, without the Hammer products that I used, and continue to use.

Jeff Waters

Diran Ayandele

I took a whopping 21 minutes off my time during the Bob Cook Mt Evans Memorial Hill Climb this year thanks to a new nutrition strategy. I relied solely on Perpetuem and Endurolyte capsules with a single Hammer Gel packet just in case. I felt fantastic the whole time and finished strong. I was amazed at how I could get up there with no cramping and completely without solids. Thanks for the good products and the good advice in the endurance athlete's handbook.

Diran Ayandele

Share Your NEWS!
Turn the page to find out how

Lydia & Emily at The Galena Grinder

The Galena Grinder XC and Marathon race held near Ketchum Idaho was absolutely great!!! Around 200 racers showed up with some big time ultra endurance riders participating.

The drive to Ketchum wasn't as long as I was expecting, the scenery was great and the fellowship made the drive go by quickly. At the summit of Galena the elevation is 8,701 a little higher then in Missoula. As we pulled into the Galena Lodge and found the starting line for the race we knew from the picturesque back drop that this race was going to be about climbing, and it was, in the Sport class I think we climbed over 2,500 feet in our 17.5 mile loop.

The young racers emerged in their new pink Hammer Nutrition Jerseys with great excitement and expectation for the race that would soon unfold.

Lydia finished 1st in the women sport Junior class. (#666) Emily finished 1st in the women beginner junior class. (#538)

Thank you Brian Frank and the whole Hammer Nutrition organization for their support of the Montana Junior bike racing program.

Ross

Sadj Bartolo

Completed Timberman, came in first in my age group and had a fabulous time during the entire race. My goals were to finish in less than 8 hours and to enjoy the race. I finished in about 7:40 and pretty much cherished every mile of the experience.

I followed your nutrition plan and my energy was consistently good throughout. No stomach issues. I made up an 8-scoop bottle of Perpetuem for the bike and used my Camelback with water in it. Took an Endurolyte about every 30 to 45 minutes on the bike and every 30 minutes on the run. Ran with a flask of Hammer Gel which I took small swallows of, periodically chased down with water.

Anyway... just wanted to thank you for helping to make my first 70.3 an ecstatic experience.

Sadj Bartolo

Greg Pressler

I'm just back from the Badwater Ultramarathon after finishing in 13th place in a time of 32:51. My preparation and focus certainly took me to the finish line, but there's no way that I could have done it without the help of Hammer Nutrition.

Before I even toed the starting line, a regular intake of Premium Insurance Caps helped keep me at optimum health levels. Regular use of Recoverite after big workouts helped me bounce back quickly. And Hammer Gel, Heed, and Perpetuem during workouts fueled me every step of the way.

During the race, I used Perpetuem constantly. An ice cold bottle awaited me every few miles. I sincerely believe that my consumption of Perpetuem was one of the main reasons why I finished the race strongly. Without Perpetuem, I shudder to think what my race might have been.

I also used HEEDat certain times during the race, especially when I wanted something that tasted a bit "sweeter." When I needed it, a cold bottle of HEED tasted better than anything I could imagine drinking.

Without a doubt, the products available from Hammer stand head and shoulders above anything else available in the marketplace. My experience at Badwater simply confirms this.

Sincerely,
Greg Pressler

Stephen Armes

Dear Hammer,

Just wanted to give you an update and provide you a photo. Yesterday was the State Games of America hosted here in Colorado Springs, CO. I did the triathlon and finished 1st in the Military category and 12th overall. My kids also participated in the games, doing track and field. At the end of the day,

Three athletes, 4 medals*, and one nutrition source.

Hammer thanks so much for your sponsorship and great products, you helped put us on the podium!

Stephen Armes
*2 Gold, 2 Bronze

Linda Moreau

In January I was diagnosed with Hashimoto's Hypothroidism and Extreme Adrenal Fatigue. Although I used to walk daily and have followed a sound nutrition program for years, I have NEVER run. My daughter is a Naturopathic Doctor and a triathlete. She is completely sold on Hammer products and started me on your program.

On June 24, at age 66, I ran my very first race, the Baltimore Women's Classic 5k. I placed third in my age division with quite a few younger women coming in behind me. My doctor is amazed and I'm looking forward to my next race.

Thanks Hammer!
Linda Moreau

Race Across Oregon

Hello, attached is a picture of my womens Hammer sponsored team after winning Race Acrosss Oregon last weekend.They had the fastest 4 person team time, including the guys. They all raced on Hammer products throughout the race using fluids and gels only for the most part. Great win and a very fast time of 29:02, breaking the old record for women.

Jeff Tedder

Become a world-famous athlete!

