

ENDURANCE NEWS

JANUARY 2010 : #67

\$3.95

2010 PRODUCT LINEUP

What's in, what's out

HAMMER GEL
New flavor in 2010

The informed athlete's advantage since 1992

Diversify your training
Have fun, perform better!

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Hammer staffer Jason Keister enjoys a fall ride around Flathead Valley. Photo - Angela Nock

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IT'S BACK!

Soni-Pure, the alcohol-free hand sanitizer proven to fight germs for up to eight hours.

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ENDURANCE NEWS

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Our Mission

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

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

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

Back issues available at
www.hammernutrition.com

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Giorgio Caserati, Giorgio Consoli, Brian, and Danny Beck take in the scenery in S. Cataldo during the 2009 Giro Della Puglia.

WELCOME

BY BRIAN FRANK

... I really want to thank you for making 2009 another amazing year for Hammer Nutrition ...

Hopefully I'll be the last person to wish you a "Happy New Year" for a while! You are holding the 67th issue of Endurance News - The Magazine. I know it doesn't currently look exactly like a newsstand magazine, but I hope you enjoy the updates and changes we've made in this issue. Over the course of the year, you'll be able to witness the evolution with each coming issue. Why the change you

ask? There are two reasons - The first is the same reason we started making energy drinks in 1992 and body care products more recently. We surveyed the landscape and we believe that what is being offered in the media is lacking and that we can offer something that no one else is. The truth is that this is one of the longest running and highest circulation publications serving the endurance athlete community and

we are just taking it to the next level. I hope you enjoy the new look, feel, and content of Endurance News - The Magazine.

Before going any further, I really want to thank you for making 2009 another amazing year for Hammer Nutrition. Everyone in our organization is keenly aware and regularly reminded that it is your support and preference for our products that allows us to have a job. The encouragement and assistance that we receive from race directors, sponsored clubs, teams, and organizations is certainly important and plays into the mix, but it is really you, the everyday customer, that is most responsible for our continued growth, in the direct channel but especially at the retail level. We have always strived to honor your support with the best products, service, and educational resources possible. I assure you that our level of commitment is

see BRIAN on page 4

BRIAN from page 3

unwavering and we will continue to refine, improve, and elevate our model in 2010.

In the November issue I went through a pretty long list of new products and enhancements for 2010, but here's a quick recap of new stuff that you can expect to see very soon: Montana Huckleberry Hammer Gel, Chocolate Recoverite, Chocolate Whey, Pelle Eccellente Ultra Hydrating Skin Cream, new packaging for all of our powder products, a new website, and an

expanded Hammerbuck\$ program. You will also notice a completely new trade dress (read: label graphics) making it's way through the product line this year.

However, we did also cut a few items from the line, specifically the WADA-killed Liquid Endurance. We will no longer be stocking single servings or six packs of Unflavored Whey, Chai Whey, or Unflavored HEED. These products will still be offered in their full size containers, 24 and 32 servings, respectively. We are also fazing out Unflavored Hammer Gel in pouches. We'll continue to offer

it in the 26 serving jugs, just not pouches.

I am looking forward to 2010 with much anticipation and excitement. I hope that it is also a good year for you - training, race performances, work, life . . . all of it. Remember that we are here to help.

Enjoy the read!

Brian Frank
Proprietor



Brian and friends in Sardegna in 2008.

We are always looking for photos of our athletes to use in catalogs, mailers, newsletters, on our website, and elsewhere. Are you interested in being included? Send copyright-free photos to athleteupdates@hammernutrition.com with the name and date of the event, as well as the photographer's name, and you just might see yourself in print!



Steve Born enjoys a summer ride around Flathead Valley.
Photo - Kelly Pris



FROM THE SADDLE OF STEVE BORN

BY STEVE BORN

Welcome to Endurance News #67, the first edition of 2010!

In the last issue I mentioned that we had set a new record in regards to the number of events sponsored annually. As it turned out, by the end of the 2009 calendar year we ended up topping the 2600 mark, which is simply a staggering number of events to sponsor. Yes, it is an integral part of our marketing strategy, that's kind of a no-brainer and

I won't lie about that. However, it is also very much a significant way to support endurance sports and help ensure their continued success. The ever-increasing feedback that we're receiving from athletes and race directors, all to thank us for providing product support for the events they compete in and/or produce, is clear evidence that our involvement is genuinely appreciated. The bottom line is that we're going to continue to help support your sport, whatever form of

“endurance” it may be, and we'll continue to do it to the very best of our ability.

Speaking of events, in this issue you'll see that we're big on winter sports, primarily Nordic skiing and snowshoeing. However, just because winter means “cold and snow” in many parts of the country, including here in Montana, that doesn't mean that there aren't other areas where it's prime time for sports such as running/ultra running. Check out this sampling of some of the upcoming running/ultra running events that we're sponsoring in the next couple of months:

- 1/9/10 – Running from an Angel Marathon, Half Marathon, and 50-miler – Lake Mead N.R.A., outside of Las Vegas, NV
- 1/9/10 – Mississippi Blues Marathon – Jackson, MS
- 1/9/10 – Bandera 100K, 50K, & 25K Trail Runs – Bandera, TX
- 1/17/10 – Swamp Stomper 50K/25K – Memphis, TN
- 1/17/10 – Calico Trail Run (30K and 50K) – Calico Ghost Town (near Barstow, CA)
- 1/23/10 – Yuma Territorial Marathon & Half Marathon – Yuma, AZ
- 1/23/10 – Mountain Mist 50K – Huntsville, AL
- 2/6/10 – Twin Peaks Ultras (50K, 50M) – Horsethief Canyon (S Corona), CA
- 2/6/10 – Uwharrie Mountain Run (8M, 20M, 40M) – near Ophir, NC
- 2/6/10 – Rocky Raccoon 100 Mile and 50 Mile – Huntsville, TX
- 2/6/10 – Sedona Marathon & Half Marathon – Sedona, AZ
- 2/14/10 – Lost Dutchman Arizona Marathon & Half Marathon – Apache Junction, AZ
- 2/27/10 – Pony Express 50M/50K/30k – Cameron Park, CA
- 2/27/10 – Mount Cheaha 50K – Cheaha State Park, AL
- 3/4/10 – Bandit 30/14K Trail Run – Simi Valley, CA
- 3/6/10 – Red Rock Canyon Marathon and 1/2 Marathon – Red Rock Canyon, just outside of Las Vegas, NV
- 3/6/10 – Champoeg 30K – Champoeg Park, OR

We're continually updating the Sponsored Events section on the Hammer Nutrition website, so keep

see STEVE on page 6

checking back to see what Hammer Nutrition-sponsored race may be happening near you!

Hammer Nutrition Supplements – Some of my favorites and why

I use pretty much everything that Hammer Nutrition has to offer supplement-wise and, of course, I think they're all excellent products (if they weren't, I wouldn't use them). However, there are a few that are currently on my "favorite" list. In no particular order:



Phytomax – What is it about this product that makes such a noticeable impact, both when I'm using it and when (for whatever reason) I forget to take it for any sizeable amount of time? Seriously, whenever I take this product regularly I

notice truly significant improvements in my energy levels (but without the jangly feeling one would get from stimulant-based supplements), as well as my focus and alertness levels. I also notice that when I use the product regularly, I sleep so much better at night than when I forget to take it. Now, some people may write these things off as being nothing more than a placebo effect but I have to respectfully disagree; there's just something special about this product that makes those beneficial effects so undeniably noticeable. Plus, a tremendous number of our clients report exactly the same thing. If Phytomax isn't currently in your regimen, you really should give it a try; it's a great product.



Mito Caps – To this day, I consider this the most important product we've ever produced and not a day goes by that I don't take it (along with the other two Daily Essentials). I wholeheartedly agree with what

Dr. Bill said many years ago about the Mito Caps formula: "So few substrate molecules function biochemically inside mitochondria cells. If endurance athletes could only realize how incredibly important it is to effect mitochondria and that everything formulated in this compound influences mitochondria cell biochemistry function synergistically and remarkably."

The key in achieving success with Mito Caps is consistency because its beneficial effects are cumulative. Think about it – the aging of your mitochondria didn't happen overnight and delaying-to-possibly-reversing the aging of the mitochondria will take a little time. So start on this product and stay on this product every day of your life... you'll really notice a positive difference as time goes by and how your body responds and how you feel will be your proof that this is a really special product.



AO Booster – I made a promise to myself to limit the Daily Essentials to three products only (Premium Insurance Caps, Race Caps Supreme, and Mito Caps). I have not had/will never have any regrets whatsoever about those choices, though

if I could have a fourth Daily Essential product it would unquestionably be AO Booster. With this product I believe we've come "full circle" in terms of antioxidant support (well, as much as one could get, given the number of antioxidant nutrients available), and if only for the inclusion of the entire vitamin E "family" (the four tocopherols and four tocotrienols), this would be a most worthy product. Add to that the powerful benefits of the lutein and astaxanthin (pronounced "as-tuh-zan-thin") components and you have an amazing product for reducing the specific negative effects of fat-soluble-produced free radicals. Excess free radicals of any type, water-soluble- or fat-soluble-produced, are flat-out not good. However, I tend to believe that the particular effects of the fat-soluble-produced free radicals have potentially

greater, more pronounced negative health consequences, which is why I am so zealous about neutralizing them. This product was designed precisely for that reason.

One of the questions I've been asked about AO Booster is "Why the emphasis on gamma tocopherol?" The answer to that question would take more space than is available here but in a nutshell, the gamma tocopherol fraction of vitamin E is considered by many to be equally as important, if not more so, than the more commonly known fraction of vitamin E, the alpha tocopherol fraction (many people mistakenly believe that alpha tocopherol IS vitamin E). As an example, in regards to protection from the inflammatory response from specific free radicals (peroxynitrite and

see STEVE on page 7

What have you done for your mitochondria lately?

- Improve energy production
- Antioxidant support
- Potential increase in longevity

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MC \$24.95

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"Ya'll are the best--in product and service." - Sean M.

STEVE from page 6

nitrogen dioxide)—that inflammation being a contributor in the development of cancer, cardiovascular disease, and several neurodegenerative disorders—one researcher writes, “Despite alpha tocopherol’s superior antioxidant abilities, gamma tocopherol is required to remove peroxynitrite and other nitrogen-containing toxins that are responsible for initiating the inflammatory response.”

Something else I found interesting were the studies showing that patients with advanced cardiovascular disease appeared to have normal plasma levels of alpha tocopherol but substantially lower levels of gamma tocopherol. While taking nothing away from the multiple benefits of alpha tocopherol, this would indicate that gamma tocopherol may be the primary component of vitamin E in regards to a protective effect against cardiovascular disease.

The list of benefits for gamma tocopherol alone could go on and on, and I haven’t even discussed the benefits from the tocotrienols, lutein, or astaxanthin components in AO Booster! The bottom line is that AO Booster’s unique formula provides powerful protection against fat-soluble-produced free radicals, and far better than vitamin E alone. It’s a multi-

faceted, multi-beneficial product—dare I say the fourth Daily Essential?—that I believe everyone should seriously consider adding to their supplement arsenal.



Endurance Amino

– Provide some key amino acids/amino acid compounds, and don’t waste people’s money by selling them an “everything and the kitchen sink” amino acid product. That was the goal in designing Endurance Amino and I have no

doubt—if only based on the feedback that we’ve received since its introduction—that the goal has been achieved. I’m a huge fan of branched chain amino acid (BCAA) supplementation prior to, during, and after exercise, and I’m an even bigger proponent of glutathione supplementation. I could go on and on and on about all the benefits of glutathione (and we did discuss it in previous issues of Endurance News), but I’ll cut to the chase by simply saying that I believe it is the most powerful and important antioxidant there is. It is referred to by many as the “master antioxidant” and its importance is summarized in the words of a well-

known researcher: “Glutathione is present in nearly all living cells and without it they can’t survive.”

If you haven’t used Endurance Amino prior to and/or after your shorter-duration workouts, and before, during, and after your longer-duration workouts (say, 3+ hours), then you owe it to yourself to give this product a thorough test in 2010. For all of the benefits you receive it is a really wise investment, especially compared to the slew of overpriced amino acid products flooding the market.

As mentioned earlier, I take pretty much the full gamut of supplements that Hammer Nutrition produces. However, these are my current favorites and I hope you’ll give consideration to including them in your supplement program, if you haven’t already done so. More information about each of these products is available on the Hammer Nutrition website, and we’re here via phone or email to answer any questions you may have about these or any of the Hammer supplements.

Here’s to a great 2010! Train hard, train wisely, train safely, race well, and have an amazing year! And remember, don’t hesitate to contact us if we may be of assistance in helping you achieve your athletic and health goals. **HN**

Supercharge your recovery, immunity, and overall health!

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- Reduce post-workout muscle soreness and inflammation
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- Improved mood & cognitive function
- Powerful antioxidant support
- Enhanced recovery

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PRODUCT SPOTLIGHT

BORON

THE "MISSING LINK" MINERAL

BY STEVE BORN

...this nutrient can very well improve the quality of your workouts, while also providing a plethora of general health benefits.

In Brian's welcome letter in *Endurance News #62*, he wrote the following about boron:

Before we had to deal with daily spam and TV commercials touting male enhancement products, there was boron. For almost 20 years now, this inexpensive little trace mineral has been the best and safest method for counteracting the downward trend in hormone levels caused by aging and endurance training. It is effective at restoring optimal hormone levels in both men and women. I recommend this product to every endurance athlete over the age of 40. 1 capsule (5 mg) per day is all it takes to notice significant improvements while training and in the bedroom.

Brian's words are spot on. I remember many, many years ago—even before the pro-hormone days (you remember – all the andro and norandro products, which are fortunately no longer available)—that boron was touted by many bodybuilding companies as a nutrient that will “raise your testosterone

levels through the roof!” (or some other ridiculous claim). Of course, those claims weren't accurate, which is why for a long time boron was cast aside as a worthless, doesn't-do-what-it-claims-to-do nutrient. That's unfortunate because this humble little trace mineral—while it didn't “blast your testosterone levels into the stratosphere”—does provide a number of benefits. We at Hammer Nutrition already knew the real story about boron and its benefits, which is why we've been selling it for nearly two decades.

Now, 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 prohormones. 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

see BORON on page 9

BORON from page 8

- 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 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 were reported that quantified the urinary boron concentration of subjects consuming their habitual diet. In addition, the 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!

The Boron Monograph published in *Alternative Medicine Review* (2004) summarizes mechanisms for boron's effects on osteoporosis:

- Enhanced calcium action
- Enhanced calcium retention
- Enhanced calcitonin function
- Enhanced collagenase and cathepsin D activity in fibroblasts that modulate turnover of extracellular matrix
- Enhanced the action of estradiol on trabecular bone

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 to 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?

see BORON on page 10

"As we age the testosterone level goes down a lot in us men. Supplementing with **Boron** helps me keep my levels up, making for not only **better training and racing**, but a **better energy level in general.**"

- Jake B.



How to use Boron

Take 1 capsule per day with a post-workout/race meal.

BORON from page 9

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 to prevent this unpleasant condition.

An ally against anemia

Nielsen (1991) reported that dietary boron-deficient subjects who received boron supplementation experienced increases in blood hemoglobin concentrations, mean corpuscular hemoglobin, and mean corpuscular hemoglobin concentration, and decreases in hematocrit, red cell count, and platelet counts. Orey also wrote that scientists at the USDA's Human Nutrition Research Center have linked boron deficiency with fatigue and lethargy. Fatigue and lethargy are primary symptoms of anemia.

Summary

Dr. Bill Misner writes: "Chronic inadequate dietary boron intake may present issues for nutritionally extended athletes." It's thus no surprise that 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. Misner adds, "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 of boron daily. There is no RDA for boron. A safe and adequate daily intake is estimated between 1 and 10 mg, though 20 mg/day will not present harmful toxicity issues. 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. Misner'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 dose 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. A bottle of Hammer Nutrition's Boron product contains 90 capsules, a three-month supply, which translates to a cost of about 17 cents per day... a small investment for all of the benefits that this trace mineral provides. **HN**

References available upon request.

SKU	PRICE
BOR	\$14.95

"I just started using Hammer products and the difference in my race performance has been tremendous" - Kirk C.

MONTANA HUCKLEBERRY THE 10TH HAMMER GEL FLAVOR IS MONUMENTALLY DELICIOUS!

BY STEVE BORN

Author : Steve Born

When asked to think of things that are Montana-specific, one that people frequently mention is "huckleberry." This tart-to-sweet tasting berry grows in various locations in the Pacific Northwest, but it's arguably Montana that is best known as the "Huckleberry Capital." And because Hammer Nutrition is a Montana-based company, it only made sense that we would eventually come out with a huckleberry flavor of Hammer Gel.

Well, that dream is now a reality. We debuted the newest flavor of Hammer Gel at the Interbike Trade Show in Las Vegas a couple of months ago and the feedback was overwhelming positive – Montana Huckleberry Hammer Gel is off-the-charts great tasting! If you've never tasted huckleberries before you're in for a treat; they have a unique flavor that is nothing short of sensational. This was verified at the Interbike show, where the supply of Montana Huckleberry Hammer Gel we made for sampling didn't last long... people visiting the Hammer booth enjoyed it so much they couldn't stop taste testing it!

The biggest challenge we faced in determining whether or not this new Hammer Gel flavor would be available year round or on a limited, "seasonal only" basis, was the availability of huckleberries (as you may or may not know, huckleberries cannot be commercially produced so supplies can vary dramatically annually). We're happy to announce that this challenge has been overcome for 2010, as we have been able to procure enough of this wonderful-tasting berry to make enough Montana Huckleberry Hammer Gel to last the entire year. Beyond that, availability is not guaranteed. As with the other flavors of Hammer Gel, the new Montana Huckleberry flavor will be available in both single serving pouches and multi-serving jugs.

Montana Huckleberry Hammer Gel is sure to be a hit so order your supply now and experience the unique deliciousness of this gem-of-a-berry from The Treasure State. **HN**

Rapid energy that lasts!

- Smooth, reliable energy
- Easy to consume consistency
- Ten delicious flavors

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"I've been using your products with great success since 1995." - Sean B.

CHOCOLATE RECOVERITE IS HERE!

BY STEVE BORN

Replenishing your body with high quality carbohydrates and protein—“refilling the tank” so to speak—after all of your workouts and races is an undeniably important component in achieving success in athletics and in maintaining-to-improving immune system health. Recovery drinks make fulfilling that aspect of athletic fueling super easy; however, it can be a real drag trying to choke down a super-sweet or chemically-tasting recovery drink, and it doesn't do you much good at all if the product is loaded with sugar and low-quality protein.

That's precisely why we designed Recoverite, and ever since its introduction it has become a staple for serious endurance athletes. Recoverite provides EXACTLY what your body needs after a tough workout or race, and its mild taste is easy on the palate and the stomach. Recoverite contains only complex carbohydrates (never any refined sugar) and the highest quality whey protein isolate (for aiding in muscle tissue repair and so much more). Plus, in

every two-scoop serving of Recoverite we add a generous 3000 mg of the multi-beneficial amino acid glutamine. It is THE ideal recovery drink.

With all this said, we're excited to announce the arrival of the new chocolate flavor of this superior recovery drink, the flavor most requested by you, our valued clients. It's the same formula as the subtle citrus and strawberry flavors, so you know it's going to provide awesome nutritional support for enhanced recovery. And we know you're going to love the taste of this new flavor of Recoverite. If you've used the chocolate flavor of Hammer Whey, you know how good it tastes. Now, just think of a slightly creamier chocolate flavor/texture and you've got chocolate Recoverite.

Recovery drinks don't have to taste lousy to work, and the new chocolate flavor of Recoverite proves it. Order some today and enjoy both great benefits and great taste! **HN**

"Thank you so much for sponsoring the Fall Peaks Power Camp at Allenberry Resort in Boiling Springs PA. The camp was designed to teach cyclists how to plan their 2010 season using their power meters as well as teach and coach skills during each day's ride. We rode an average of 60 miles a day, thanks to the products you sent, we had very 'Happy Campers'. We had a 'Hammer Bar' that each athlete could bring their bottles and gel and electrolyte containers, to each morning to resupply. After each ride, before our yoga session, I whipped up Recoverite shakes. They were a huge hit, keeping everyone's energy up for the next days' ride and events. We made a variety of Recoverite shakes but the best ones were our special Peaks Berry Blend. They are thick, yummy and filled with vitamins, minerals and antioxidants!"

Thank You Hammer Nutrition!

- Kathy W.



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Randy Profeta celebrates his age-group win at the 24 Hours of Adrenaline in Canmore, Alberta.
Photo - Dan Profeta



ENDURANCE RACING: WHEN THINGS GO WRONG

BY RANDY PROFETA

While it sometimes occurs, fatigue due to insufficient caloric intake is not as much of a problem as the opposite condition: consuming too many calories.

It was June 3, 2006, the day after my granddaughter Samantha was born. I was racing in the inaugural 24-hour mountain bike race sponsored by the Warriors Society at the Flying B Ranch in Orange County CA. The race started at 12 noon on a brutally tough course. As a racer who has taken part in many of the Warriors Society's events, I knew that we could count on several things: it would be a true test of endurance and it would require solid technical skills. Not to be outdone, Mother Nature added her \$0.02 worth. It was over 105 degrees that day on a course that was fully exposed. The sun baked us. As the afternoon wore on, I had managed a slim lead in my age class.

I was consuming between six and eight Endurolytes an hour. An Anti-Fatigue cap, one Race Cap and a Mito

see ENDURANCE on page 14

Cap rounded out my hourly dosage of supplements. I fueled with Perpetuem mixed with Hammer Gel and carried about 50 oz. of chilled water in a hydration pack. So far, so good. Part-time crew chief and full time wife Mary Ann made sure that I had a fresh Perpetuem bottle, and cold water in my hydration pack each lap. The Perpetuem mix I was using had worked well for me in the past and I had fine-tuned my fueling strategy during my long training rides. Still, I was having some trouble with my nutrition during this race. My non-insulated water bottles were turning lukewarm at about the half way mark on each lap. This made my digestive system work overtime to break it down. My wife calculated that I was only taking in about 150 calories per lap and she urged me to increase my intake of the Perpetuem mix. I was swigging water more frequently than usual, consuming about 30 ounces an hour.

Sensing that my tank was running low, she urged me to have some solid food when I stopped to put lights on the bike. So, I deviated from my nutritional plan and devoured some chilled Chinese noodles and some fruit chunks. It tasted great and since it was chilled, it was a pleasant diversion. It was a small treat that I would look forward to after I completed each one-hour lap.

The evening hours provided no relief from the heat. Nighttime temperatures were in the mid 90s. At about 3 AM I had to come off the bike. My stomach was turning back-flips, no doubt due to my improvised noodle and fruit diet. Apparently, I was overdoing it. I was still in the lead, but I did not have much of a cushion. While I did not want to stop, I sensed that if I continued, I would have to abandon. So for the next hour or so, I sat and nursed a cool bottle of HEED and consumed no solid foods. At about 5 AM, I had one serving of Hammer Gel and headed out again. For the rest of the race, I refueled with Hammer Gel and HEED, taking in a few watermelon chunks every other lap. It did the trick.

Ever happen to you?

As a member of the Hammer Endurance List, it seems that I am not alone when it comes to encountering the unexpected during a race. Whether you are a seasoned athlete who has your nutrition,

hydration, and supplementation well dialed in, or someone new to the endurance sports, it seems that we all have days when Mother Nature throws us a curve ball or we have issues when our fueling strategy is not suited for what we are asking our bodies to do. Based on the posts on the Endurance List, DNFs are the most common result.

Over the years, I have developed a strategy that works for me. While it is now a very rare occurrence for me to experience any stomach issues or muscle cramps, I attribute this to fueling almost exclusively with Hammer products and the prudent use of Hammer Supplements. I also know when and how to adjust my plan to suit the conditions. I would like to share some strategies that have worked for me in the past when things did not go as planned.

Stick to your plan, but be flexible!

I have discussed developing a fueling strategy during your training sessions in previous articles so I will not detail the steps here. One thing that does bear repeating is that you should not experiment with new products when race day arrives. Use the products and the fueling protocol that you have already developed during your pre-race training rides.

As a refresher, re-read the *Endurance Athlete's Guide to Success*, also known as the "Fueling Handbook". Pay particular attention to the section that addresses the Ten Common Mistakes. We will be focused on Mistake #8, *Sticking With Your Game Plan Even When It's Not Working*, but as you will see, many of the discussion points will touch on the other common mistakes.

The Guide indicates that our fueling plan should be "written in pencil, not in ink." We need to be in tune with our bodies and adjust accordingly. And while it is nice to have a support crew monitoring your intake, you can also do it pretty easily yourself when you have to go it alone. More on this later.

How many calories?

Experience has shown that I need about 250 calories an hour. Your mileage may vary. At 6' - 0" and about 185, this works well for me. According to the *Guide*, even larger athletes (over 200 lbs.) really do not need more than

300 calories an hour. The nice thing about a liquid diet is that it is very easy to monitor your caloric intake very accurately. This is not so with solid foods unless, of course, you bring a scale to the race and weigh each portion before you refuel.

Even the fittest athlete will run through their body's stored muscle and liver glycogen in about two hours. From that point forward, your body will start to convert fat stores into energy. My observations seem to indicate that more problems occur as a result of consuming too many calories rather than too few. So, when your stomach is giving you fits, stay focused on your hydration and do not worry about your caloric intake. Once your stomach issues pass, it's probably OK to resume your fueling and caloric intake. That said, you may need to adjust what you are consuming.

Are solid foods OK?

The short answer is "sometimes". While I have done many races where my entire source of calories was from Perpetuem, Sustained Energy, and Hammer Gel, I will occasionally take in some solid foods more as a diversion, just to mix it up a bit. The solid foods are more for variety than out of any necessity to satisfy my nutritional needs. The key is moderation and making sure that, if you do switch it up, you are still eating the right foods. Fruit chunks like melon, bananas, or even grapes have worked for me. Pasta noodles, chicken and rice soup when the temperatures drop, boiled skinless red potatoes, bagels with some peanut butter, whole wheat bread with some strawberry preserves and cream cheese, have provided me with nice diversions during a race. Choose high starch foods.

As the Fueling Handbook recommends, "Choose foods that have little or no refined sugar or saturated fats. Don't think, "I'm a calorie burning machine so I can eat anything I want...calories are calories." Remember, what you put in your body greatly determines what you get out of it. Use solid food sparingly, and only as an exception or diversion. Maintain your primary [caloric] intake through liquid/gel sources.

Exercise diminishes digestive system function, so regular solid food intake should be limited in your fueling strategy. Solid foods increase the

likelihood of lethargy and performance-inhibiting stomach discomforts such as bloating, stomach cramps, nausea, and vomiting”

What to do?

As endurance athletes, we are typically in tune with our bodies. Many of us can differentiate between passing discomfort and symptoms that indicate that we may be in trouble. So, when you start experiencing some of the danger signs, such as precipitous fatigue and loss of energy (also known as “hitting the wall” or “bonking”), stomach discomfort or nausea, it is time to make some adjustments.

While it sometimes occurs, fatigue due to insufficient caloric intake is not as much of a problem as the opposite condition: consuming too many calories. In the case of too few calories per hour, you can get back on track by upping your intake with a fuel source that is readily broken down and converted to glycogen. Even though my primary fuel is generally Perpetuem or Sustained Energy, Hammer Gel is always my choice for adding calories quickly to help make up a deficit. I will always carry a five-serving flask of Hammer Gel in my jersey pocket if I need to make immediate upwards adjustments.

The key here is to be sure that you are falling behind in your caloric requirements before making any adjustments. When I do a long event, the content in my bottles have been accurately measured and I know exactly how long it should take to consume, as does my crew. If I am falling behind, I will increase my intake to get back on track with Hammer Gel.

If, however, you have taken in too many calories (or chosen the wrong fuel) and are experiencing stomach distress, cramping, or nausea, your only choice is to let your body recover by helping your digestive process. This usually means taking a break from the strenuous activity that is diverting blood away from your stomach. In the case of the 24 Hour inferno I endured, I came off the course, wrapped a wet towel around my neck, sipped some cold HEED and consumed no more calories until I was back on the course. Yes, I lost over two hours, but I would have driven myself into the ground had I continued.

The same thing can be said if you are experiencing bloating from excessive hydration. I wish that there was a “quick fix”, but you should let your stomach contents and bladder empty before hitting it hard again. Hyponatremia is not a good thing. Hyponatremia is a severe electrolyte disturbance in which the sodium concentration in blood plasma is lower than normal. It can be the dangerous result of over-hydration and excessive electrolyte imbalances. Suspend activity and cool down externally if you are overheating. Typical symptoms of severe hyponatremia include headache, nausea, vomiting, and feeling out of sorts (malaise). As the condition worsens, confusion, diminished reflexes, convulsions, stupor or coma may occur.

Cooling down

Be prepared for everything. When I completed the Furnace Creek 508, my support crew brought along a garden sprayer filled with water. My daughter-in-law, Jeanny, would give me a misting every so often to help cool me down as I crossed the Mojave Desert in the 95 degree heat. Jeanny was enjoying this way too much! But it did the trick. During the 24-Hours of OC when temperatures soared into the low 100s, my wife fashioned a neckerchief out of

a Buff and filled it with ice cubes. It provided me with about 30 minutes of “air conditioning” and cooled me down nicely. The glycerol in Liquid Endurance also has worked for me as well. One of the best ways to help keep cool and minimize fluid loss is to train in the heat. Acclimatize your body to extreme heat. In cases where Mother Nature does not cooperate, I have been known to wear a long-sleeve jersey on 90 degree days. Yes, I get some weird looks, but it has helped.

Bottom line

- Work out your fueling and supplementation needs during training rides.
- When things are not working, be flexible.
- Avoid solid foods but have some on hand for times when you need a diversion. Choose wisely.
- Hammer Gel helps get you back on track quickly.
- A period of rest (inactivity) can help get you back on track when you have overdone it.
- Do not over-hydrate!
- Keep up with your electrolyte intake.
- Listen to your body.
- Stay cool.
- Race hard!

HN

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CAN SUGAR LEAD TO BITTER CONSEQUENCES?

BY DR. ALLEN S. JOSEPHS

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I have some important news for those of you who have high blood pressure. A paper [1] was recently presented at the 42nd Annual Meeting of the American Society of Nephrology regarding use of processed foods and beverages that contain high fructose corn syrup (HFCS). The authors found that within the last couple of hundred years, the rate of fructose intake appeared to be in direct correlation with the increased rate of people who are at an unhealthy weight; particularly notable is the increase that occurred over the past twenty years since the introduction of high fructose corn syrup.

Dr. Diana Jalal, from the Colorado Denver Health Sciences Center, along with colleagues, studied a group of over 4,500 adults, ages 18 years or older, with no prior history of unhealthy blood pressure. A diet questionnaire was utilized to determine the amount of fructose intake found in beverages such as fruit juices, soft drinks, candy and baked products. Dr. Jalal and her team noted that those who ate or drank more than 74 grams per day of fructose (which amounts to about 2 1/2 sugary soft drinks per day) increased their risk of developing unhealthy blood pressure by as much as 87%.

We are basically eating ourselves to premature mortality in this country. The number of individuals with unhealthy weight levels has been skyrocketing over the past couple of decades as portions

have increased and "supersizing" has become the norm. High fructose corn syrup is extremely detrimental. It is not the fructose that you naturally find in honey and fruit products. Rather, it is a clear liquid, a highly refined product made from corn starch. It is used in foods because it is inexpensive and apparently has a long shelf life. Aside from the recent study indicating that this can lead to increased blood pressure, ingestion of this product can also cause unhealthy blood sugar and unhealthy weight, and may adversely affect cardiovascular function.

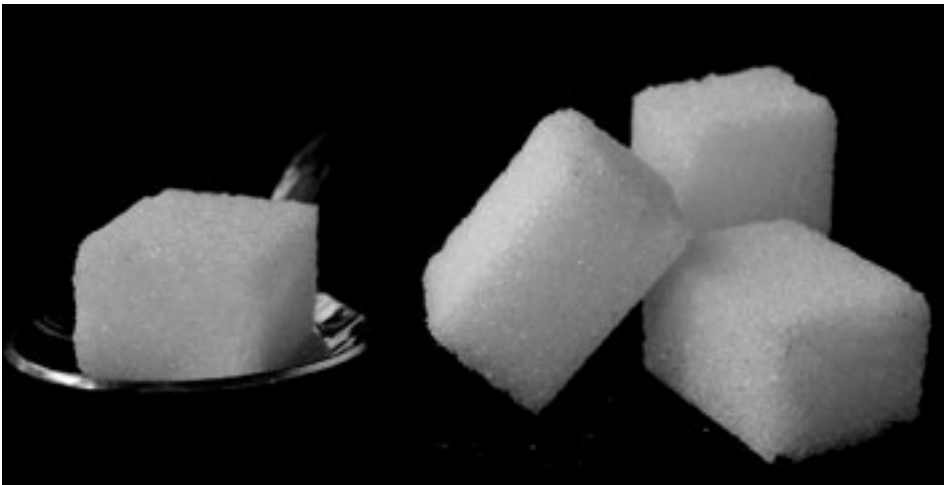
REFERENCE:

Jalal D, et al., Increased Fructose Intake is Independently Associated with Elevated Blood Pressure. Findings from the National Health and Nutrition Examination Survey (2003-2006), presented at the 42nd Annual Meeting of the American Society of Nephrology, San Diego, California, October 30, 2009.

Dr. Allen S. Josephs is Co-Founder & Director at Vitacost.com, and is currently in private practice in neurology with Essex Neurological Associates and is Section Chief of Neurology at St. Barnabas Hospital, a 600-bed hospital in Livingston, New Jersey. Dr. Josephs served his neurology residency at Mt. Sinai Hospital in New York, where he also served as Chief Resident in Neurology. In addition, he has served as the Chairman of the Ethics Committee of Beth Israel Hospital. Dr. Josephs is board certified in Internal Medicine and Neurology. He is a member of the American Academy of Neurology, the Essex County Medical Society, and Alpha Omega Honor Medical Society. HN

"I'm a triathlete and earlier this year I was diagnosed with a gastrointestinal problem which requires a wheat-free and **low sugar diet**. My foremost concern at the time was the impact on my training. Luckily my coach suggested Hammer Nutrition. I've been using Perpetuem, Gel and the Hammer Bars. **They have kept me fueled better than any other sport food out there**, but more importantly I've had no adverse GI reactions! Your company has done nothing short of saving my beloved sport! Thanks!"
- Adrian S.

"Your products are wonderful. We can't keep them on our shelves." - Tricia P.



ARTICLE REBUTTAL MISINFORMATION ABOUT SIMPLE SUGARS ONCE AGAIN

BY STEVE BORN

Matt Fitzgerald's article, "The Straight Dope on Sugar in Sports Drinks," found on the TrainingPeaks.com website (<http://home.trainingpeaks.com/articles/general-fitness/the-straight-dope-on-sugar-in-sports-drinks-by-matt-fitzgerald.aspx>) is incredibly inaccurate and flat-out wrong on so many levels. We've only a limited amount of space to discuss a portion of the inaccuracies in the article, so I would encourage you to read Mr. Fitzgerald's article first, then review each of the points that Dr. Bill & I rebut.

1) Mr. Fitzgerald writes: "First of all, sugar has a reputation as an unhealthy nutrient; consequently, there are those who believe that the use of sugar in sports drinks is bad. But sports drinks are formulated for a narrow use and to serve a specific function: to enhance exercise performance. Therefore, consuming the sugars in sports drinks could only be bad if they did not serve this function better than alternative

ingredients, or if using sports drinks for their intended purpose caused major negative health problems that outweighed their performance benefits. But research has clearly demonstrated that the sugars in sports drinks enhance exercise performance significantly, and there is no evidence that consuming sports drinks exclusively within the exercise context causes weight gain and metabolic disorders, as general overconsumption of sugar is known to do."

REPLY: First of all, the consumption of simple sugar is a health hazard, or at the very least, directly related to a number of negative health consequences. See any of Dr. Nancy Appleton's articles on the Hammer Nutrition website for more information, in particular "146 Reasons Sugar Ruins Your Health" at <http://www.hammernutrition.com/za/HNT?PAGE=ARTICLE&ARTICLE.ID=287>. Note that Dr. Appleton has research references for every one of the

146 topics, whereas Mr. Fitzgerald lists none to back up his claims.

The bottom line is that we are already over-consuming sugar as it is. Yes, all carbohydrates eventually break down into glucose to be used in the energy cycle. But why use a refined sugar as a carbohydrate source, which again, we are already consuming too much of in the diet? If refined sugar is not good for you in a general health sense (which means that most of the time you're consuming it in a semi-to-fully sedentary state), and if its consumption is related to a number of negative health consequences, how on earth is it going to benefit you when you're putting your body through a tremendous amount of stress (exercise), a time when you're demanding your body to perform?

2) Mr. Fitzgerald writes: "Most endurance athletes understand that the sugars in sports drinks are beneficial, yet they are still affected by sugar's negative reputation. Within this population, anti-sugar prejudice takes the form of a belief that certain fast-acting sugars in particular cause an energy spike followed by an energy crash that wreaks havoc on performance. According to this viewpoint, slower-acting sugars and non-sugar carbohydrates are better, because they provide a steady supply of energy that does not terminate in a crash."

"These beliefs are completely misguided. In fact, the human body is incapable of absorbing carbohydrate as quickly as carbohydrate is oxidized in the muscles during moderately intense to intense exercise. Thus, to get the maximum possible benefit from carbs consumed during exercise you want to consume the most rapidly absorbed and metabolized types of carbs possible. There is no advantage whatsoever in consuming carbs that take a long time to reach and be used by your muscles. To the contrary, relying on slower carbs will only exacerbate the unavoidable carbohydrate deficit that results from the differential rates at which carbs are burned and absorbed during exercise."

Later in the article the author also writes: "Also, the phenomenon of reactive hypoglycemia simply does not occur during exercise. No matter how much sugar of the fast-acting types you consume, you cannot and will not

see ARTICLE on page 18

ARTICLE from page 17

experience a rapid decline in blood glucose resulting from excessive insulin release, as is possible at rest. During intense exercise the only thing that will cause your blood glucose level to decrease is depleting your liver glycogen reserves, which will only happen faster if you fail to consume enough sugar or misguidedly consume 'long-lasting

The effects of preexercise hyperinsulinemia on exercising plasma glucose, plasma insulin, and metabolic responses were assessed during 50 min cycling at 62% VO₂max. Subjects were fed a 6% sucrose/glucose solution (LCHO) or a 20% maltodextrin/glucose solution (HCHO) to induce changes in plasma insulin. During exercise, subjects assessed perceived nauseousness

that "the human body is incapable of absorbing carbohydrate as quickly as carbohydrate is oxidized in the muscles during moderately intense to intense exercise." With some allowance for calories lost (burned) during the digestive process, the human liver can return to the energy cycle an amount between 4.0 - 4.6 calories per minute. In other words, calories burned cannot

be replaced from exogenous sources (your fuel donation)... the body is simply not equipped to replace "X" calories lost with "X" or "near-X" amounts in return. So how does the body compensate for what it's losing and what it can comfortably accept in return from your fuel donation? The calories from muscle glycogen stores and, primarily, the calories from fatty acid stores. In fact, when you reach hour #2 and beyond, roughly two-thirds of your energy requirements will be fulfilled from the nearly endless supply of calories available

from body fat stores.

Mr. Fitzgerald also says "to get the maximum possible benefit from carbs consumed during exercise you want to consume the most rapidly absorbed and metabolized types of carbs possible."

REPLY: I definitely agree with that, but are simple sugars such as glucose, sucrose, or fructose the ideal choices? The answer is no, for two primary reasons:

• **Complex carbohydrates (maltodextrins) are absorbed more rapidly than simple sugars. Three studies show this to be true:**

*** **GLUCOSE POLYMERS [MALTODEXTRINS] EMPTY THE STOMACH FASTER THAN SIMPLE SUGARS** ***

BACKGROUND: The energy density of a

A Houston Adventure Racer carries his Hammer goodie bag full of healthy fuels for the entire race to a victory! Photo - Lori Hazlewood Sanders



complex carbohydrates for steady energy'."

REPLY: Dr. Bill can elaborate in more detail regarding this point, but in one section of his article "Carbohydrates 101- The Why's, When's, & What's..." (<http://www.hammernutrition.com/za/HNT?&PAGE=ARTICLE&ARTICLE.ID=294>) – an article I suggest Mr. Fitzgerald read in its entirety—one of Dr. Misner's recommendations is to "Avoid simple sugars period & prior to, during, or after exercise. This aids the athlete to avoid gastrointestinal reactions, sharp insulin spiking, and the subsequent blood sugar 'crash' prevalent among persons who consume high simple sugar foods and drinks."

Here's a bit of research that applies regarding Fitzgerald's above-listed comments:

*** **GLUCOSE CAUSES GREATER DROP IN BLOOD SUGAR THAN MALTODEXTRINS** ***

and light-headedness. By the start of exercise, plasma glucose and plasma insulin had increased. In the LCHO trial, plasma glucose values significantly decreased BELOW the baseline value at 30 min of exercise. However, by 40 min, exercise plasma glucose and insulin values were similar to the baseline value. Exercise plasma glucose and insulin did NOT differ from baseline values in the HCHO trial. Ingestion of LCHO or HCHO was not associated with nausea or lightheadedness. It was concluded that the hyperinsulinemia induced by pre-exercise feedings of CHO did NOT result in frank hypoglycemia or adversely affect sensory or physiological responses during 50 min of moderate-intensity cycling.

REFERENCE: Glycemic and insulinemic response to pre-exercise carbohydrate feedings. Seifert JG, Paul GL, Eddy DE, Murray R, Int J Sport Nutr 1994 Mar 4:1 46-53.

3) **Mr. Fitzgerald** is correct in saying

nutrient drink is one of the main factors that affect the gastric emptying of the solution, while osmolality and viscosity are thought to have only a minimal influence.