Okay, so maybe 'world-famous' is a bit of a stretch but we do want to include YOU in our 2008 catalog, other printed materials or on our website. Round up those awesome action shots of you doing what you do and send them to **anock@hammernutrition.com**. Please put PHOTO SUBMISSION in the subject line and include the name of the race and any photographer information in the body of the message, copyright-free photos are preferable. You just may find yourself representing Hammer in the printed world so start practicing that signature...you're gonna need it for all the autographs!

Race Report

Crossing the finish line at the USAT National Championships

Hammer Athletes

Wayne Riley

I just finished up the PAC Tour Elite Transcontinental, which was 17 straight days from San Diego to Tybee Island, Georgia -- average 167 miles per day with a couple 200 mile days in there.

In my training I don't eat any 'real food' while riding, and I continued this practice throughout the the trip. Sustained Energy and Endurolytes kept me going, with some Hammer gel occasionally thrown in for variety and Recoverite at the end of each day and PICs, then Hammer Whey Protein that I mixed into evening meals. I felt strong throughout and finished at the front of the pack each day. I was the only guy in the group who didn't partake in Susan's daily lunch spread and didn't need to stop at the rest stops (except for water) because I had my own concentrated flasks of SE (6 with me each day) that provided everything I needed. We had a 22% dropout rate and I'm sure some of those guys pulled out due to improper fueling/electrolyte replacement, particularly through the desert (I recall your comments in "Fueling for Endurance Athletes" on one of your RAAM experiences where you bonked in the first 200 miles across the desert due to electrolyte issues).

I had a shipment of SE/Hammer Gel/ Endurolytes/Hammer Whey sent every 5 days along the route to the various hotels. As it turns out, Lon/Susan had plenty of Hammer products as well, including Recoverite.

Thanks for providing outstanding products. Also, the quality and consistency are a big deal. I've purchased hundreds of Hammer products over the years and have never had a bad batch.

Wayne Riley

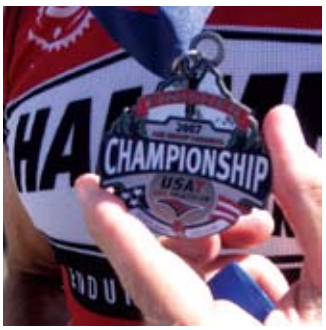
Adam Brown

Going up to Muncie for a 1/2 IM I wasn't sure what to expect since it was my 1st race of the summer. I have been going with a different nutrition plan this year and it definitely paid off. I was able to go 9 minutes faster than I did last year with a 3 minute PR at the 1/2 IM distance. I owe a ton of that to Hammer Nutrition and Sustained Energy. Usually I get off the bike and I get caught during the run because I start to slow down, but on Saturday I was the one catching people on the run and passing them with no problem. Not only was it a personal best for me, but it lets me know that I am properly fueled as I prepare for Kona. Thank you guys for always being available for help, and getting me prepared for the biggest race of my life.

See you in Kona!
Adam Brown

Lincoln Murdoch

Hey Hammer - Thanks again for your fantastic products! At the USAT Age Group Nationals Triathlon last weekend in Portland, I used Race Day Boost, HEED, Hammer Gel, Endurolytes, Race Cap Supreme, Mito Caps, Anti-Fatigue Caps, Hammer Bars and Recoverite.



They helped me earn 8th place in my age group, a spot on Team USA and a trip to Hamburg, Germany to race at the World Championships in September.

I continue to be totally amazing and more than 100% satisfied with every one of your products. They are the best on the planet.

Follow-up

I wanted to let you know that I just returned from Hamburg, Germany and the Age Group World Championship Olympic Triathlon. There were 50 countries there and Team USA had 240 members this year representing 40 states. I had 99 men in my 50-54 age group from all over the world. I finished 20th in our group and 4th out of 14 in our group from Team USA.

I used my normal Hammer protocol for Olympic distance - HEED, Hammer Gels, Race Cap Supreme, Mito Caps, Endurolytes, Anti-Fatigue Caps, Recoverite, etc. I had my best swim ever, my best bike ever and the best run I've had in years. I proudly wore my Hammer clothes as much as possible.

Lincoln

Matt Byers

I cannot begin to thank your entire team enough for all the great things you have brought to me, and our team (Team Donate Life-Primo) in this year's Race Across America. Our entire team (8 riders and 10 crew) was new to this event, and I can honestly say I have never had more fun over a period of 6 days, 15 hours and 10 minutes!

I have used Hammer products sporadically the last few years in my triathlon endeavors. However, in February I heard Steve Born speak at a triathlon camp in Phoenix, AZ on behalf of the products, and tweaked my pre- and during-event nutrition considerably based on what I learned from him. From that point on, Hammer Nutrition has been in every bottle I have trained and raced with.