METHOD: The rate of gastric emptying of two isoenergetic carbohydrate solutions with different osmolality and viscosity was determined using a double sampling gastric aspiration technique. Six healthy male subjects were studied on two occasions using approximately 550 ml of a solution containing 13.5% of carbohydrate either in the form of a mixture of monomeric glucose and short chain glucose oligomers (G-drink) or of long chain glucose polymers composed of 78% amylopectin and 22% amylose (C-drink).

RESULT: The half emptying time (t(1/2), median and range) for the viscous, markedly hypotonic (62 mosmol/kg) C-drink was faster (17.0 (6.2-31.4) min) than for the moderately hypertonic (336 mosmol/kg) G-drink (32.6 (25.2-40.7) min). The amount (median and range) of carbohydrate delivered to the small intestine was greater during the first 10 min after ingestion of C-drink (31.8 (15.8-55.9) g) than after ingestion of G-drink (14.3 (6.8-22.2) g). However, there was no difference in the blood glucose (P = 0.73) or serum insulin (P = 0.38) concentration at any time point after ingestion of the two test drinks.

CONCLUSION: The results of this study show that the carbohydrate present in C-drink, although it has the propensity to form a gel, empties from the stomach faster than that of an isoenergetic carbohydrate solution (G-drink) without potentiating increased circulating blood glucose or insulin levels.

REFERENCE: Improved gastric emptying rate in humans of a unique glucose polymer with gel-forming properties. Leiper JB, Aulin KP, Soderlund K. Sc and J Gastroenterol 2000 Nov;35(11):1143-9.

*** GASTRIC EMPTYING RATE FAVORS MALTODEXTRINS OVER GLUCOSE ***

The high prevalence of gastrointestinal complaints in long-distance runners makes the movements specific to this type of exercise suspected of causing a disruption of normal gastrointestinal

function. Gastric emptying rate is one indicator thereof. In the present study trained volunteers performed similar repeated fluid ingestion tests while running and while bicycling for 80 min at 70% VO₂max. Control tests at rest were also conducted. Two drinks containing carbohydrate were tested, one hypertonic and one isotonic. Artificially sweetened water was used as a control.

Gastric emptying rate of the isotonic drink, expressed as a percentage of the volume in the stomach at the beginning of each measurement period, did not differ between cycling and running during the first 40 min and was faster during cycling than during running between 40 and 80 min. With the hypertonic drink no differences between cycling and running were observed. In comparing gastric emptying rates after each sequential bolus, at rest, the isotonic drink was observed to maintain a high emptying rate, equal to that of water, whereas the hypertonic drink emptied more slowly after the first 20 min period. A similar pattern was observed during both running and cycling. The isotonic drink continued to empty quickly after the initial 20 min, whereas GE rate of the hypertonic drink decreased after the initial 20 min.

REFERENCE: Effects of exercise and carbohydrate composition on gastric emptying. Neuffer PD, Costill DL, Fink WJ, Kirwan JP, Fielding RA, Flynn MG, Med Sci Sports Exerc 1986 Dec 18;6 658-62.

*** CALORIE ABSORPTION RATE IS SUPERIOR USING MALTODEXTRINS ***

In four mini pigs, a segment of the proximal jejunum was temporarily isolated and perfused with two enteral diets containing isocaloric amounts either of glucose or maltodextrin. With regard to total energy, the diets were composed of 60% carbohydrate, 20% protein, and 20% fat. The perfusion rates were 60, 120, 240, 360, and 480 kcal/hour. Absorption of glucose and fat from the maltodextrin diet was significantly greater than from the glucose diet, whereas absorption of protein was only slightly enhanced. A net water absorption occurred at perfusion of the isotonic solution with maltodextrin. Perfusing the hypertonic glucose diet, water was secreted; therefore the flow rate increased from oligomer to

monomer glucose source. With enhanced flow rate sodium secretion increased. However, the sodium concentration of the effluent was determined more by the transepithelial water movement than by the sodium secretion. The present results indicate that in enteral diets with interactions among different nutrients there is a 'kinetic advantage' in glucose absorption from maltodextrin compared to glucose; however, the reduced flow rate of the maltodextrin diet due to the lower osmolality contributed to the enhanced absorption.

REFERENCE: Glucose and maltodextrin in enteral diets have different effects on jejunal absorption of nutrients, sodium, and water and on flow rate in mini pigs. Weber E, Ehrlein HJ, DTW Dtsch Tierarztl Wochenschr 1998 Dec 105:12 446-9.

• **The volume of calories that the body can digest and absorb is greater using maltodextrin than simple sugars. There is a very low ceiling in regards to how many calories the body can digest and absorb from one- or two-chain sugars as compared to complex carbohydrates. This chart and the following study illustrate that:**

*** BODY FLUID OSMOLALITY CALORIC VALUES OF SUGAR AND LONG CHAIN CARBOHYDRATES ***

Gastric Transit Rates Favor Maltodextrin During Exercise

TYPE OF FUEL	CALORIES PROVIDED AT 280-303 mOsm OSMOLALITY
Glucose	0.2 cal/ml
Fructose	0.2 cal/ml
Sucrose	0.4 cal/ml
MALTODEXTRINS	1.0+ cal/ml

WHEN GLUCOSE CONCENTRATIONS EXCEED 6% GASTRIC STRESS OCCURS [GLUCOSE POLYMERS/ MALDEXZTRINS ABSORBED AT 18%]

This study compared the effects of ingesting 6% (MC) and 12% (HC) glucose/electrolyte beverages, and a flavored water placebo (P) on markers of fluid absorption, palatability, and physiological function during prolonged intermittent cycling in the heat. On three occasions, 15 trained male

see ARTICLE on page 20

cyclists performed two 60 min cycling bouts at 65% VO₂max (E1 and E2). A brief exhaustive performance ride (approximately 3 min) was completed after E1 and E2, and after 20 min recovery (P1, P2, P3). Every 20 min, subjects consumed 275 mL of P, MC or HC. The first drink contained 20 mL of D₂O, a tracer of fluid entry into blood plasma. Plasma D₂O accumulation was slower for HC than for P and MC (P less than 0.001). HC caused more nausea (P less than 0.01) and fullness (P less than 0.05) than MC or P, and subjects said they would be less likely to consume HC during training or competition (P less than 0.10). Sweat rates, HR, Tre, Tsk, VO₂, and PV were similar for all drinks. Performance of P1, P2, P3 were not different among drinks. However, four cyclists failed to maintain the prescribed work rate during E2 for HC but only one failed for MC and P. These data suggest that the slow absorption of a 12% glucose/electrolyte beverage during prolonged intermittent exercise in the heat may increase the risk of gastrointestinal distress and thereby limit performance.

REFERENCE: Effects of ingesting 6% and 12% glucose/electrolyte beverages during prolonged intermittent cycling in the heat. Davis JM, Burgess WA, Slentz CA, Bartoli WP, Pate RR., Eur J Appl Physiol Occup Physiol 1988;57(5):563-9 [Exercise Biochemistry Laboratory, College of Health, University of South Carolina, Columbia 29208.]

4) Mr. Fitzgerald writes: "One sugar that is used commonly in sports drinks—although less and less so—is high fructose corn syrup. This sugar has acquired a very bad reputation based on a little bit of science and a whole lot of media hype. In fact, there is nothing inherently bad about high fructose corn syrup. It is nothing more than a combination of what might be considered the two most natural sugars on earth: glucose, which is the sugar your body runs on, and fructose, which is the sugar in fruit."

"Why does high fructose corn syrup have a bad reputation? Simply because our society is not quite intelligent enough to distinguish between food ingredients that are inherently unhealthy and nutrients that we simply consume too much of."

REPLY: I would suggest that before making such absurd statements, and with no research to back them, Mr. Fitzgerald should review the literature, a small portion of which I've listed here: "Dietary Fructose or Fructose Containing Sweeteners Negatively Impact Health" <http://www.hamnernutrition.com/za/HNT?PAGE=ARTICLE&ARTICLE.ID=1265>

"Fructose (Corn Cyrupe) is No Answer For a Sweetener" <http://www.hamnernutrition.com/za/HNT?PAGE=ARTICLE&ARTICLE.ID=2263>

"Fructose Increases the Rate of Aging" <http://www.hamnernutrition.com/za/HNT?PAGE=ARTICLE&ARTICLE.ID=6005>

"Fructose Called Most Dangerous Sugar" <http://www.hamnernutrition.com/downloads/ENews/ENissue58.html> (article starts on the first page)

"High Fructose Corn Syrup is associated with obesity, no myths about it!" <http://www.hamnernutrition.com/EN/en57/index.html> (scroll down a bit to get to this article)

"High Fructose Corn Syrup - The news just gets worse and worse!" <http://www.hamnernutrition.com/EN/EN62/ENIssue62.html#fructose>

As I mentioned earlier, if the consumption of refined sugars such as sucrose and HFCS are not good choices for general health purposes, why on earth should they be considered good choices for enhancing exercise performance? To conclude that they are, which it appears that Mr. Fitzgerald does in his article, is simply mind-bogglingly wrong.

Additional comments/thoughts/ summaries

1) The primary reason we use maltodextrins versus simple sugars such as glucose or sucrose is that a greater volume of calories can be absorbed within body fluid osmolality parameters (280-303 mOsm) from complex carbohydrates than from simple sugars. Simple sugars must be mixed in calorically weak 6-8% solutions to match body fluid osmolality and be digested efficiently. Conversely, fuels comprised of maltodextrin can be mixed at 15-18%

solutions and still match body fluid osmolality. The benefit? The body is able to receive a greater volume of calories for energy production with no delay in gastric emptying rates (which means no stomach distress).

2) The Glycemic Index of most maltodextrins is actually higher than simple sugars, especially sucrose and fructose, so you do receive a rapid increase in blood sugar levels, which of course is a definite "plus" during exercise, as well as in post-exercise glycogen replenishment.

3) Maltodextrins provide a longer lasting and more consistent energy supply than do simple sugars. With complex carbohydrate maltodextrins you don't have that "peak and valley" type of energy that you get from simple sugars.

Now, there are many athletes who believe that "your body uses sugar first before anything else (such as protein and fat) so it makes sense to consume sugars like glucose." Technically, this is true; all carbohydrates will eventually be broken down to glucose. However, the first fuel (sugar) the body will use when exercise commences is muscle stored glycogen, which is a long-chain (complex) carbohydrate that, as Dr. Misner puts it: "...is a form of starch which contains 8 parts amylopectin to 2 parts a-amylose." Thus, wouldn't it make sense to say that if the body's first-used fuel is muscle glycogen and that its makeup is complex in nature, the body obviously is very efficient in breaking it down for rapid conversion to energy?

I would argue that the time it takes "from gut to muscle" isn't nearly as long as some "experts" think it is, if there is any difference to begin with (see the research articles listed earlier). And even if maltodextrin took slightly longer in "breaking down in the gut" as compared to glucose, the benefits of using complex carbohydrates only versus simple sugars (such as glucose) or combinations of carbohydrates more than justifies the use of complex carbohydrates. All of the details regarding that are in the articles/research listed in this rebuttal article. I vehemently disagree with one well-known athlete's assertions that "as the race progresses your ability to cleave it [maltodextrin] into the absorbable form of carbohydrate (glucose) gets slower and slower. But maltodextrin is

see ARTICLE on page 21

ARTICLE from page 20

patient. It will sit in your stomach and wait for quite a while for something to come along and break it into glucose. This, my friend, is what causes that very undesirable bloating and eventual feeling like you want to hurl."

I couldn't possibly disagree more. If this were the case, if I had to "wait for

If complex carbohydrates were the culprit in stomach distress we wouldn't have thousands upon thousands of testimonials from satisfied athletes who have enjoyed better results and NO stomach issues by using complex carbohydrate fuels only.

What's even more astounding is that the very company that this particular athlete is affiliated with states the



John Kahler finishes first in the sprint triathlon at the 2009 Tawas Triathlon Festival with the help of Hammer Gel. Photo - Shelly Kahler

For over 20 years Hammer Nutrition has vehemently opposed the use of these one- or two-chain sugars, and we will continue to do so.

quite a while for something to come along and break it into glucose," then I probably wouldn't have finished any of my ultra distance races, which were fueled solely on complex carb-based fuels. This includes the Double Furnace Creek 508, an ultra distance cycling record attempt that saw me on the bike for 75+ hours, which is more than 6 x 12-hour iron distance triathlons.

following on their website: "Maltodextrin has a much lower osmolality than glucose and fructose and therefore can be mixed in much higher concentrations without any stomach issues. Molecules of maltodextrin are larger than glucose, so drinks with maltodextrin will have a few large particles compared to a drink with glucose. The number of particles

determines how much water it will hold. The more molecules of smaller sized glucose in the drink, the more water will be pulled into the intestine than the maltodextrin-based drink. Since maltodextrin based products don't pull as much water into the intestine, it is absorbed faster into the bloodstream."

The bottom line is that while the process is, of course, quite detailed, the truth is that the bonds that compose maltodextrin are very weak and readily broken apart in the stomach.

There is far more that could be written but I think this is a sufficient amount of information from me (Steve). In an email that I have on file from Dr. Misner, he nicely summarizes why complex carbohydrates are superior to simple sugars:

"The mechanisms favoring an isotonic solution of 15-18% glucose polymers/ maltodextrins enhanced with electrolytes--so as to prevent negative hypertonic solution influence--appear obvious from the literature reviewed. Since it has been observed that simple sugar solutions elevate osmolar pressures above body fluid levels [280-303 mOsm] significantly, their inefficient absorption rate occurs in endurance events where an athlete consumes too much volume or concentrated (> 8%) simple-sugared solution in order to resolve thirst, fatigue, or electrolyte depletion. While the same negative events may potentially occur when too much glucose polymer [complex carbohydrate] solution is ingested, it appears less likely simply due to the favorable isotonic properties of long chain carbohydrates, which again are absorbed immediately in solution concentrations of 15-18%."

In addition to the above-listed articles regarding fructose/HFCS, the following research-based articles of Dr. Misner's accurately and responsibly defend our "no simple sugars" position:

"Carbohydrates 101- The Why's, When's, & What's..."
<http://www.hammernutrition.com/za/HNT?PAGE=ARTICLE&ARTICLE.ID=294>

"Osmolality Review: the biochemistry of fuels absorption"
<http://www.hammernutrition.com/za/>

see ARTICLE on page 22

HNT?PAGE=ARTICLE&ARTICLE.ID=297

Dr. Bill responds

Steve Born presents an excellent argument to the misinformation reported by Fitzgerald's article advising use of simple processed sugars for fueling endurance exercise.

In my opinion, Fitzgerald's article wrests and twists known truths to fit his own square peg-round hole philosophical mutter. He states known truths but diverts to making inaccurate statements, avoiding consequences of simple sugar overdose, which many of us have been forced to learn the hard way! Statements below I, II, and III are known "givens"; however number III distorts givens, requiring an amending addendum, while number IV is completely errant: see Scarpace et al., [1].

Given I: During high blood sugar turnover, simple sugars @ 6-8% in solution do resolve endurance aerobic energy production, while much larger percentages of complex carbohydrates are metabolized to between 10-18% solution absorption.

Given II: More calories are absorbed from complex carbohydrates than simple sugars.

Given III [from Matt Fitzgerald]: "During intense exercise the only thing that will cause your blood glucose level to decrease is depleting your liver glycogen reserves, which will only happen faster if you fail to consume enough sugar or misguidedly consume 'long-lasting complex carbohydrates' for steady energy'."

Addendum to Given III [Fitzgerald Statement]: Once an athlete exceeds calorie intake above 8% from simple sugars during intense and especially heat-stress endurance exercise, an increased risk of hyperosmolar pressures occur in the gut. This halts absorption of sugar drinks, causing the body to deplete liver glycogen reserves, resulting in a premature bonk, gastrointestinal distress, and muscle cramps, due-to in Fitzgerald's own words "reactive hypoglycemia."

Fitzgerald IV Errant Statement:

"With respect to sports drinks... are designed to enhance exercise performance, and research has clearly shown that HFCS is as effective as other sugars in this regard."

Correction IV Fitzgerald Statement:

Research links high fructose corn syrup to obesity, diabetes, and leptin resistance. (High fructose excess does NOT result from natural fruit consumption). High dietary fructose consumption has been shown to elevate triglycerides and impair transport of the hormone leptin across the blood brain, according to Philip Scarpace [1] who stated: "The presence of high fructose alters the way leptin works, fooling the brain so that it ignores leptin." HFCS (in effect) fails to turn off our appetite causing unabated consumption of more simple sugar than can be absorbed, resulting in gastrointestinal stress, malabsorption of gut calories, elevated triglycerides, depletion of liver glycogen, and delayed calorie absorption, with predictable performance failure.

REFERENCE:

[1] Scarpace P. J. et al., Fructose-induced leptin resistance exacerbates weight gain in response to subsequent high-fat feeding. American Journal of Physiology – Regulatory, Integrative and Comparative Physiology Published online ahead of print, doi:10.1152/ajpregu.00195.2008

Summary

It is disturbing, yet not terribly surprising, that so many so-called "experts" are still promoting the use of simple sugars as an acceptable energy source for enhancing exercise performance. For over 20 years, Hammer Nutrition has vehemently opposed the use of these one- or two-chain sugars and we will continue to do so. A plethora of articles on the Hammer Nutrition website—all science based and referenced—provide undeniable evidence that complex carbohydrates are your best choice, your only choice actually, if the goal is enhanced performance during exercise. **HN**

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"As a coach who works with over 50 athletes, I always recommend that they try Hammer." Kimberly S.

HOT TIP: TAKE MORE VITAMIN D3, ESPECIALLY DURING THE WINTER MONTHS!

Based on an ever-growing body of research, an increase in vitamin D has been shown to be beneficial for a tremendous variety of health issues, far too many to list here. One recent study (of many) shows that the dose required to achieve a healthy blood level of vitamin D is 1,000 – 3,000 IU per day in the absence of sun exposure.

Here are but a few of the health disorders that adequate amounts of vitamin D help protect against:

- Various forms of cancer including breast, prostate and colon cancer
- Fractures
- Hypertension
- Heart Disease
- Pain and Muscle Aches
- Insulin Resistance
- Osteoporosis
- Decreased immunity and lowered resistance to influenza and viruses
- Depression
- Seasonal Affective Disorder (SAD)

While all are important, it's the latter three that come into play the most during this time of the year, a time when sun exposure for many of us is minimal. Vitamin D supplements are a very inexpensive way to ensure that you're obtaining enough of this multi-beneficial vitamin. Therefore, we suggest 1000 – 3000 IU of vitamin D3 (cholecalciferol) daily, in divided doses. The cholecalciferol form of vitamin D is what the body manufactures via sunlight, and the form most efficient for the body's needs.

NOTE: Premium Insurance Caps contains 500 IU of vitamin D3 (cholecalciferol) per 7-capsule dose.

REFERENCES available upon request

Last chance to spend a week in the sun with Hammer Nutrition!

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Join Brian Frank and Jim Bruskewitz for a once in a lifetime experience. A great way to enter the season with greater confidence, this camp's structured format is centered on one-on-one coaching, nutrition/fueling/supplementation guidance, goal refinement, and objective evaluations.



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Ben Parsons - 24 Hours of Moab.

2009 24 HOURS OF MOAB

BY DUSTIN PHILLIPS

On October 17th, 2009 I found myself in an all-to-familiar place at this point in my racing career (if you can call it that). The place in which my fitness is a ghost of what it once was. To make matters worse for me, I had the opportunity to recruit some of the best mountain bikers in the state and knew I was going to be riding over my head again!

But this didn't matter; I was committed and there with riders who were hungry for a good result, so I already knew it would hurt and the race hadn't even started. Worse yet, Moab has a reputation for being nasty in both weather and in the riding.

Saturday morning dawned and the atmosphere at the race venue was at a high level of intensity with national titles on the line and most importantly bragging rights. I had my arsenal of supplements in front of me and the Hammer tent was buzzing with last minute support-seeking riders asking what Hammer had brought because they forgot their fuel or simply just knew that it's the best possible product for this type of event. It didn't take long for the word to get out that we were there with samples and people began coming by in droves in both a state of panic and a state of gratitude; it was fun!

At 12 noon, the gun went off and our lead out Ben "the Rocket" Parsons, got us in the mix right away. His first lap put us somewhere in the top ten overall and 3rd in the 4-person team division. From there it was on as Phil "the Assassin" Grove kept us fighting for the next eight hours of racing. We were 15 seconds out of 1st and 12 minutes in front of 3rd and then night fell.

The first of the night laps became my responsibility and I faltered. I struggled with my light and then blew some of the fast lines and ended up riding more in the sand. On top of this I lost my baton....this was the worst lap for the team, plus the addition of a time penalty, and it was on my lap. I let the boys down! This seemed to disrupt our momentum a bit because for the next few laps we lost time to the leaders and they were able to gap us; this turned out to be something we could never make up. The night portion on this 24-hour race was more important than I had anticipated since it literally made up half the race.

As dawn was breaking, the spirits of

the team were more than a little down! We were low on sleep and simply tired. There was no time to reflect on how tired we were though because Honey Stinger had made a move in the night and they were breathing down our necks. So it was time to beef up the Caffè Latte Perpetuem and Energy Surge and hit the trail. There were also some tactics going on. At this point lack of fitness was clear after 18 hours of racing and with six more to go, we had to make some choices. So I was able to refocus my abilities as pit man and massage therapist, so the riding load fell on the shoulders of the other three riders.

In between each lap I would stretch the riders and work on their low back, then tune the bikes so that they could focus on recovery after each ride. We were keeping a close eye on Honey Stinger as they had closed to within minutes. The sun was out, and after refocusing our tactics and fueling with Perpetuem and Recoverite, the team was putting in some of the fastest laps again out of all the teams after 22 hours of racing.

In the end and after 24 hours of racing, our team of Montana locals powered by Hammer Nutrition stood up to some of the nations best riders and came in 2nd to the best team. We made some small mistakes that we have learned from but our nutrition was right on, never leaving us short on energy. All I have to say for 2010 is that the Hammer boys are hungry to stand on the top step.

How did the rest of our Hammer clients fair? I would say pretty good. Rebecca Rusch and her teammate were the 1st female duo and 3rd overall in the duo category. Troy Barry and his teammate were the overall winners in the duo open division and they were able to stop doing laps by 10:30 a.m. because they had it wrapped up already. In the solo category, the new female star, Eszter Honsnfgla, stayed consistent and rode away with a national championship!

On the next page are race reports from two of my other teammates, recounting their versions of the 2009 24 Hours Moab. Also please take a look at Superhumanmag.com to read Butch Peterson's account of the race for both the solo and 4-man open divisions!
<http://www.superhumanmag.com/content/view/1632/48/>
<http://www.superhumanmag.com/content/view/1635/48/> **HN**

MATT BUTTERFIELD

|| The 24 Hours of Moab National Championship

was the big show this season for me and the boys. After doing 24 Hours Round the Clock in Spokane, I felt like I had a handle on the whole 24 hour thing. But once I rolled up to the race venue in Moab I realized that I needed more than a handle on it, I needed a Kung Fu Grip to battle through this one. Game on!

I've never had the privilege of riding in Moab, let alone racing in Moab, so I knew I was in for a treat. I must say there is quite a contrast of terrain between Northwest Montana and Southern Utah. The rock gardens were manageable and fun, but the momentum-sucking sand sections were a different story all together. If you didn't hit them at the right speed, with the right cadence, you'd be dead in the water and heaven forbid there be anyone within a three foot radius of you flailing through the sand. I was bound to play a little bumper cars with the other racers out on course for 24 hours.

The competition was tight and they meant business. For us, being the new kids on the block meant that we had something to prove. All in all I think we made quite an impression on the people who didn't know what Hammer Nutrition and Montanans were all about, they've now been warned!!!

The vibe at the venue was great; getting to meet tons of new people and giving them the facts about Hammer products was a blast. The people couldn't get enough! When we weren't blowing out laps we were talking with other racers about the different products and how to apply them to a race as grueling as a 24-hour event.

For the category we were racing in, which was the 4-man Pro category, it's

all about the before and after when talking fuel. We averaged around 1:12 laps and did them all over threshold. Trying to fuel during a lap was as simple as drinking the Heed in my bottle, and honestly it was all I had time for. The terrain was hard enough at night to ride with two hands on the bars that I had to pick my bottle pulls pretty wisely. Pre-lap fuel was dialed: a bottle with two scoops of Caffé Latte Perpetuem, 3 Race Caps, 4 Endurolytes, a gel, and my new favorite – Endurance Amino – all an hour before each lap and then I was ready to go. After a lap I'd go right for a bottle with a scoop of Recoverite, eat a Hammer Bar, and then make a clean, light sandwich. I came up with my own race recipe at 24 Hours in Spokane after years of using Hammer products. I based it around the fact that my stomach likes to race with a predictable routine of fuel. Veering off my plan usually leads to the oh-so-glamorous puking on the side of the trail at 3 a.m. or dressing up as Bonkers the clown for a whole lap and riding backwards. On my last couple of laps I had to pull in a little extra help from some hot coffee and Energy Surge to counter the fatigue that was setting in from lack of sleep. My legs were getting tattered from all of the abuse but it worked and I was able to have a good lap when we needed it the most.

The beauty to racing on a 4-man team is that you have a full three hours to recover and refuel before the next effort; there's no need to feel like you have to slam your Recoverite in ten seconds or inhale your Hammer Bar. Instead, you get to breathe, take some time, wind down, make good fueling decisions, and then start preparing for the next effort. Oh...there is that part about flying past everyone like they're standing still that makes 4-man even more fun.... at least for your ego, ha!

Moab was a remarkable experience and it couldn't have happened without having all of the right ingredients; good legs, good friends, and good fuel. Thanks Hammer! ||



Phil Grove, Dustin Phillips, Ben Parsons and Matt Butterfield celebrate their 2nd place finish at the 24 Hours of Moab.

PHIL GROVE

|| First I need to give a huge thank you to Hammer Nutrition for sending me and my buds to Moab this October. 24-hour

racing is something that I've always wanted to do, but until now, haven't had the chance. As most mountain bikers will tell you right now, the sponsorship climate is perhaps worse than Wall Street. So to this point my season has mostly consisted of training ridiculously hard just to be the local honcho. Not that there's anything wrong with that; racing locally is all the rage right now, but given the chance to race in the desert, I couldn't let my good form pass!

We arrived in Moab to temperatures at least 40 degrees warmer than the Flathead Valley where our journey began. We were all super pumped to show this makeshift city in the desert that we ride like wolves. Ben Parsons was selected as our Le Mans start guy because he has huge lungs. After 1,000 racers ran round the juniper bush and the dust had settled, our man Ben was in third place! It was a sea of mountain bikers, like nothing I had seen since a month earlier at the Single Speed World Championships. Everyone rode the first few laps like it was their last, maybe even ruining their late race speed

just to prove a point. Running the 4-man class is great because you needn't worry about falling apart. Just ride like hell every chance you get! At sundown we were tied, yes tied, for 1st in class and 1st overall. Things couldn't get any more cryptic.

Our squad was all fairly new to 24-hour racing, with two of us riding at night for the first time. We dropped some big time to Pro Cycling overnight. We woke up to find Pro Cycling way out in front and Honey Stinger yapping at our heels! This was not good; a loss to Stinger would have serious consequences. I fueled up with the good stuff; I grabbed a handful of all of Hammers' supplements - Endurolytes, Endurance Amino, and Anti-Fatigue - put some Caffé Latte Perpetuem in my bottle and was off. I wouldn't be caught and neither would my teammates. When everyone else was limping home, we were out ripping hot laps in the morning. While we couldn't catch Pro Cycling, a top notch unit out of Colorado Springs, we were stoked that a rag tag bunch of Montanans was 2nd place out of 400 squads! Shout out to Hammer Nutrition for sending the local boys to get the job DONE! ||

FROM THE ARCHIVES

ASK DR. BILL ABOUT CARNOSINE

Q: One of the ingredients in HEED, Sustained Energy, Perpetuem, and Recoverite is carnosine. What is it and why is it included in these fuels?

A: Carnosine is a type of endogenous dipeptide composed of one molecule each of histidine and alanine. In foods, carnosine is found in/derived from animal muscles, namely white meat fiber type, like the white meat in chicken.

Orally supplemented carnosine, which is NOT animal-derived, is very well absorbed (70%). Vegans typically lack carnosine and its anti-glycation AGE effects, along with folate and B-12, plus several other B vitamins.

Excess lactic acid accumulation during prolonged or intense exercise creates premature fatigue, reduced circulation, increased muscle soreness & inflammation, and mitochondrial electron transfer insufficiency, eventually resulting in inefficient muscle torque output. The human body reduces up to 90% of exercise-induced acidic-pH accumulates in muscle tissues by recruiting substrate solutes from phosphates or carnosine. Carnosine functions primarily to buffer lactate buildup in muscle structures.

Carnosine has many other dynamically beneficial properties, as described below.

ANTI-AGING

Carnosine retards some aspects of the aging process (specifically it maintains the defense mechanisms of fibroblasts, inhibits cross-linking, and improves the efficiency of the synthesis of endogenous proteins). The body's levels of carnosine

decline by up to 63% in tandem with the progression of the aging process. Carnosine possesses life extension properties (in mice it has extended life span by an average of 20%). Carnosine rejuvenates cells that have reached their Hayflick limit (causing the senescent phenotype of old cells that have reached their Hayflick limit to revert to their juvenile phenotype state). This is one of the mechanisms for the life extension properties of carnosine.

CARDIOVASCULAR

Carnosine helps to prevent (chemical-induced) hemolytic anemia (by stabilizing the cell membranes of red blood cells). Carnosine helps to prevent abnormal blood clotting (by reducing platelet aggregation). Carnosine (if consumed prior to the occurrence of a stroke) helps to prolong survival in persons who experience an ischemic stroke (due to its ability to protect the brain against the toxic effects of ischemia).

ANTIOXIDANT/ENHANCED RECOVERY EFFECTS

Carnosine functions as an antioxidant in cell membranes and prevents lipid peroxidation within cell membranes. Carnosine protects chromosomes from the toxic effects of exposure to excessive oxygen. Carnosine helps to protect proteasomes from age-related damage and enhances their ability to undertake proteolysis (the directed degradation/digestion of proteins by cellular enzymes called proteases or by intramolecular digestion).

DIGESTION

Carnosine helps to prevent gastric ulcers

and accelerates the healing of gastric ulcers.

IMMUNE SYSTEM

- Carnosine helps to prevent cancer and may facilitate the regression of some types of cancer (it inhibits the process of glycolysis in cancer cells – cancer cells are highly dependent upon glycolysis to meet their requirement for the energy that helps them to grow and replicate).
- Carnosine (especially when used concurrently with vitamin E) helps to prevent breast cancer.
- Carnosine: activates B-Lymphocytes, increases the production of Interleukin-1 by neutrophils, enhances the function of neutrophils, activates T-Lymphocytes, and reduces inflammation.
- Carnosine quenches hydroxyl free radicals, peroxy free radicals, singlet oxygen free radicals, and superoxide free radicals, preventing the cross-linking of endogenous proteins and blocks the production of Advanced Glycosylation End-Products (AGEs) and carbonylated proteins that are formed as a result of cross-linking.
- Carnosine interacts with and deactivates various aldehydes and ketones that initiate the process of cross-linking and which initiate the formation of Advanced Glycosylation End-Products (AGEs). In fact, Carnosine reverses pre-existing cross-linking. It binds to already-formed Advanced Glycosylation End-Products (AGEs) and then deactivates them.
- Carnosine further enhances the ability of Macrophages to recognize and eliminate Advanced Glycosylation End-Products (AGEs) and helps protect the Liver from the effects of various toxins (including Carbon Tetrachloride).
- Carnosine protects the brain against the toxic effects of ischemia.

PREVENTS ALZHEIMER'S DISEASE

Carnosine prevents Alzheimer's Disease (by inhibiting the damage caused by amyloid-beta protein). Carnosine blocks and inactivates amyloid-beta protein and prevents the cell damage caused by

see DR. BILL on page 27

"Holy cow, could customer service be any better?!?" - Megan L.

amyloid-beta protein. Carnosine also inhibits the cross-linking of amyloid-beta protein that leads to the formation of the senile plaques in the brains of Alzheimer's Disease patients. Carnosine concentrates in the brain (where it helps to counteract excitotoxicity and the toxic effects of copper and zinc in the brain). It also helps to protect the brain against the toxic effects of ischemia.

SKIN

Carnosine maintains the defense mechanisms of fibroblasts and inhibits oxidative damage to fibroblasts. Carnosine is speculated to be useful for the treatment of Scleroderma (due to its anti-cross-linking properties) and accelerates the healing of wounds and burns. Carnosine (consumed orally or applied topically) helps to prevent and reverse wrinkles (by preventing and

reversing the cross-linking of the skin that leads to wrinkles).

COMMENT: Carnosine may not only help athletes lengthen lifespan, it also may lengthen performance. Carnosine is a prime exogenous example of a specific metabolite that not only may prevent or resolve certain disease disorders, but is also a dynamic muscle-buffering metabolite, contributing to physiological performance efficiency in endurance events.

NOTE: The following Hammer Nutrition products contain carnosine:

- HEED – 50 mg per scoop
- Sustained Energy – 33.3 mg per scoop
- Perpetuem – 50 mg per scoop
- Recoverite – 30 mg per scoop

HN

"Recently, I lost some weight and cut out a lot of carbs, but when I began training for a marathon, I used the same sugar-filled fuels as I did before I lost the weight, and felt awful. My stomach was in knots, the only energy I had was to run to the nearest bathroom. A friend mentioned Hammer Nutrition. I was skeptical, but I tried it and loved it. I do not have any stomach issues, and I feel energized even after long runs. Wow, this type of nutrition has helped me transform from a very slow back of the pack runner, to a middle of the pack runner.

Thanks for the nutrition help, and most of all, the confidence help."

- Leslie

2010 SHIPPING RATES: SAVING YOU MONEY AND MAKING THINGS SIMPLER

As has been our policy right from the start, unlike many other companies, we do not attempt to make a profit on shipping charges. Now we're going above and beyond that commitment, making things simpler for you when it comes to shipping and saving you even more money at the same time!

Here were the OLD Ground Shipping rates:

Order Amount	Shipping Charges
\$0 to \$49	\$8
\$50 to \$99	\$9
\$100 to \$149	\$10
\$150 to \$249	\$11
\$250+	FREE

Here are the NEW Ground Shipping rates:

Order Amount	Shipping Charges
\$0 to \$39.99	\$4.95
\$40 to \$99.99	\$7.95
\$100+ FREE	

As you can see, these are significant savings for you across the board, especially when you order \$100.00 or more! (Originally you had to order \$250 or more to receive free shipping). We will, of course, continue to offer 3-day, 2-day, and overnight service and we'll continue to use the FedEx published rates for orders being sent via any of these expedited methods. However, now when you choose ground shipping (i.e. FedEx Ground) you'll save even more money than before!

PREMIUM INSURANCE CAPS GETS A FACELIFT!

BY STEVE BORN

You've heard that saying "If it ain't broke, don't fix it." Well, most often that's true, but we kind of bent the rules a bit when reformulating Premium Insurance Caps. Not that there was anything wrong at all with the current formula; we just believe we've made a great product even better. Here's what we've done:

- 1. Removed the amino acid content in the product.** Yes, having these aminos in the product was nice, but the amounts weren't really high enough—especially when compared to what you receive in Hammer Whey, Hammer Soy, or Recoverite—to have a truly significant impact. Removing the amino acid profile allowed for a bit more room in each of the capsules for the inclusion of higher amounts of a couple of currently-included nutrients and the inclusion of a specific new nutrient, both of which I'll discuss in a moment.
- 2. Removed the following nutrients – lecithin, royal jelly, chlorophyll, ginger, Ginkgo biloba, alfalfa, and spirulina.** These are all fine nutrients, which provide a number of health benefits. However, some of them are already included in significantly higher amounts in other products, such as the Ginkgo biloba, which is contained in Super Antioxidant, the lecithin, which is found in any soy-containing Hammer Nutrition fuel, and the chlorophyll, which is found in Phytomax. Also, the amount of each of these nutrients on a per-capsule basis in Premium Insurance Caps was determined to be not as sufficient as they could be. However, because we had other plans in mind,

and because many of these nutrients already occurred in other Hammer products, we decided to remove them instead of increase the amounts. Doing so gave us more room in each capsule, which allowed us to do the following:

- 3. Increase the amount of elemental calcium and elemental magnesium.** The updated Premium Insurance Caps formula now contains 400 mg of elemental calcium per seven capsules (increased from 250 mg), and 200 mg of elemental magnesium per seven capsules (increased from 125 mg).
- 4. Added 50 mg of quercetin per capsule (350 mg per 7-capsule dose) –** This is perhaps the most significant change we've made in the product and I discuss some of the many benefits of quercetin in another article in this issue of Endurance News.

Everything else in the Premium Insurance Caps formula remains the same. One thing you may or may not have noticed (because

it occurred awhile ago) is that we had increased the amount of vitamin D in a 7-capsule dose. The older formula contained 200 IU per seven capsules, but the latest versions of the product now contain 500 IU per seven capsules. Vitamin D is arguably the most talked about nutrient in terms of the plethora of health benefits that it can provide (quite frankly, books could be written about all of the recently discovered benefits of this humble little vitamin), so increasing the amount of D in Premium Insurance Caps was a no-brainer.

One other thing to note: We are already out of—or soon will be—the 7-capsule cellophane packets version of the product. Premium Insurance Caps will now be available in 120-count and 210-count "capsule only" sizes (no individual packets of seven capsules).

The updated Premium Insurance Caps – A great product just got better! **HN**

PREMIUM INSURANCE CAPS

Supplement Facts

Serving Size – 7 capsules

Servings per Container - 30

	Amount	% Daily Value
Vitamin A (as beta-carotene)	12500 IU	250%
Vitamin B1 (as thiamine)	100 mg	6667%
Vitamin B2 (riboflavin)	100 mg	5882%
Vitamin B3 (as niacinimide)	100 mg	500%
Vitamin B6 (as pyridoxine phosphate)	100 mg	5000%
Vitamin B12 (as methylcobalamin)	100 mcg	1,667%
Vitamin C (as calcium ascorbate)	500 mg	833%
Vitamin D3 (as cholecalciferol)	500 IU	125%
Vitamin E (as d-alpha-tocopherol)	400 IU	1333%
Folate (as folacin)	400 mcg	100%
Biotin (as d-biotin)	150 mcg	50%
Pantothenic Acid (as d-calcium-pantothenate)	100 mg	1000%
Calcium (as AAC* and calcium ascorbate)	400 mg	40%
Iodine (as kelp)	112.5 mcg	75%
Magnesium (as AAC*)	200 mg	50%
Zinc (as AAC*)	15 mg	100%
Selenium (as AAC*)	100 mcg	143%
Copper (as AAC*)	1 mg	50%
Manganese (as AAC*)	7.5 mg	375%
Chromium (as Chromemate™)	200 mcg	167%
Potassium (as AAC*)	50 mg	1%
Boron (as AAC*)	2.5 mg	†
Bioperine™	5 mg	†
Pepsin	25 mg	†
Bromelain	25 mg	†
Papain	25 mg	†
Phosphatidyl Serine	50 mg	†
PABA (para-aminobenzoic acid)	100 mg	†
Quercetin	350 mg	†
Phosphatidyl Choline	100 mg	†
Inositol	100 mg	†
Betaine HCL	100 mg	†
Citrus Bioflavonoids	500 mg	†
Enzyme Enhancement System (proprietary blend of protease, amylase, glucoamylase, lipase, cellulase, phytase, maltase, and sucrose)	25 mg	†

Other Ingredients: Plant-based stearic acid, vegetable capsule (plant cellulose, water)

† Daily Values Not Established

* - AAC = Amino Acid Chelate

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PICL	\$31.95
PICS	\$19.95



- Superior overall health support
- Fill nutrient gaps in diet
- More energy throughout entire day
- Better digestion

"I have been using Premium Insurance Caps for 4 years and I don't see how I can do without them. These are the best vitamin supplements I have ever used. My energy level during the day is noticeably higher and they truly aid in the recovery process."

- Cameron H.

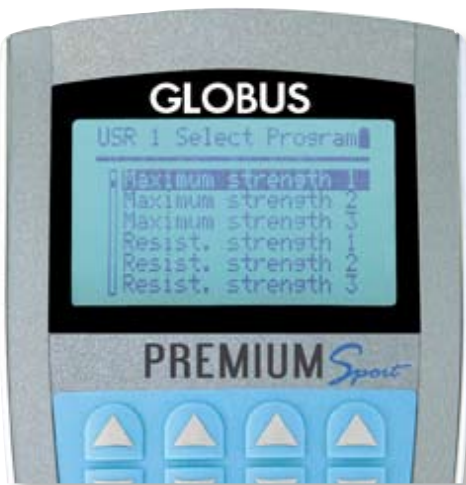


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WANT TO SIZZLE?... WARM UP FIRST

BY JIM BRUSKEWITZ



What is it about exercise? Why do we forgo many of life's other pleasures to workout? It feels good! Maybe we sacrifice a whole bunch of life's other pleasures for years to reach a goal, but I doubt we'd even imagine that goal if the exercise didn't feel great at some point along the way. Today I had a good early morning run before sitting down to write this. What about it was good? It FELT good. Bad workouts and races generally go hand in hand with feeling bad. Drawing on personal experience, I'd say we keep up a regular training schedule in search of another workout that feels great. Maybe success could be measured by the number of workouts that feel great in a month or a season.

So why did my run feel good today? For a lot of reasons no doubt, but I know why the first couple of miles felt better than they might otherwise have felt. I got a terrific warm-up and I used my Globus EMS unit to do it. I don't do this before absolutely every run. Maybe that's why I can say that this run felt better than the other runs that weren't preceded by a Globus EMS warm-up. I have a more traditional warm-up routine prescribed by a talented athletic trainer I work with. That warm-up makes me feel better. However, if I have my Globus unit on hand, I choose to warm up with

an Endurance Prep warm-up program because I feel better than I do when I warm-up in a traditional fashion.