Entering into the unknown territory of RAAM, I stuck true to my 240 calorie/hour intake (HEED, Perpetuem, Hammer Gel and Hammer Bars, along with Endurolytes) during my riding portions and quickly got in Recoverite after the day's work. I had zero stomach issues after riding nearly 500 miles that week, and had strength like I could not believe on day 5 through the West Virginia hills.

Thanks so much for all your help, you helped to make our RAAM an unbelivable event for all involved!

Matt Byers
Scottsdale, AZ

Eric Marquard

Dear Hammer;

Many thanks to all of you at Hammer Nutrition as your products recently assisted me in my first ever triathlon win. On May 20th I took 1st Overall at the Metroman Sprint Triathlon in Long Branch, NJ.

I had my usual pre-race breakfast of Perpetuem (400 cal) and 1 Apple-Cinnamon Hammer Gel. Then another Hammer Gel (Espresso) 15 min. before the start of the swim. And on the bike a small bottle of Mandarin Hammer HEED.

I ended up with the 3rd fastest overall swim, 4th fastest bike, and capped it off with the fastest run of the day. As always I raced in all Hammer Nutrition race wear.

Thanks for all your help!!

Eric Marquard

Cristin Sohm

As a new cyclist, I didn't know about Hammer Nutrition until my first big event that was fully sponsored by Hammer at the Solvang Double Century. I found that my stomach was so nervous that I was unable to eat. I tried the Hammer products and was able to utilize Sustained Energy and Hammer Gel successfully the entire 200 miles. Since the first double was relatively "easy", I decided to try another one in Davis in May. Unfortunately that event was not sponsored by Hammer and I bonked at mile 178 and had to lay down for about 45 minutes as everyone passed me while I tried to recover from my nutrition deficit before completing the 200 miles. In June I decided to try again at the Grand Tour. This time I was prepared and loaded up on my Hammer products and also was thankful to find that the event was sponsored by Hammer. After 200 miles, I felt so fantastic that I decided to go for the Triple Century! I've had an amazing first year in cycling and could not have done it without Hammer Nutrition!!!

Cristin Sohm

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.

ENDURANCE
NEWS

PRST STD
U.S.POSTAGE
PAID
BOZEMAN, MT
59715
PERMIT #209

Hammer Nutrition 4952 Whitefish Stage Rd., Whitefish, MT 59937
1.800.336.1977 / www.hammernutrition.com

Inside this issue

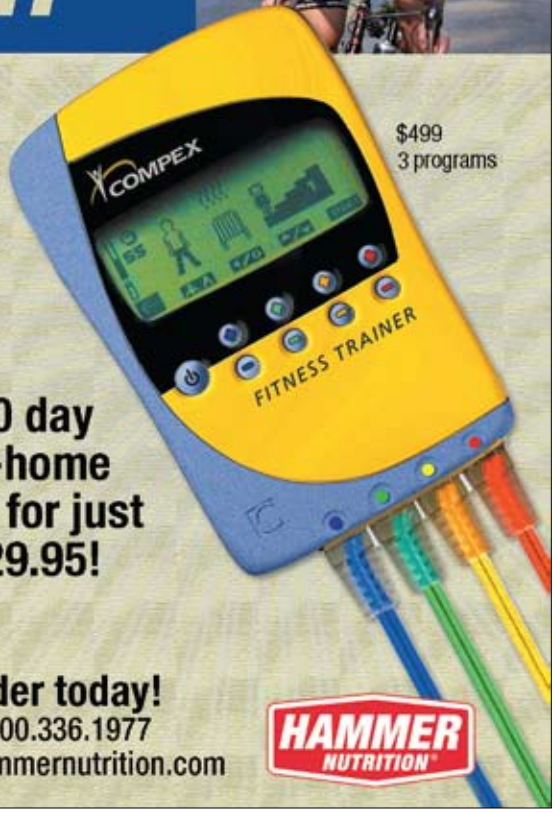
Take your training to the next level!

- Build muscle 51% faster
- Increase power by up to 17%
- Accelerate muscle recovery to minutes, not days
- Identify & safely correct leg strength imbalances
- Help prevent & manage injuries

Using the Compex muscle stimulator will enhance your athletic performance, physical fitness, and post workout recovery beyond what is achievable through conventional training alone.

Proven Effectiveness
Compex uses safe and comfortable medical-grade E-stim technology that reproduces natural muscle contractions and **exercises 400% to 600% more muscle fibers than conventional training.** The results are nothing short of amazing. In over two dozen independent studies conducted worldwide over the past 20 years, Compex has been repeatedly proven effective.

Talk to athletes already using Compex
If you are still not convinced that you need a Compex E-stim unit, join the free Compex discussion list and ask hundreds of athletes who are already using this technology to their advantage their opinion. Simply go to **www.hammernutrition.com/compex**



$499
3 programs

30 day in-home trial for just $29.95!

Order today!
1.800.336.1977
www.hammernutrition.com

HAMMER NUTRITION