I really appreciate the difference in the way I feel if I use the Globus EMS warm-up before a cycling event too. I notice this most when I want to be "on" right out of the gate. Instead of waiting a few miles to adjust to the high output when the race starts, I'm ready to go right off the bat. The same can be said for a workout when I'm not in top form (usually from a hard workout the previous day). On one of those days when it normally would take 10 to 15 miles before my legs feel ready to go, the day turns into a ride where I can actually get some quality training out of those first 10 to 15. My time is spent more efficiently because my muscles are working more efficiently.

The physiology of a warm-up is well-researched. There are a number of observed changes in the muscle that improve performance:

- A muscular contraction is a cascade of biochemical reactions. Each of the inter-dependent reactions will proceed at a faster rate if the temperature at which the reaction occurs is increased. Normally some blood is shunted away from a working muscle when it is inactive. Blood supply will increase when the muscle is active and this will increase the temperature of the muscle tissue. Expending energy for contracting muscle fibers also produces heat and additionally contributes to increasing the temperature of the muscle tissue.
- A muscle fiber is full of enzymes and organelles that make up a kind of soup. The mixture has colloidal properties and behaves like another familiar colloid, Jell-o. Mix the packet of Jell-o in water and put it in the refrigerator and

it becomes a shimmering, jiggling semi-solid. Take this Jell-o out of the refrigerator and it will return to its liquid state after it has warmed. You can move a finger through the semi-solid Jell-o with a little effort. Moving your finger through the liquid form requires much less effort. A muscle is deformed when it contracts and bunches up. A warm muscle deforms with less effort sparing some of the work done to generate the desired force.

- The oxygen carrying molecules, hemoglobin and myoglobin, will give up their oxygen where needed more easily at higher temperatures. Aerobic energy delivery may proceed at a faster rate.
- Some muscle fibers are reluctant to contract. This is normal even if not desirable when there is work to be done. Some of this reluctance to contract is temporarily removed with a good warm-up. More muscle fibers are available to help develop the desired force from a muscular contraction.

Add up all of these warm-up adaptations and it is no wonder that you and I feel better when initiating a workout after a thorough warm-up.

Why use a Globus EMS warm-up program instead of a different method. There are advantages and disadvantages to traditional warm-up routines when compared to EMS warm-ups. Globus EMS has a variety of warm-up programs to choose from. The advantage is that we can warm-up specifically for different kinds of activity to follow. The different programs target different kinds of muscle fiber types. Simply ask yourself, is the planned activity going to use primarily slow twitch, endurance, or fast twitch, sprint, muscle fibers? The Globus EMS warm-up programs target these different muscle fiber types of your choosing. Which type of warm up do I prefer, Globus EMS or more traditional warm-ups? I like them both, but without question I feel better and "sizzle" more after a Globus EMS warm-up.

Jim is a multiple-time World and National Age Group Triathlon champion, a coach (www.enduranceperformance.com), and former lecturer at UW-Madison-Department of Kinesiology. He recently left teaching at UW to study and teach EMS training.

HN

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- Aerobic Resistance
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- Aerobic Resistance
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- Jogging
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"I am really liking the Globus. It is really amazing after doing hill repeats last night. Normally I would be feeling fatigued in the legs and they would be stiff/tight when walking down stairs. Well, I did another endurance workout on the Globus right after my shower, then did a recovery program. Amazing, my legs felt great last night! Today they have slight soreness (left over from a few days ago), but feel fine. I can't believe I did not discover the benefits of this device a long time ago."

- Paul O.

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Yes, I want to build strength, power, and endurance, and enhance recovery with the Globus model I have chosen. I will use it daily after my conventional training and on rest days. If for any reason I am not 100% satisfied after I have thoroughly tested this device, I can return it for a full, hassle-free refund.

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When you buy a Globus unit from Hammer Nutrition, Globus will extend your warranty from two years to three! One set of 2x2 and one set of 2x4 pads are included in the guarantee. If you use more than one set of each during the trial period and decide to return the unit, you will be billed for the additional pads used.



Bruce Balch celebrates among the top three amateurs at the Amica Sprint Series Triathlon Championships
Photo - Laura Balch



Photo - Laura Balch

Our “spotlight” athlete for this issue is 47-year-old Bruce Balch, a longtime client of Hammer Nutrition. And when I say “longtime” I mean it – his client number is 267 so he’s even more “old school Hammer” than me (I’m client #2971). At any rate, I feel a kind of kinship of sorts with Bruce, simply because we both go back a long, long way with Hammer Nutrition, and because we’ve known company owner, Brian Frank, for such a long time.

Speaking of which, while Bruce and Brian have known each other pretty much from the start of Hammer Nutrition’s existence (then known as E-CAPS), they haven’t always been able to maintain consistent correspondence with each other (which tends to happen to a great many of us due to the everyday demands of life). However, when Bruce recently emailed Brian it re-ignited their relationship, both as friends and athletes.

Bruce’s email was basically a story about where he’s been, the challenges and adversities he’s had to overcome, his faith in God, and how it’s all influenced his life to this day. As Bruce would describe it, the goal in writing the story and sharing it with Brian was to “develop the full circle of our relationship.” Well, after reading Bruce’s story we all agreed he’d be the ideal person to be our “Spotlight Athlete.” However, after I read Bruce’s story—fully ensconced in it the entire time—I thought it best to run it “as is” instead of the usual interview/Q & A format.

I’m hopeful that you will be as touched and inspired by this special person and athlete as I am. I can honestly say that his story has certainly given me “food for thought” in terms

see SPOTLIGHT on page 33

ATHLETE SPOTLIGHT

BRUCE BALCH

SPOTLIGHT from page 32

of priorities. Bruce has been a Hammer guy from the start and still hammers with Hammer to this day.

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I started racing in the multi-sport world in late 1986. I thoroughly enjoyed the sport and the competition. I participated in Ironman Canada in 1988 and qualified for the 1989 Hawaiian Ironman; however, in July of '89 I was diagnosed with testicular cancer, the same cancer Armstrong had, which effectively dashed my Hawaiian Ironman hopes. I was resolved to come back stronger. So, after I completed cancer treatments and with the encouragement of my friends, I entered "The World's Toughest Triathlon" in Lake Tahoe. I finished 11th overall. I raced the next month in Texas, qualifying for the 1990 Ironman Triathlon in Hawaii, fulfilling my dream.

During these early years of my racing, I met Brian Frank. He had a new company and had some awesome products. E-CAPS became an essential part of my supplement program.

I raced extensively from 1986 through 2000. Although I started out with triathlon, I eventually transitioned to bike racing. I enjoyed a lot of success in racing and found it personally satisfying, but the reality was I had a family, an insurance agency, and most important, a relationship with Jesus Christ. Somewhere in the process of fulfilling "my" goals and dreams, racing became the most important thing to me.

One of my best friends was starting a new church called "The Crossing," and he asked me to be part of the launch team. As we were leading up to our first service in September 2000, God had really shown me how my priorities had gotten out of whack. It was at that point that I decided to stop racing and refocus on the important things in life: faith and family. I had let something that was good and healthy become a distracting and destructive force in my life. When I hung the bike up, I figured it would be for a couple of months. It stayed on the hooks for six years. Those were six of the best years of my marriage, and the healthiest for my family. God allowed me to see the importance of being the husband and father.

2006: The bike comes off the hooks. I felt released to get back on the bike, this time with a healthier perspective. As I reconnected with my old racing buddies, I joined the Barry Lasko DDS/Paultracy.com racing team and I started racing my bike again. I was resolved to keep a limited race schedule, making sure that everything else didn't revolve around my racing world.

2007 was a good, strong year but around November I started feeling a bit worn out; it had been a long season. I noticed that my eyesight was diminishing, but just figured that is something that happens at 45. It all seemed like the normal effects of aging. As we started the 2008 race season, I was having trouble finding the old "giddy-up." I was struggling with the shorter time trials and just figured my best days were behind me. Finally, after a spring of racing and struggling to find the old form, I finally felt so bad I went to the doctor. I

wasn't sure what the problem was, but I began to wonder if the cancer had come back, or if it was just a bad case of allergies. My doctor ran a few tests at his office and after seeing the results, he rushed back to the room. He had discovered I had Type 1 diabetes. My blood sugar was so dangerously high, he sent me right away to the ER. That was a Monday; I was home Tuesday and racing in a criterium on Saturday.

I now had to figure out my new "normal", given my condition. As a Type 1 diabetic, I will be dependent on insulin for the rest of my life. I did dust off the running shoes and goggles to start running and swimming, along with the biking as a way to control glucose levels. I even entered a couple of local triathlons for fun. As I was preparing for that first race, another longtime friend gave me some crucial information: He clued me in to the fact that people don't race in Speedos anymore. That truly was a sad day.

With diabetes, fueling is crucial. For most athletes, bonking is just unfortunate, but for a diabetic, it can be fatal. I experimented with different products and sought advice from other Type 1 diabetics, and ultimately, I ended up having the most success with Hammer Nutrition products. With the help of Hammer, in 2009, I have had one of my most fulfilling years on a sporting level. I did some bike racing with my old teammates and I got back into the triathlon scene. I even did a couple of mountain bike races with my son.

I truly had rekindled my love of triathlon in the process of trying to live as healthy a life as possible. I concentrated on the sprint distance primarily because I have difficulty swimming more than 1000 meters and keeping my blood sugar up; plus, training for the shorter events helps minimize the impact on the more important parts of my life: church and family. I competed in nine sprint triathlons in 2009 and came in 1st place in my age group in all of them. I was 1st overall in four of the events. Some of my best weekends came when I won a triathlon on a Saturday and got to play electric bass on the worship team at church on Sunday.

My wife, Laura, and my two kids, Sarah (21), and Tanner (17), have been very supportive. They do understand the benefits of exercise with my diabetes, and they also know I love to compete. Laura and I will sit down as the prospect of a race presents itself. We look at the family calendar and decide if it's ok to race that weekend. If a race conflicts with something more important, I skip the race. I passed on a big race here in Las Vegas this fall to attend a men's retreat for our church with my son. The weekend with my son was priceless.

Some people strive for a balanced life. I contend we are always out of balance to some extent, depending on what season of life we find ourselves. We need to focus on perspective. We need to remind ourselves what is really important. When I reconnected with Brian and with Hammer, I found that they have the same outlook as I do. You can be successful at a sporting or business level, still have a strong faith, love your wife and family, and have a positive influence on those you associate with in your circles of influence. I am very thankful for the opportunity to

see SPOTLIGHT on page 34

represent Hammer Nutrition. I know I am representing more than just a great company with great products. Somewhere in this process we are finding out it's about much more than just us. I love the way my relationship with Brian has come full circle. I am excited to see where God is going to take us from this point forward. I know it is going to be awesome.

What I dig about Hammer Nutrition is the wide range of endurance products that are available. I use HEED on the bike, and I use Hammer Gel before and during my racing and training. I never leave home without a couple of Hammer Gels in my pocket. I finish off my hard days with Recoverite. I also use the Premium Insurance Caps and Super Antioxidant for my daily supplements. I love the Hammer Bars, which I use for between-meal snacks and on long weekend rides. Hammer products give me the confidence to go to the max knowing I am fueled properly. As I look forward to 2010, racing sprint distance triathlons and bike racing with my team, I hope to continue to grow and improve as a Christian athlete, being a positive influence in a competitive world. I may even try to spread that influence at the half ironman distance.

Endurance sport is challenging on many levels. It is inherently selfish. Sharing successes with the ones you love makes sharing the failures easier. Having athletic success is not a bad thing unless it becomes the only thing. Your family and friends love you for who you are, not for the things you accomplish. While my wife actually enjoys it when I am at home, this time around we know we have been given a chance to race and to share

God's love and we shouldn't miss these opportunities. My hope is that I am different - offering a kind word of encouragement out there on the race course, passing or being passed, and at the end of the day I have grown from this experience. I love to race, and winning is a blast, but I have discovered that the real joy isn't found at the finish line. What I am finding out is it's the relationships that you develop during your journey that are most important. While I have been blessed with a lifetime of friendships, my relationship with Jesus Christ is foremost, and it's that relationship that gives me a greater capacity to love others. Be blessed and be safe.

Matthew 16:26 – What good will it be for a man if he gains the whole world, yet forfeits his soul? **HN**

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Bruce's recent tri stats

2009 Triathlon Results:

Showdown at Sundown Sprint Tri	4th overall	1st 45-49
Rage Triathlon/Sprint	3rd overall	1st 45-49
Xterra Triathlon/Sprint	3rd overall	1st 45-49
St George Triathlon/Sprint	1st overall	
USG Triathlon/Sprint	1st overall	
Lowery Splash & Dash	4th overall	1st 45-49
AMICA Sprint Tri Series LV	1st overall	
Kokopelli Triathlon/Sprint	1st overall	
Pumkinman Triathlon/Sprint	2nd overall	1st 45-49
Amica Sprint Tri Championship	2nd overall	1st 45-49

2008 USAT All American

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"Some people strive for a balanced life. I contend we are always out of balance to some extent, depending on what season of life we find ourselves. We need to focus on perspective."



Bruce Balch prepares for the bike portion of the Amica Sprint Series Triathlon Championships. Photo - Laura Balch

LIQUID ENDURANCE NO LONGER AVAILABLE

BY STEVE BORN

Due to recently updated World Anti-Doping Agency (WADA) codes, glycerol—the primary component in Liquid Endurance—is now prohibited. The rationale for banning this substance is because, while glycerol is a natural metabolite generated both from exogenous & endogenous sources, WADA considers it to be a plasma expander, thus making it a possible drug-masking agent.

Glycerol is a precursor during synthesis of triacylglycerols (a glyceride in which the glycerol is esterified with three fatty acids) and phospholipids (fat derivatives in which one fatty acid has been replaced

by a phosphate group and one of several nitrogen-containing molecules) in the liver and adipose tissue. When the body uses stored fat as a source of energy, glycerol and fatty acids are released into the bloodstream. The glycerol component can be converted to glucose by the liver and provides energy for cellular metabolism.

Glycerol is the primary component in the Liquid Endurance formula. It is a physiologically well-tolerated, naturally produced metabolite of fatty-acid oxidation. The reason why glycerol loading works so well is that it absorbs rapidly when taken with water

or sports drinks, increasing the water content in blood, cells, and extracellular spaces. All three of these compartments contribute to sweat volume, resulting in a significant increase in cooling efficiency during prolonged exercise. Glycerol is metabolized by the cells into a substance called dihydroxyacetone phosphate, which is a normal metabolic by-product found in the glucose-for-energy pathway. Glycerol also has an important role in the absorption of l-carnitine, another component in the Liquid Endurance formula.

We are saddened to hear of WADA's decision to ban glycerol, especially without setting specific upper-level measurable limits as has been done with caffeine, another substance that is banned when limits exceed WADA standards. However, our products must comply with WADA standards; therefore, Liquid Endurance—Hammer Nutrition's heat tolerance formula—will no longer be available.

For more information about the 2010 WADA list of prohibited substances, please go to www.wada-ama.org/rtecontent/document/2010_Prohibited_List_FINAL_EN_Web.pdf **HN**



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"I tried HEED on my run yesterday, and I felt like a Superhero!" - Matthew S.



TRAINING SPECIFICITY: WHO NEEDS IT?

BY CHRIS KOSTMAN

While training for the 3,127 mile 1987 Race Across America (RAAM), I ignored conventional wisdom by specifically avoiding major mileage in my training. In fact, only five times in the eight months prior to the transcontinental race did I ride 100 miles or further. Meanwhile, my colleagues were churning out the miles like there was no tomorrow, eventually building up to weekly 24 hour training rides and weekly totals of up to 1,000 miles. I would never train like they do, though, because training specificity may lead one in a million Olympic hopefuls to a gold medal, but it leads the rest of us in the real world to boredom, discontent with our sport, and sub-par performances.

The moral of this story? If you want to improve as a cyclist, utilize on-bike cross-training by dabbling in, training for, and competing in cycling disciplines and events totally removed from your primary focus. Diversity

equals excellence in both a cumulative and activity-specific sense. This system worked for me: I beat the one-in-three odds for finishing RAAM as a rookie, placed 9th, and at age 20, went down in the books as the race's youngest ever finisher, a distinction I held for 18 years.

My understanding of this does not make me part of cycling's illuminati. I arrived at these conclusions through my frustration with doing the same rides and events year in and year out and from my constant desire to try new things. Also, I had the good fortune to have RAAM '85 winner Jonathan Boyer, the first American to race in the Tour de France, as my mentor. But before he became my mentor, I was the lead Race Official of RAAM '85 and I watched Jonathan for the duration of that race. I quickly realized that he was onto something that the other racers were entirely missing.

Jonathan had done no rides of over 100 miles while in training for the RAAM. His diversified background on the European pro racing scene, coupled with his unparalleled grace and skill on the bike, netted him the first and only rookie men's win in the history of the Race Across America, an effort I watched first hand for nine days. (That same ability yielded Jonathan another solo victory in RAAM at age 50, in 2006.)

The training regimen that I developed for the RAAM '87 included mountain biking, fixed-gear, rollers, tandem riding and racing, bike commuting, USCF racing, and triathlons. I did events in all of the competitive disciplines and my actual non-event training included intervals, speed work, hill work, speedy fartlek-type club riding, "Long Steady Distance" rides, and plenty of just plain old rides. In other words, I really mixed it up (and I still do). Regardless of your focus, you would do well to follow suit. Here's why:

- 1. Strategic adaptability.** Consistently and naturally drawing on your far-flung experience will benefit your riding and racing ability across the board. What you learn in one competitive endeavour will help you in the others.
- 2. Physical adaptability.** You'll ride and race on several totally different bikes, making your body more readily adaptable to changes in position and riding style. This will increase your endurance and comfort levels in everything from touring to time trialing.

see TRAINING on page 37

3. **Mental adaptability.** Like Gumby, you'll be ready for anything. The confidence you'll have on any wheeled steed will make you a formidable and willing competitor.
4. **Superior bike-handling skills.** Tandems, track bikes, mountain bikes, aero-equipped time trial / triathlon bikes, and bikes on rollers all handle differently. The skills you'll develop to train and race on these different bikes will make you a world class bike handler in your chosen focus, and across the board as well.
5. **Fresh body, mind, and soul.** Training like this makes your cycling experience diversified and exciting. You can't help but love the sport when you experiment with all it has to offer, so you'll avoid the dreaded "train brain." Each new day's cycling will be a rush.
6. **Superior physical development.** The minutely and grossly varied muscular developments and the different cardiovascular benefits that each discipline brings will make you a fitter athlete overall. As a multi-focus cyclist, you'll be fit enough for all kinds of endeavours, on and off the bike.
7. **Cross-train.** Done properly and regularly, this type of diversified approach to cycling will allow you to derive major cross-training benefits without even leaving your favorite sport. So instead of doing leg extensions and leg curls, track race. Instead of leg presses, go mountain biking and do hill repeats. Build your upper body without leaving your bike by taking to the hills or muscling a tandem or track bike. Develop back, neck, glute, and shoulder strength by riding and racing an aeroed-out triathlon or time trial bike.
8. **Travel and hob-knob.** Getting involved with these different disciplines will open up whole new worlds to you. You'll meet totally different breeds of cyclists, learn untold secrets and nuances of the sport, and just get around a whole

lot more. You'll make more friends and cover more ground. Who knows where that can lead?

9. **Etiquette and respect.** You'll develop an etiquette and grace on the bike that is far, far beyond what any one discipline can instill in you. You'll develop a much greater respect for the history and grandeur of the sport as a whole. You'll be more deeply steeped in the traditions and lore of the world on wheels. You'll be a more integral part of something much bigger than you ever imagined.

So, leave the train brain and mono-track lifestyles to the compulsive-obsessives. Instead, have more fun, keep life fresh, and become a superior cyclist through a diversified approach to our wonderful sport. You'll live longer and better, and be more likely to stick with the sport for a lifetime. And those are goals truly worthy of your aspirations!

*Chris Kostman has lived on the endurance path since 1982. Besides competing in races as diverse as the Race Across America, the Triple Ironman, and the 100-mile Iditasport Snowshoe Race, he also organizes endurance events such as the Badwater Ultramarathon and Furnace Creek 508 races, a series of four century rides, a five-day cycling retreat in Death Valley, and the Rough Riders Rally. This is his twelfth article for Endurance News. Learn more at www.adventurecorps.com. **HN***

We are adding even more information to this book!

The 9th edition will be available for purchase in 2010. In the meantime you can view the current version by downloading the FREE PDF!

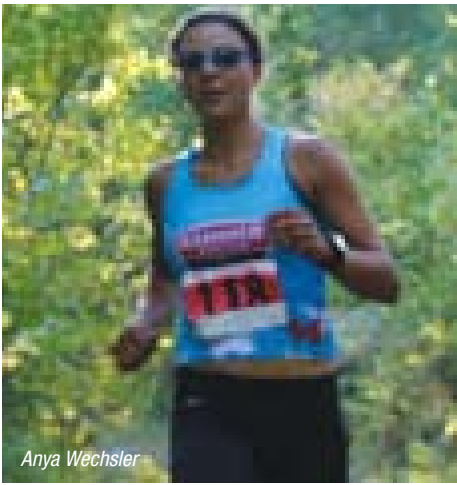
HAMMER NUTRITION

www.hammernutrition.com/guide

"I thought it was about time to let you know what a wonderful thing it was to find Hammer. I have always been an athletic person but about 6 years ago I really started to suffer on bike rides and races. My husband and I enjoy mountain bike racing but I would find that I could not keep up after about 10-15 miles. I was 42 years old and just thought that I did not have the endurance to keep up all of a sudden. I like to race 24hr events but thought it was strange how I would bonk after my second lap. I became scared to ride in races or any ride over 1 1/2 hrs. 2 years ago my husband called your company because I had just been diagnosed with acute hypoglycemia and talked to one of your reps. That person recommended that I take Raspberry Hammer Gel since I cannot have refined sugar or caffeine. I started using it every ride and could go much longer just working on fueling with that. I started using Perpetuem for longer rides along with the Hammer Gel. It made a huge difference in my ability to stay on the bike and ride harder and longer.

Since June 2008 I have been faithfully taking Premium Insurance Caps, Anti-Fatigue Caps, AO Booster, Boron, Chromemate, Endurance Amino, Mito Caps, Phytomax, Race Caps Supreme, Tissue Rejuvenator and Super Antioxidant and I am like a different person. I ride five to six days a week, riding between 30-60 miles each day to train. This past summer I entered a 12-hr race, Norba race, a 24-hr race and the Tahoe 50. I came in first or second in my category on each of those races and I am thankful for Hammer products every time I get on my bike to train or race."

- Tracey D.



Anya Wechsler



Hammer staffer Angela Nock



Scott Gaiser



Hammer staffer Shelley Maassen

HAMMER NUTRITION TWO BEAR MARATHON

BY DUSTIN PHILLIPS

Over the last couple of years I have watched this event in our area really gain a foothold on what will soon be a premiere run in the Northwest, The Hammer Nutrition Two Bear Marathon. In my book this run really has a lot going for it. The timing of the race in Montana couldn't be better. The weather is predictable, the running temperature is perfect, and the setting can't be beat anywhere. For those runners like me who prefer dirt trails instead of pavement, it offers a balanced compromise, of about 1/2 off road and 1/2 on pavement. What more could one ask for?

Hammer Nutrition liked this event so much, in fact, that we have invested in its future, as we have done with so many other events across the country. But this is extra special to us, as we are paying homage to the place in which we live and work, so Hammer Nutrition stepped up the support and became the title sponsor.

So how did our first year of partnering with the Two Bear work out? On the morning of the race the weather was amazing and the racers were hovering around our local coffee brewers getting their morning buzz. Right at 7:30 a.m. the race was off with a not-so-pleasant warm up. You have a one mile hill climb to start off, if the chilly air was too much, by the top of the hill you would be warm. Last year's overall winner started out by making a statement and in the first mile and a half was already running alone with a group of solid contenders about 30 seconds back.

From here, the race weaves in and out of some backcountry lakes that were placid and calm, opposite of the racing that was going on around them. I had a

birds-eye view of the race on this day, as I was deemed the official photographer and these are my training grounds so I was also cutting in and out of the race encouraging the racers (and taunting some friends).

I waited where the race makes the transition from dirt to road and the tactics and flow of the run change as well. I also got a chance to see who was running well and check on some of our local heroes in the race. In the men's field it was almost the same as the start but the chasing group had broken up. Last years race leader was still leading, but local triathlete/high school principal, Scott Gaiser, was at his heels, 15 seconds back with a lot of racing left. Four more runners rolled through, all with in two minutes, so a lot could have happened on the pavement.

I waited there to see how the women's race was unfolding, and I was not disappointed. Last years champion was not defending her title (a close friend of mine) due to a running injury and time constraints. There were some dark horses in the field and really just some unknowns. As the ladies were exiting the woods onto the pavement, girlfriend of Cycling House's Owen Gue and apparent running extraordinaire, Anya Wechsler and another friend, Emily Kipp, were dicing it at the front with the leaders. For the rest of the race my wife and I had the privilege of watching the race unfold through comfort of the camera lens and Hammer van, but could see that it would be exciting. At this point in the race the marathoners began mingling with the half marathoners who started two hours later on the road. This gave me the

Photos - Dustin Phillips

see TWO BEAR on page 39

opportunity to cheer on some of our very own Hammer Staff taking part. Each of them ran a very respectable race and said they had fun doing it. I also got a chance to see how well-received Hammer Nutrition was on course. As the title sponsor we were everywhere, but most importantly we were at the aid stations. With people constantly giving the thumbs up and whoops and hollers, I think I may never race again; I had too much fun spectating.

Back at the front of the race, the marathon leader and eventual winner had made his move around mile 15. He continued to distance himself from Scott but Scott was not giving in and still flashing us smiles when we would offer a word of encouragement. In the end, Markus Lehr stayed strong and eventually won by six minutes, a race well ran. Scott followed in 2nd, along with Michael Bestwick and Mark Tarr, all local runners putting on a show for their family and friends.

The women's race had unfolded in this time; Anya had moved into the lead and was looking as smooth as she did ten miles earlier. Emily Kipp was also consistently moving up through the field and was pressing for 3rd place. Anya was putting some pavement between herself and the rest of the field, while things were heating up for 2nd-4th places. Anya put nearly eight minutes into 2nd place, and as a young runner, one can imagine what her future may hold. Emily had pulled to within 20 seconds of 2nd place (while in a building week for the Portland Marathon). The two Katie's coming in 2nd and 4th made this race one to remember.

At the awards ceremony the Recoverite flowed like water and smiles were abundant. Take away the blisters and sore muscles; I would venture to guess that everyone had a great experience. So if you are looking to incorporate an active vacation, or looking to do a new marathon or maybe even your first, you should look into the Hammer Nutrition Two Bear Marathon. You know it will have the best nutritional support available.

Thanks for reading!
Dustin
HN

"I did it! I qualified for Boston! After 15 years and 34 marathons of trying, I finally qualified! **Hard work, persistence and dedication helped, but Hammer Nutrition products had a lot to do with it.**

All these years, I've continued to use Hammer products exclusively. Now that I'm 64 they seem to help even more as I age. They got me through the 50 miles of the Le Grizz in 2000, through serious mountain climbs at the Baldy Peaks 50K in Southern California in 2003, 34 marathons since 1993, and now, qualifying for Boston 2011 when I'll be 65... I just had to get old enough to finally run the needed time of 4:15.

What motivated me to make a serious qualifying attempt was the strong effort I managed at this year's Hammer Nutrition Two Bear Marathon in Whitefish where HEED, Hammer Gel, Endurolytes, and Anti-Fatigue Caps kept me going for a course PR in my third Two Bear, and a 2nd place age group finish. This encouraged me enough to impulsively enter the Portland Marathon for a Boston qualifier just three weeks after Two Bear. Of course, before and after Two Bear I was also using Recoverite, Super Antioxidant, Xobaline, Tissue Rejuvenator, and Mito Caps during training and recovery, to keep my aging body feeling at least 20 years younger than it is.

I'm convinced that using all the Hammer recovery and supplement products before and after Two Bear and leading up to Portland allowed me to step up to the starting line, ready to run probably my best ever age-graded race (61.88%) and qualify for Boston. I was beginning to wonder if it would ever happen, so I'm pretty excited.

Thanks for creating and providing such outstanding, effective products. I'm a true believer in Hammer Nutrition as an important contributor to a healthy, active lifestyle."

- Gil J.
Coram, MT



HOW STRENGTH TRAINING RESULTS IN FASTER LAP TIMES - PART 1

BY ROBB BEAMS

As a top racer, you need to identify your weaknesses and address these variables specifically.



Tyler Livesay at the MotoE Training Facility.
Photo - RJ Huss / imotoonline.com

There are numerous professional opinions on whether or not strength training should be an instrumental part of a racer's training program. In my opinion, strength training is imperative for the successful racer at multi day races like Loretta Lynn's, Ponca, Lake Whitney and Oak Hill. Overall body strength will help prevent the effects of cumulative fatigue and allow for proper bike position and efficiency on the bike throughout the entire week

of racing. Also, full body strength is a complement to the other elements of a complete performance training program: endurance, flexibility, nutrition and mental preparedness.

Let's take a look at **three direct benefits of strength training** from a physiological stand point and how it relates to motorcycle racing. **First**, it will increase the amount of force your muscles can exert on a particular object. As a racer, moving a motorcycle around that weighs anywhere from one hundred to two hundred plus pounds for any extended period of time requires strength levels above the typical athlete that only has to concern himself with one's body weight. When you add both the weight of the rider, the weight of the motorcycle and the law of physics that exponentially adds resistance to the working muscle, force is a key component for finishing a race as strong as you started.

Second, strength training will permit your muscles to reach a maximum output of force in a shorter period of time. Even if you are not a big fan of science, hang in there with me for this concept. Weight training will increase and facilitate the balance of strength in all working

muscles and the resulting motor units (which include motor nerves and muscle fibers). One nerve impulse can charge hundreds of fibers at once; a rapid series of multiple fiber twitches can generate maximum force quickly and for a long period of time. Weight training will "teach" your nervous system to recruit a wide variety of fibers. As one group of fibers fatigue, another group will be prepared to relieve the fatigued group. Without getting too complex, think about nerves as messengers from the brain which control every physical response. If motor nerves don't "tell" the muscle fibers to twitch, your muscles won't contract. The entire concept behind physical training is to teach your nervous system, with repeating particular muscular movements, to get the correct message to the working muscles. With a diversified strength program, you will initiate a message to include the number of fibers to be recruited, type of fibers used (fast twitch A or slow twitch B) and frequency of contractions. Remember, a diversified training program will recruit all of the fibers and the types of fibers needed for the required physical demands. This is the purpose behind sports specificity and related workout – the more specific the more productive.

Finally, the duration of time your muscles can sustain the level of force before exhaustion is extended. The overload principle is based on the concept of subjecting the muscles to slightly more load levels than it has incurred in the past. With incremental load levels, the muscles will increase the fiber solicitation and corresponding recruitment. With proper rest, the muscles will grow stronger by developing new muscle tissue as an adaptation to the load levels. With increased muscle mass, the muscles are able to exert higher levels of force and for extended periods of time before exhaustion. To capture a better idea of this concept, imagine you have muscles that fall under the category of primary and secondary muscles. The primary muscle groups are the obvious muscles that are responsible for assisting movement. The secondary muscle groups are also referred to as "assistants" for primary movement. However, once the primary muscle groups fatigue, the secondary muscles are required to step up to finish the task at hand. Strength training makes

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this task familiar to the secondary muscle groups at both the muscular and neuromuscular levels.

Three indirect benefits of strength training include stronger tendons and ligaments, greater bone density and enhanced joint range of motion. Concerning tendons and ligaments, weight training will increase the size and overall strength of both which will increase the stability of the joints that they surround. Bone density will increase as a by product of tensile force being placed on the bones – without this tensile force, the bones will actually become brittle and susceptible to breaking. An increased range of motion at the joint is due to the increased

strength and size of the tendons and ligaments. This increased strength will enhance the ease of mobility within the joint due to tendon and ligament strength and resulting efficiency. When you look at all three of these components collectively, they address the concern of every racer: broken bones and torn up joints (particularly knees). Keep in mind that the ultimate goal of the muscles and a self protecting mechanism called the Golgi Apparatus are to keep the bones from being taken outside the normal range of motion. If you have a strong muscular system (accompanied with good flexibility), you will be able to take large impacts without the typical injuries because your body has the proper mechanisms to protect itself.

As a top racer, you need to identify your weaknesses and address these variables specifically. In the next article, we will discuss how to assess your strengths and weaknesses both in the gym and on the motorcycle.

Motoendurance.net is a premium resource center for motocross and supercross riders of all abilities and ages. The website outlines the MotoE Performance Training programs available to racers for 2010 - such as those used with great success by X-Games and 2 time WMA Champion Ashley Fiolek and top amateur Ian Trettel are now being made available to the public on a very limited basis.

Additional resources available include the MotoE Performance Training Facility in Haines City, Florida, eBooks on various human performance elements and online instructional videos. To discuss your current program or have a new one developed for you; feel free to contact Robb Beams at Motoendurance.net or 407.701.7586 directly. HN

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"Hammer products have made a significant change in the way I look at nutrition." - Joe M.



Suzy Degazon at the Ultraman World Championships.
Photo - Michael Lee

RACING IN THE HURT BOX

BY SUZY DEGAZON

Racing in the hurt box is something that I do not advise! I really did believe that I could race a solid event and even do a few personal bests on the bike and run, yet circumstances leading up to my 12th Ultraman Hawaii would prove to be mentally and physically challenging.

It was August and I found myself in a dental chair where the diagnosis was 14 crowns, four root canals, a bridge and two abscessed teeth! The cost would be huge and after factoring in the failing economy, my husband came to the logical conclusion—no Hawaii!

Despite my mental state of trying to find a money sponsor and lack of training due to dental procedures, I never lost the faith and found myself looking out over Kailua-Kona, facing the daunting prospect of a 6.2 mile ocean swim!

I was definitely questioning my sanity by this point and tried to just focus on the positive—I had done this swim 11 times before—I could do this! I began swimming following my kayak support. There was a favorable current and by mile five I was three hours into the swim, then the ocean became choppy and not even a bottle-nosed dolphin could lift my failing spirits! Eighty-five minutes later I was wobbling onto the shore of Keauhou Bay assisted by Al; I had never drunk so much sea water but the good news was that I had finished the swim in 4 hrs 25 mins! I had a lightening fast transition and was soon on my new Cannondale Synapse.

I made the first part of the climb up the King Kam and met my crew, Al and Chuck. I was complaining of a pounding headache and stomach problems; yum, think sea water! I stuck to my plan to keep hydrated and fueled on Perpetuem and Endurolytes. The most important thing was to keep moving forward and stay positive! I was turning the cranks smoothly, then the funniest thing—I saw a zebra! And I immediately started thinking of racing stripes! It gave me a race boost as I pretended to be a race horse! Just as I began feeling better, around mile 40, horrendous headwinds materialized with light rain which would stay with me for 50 miles until I reached the Volcano Campsite. Digging deep into my "hurt box" stomach gurgling my left foot cramping I soldiered on. The last 25 miles was an upward battle. I finally approached the last mile, very cold and cranky! As soon as I passed the finish

line my husband Al was there with my pink Hammer Jacket and a bottle of Recoverite! It was raining and dark... hard to believe I was in Hawaii!

After a restful night at the Volcano House, my crew worked busily preparing me for a 171.4 mile bike ride. I was dressed as if I was in Antarctica! I was frozen! The first 25 miles were downhill and it was wet and slippery so I was taking no chances. I cautiously made my way to the right turn into Pahoa where a crowd of well wishers are cheering on the Ultra athletes. Kind of cool and it lifted my spirit! Approaching the Red Road, I could not help but notice the plume of the active volcano and it made me realize how blessed I was to be a part of such a unique event here in Hawaii. Once on the Red Road, my blessings were QUADRUPLED! I began a 17 mile unaided section which, with its lavish foliage and breathtaking views of lava, surf, and palm trees, helped me forget my aches and pains and focus on the beauty! After connecting with my crew and refueling on Perpetuem and Endurolytes I headed for Hilo. I was getting warm as the sun peeked out so I stopped to take off extra clothing; my left toe was cramping and Al took off my shoe to sprays it with Kool n Fit. I had 71 miles left and felt good so I picked up the pace and started to see other cyclists on the Hamakua coastline. Approaching Wiamea, there was a ten mile climb into the town, and despite the rain, I recognized my surroundings and headed towards the Kohalas. This can be a beast of a climb given the nasty side winds but this day it was in the cyclists favor and before I knew, it I was on the fast, slippery descent of the Kohalas, heading towards the finish chute in Hawi way faster than I was comfortable with! I felt awful yet had a respectable time! I took my Recoverite, my crew got me to my room, we ate pasta, and I was soon relaxing to the deafening rain storm.

After a friendship circle was formed and a triton trumpet blown three times, I start my journey of one mile 52 times in semi darkness. I though "Race your own race Suzy". As no listening devices were allowed, I listened to the patter of my Ravenna shoes, knowing I needed to keep well-hydrated and keep on the gel and water. As the day broke and the sky changed, I looked out towards the ocean and was soon seeing Kawaihae...think

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Elvis Presley Blue Hawaii! After a small uphill towards the Queen K my pacer, Michael, was relieved by Al and I was at mile 26.2. Wow, I was half way there and the sun was warming up the road. I was sprayed with Ocean Potion Sun Care. At the mile marker 82 scenic point I was joined by my friend, Janine. Forty miles into the run, I realized I was in trouble. It was as if my legs were made of lead, I was sweating and having stomach problems. With 12 miles left, I took Perpetuem and was well hydrated. I had been taking regular Hammer Nutrition supplements; my problem this time was that I was racing in the "hurt box", lack of conditioning will do that! But I am as stubborn as a mule, so I kept on moving forward until mile 47 when I started to have issues with vomiting and sweating. I even tried submerging myself into the ice cooler, but when that did not work, my husband took my hand and said we would walk the last 5 miles and that is exactly what we did! So many athletes over took me but I did not care; I just wanted to finish and walked in with my head high! At the Old Airport all of my crew walked with me across the finish line as I broke the tape. I had a smile but my tears of joy and mixed emotions were hidden behind my Rudy Project sunglasses! A crowd of athletes and crews were there to embrace and take photos. Wow, my 12th Ultraman finished in the "hurt box"!

It was a difficult race this year and I dug deeply into the "hurt box". I hope that next year will not be as painful. I am really grateful to ALL of my sponsors: Ocean Potion Sun Care for defraying costs, Hammer Nutrition, Williams Racing Wheels, Polar Monitors, Brooks Running USA, Cannondale, Rudy Project, Serfas, Profile-Design, Kool n Fit, Tri all 3 Sports Cases, Fuelbelt, and most importantly, AVON of Puerto Rico, as with this race I have now raised over \$61,000 for the Breast Cancer Crusade in the last four years!

It would not have been possible without the hospitality of Chuck and friends on the Big Island and my husband, Al. I hope to return next year with a dazzling smile and not race in the "hurt box"! **HN**

"I am a 68 year old triathlete. Using Hammer products this year produced a fantastic result - four races - three first and one second in my age group. More importantly in my key race I dropped one minute off my PR from 18 years ago when I first did this race. I used Recoverite, Race Caps Supreme, Anti-Fatigue Caps and Race Day Boost. In short, I am getting faster as I get older thanks to your products."

- Jim C.



Jim Chapman celebrates his age group win at the Dextro Energy Sprint race with his daughter and her husband.

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NATE'S CORNER

BY NATE LLERANDI

Steve's Note: As is usually the case, I dig through the archives of Nate Llerandi's "Tip of the Week" contributions to the Endurance List to find the material for the "Nate's Corner" section of the newsletter. This particular article dates back six years but the advice is timeless and definitely worth revisiting. After reading it, I'm sure you'll agree that it's also worth adopting.

By the way, if you're not yet a member of the Endurance List forum, you're missing out on a lot of great information via contributions from the Hammer Nutrition staff, a panel of experts (such as Nate Llerandi), and our great list members. It's super easy to join the Endurance List and there's no cost whatsoever. Click on the "HAMMER FORUM" link—found in the left column on the home page of the Hammer Nutrition website—for information on how to become a member.

Skewed Perceptions

I hope you all enjoyed the year-end holidays and are looking forward to a great upcoming year.

OK, by now we all realize (hopefully) that we should be structuring our season training plans to help us peak for our most important races of the year. You want to be 100% fit and ready at that time, not here in January, right?

Along those lines, you must also realize that as you build up your fitness toward your big goal of the upcoming year, your training will also be building up and improving. Just as we cannot race at 100% year round, neither can we train at 100% fitness year round. So many athletes seem to "forget" this pertinent factor.

If you are not ready to perform at 100%, then why do you expect your training to be faster than ever before? "I just ran a 10k and my time was so slow compared

to what I did last July." Well... of course. It should be. It's January! It's cold, you aren't (shouldn't be) doing any race-specific intervals, your body is naturally experiencing a period of hibernation and you're getting back into your routine after a period of down time after your previous season came to an end. So, with all of these factors working against your ability to perform at 100%, why do you expect a PR at a race in January?

Sure, you can compare the same race year-to-year to possibly—**possibly**—gauge your fitness. But even then your performance is affected by weather conditions. One year's Super Bowl Shuffle 5k might be greeted with temps in the 50s while the next year it could be 20 and snowing. You shouldn't expect a better or even similar result in less favorable conditions, but how many of us refuse to cut ourselves that slack? Not too many of us.

Maybe this will help you get through the winter and spring. Think of your training during this period as a slow and gradual progression that holds you over until it is time to turn the screws and get down to business. While it is true that you gain the majority of your fitness during the initial 3-5 months after a prolonged break from training (4+ weeks), you can still view your improvement curve as one that rises gradually now and then spikes in the weeks approaching your most important race(s). That spike is resultant from the addition of race-specific training that sharpens your fitness, smooths the rough edges and brings everything in your program together to a nice, solid peak performance.

Now, that being said, I don't mean that you should simply dawdle along until June. You can't afford to shoot your plan full of holes. But your resolve can be more relaxed and you can cut yourself some slack at this point. If you are too

focused now, then you run the risk of hitting the brick wall called Emotional Burnout just about the time you should be getting excited about what you're trying to accomplish. Bad news when this happens.

Training is the means to the end. If you're training faster than ever before right now, be careful. You may not be leaving yourself anywhere to go but down (meaning slower) when it really comes time to kick things into a higher gear. For those of you who have ever seen "Star Wars", you don't want to be Han Solo attempting to make the jump to light speed in the Millennium Falcon and have your ship's (body's) systems fail. Unlike Han's cry of "It's not my fault!" you would not be able to plead such ignorance.

So, cut yourself some slack! As long as your training is improving during these upcoming months and your plan is on track, then relax and enjoy. **HN**

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FOOD SAFETY, FROM THE GROUND UP

BY RUSSELL LIBBY

If we were trying to design a system to promote food safety, I don't think it would look anything like the legislation that's moving through Congress now. It would focus regulatory attention on the companies that supply most of the food in the country. It would be comprehensive. It would focus on root causes.

That, unfortunately, is not what the debate in Washington has been like this year. So far it's been a one-size-fits-all approach that doesn't recognize the realities of the growing local, organic food system.

For decades, farmers have been

encouraged to either get big enough to compete in national and international commodity markets, or to diversify, add value to their products, and build connections with their customers to survive in so-called specialty markets. The latest US Census of Agriculture only confirms that division, with the so-called 'farmers in the middle' shrinking in numbers while very big farms and very small farms increased.

Now the entire strategy that most of us have built our farms and marketing approaches around is under pressure. Congress, the Food and Drug Administration, and the U.S. Department of Agriculture are all considering food safety approaches that will make it harder for small, diversified, and organic farmers to build viable businesses. And, of course, the irony is that it's all happening because of a series of national and international food safety scandals that were caused by businesses that supposedly already operate under existing food safety laws.

Here are some first steps we can all take:

- Build soil fertility, and rely on that to produce healthy crops
- Talk with our buyers about how our farming systems help to produce safe food. We walk the fields. We harvest the crops. We raise the animals. We follow them all the way to your door.
- Make sure we do a good job. Keep fresh manure away from crops that will be harvested soon (generally, at least 90 days). Use clean water to wash and to irrigate.
- Keep records of what we're doing, where we buy our inputs, where we sell.
- Talk with other farmers about how to do a high quality job.
- Integrate diversity into our farms—birds and bats are major allies in insect control, hedgerows help with pollinators.

To us, all the aspects of a farm—growing, getting ready for market, taking our products to markets that might be made up of individuals we know, chefs we've worked with for decades that ask us to grow special items for them, the store where our brand is an important asset for the retailer as well as us—make up a complex whole. But under the legislation and proposed rules, we become more than farms—we become potential contamination points that need to take more and more steps to prove

see FOOD on page 47



Shanna Armstrong competes as the only American during the 2009 Swiss Olympic Gigathlon. Photo - Donna Kittrell.

ARE YOU READY TO KEEP PACE IN THE NEW DECADE?

BY TONY SCHILLER

Here's a prediction... the next 10 years will be the greatest ever in terms of athletic improvement. In the next decade all age group levels will realize the most unprecedented record setting in history, thanks primarily to technology. Race day equipment will make us faster but the most astonishing advances will come from the sciences. By the year 2020, athletes will make the use of high-tech training devices and protocols derived from laboratory testing as commonplace as using a heart rate

monitor is today.

The challenge each of us will face will be making the right choices and weeding out the rest. I saw a tiny glimpse of the future just last week when the coach of an aspiring professional triathlete asked for my feedback on his star pupil's weakest link, running. Then he fired up video of his athlete running on a treadmill and began to demonstrate his new school software tool. For several minutes he drew lines and his runner's stride while doing side-by-side comparisons to that of stronger runners.

It was pretty impressive and I could see how such technology could be helpful, especially in establishing dated benchmarks and comparing them to future tests. You'd be able to see on a micro scale how specific changes effected stride length and turnover and measure that against actual speed and heart rate. It's a lot of data that used properly can be very helpful to many athletes.

My concern though is that in the rush to use technology to get an edge, many coaches are cloning some perceived notion of a model for proper technique and training. This goes against much of the best time-honored approaches coaches have used to meet the unique needs of very different athletes.

For instance, when my high school coach Jerry Larson first observed my awkward running style, in no time at all he'd traced the problem to my knees being rotated outwardly which caused my clownish toe-out stride. Considering the

huge limitations of my stride, I actually ran fairly fast and that motivated Larson to see me correct it. Using the lines that ran the length of the hallways at school, he instructed me to always walk so the big toe of each foot landed on the center of the line. And for the next 3 years, each time our paths crossed in school, he said, "Point your toes."

For years I hated walking that way, but doing so became almost normal and helped eliminate about 80% of the toe-out problem. The corrections and the resulting improvements brought on by years of retraining my body, almost certainly would never have been realized if Larson had such software like I saw last week and used it with his athletes. It's just hard to imagine how this coach's many unique approaches to teaching stride wouldn't have begun to morph on the computer screen into one or two archetype strides. It's even less likely he would have addressed my needs first from a walking platform. But that's exactly what I needed.

The toe pointing continued into college where my "ah-ha" moment finally happened. It was triggered by, I kid you not, watching John Travolta, walk the sidewalk during the opening scene of Saturday Night Fever. After nearly 5-years of my mostly robotic toe pointing, the sight of Travolta doing it with such ease and flow just blew me away. It was something you felt, not forced. And while Travolta was professionally trained to

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DECADE from page 46

walk that way, he definitely felt it. It was shortly after that I began to feel it too and that's when my times really began to drop.

Last week this entire experience from my formative years flashed back as I watched the young athlete run. He and his coach were looking to find the silver bullet by any means possible, but it seemed to me his biggest gains were going to be made through a lengthy process of retraining his body to move in a more effective way. In fairness to both men, a combination of high-tech tools and old-fashioned repetitive conditioning will probably bring the fastest and biggest gains of all.

The first of two points of this piece are that athletes who love technology and rely heavily on it would be wise to seek advice along the way from old school coaches and mentors. The truth is, a Eddy Merckx could still win the Tour and a young Mark Allen could still win the Ironman, even though neither ever had anything close to the training

advances that exist today. But what they did have was superior mental preparation and unmatched personal habits that are as relevant today as ever before. People like that are all around. Challenge yourself to be a sponge and soak up their wisdom.

The second major point is a warning to all my old-school brethren. We've come a long way relying mostly on the passion that drives us to train and push ourselves to the limit. Those traits will always serve us well but now is the time to also get on board with new advances (like the Globus E-Stim) that can take us further, extend our careers and make our experience that much more satisfying. Don't let comfort, fear or habits keep you from stretching and growing.

Good luck on making the next decade one for the ages.

Tony Schiller is an old-school Hammer customer, using our products since the late '80s to achieve many race wins. By adding one more overall race win somewhere in 2010, he'll join a rare list of people who have recorded overall race wins in 5-straight decades. HN

FOOD from page 45

that our food is safe to eat.

There's a political discussion that will continue to play out in national policy forums. But there's also a discussion that is happening every day in our communities, and it's equally important for us to be involved in that conversation so that we can continue to grow the kinds of food that people around us already want.

Sterility is not the answer. We don't need sterile fields producing sterile food. Our food safety strategy has to be based on producing high quality food, using the best possible growing methods, and talking with the people who eat our food about what we do and how we do it. That is the best food safety system we can create. Meanwhile, MOFGA will continue to be engaged in the national policy discussions, trying to make it clear that we all need to be working towards a comprehensive, reasonable approach to food safety—while FDA, USDA, and Congress should focus on the big problems first.

Russell Libby is the Executive Director for the Maine Organic Farmers and Gardeners Association (MOFGA). Formed in 1971, MOFGA is the oldest and largest state organic organization in the country.

The purpose of the Association is to help farmers and gardeners: grow organic food, fiber and other crops; protect the environment; recycle natural resources; increase local food production; support rural communities; and illuminate for consumers the connection between healthful food and environmentally sound farming practices. More information about this organization can be found at www.mofga.org HN



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Matthew Thompson hammers the course during the Odyssey Trail Running Rampage Marathon. Photo - Jo Thompson

QUERCETIN – MULTI-BENEFICIAL FLAVONOID NOW IN PREMIUM INSURANCE CAPS

BY STEVE BORN

Quercetin (pronounced kware-ceh-tin) is a water-soluble flavonoid typically found in onions, apples, leafy vegetables, and other food sources (see list below). It is probably best known for its anti-histamine/anti-allergic effects, which is why it's found in many allergy-specific supplements, and for its anti-inflammatory properties, which is why it's included in Tissue Rejuvenator.

Quercetin, however, has many other benefits as well, which is why we've

added this powerful nutrient to Premium Insurance Caps, at a robust 50 mg per capsule.

What else does quercetin do?

- Quercetin is a powerful antioxidant, which has been shown to be effective in helping to prevent cardiovascular disease.
- Quercetin helps reduce blood pressure in hypertensive patients.

- Quercetin is being looked at with close interest as a possible cancer-fighting nutrient.
- Quercetin's actions mimic the beneficial effects of calorie restriction, making it a nutrient with possible life extension capabilities.
- Quercetin has anti-viral properties, which helps boost immune system function.
- Quercetin may assist in preventing/combating obesity, via its effects in helping reduce fat tissue growth and development, and reducing the bulk of body fat stores.
- Quercetin appears to increase exercise performance, both in terms of increased VO2Max and stamina. One recent study showed that athletes who supplemented with quercetin had a 3.9 percent increase in VO2max compared to placebo and a 13.9 percent increase in physical stamina when compared to the non-quercetin-supplemented test subjects. More tests are needed, of course, but this study is exciting in terms of the results and their ramifications.

Summary

As you can see, quercetin has many health-benefiting properties, with additional athletic performance benefits just now being revealed. Consuming foods that contain high amounts of this flavonoid, along with daily supplementation of Premium Insurance Caps, is a great way to ensure you receive the multiple benefits that quercetin offers.

Lastly, as far as bioavailability of quercetin is concerned, although a mainstream media news outlet reports that it is "tough for the body to absorb orally," a strong body of research indicates that quercetin is, in fact, readily absorbable and bioavailable (note that bromelain and papain, both of which are contained in Premium Insurance Caps, help increase the absorption of quercetin).

References available upon request. **HN**

Where do I get quercetin in my diet?

Here is a partial list of foods that contain quercetin, the amounts reflected in milligrams (mg) per 100 grams of the particular food:

Apples 25
 Grapes (black) 2.54
 Grapes (red) 3.54
 Grapes (green) 0.87
 Grapefruit 0.5
 Cranberry 14.02
 Black Currants 5.69
 Red Currants 4.95
 Elderberry 42.0
 Lemon (without peel) 2.29
 Limes 0.4
 Lingonberry 12.16
 Pears 0.42
 Plums 1.2
 Raspberry 0.83
 Strawberry 0.65
 Dock 86.2
 Horseradish 0.28
 Lovage (leaves) 170.0
 Parsley 0.33
 Chili (hot green) 16.8
 Perilla Leaves 0.53
 Dill 55.15
 Green Tea (dry leaves) 255.55
 Tarragon 10.0
 Black Tea (dry leaves) 204.66
 Cocoa 20.13
 Chocolate (milk) 0.12
 Onions (white) 30
 Onions (red) 19.93
 Spring Onions 14.24
 Rutabaga 0.08
 Fennel (leaves) 48.8
 Cucumber 0.04
 Kale 7.71
 Kohlrabi 0.4
 Leeks 0.1
 Lettuce (iceberg) 2.47
 Parsnip 0.99
 Green Capsicum 0.65
 Spinach 4.86
 Tomato 0.57
 Turnip Green 0.73
 Watercress 4.0

"Thanks for the great supplements! I have been using them for years now and as the new head cross country coach for St Michael's Academy, I exposed my cross country runners to the products. **Tissue Rejuvenator helped two of my female runners get back into the season.** One with a knee problem, the other with a hip problem. The product helped these two girls take a 3rd and 8th place at our league championships. 6 weeks prior they could not even train! After a strong placing at league by the girls and a good showing by the boys, I knew that in order to make the state championships, we would need a little help from Race Day Boost to keep the legs feeling strong. **I have no doubt that Race Day Boost was a key factor in helping us send 3 freshman to the state championships!** All of my runners PR'd at the District Meet, and a week later my female runner beat her best time from the previous week by almost a full minute at the State Championships!

Thanks for helping to keep our team on our feet and show we are a force to be reckoned with, especially in the next few years!"

- Jason K.



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VITAMIN B6 IN HAMMER NUTRITION PRODUCTS

A CAUSE FOR CONCERN?

BY STEVE BORN

A question we've received a few times has to do with the number of Hammer Nutrition products that contain vitamin B6 (a.k.a. pyridoxine) and the amounts of this particular water-soluble vitamin that are contained in the products.

One client (a doctor) emailed us awhile ago asking, "Why do you put vitamin B6 in almost every one of your products? [High doses of] Vitamin B6 may have, in the case of hypervitaminosis, some toxic effects, like disturbances in coordination and may have the influence on the neurotransmitters (dopamine) effect."

Both Dr. Bill and I replied with the following information, starting with me (Steve)...

Dr. Michael Colgan wrote about this in his book *Optimum Sports Nutrition* [Advanced Research Press]. He writes: "The third nutrient to receive a media thrashing for purported toxicity is vitamin B6. Taken in large amounts (500 mg to 5 grams) for months or years, vitamin B6 does cause severe nerve damage [1, 2]. These huge overdoses are usually self-administered by women who have read popular articles on the use of vitamin B6 to treat premenstrual syndrome."

References:

[1] Anderson TW. *Acta Vitamin Ezymologica* 1977;31:43

[2] Haskell BE. Toxicity of vitamin B6. In: *Effects of Nutrient Excesses and Toxicities in Animals and Man*. Boca Raton, FL: CRC Press, 1978

In her book *The Real Vitamin & Mineral Book* [Avery Publishing Group], Dr. Shari Lieberman (who designed/developed the Optimal Daily Intake standard) writes, "For optimum general health, the basic Optimal Daily Intake for vitamin B6 is 25-300 mg for men and women." Dr. Lieberman suggests dosages for specific conditions such as anxiety (100-

500 mg), asthma (50-300 mg), and emotional or physical stress (100-500 mg). Interesting to note that last one as our clients are certainly in the category of having physical stress or both physical & emotional stress.

As far as toxicity, Dr. Lieberman writes, "B6 in relatively nontoxic, but some problems with the nervous system have been reported. This occurs only with huge doses of 2,000 to 6,000 milligrams of B6 daily, although there are isolated cases of toxicity with smaller doses. These side effects appear to be reversible when the dosage is discontinued."

Additionally, the following text appears in the *International Journal for Vitamin and Nutrition Research* 58 (1988): 105-188 -- "There are many reports stressing the absence of toxic side effects of vitamin B6 at doses up to 500 milligrams. In the strictly scientific sense, no casual relationship between pyridoxine [vitamin B6] and neuropathy has been demonstrated. It would appear that long-term administration of up to 200 milligrams daily may still be considered safe."

Lastly, Dr. Bill wrote the following, which I had on file...

PYRIDOXINE B6 UPPER TOLERABLE INTAKE LEVEL (UL)

"The Food and Nutrition Board of the Institute of Medicine established an upper tolerable intake level (UL) for vitamin B6 of 100 mg per day for adults (Institute of Medicine. Food and Nutrition Board. Dietary Reference Intakes: Thiamin, riboflavin, niacin, vitamin B6, folate, vitamin B12, pantothenic acid, biotin, and choline. National Academy Press. Washington,

see VITAMIN on page 51

VITAMIN from page 50

DC, 1998). In humans, a 100 mg dose will produce a plasma peak in 2-hours with a subsequent half life of 8 hours. Add to this equation, exercise-induced fluid loss of the water soluble vitamin B6 from energy expenditure, there are no toxicity issues with less than 20% of the upper ODA (a.k.a. ODI) therapeutic dose. Toxicity effects associated with Vitamin B6 may begin to manifest in isolated hypersensitive subjects when amounts greater than 500 mg per day are supplemented."

Take a look at that again... A dose of 100 mg peaks in plasma in two hours, with a half life of eight hours. In other words, it doesn't have a terribly long "life span" in the body. Now, take into account vitamin B6 losses both from fluid (urine) and from exercise energy expenditure, and you can see why the Optimal Daily Intake dose is in the range of 100-500 mg, which is why we include 100 mg in every 7-capsule serving of Premium Insurance Caps, and a conservative amount of 6.6 mg in each capsule of Endurolytes.

My (Steve's) position reflects that of Drs. Colgan, Lieberman, and Misner. Vitamin B6 is a water-soluble vitamin, rapidly depleted during times of stress, which exercise most certainly is. In addition to its requirement for over four-dozen enzymatic reactions/processes involving the metabolism of carbohydrates, protein, and fats, adequate amounts of vitamin B6 are required for coenzyme Q10 biosynthesis, CoQ10 being one of the most important substrates for energy production. For athletes, active people, or for those with specific health conditions, such as those Dr. Lieberman lists, I believe the Optimal Daily Intake amounts that Dr. Lieberman suggests are merited.

Dr. Misner followed up my response with this email to the client...

Amongst endurance athletes water-soluble B vitamins especially B1, B2, B3, B6, folate, and B12 are depleted proportionate to caloric expense. I hypothesize that 90% of all endurance athletes are deficient in B vitamins. My research confirms this statement with the subjects whose diets from food alone were analyzed. I would be happy to send you that paper if you indicate an interest.

B6 DEFICIENCY

Too little vitamin B6 or deficiency state occurs in certain subsets of the population. Individuals with a poor quality diet, persons over age 40, or those whose intake contains an inadequate amount of B6 for an extended period may benefit from taking a vitamin B6 supplement. Endurance athletes fit several subsets due to high carbohydrate and body fat calorie expense catabolized during workouts and races. High caloric expenditure during exercise causes significant losses of B6; however, their diet fails to

adequately replace B6, hence the need for supplementation.

HOW MUCH B6 IS TOO MUCH?

Too much vitamin B6 can result in nerve damage to the arms and legs. This neuropathy is usually related to high intake of vitamin B6 from supplements, but it is reversible when supplementation is stopped. According to the Institute of Medicine, "Several reports show sensory neuropathy at doses lower than 500 mg per day" [1]. They established an upper tolerable intake level (UL) for vitamin B6 of 100 mg per day for all adults [1].

RATIONAL CONCLUSION

If 100 mg is a safe upper dose for a sedentary adult requiring 2000 calories per day to maintain lean body mass index, would not 100 mg B6 or more be rational for an endurance athlete requiring 4000 calories per day to maintain lean body mass index?

For further discussion of this question, kindly review "Dietary Supplement Fact Sheet: Vitamin B6" published by the Office of Dietary Supplements [2].

References:

[1] Institute of Medicine. Food and Nutrition Board. Dietary Reference Intakes: Thiamin, riboflavin, niacin, vitamin B6, folate, vitamin B12, pantothenic acid, biotin, and choline. National Academy Press. Washington, DC, 1998.

[2] Office of Dietary Supplements, NIH Clinical Center, National Institutes of Health. "Dietary Supplement Fact Sheet: Vitamin B6" <http://ods.od.nih.gov/factsheets/vitaminb6.asp#en12> **HN**

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NEW DOSAGE RECOMMENDATIONS FOR HAMMER FUELS

BY STEVE BORN

Several years ago, Brian asked me to put together some dosage suggestions for the various Hammer Nutrition fuels based on body weight. In formulating what are the current recommendations, I based them on two primary factors:

1. That, in general (“in general” being the key words here), the liver can return to the energy cycle a caloric amount of 4.0 – slightly over 6.6 calories per minute, or roughly 240-280 calories per hour.
2. That a small percentage of the calories consumed are lost (“burned”) during the digestive process.

However, over the past few years we have found— both from our personal use of the products and from clients’ experiences—that more often than not, less calories are required, especially when using Perpetuem. As a result, we’ve revised our dosage suggestions, which are listed later in this article. These new recommendations will also be listed in the 9th edition of *The Endurance Athlete’s GUIDE to SUCCESS* (when that is finalized), the Product Usage Manual (a.k.a. Little Red Book), various places on the Hammer Nutrition website, and on the labels of specific fuels (primarily Sustained Energy and Perpetuem).

Key things to remember regarding fueling

- A. The goal in fueling is not to try and replace all of the calories your body is burning with equal or near-equal amounts from your fuel. As explained in various articles found in *The Endurance Athlete’s GUIDE to SUCCESS*, on the Hammer Nutrition website, and in back issues of Endurance News, the human body is not equipped to replace “X” out with “X” or “near-X” in. Fortunately, the body has many built-in mechanisms that effectively bridge the gap between what it’s losing and what it can comfortably accept in return from your fuel donation. That’s why your focus should NOT be “How many calories can I consume before I get sick?” but rather, “What is the least amount of calories I need to consume to keep my body doing what I want it to do hour after hour?”

Fueling this way—the “less is best” approach—makes much more sense, if only because a “not enough calories” problem is significantly easier to fix (you simply consume more calories) than an “uh oh, I overdid it on the calories” problem.

- B. During exercise, the average-size athlete’s liver can effectively return 4.0 to slightly over 4.6 calories per minute back to the energy cycle. That’s 240 - 280 calories per hour MAXIMUM for the average-size athlete under normal conditions. However, we have consistently noted that most athletes do well on even fewer calories, so “average size” athletes (approximately 160-165 lbs/approx 72.5-75 kg) should look at that 240 - 280 gauge *only* as a reference point (you’ll notice that our recommendations are even less than those amounts). Of course, larger athletes on occasion may need slightly more calories and lighter athletes will most certainly need fewer calories.
- C. All athletes must be willing to alter their calorie intake in deference to the weather, the terrain, their pace, and any pre-race anxieties they’re experiencing, as all of these things negatively affect optimal digestive system functioning.

With this in mind, here are our suggested dosages for the following Hammer Nutrition fuels. As just mentioned, over the years we have consistently noted that for optimal performance most athletes require far less than the theoretical maximum of 240-280 calories/hour. This is why we recommend starting with the lowest amount suggested, especially if your weight is at the lower end of the scale, and increase the amount of calories you consume if you find it necessary.

Remember, though, that these are just suggestions and that you need to determine, via thorough testing under a variety of conditions, what amounts work best for you.

see DOSAGE on page 53

DOSAGE from page 52

Hammer Gel (90 – 100 calories per serving, depending on flavor)

Suggested Doses by Body Weight:

- 0 - 120 lbs (approx. 54.5 kg) – up to 1 serving/hr. This provides up to 90-100 calories.
- 120-155 lbs (approx. 54.5-70 kg) – 1 to 2 servings/hr. This provides 90-100 to 180-200 calories.
- 155-190 lbs (approx. 70-86 kg) – 2 to 2.5 servings/hr. This provides 180-200 to 225-250 calories.
- 190+ lbs (86+ kg) – up to 3 servings/hr. This provides 270-300 calories.

HEED (105 calories per scoop)

Suggested Doses by Body Weight:

- 0 - 120 lbs (approx. 54.5 kg) – up to 1 scoop/hr. This provides 105 calories.
- 120-155 lbs (approx. 54.5-70 kg) – 1 to 1.5 scoops/hr. This provides 105 to 157.5 calories.
- 155-190 lbs (approx. 70-86 kg) – 2 to 2.5 scoops/hr. This provides 210 to 262.5 calories.
- 190+ lbs (86+ kg) – up to 2.75 scoops/hr. This provides approx. 289 calories.

Sustained Energy (approximately 107 calories per scoop)

Suggested Doses by Body Weight:

- 0 - 120 lbs (approx. 54.5 kg) – up to 1 scoop/hr. This provides 107 calories.

- 120-155 lbs (approx. 54.5-70 kg) - 1 to 1.5 scoops/hr. This provides 107 to 160.5 calories.
- 155-190 lbs (approx. 70-86 kg) – 2 to 2.5 scoops/hr. This provides 214 to 267.5 calories.
- 190+ lbs (86+ kg) – up to 2.75 scoops/hr. This provides approx. 294 calories.

Perpetuem (135 calories per scoop)

Suggested Doses by Body Weight:

- 0 - 120 lbs (approx. 54.5 kg) – up to 3/4 scoop/hr. This provides approx. 101 calories.
- 120-155 lbs (approx. 54.5-70 kg) – 1 scoop/hr. This provides 135 calories
- 155-190 lbs (approx. 70-86 kg) – 1.25 to 1.5 scoops/hr. This provides approx. 169 to 202.5 calories.
- 190+ lbs (86+ kg) – up to 2 scoops/hr. This provides 270 calories.

Special Note on Perpetuem: Due to this being a high concentration calorie source (via its complex carbohydrate, soy protein, and healthy fat components), we have noted that many athletes do well with a substantially lower calorie intake when using Perpetuem as their primary-to-sole fuel. Therefore, with this particular fuel we highly recommend starting with the lowest amount suggested—perhaps even a bit lower—and work your way up to a higher amount, if a higher amount has proved to be necessary via testing in training. **HN**

Hammer Nutrition Fuels Official Kosher Status

We recently received word from our manufacturing facility that the following Hammer Nutrition fuels currently being produced there are officially certified kosher:

Certified Kosher Pareve (defined as “prepared without meat, milk, or their derivatives and therefore permissible to be eaten with both meat and dairy dishes according to dietary laws”)

- Hammer Gel – All flavors
- HEED – All flavors
- Hammer Soy
- Sustained Energy
- Perpetuem – All flavors

Certified Kosher Dairy (basically defined as “no mixing or combination of meat and dairy”)

- Recoverite – All flavors
- Hammer Whey – All flavors

As far as the Hammer Bar is concerned, the almond raisin flavor falls under the Kosher Pareve status, while the cashew coconut chocolate chip and chocolate chip flavors fall under the Kosher Dairy status.

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"Thank you Hammer for making my ride enjoyable and successful!" - John Y.

THE VENERABLE STATIONARY STAND

BY SHANE ALTON EVERSFIELD

Reality Sets In

I lived in Kona when I first got sucked into the “Church of Triathlon.” It wasn’t hard to sing evangelical - I swam in turquoise water, I biked and ran in golden sunshine, and my skin was bronze. By far the most disconcerting thing about returning to the mainland after 13 years was watching my skin turn white. “Yikes! Who is this ghost?”

Yes, things certainly did change when I moved to Lake Placid. I remember the first time I got in a pool. “Aw shucks, this is gonna be a piece a cake - calm water, no currents, top of the food chain again.” Not quite. The lack of buoyancy showed me the value of balancing and streamlining. All of a sudden I was focusing on stroke length, cadence, and interval repeats instead of the coral reef. Now that I regularly visit the Sacred Chlorine Chamber, my swimming has improved substantially.

And then there’s the Venerable Stationary Stand, bane of every road cyclist and triathlete living in temperate climes. Here in Lake Placid, road bikes see nary a ray of sunshine from early November until late May. Heck, we have to supplement our bikes with Vitamin D just to keep ‘em from getting Seasonal Affective Disorder!

However, just as pool swimming has advanced my pursuit of swimming excellence, stationary riding has advanced my pursuit of cycling excellence. In fact, I now conduct all of my high intensity interval sessions on the Venerable Stationary Stand, *even when the weather is perfect outside!* I can control the cadence, resistance and intensity very accurately, without any distractions or disruptions. For refining cycling technique - posture, alignment, riding positions and pedaling biomechanics, nothing beats the simplicity of a basic fluid trainer and a mirror (ideally two mirrors - one in front, one to the side). These simple tools comprise your very own cycling lab. You can focus intently on your relationship with your bike, free from the distractions and dangers of the open road. You can even *close your eyes*. With a little passion, curiosity and diligence, you can avoid “auto-pilot” and get maximum value from your stationary sessions.

Warm-Up

Here’s a great stationary warm-up protocol I’ve developed for Zendurance Cycling Technique. Many injuries are preventable with a patient warm-up. Oh, you don’t have time to warm up? No worries, once your sidelined with injury, you’ll have plenty of time on your hands. I’ve remained virtually injury free for years, through seasons that included multiple races at or exceeding iron-distance with rapid recoveries, even in my 50’s. (Props to Hammer Nutrition too!) I use this warm-up before both my cycling *and running* workouts.

Begin at a very relaxed pace, and ride easily with buttery smooth pedaling. Let the synovial fluid begin to lubricate your joints. *Gradually* allow your cadence to increase as your stroke gets more fluid and relaxed. Maintain “saddle silence”. (See “Zen Fundamentals of Cycling Technique”, published in HNE #62.) After 10 minutes or so, when you can *easily* hold a cadence of 90 in an easy gear, proceed to Yin/Yang Warm-ups.

Yin/Yang Warm-ups

Yang: For a minute or so, pedal at high resistance with *very low cadence*. Align your hips knees, ankles and feet, and keep your body weight in the pedals. After a minute or so, it’s time for **Yin**: Do just the opposite - spin very fast (90+ rpm), at very low resistance. Relax your joints to spin at your limit, remaining silent in the saddle. Alternate these two phases every minute or so, *keeping your intensity at Zone 2 - remember this is a warm-up!* Warm-up with Yin/Yang for 10 minutes or more. (You can make Yin/Yang a whole workout by increasing/ varying the duration and intensity of each phase.) Here is a key part of Yin/Yang: *Do it blind!* Use the mirror initially to verify joint alignment, *then close your eyes*: During the Yang phase, focus on a smooth transition of your weight from the bottom of one pedal stroke to the top of the next. Listen, to your strokes and make the sound as even as possible especially during the weight change, while you keep your core still. During the Yin phase focus on “orbiting your feet”, quickly and lightly “resting” your body weight through the pedals, keeping the sound of your strokes smooth and your core silent in the saddle.

Jumps

After Yin/Yang, do (4-6) 30-second jumps at a high cadence and high resistance where you can still maintain excellent biomechanics. Cadence should be at or above 90. Recover by lowering resistance and spinning until your rate of perceived exertion drops back to Zone 2 (usually 90-120 seconds). Perform these jumps in the rider position(s) you will use for your workout. Spin easy for two minutes or so to finish.

This 20-minute warm-up does more than just warm-up your muscles. It primes your neural system, (maximizing muscle fiber recruitment) and primes your *mindfulness* - two essential elements that will optimize the value of your workout, especially high intensity intervals. High intensity is not simply a balls-to-the-wall shred-fest. It is a fine balance of efficient technique at high output. Finessing this balance takes thorough and patient preparation.

After many years in Kona, my body

see VENERABLE on page 55

whined every time I started yet another triathlon workout. "What!?! Swim-bike-run again!?" Ah, the joys of living in the Great White North! Nordic skate skiing - the perfect winter alternative to cycling! No need for long rides on the indoor trainer. That's reserved for interval training, recovery and intensive technique investigation.

Yup, I'm still an evangelical member of the "Church of Triathlon". Now my supplications on the divine path of endurance include the Venerable Stationary, the Sacred Chlorine Chamber, and the Exquisite Winter Wonderland.

Shane Eversfield, author of the book "Zendurance" and over 30 articles, is Head Coach at Total Immersion Swim Studio Lake Placid. Look for the release of his new book "Triathlon Cycling Technique, Zenman's Guide to Velo-Nirvana" soon. shane@totalimmersion.net 518.837.5300 **HN**

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WAYNE KURTZ CONQUERS THE DECA!

BY STEVE BORN

Longtime Hammer Nutrition client, Wayne Kurtz, of Wexford, PA recently completed what has to be one of the toughest ultra endurance contests ever created – The Deca Ironman World Challenge, which took place from November 9 – 19, 2009 in Monterrey, Mexico.

Kurtz is no stranger to ultra distance triathlon racing, having competed in double, triple, and quadruple iron distance races throughout his career. He's even done a quintuple iron distance race!

The Deca Ironman World Challenge is a significantly greater challenge, however, as the goal of each participant is to complete an iron distance triathlon every day for ten straight days. Think about it – that's a total of 24 miles of swimming, 1120 miles of cycling, and 262 miles of running in ten days... yikes!

What makes the Deca Ironman even more difficult is that the contestants do the same course every single day! As Wayne wrote in the OpenTri.com blog, "One interesting aspect of these races is that they are all 'circuit' courses. It would be very difficult to close down roads, having police for intersections for 20+ hours so the majority of the swimming is done in a pool, the biking and running sections are held on short loops that range from 1.2 miles to 5 miles. It's a very different type of racing and mental

strength like 24 hour running races is crucial for a strong race performance."

As it turned out, Wayne—who was the only American competing in a field of 18 male starters and one female starter—very much had a strong race performance (to say the least!), finishing in 5th place with a cumulative time of 141 hours, 28 minutes, and 28 seconds. Here are his times for each of the ten iron distance triathlons that he completed:

DAY ONE – 13:16:08
DAY TWO – 13:43:29
DAY THREE – 13:47:31
DAY FOUR – 13:53:46
DAY FIVE – 13:45:55
DAY SIX – 13:43:57
DAY SEVEN – 14:18:22
DAY EIGHT – 14:47:11
DAY NINE – 15:33:21
DAY TEN – 14:38:46

Ferenc Szonyi from Hungary won this year's edition of the Deca Ironman World Challenge in a combined time of 114:59:20, breaking the race record by nearly 11 hours. Full results can be found at www.multisport.com.mx/eventos/r10iron.htm.

Congratulations, Wayne, on your remarkable ultra accomplishment!



Photo - Steve Kirby

"I use many of the Hammer products and had another successful year racing with several podium finishes." - Steve C.

PELLE ECCELLENTE

THE PRODUCT YOUR SKIN HAS BEEN WAITING FOR!

BY STEVE BORN

While skin care products are “a dime a dozen” (pardon the cliché), there’s nothing like Pelle Eccellente (Italian for “Excellent Skin”), the newest product in Hammer Nutrition’s body care line.

As Brian described in his welcome letter in the last edition of Endurance News, “My experience with every skin cream up until Pelle Eccellente was the same vicious circle - skin is a bit dry and scaly, I apply cream and my skin feels moist for a few hours or a day at most and then it is even dryer than before until I apply more. So, when Dr. Bill said that he'd developed a skin cream that I'd like and be willing to use, I said ‘show me.’”

“Sure enough, I can apply a small amount to my legs and two or three days later the skin is still moist and soft. Seriously, if you don't use skin creams/moisturizers for the same reason, you've got to try this product. And if you do regularly use these types of products, you've got to try Pelle Eccellente and compare it to your current favorite. I think that you will be highly impressed.”

Look high and low, but you won't find anything like this product anywhere. So give Pelle Eccellente a try. Like Brian, we know you won't want to use anything else!

Take a look at Pelle Eccellente's unique formula and what each ingredient does. It's quite this list, and they're all in there for the sole purpose of giving you excellent skin!

A 1/3-ounce trial size retails for \$3.95.
A 2-ounce tube retails for \$19.95. **HN**



1. OLIVE OIL applied topically is reported to resolve eczema, bruising, heal calluses, and eliminate scalp dandruff.

2. ALMOND OIL applied topically is observed to eliminate both dry skin and dandruff.

3. JOJOBA OIL is readily absorbed by the skin, imparts temporary "velvet" softness, and reduces skin flaking.

4. HOPS [leaf] produces an anti-inflammatory effect.

5. SPEARMINT [leaf] is a skin organ protective barrier agent with an anti-carcinogenic effect.

6. COMFREY [root & leaf] contains Allantoin, which when applied topically, is widely reported to reduce the swelling associated with bruises, insect bites, eczema, psoriasis, and burns.

7. GINGER [root] extract inhibits an enzyme that destroys skin elastin and stimulates blood circulation to the skin.

8. MULLEIN [leaf] is a skin antibiotic with remarkable anti-viral effects to reduce antimicrobial-induced skin irritations.

9. CARNUBA WAX (Copernicia Prunifera) hypoallergenic, moisturizing, emollient properties soften and soothe by reducing dryness and scaling of the skin.

10. PURE BEES WAX is a thickening agent, emulsifier, and humectant (a substance that absorbs or helps another

substance retain moisture) that works synergistically with Carnuba Wax in generating emollient skin soothing softening effects while retaining moisture.

11. PURE ALOE CONCENTRATE [Gel] improves skin appearance by stimulating regeneration of skin cells, heals dry skin, acts as a moisturizer, inhibits inflammation and itching of the skin.

12. SQUALANE is an important protective lipid for the skin.

13. VITAMIN E OIL resolves wrinkles, acne, and eczema, moisturizes dry skin, reduces seborrheic dermatitis.

14. PEPPERMINT OIL resolves the pain associated with neuralgia, headache, and kills herpes simplex viruses.

15. CLOVE OIL applied topically is shown to be a remarkable analgesic agent, aiding in reducing pain.

16. WINTERGREEN OIL is used topically for muscle and joint discomfort, arthritis, cellulite, edema, poor circulation, headache, rheumatism, tendonitis, cramps, inflammation, eczema, psoriasis, and gout.

SONI- PURE BACK BY POPULAR DEMAND!

BY STEVE BORN

Soni-Pure is back and the timing couldn't be better! The reason is simple: Most upper respiratory infections are caused by common aerobic bacteria transmitted by human hands.

Findings from the FDA show that:

- The #1 cause associated with upper respiratory infections is not washing hands.
- The #1 cause for food borne illnesses is overall poor hygiene practice.
- Direct hand touch transmits 80% of common infections.
- The FDA reports 10,000 deaths per year due to the lack of hand washing.

With even more potent strains of viruses and bacteria now present, the need for practicing good personal hygiene—specifically frequent hand washing—is no longer an option, it's a necessity... it's the best way to avoid illness and prevent the spreading of germs. That's why Soni-Pure was introduced and why it's now back in the Hammer Nutrition body care line.

An insufficient amount of interest forced us to discontinue production of Soni-Pure around mid-July of 2008. Since then, however, an overwhelming increase in the desire for an effective hand sanitizer—one that would ideally be both petroleum-free and alcohol-free—gave us the impetus to reintroduce this unique product. And it really is

unique! Soni-Pure is petroleum-free and alcohol-free so it won't dry your skin or expose you to harsh chemicals. What it will do is provide an effective defense against germs and bacteria. In fact, Soni-Pure has been shown to kill aerobic bacteria, yeast, mold, and fungi 100% for up to eight hours... that's right – 8 HOURS! Plus, it doesn't have that awful chemically odor; in fact, Soni-Pure smells downright pleasant!

The Soni-Pure anti-bacterial blend

Tests on the anti-bacterial ingredients in Soni-Pure have been shown to significantly inhibit microbial proliferation on human skin.

Pink Grapefruit Seed Extract is well-known for its broad-spectrum antimicrobial activity, killing or suppressing numerous forms of detrimental bacteria.

Orange Oil has antiseptic and anti-inflammatory properties.

Peppermint Oil has been reported to generate antibacterial effects.

Both **Clove Oil** and **Basil Oil** exhibit antimicrobial effects on the detrimental bacteria *Shigella flexneri*.

Both **Clove Oil** and **Bay Oil** contain Eugenol, an antiviral substance, which has virucidal (destructive to viruses) effects and has even been shown to be effective in inhibiting herpesvirus replication in vitro.

Tea Tree Oil has been shown to

inhibit or kill many detrimental micro-organisms such as *Escherichia coli*, *Mycoplasma pneumoniae*, *Porphyromonas gingivalis*, *Propionibacterium acnes*, *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Streptococcus mutans*, *Streptococcus pyogenes*, Detrimental Fungi on the skin, *Candida albicans*, *Pityrosporum ovale*, *Trichophyton mentagrophytes*, Detrimental Protozoa, *Trichomonas vaginalis*, and Herpes Simplex Virus Type 1-2.

With a potent ingredient list like that it came as no surprise that Soni-Pure inhibited aerobic bacteria proliferation—in an ideal growth-enhancing environment—by a factor of 1000 times. Soni-Pure also inhibited yeast/mold fungus proliferation in an enclosed growth-enhancing environment a factor of 100 times. Needless to say, that's effective!

Soni-Pure is available once again and its powerfully formula is highly effective in reducing the risk of contracting bacterial infections transmitted by human hands to the upper respiratory tract. However, as mentioned earlier, Soni-Pure is petroleum/alcohol-free so it won't dry out your hands.

A 2-ounce foam-dispensing bottle of Soni-Pure retails for \$7.95, a small investment to help defend against germs and bacteria. Once you try it, we know you'll love it (did I mention it smells good too?) and won't ever go back to those harsh, alcohol-based hand sanitizers. **HN**

Body care products with the same uncompromising standards as our fuels and supplements!

	SKU	PRICE
Hammer Balm	BALM	\$21.95
Cool Feet	CF	\$15.95
Pelle Eccellente	PE	\$19.95
Seat Saver	SSV	\$12.95
Soni-Pure	SP	\$9.95



HAMMER NUTRITION 1.800.336.1977 www.hammernutrition.com

HAMMER NUTRITION/ USSSA - PARTNERS AGAIN IN 2010

BY STEVE BORN



We're once again honored to be partnered with the United States Snowshoe Association as the Official Energy Product of the USSSA. We'll be providing product support for the races that make up the 2010 PowerSox U.S. National Snowshoe Championship Series, as well as the 10th Annual United States National Snowshoe Championships. Here's the current 2010 PowerSox U.S. National Snowshoe

Championships Series calendar and for more information about each race, visit www.snowshoeracing.com.

- 1/2/10 – Rib Lake Snowshoe Adventure – Westboro, WI
- 1/9/10 – Swift Skedaddle Snowshoe Race – Silverthorne, CO
- 1/10/10 – Rail Trail Snowshoe Stomp – Park City, UT
- 1/10/10 – Kahtoola Snow or No Snow

- Flagstaff, AZ
- 1/16/10 – Northwoods Snowshoe Champs – Duluth, MN
- 1/17/10 – Mendon Ponds Race – Mendon, NY
- 1/23/10 – Bigfoot Boogie – Traverse City, MI
- 1/24/10 – Jazz Trax Snowshoe Stomp – Bear Valley, CA
- 1/24/10 – White River Snowshoe Race – Mt. Hood, OR
- 1/30/10 – Rumble in the Jungle – Eau Claire, WI
- 1/30/10 – Sidehiller Snowshoe Race – Sandwich, NH
- 2/6/10 – Montana State Snowshoe Champs – Butte, MT
- 2/6/10 – Twin Cities Snowshoe Shuffle – Minneapolis, MN
- 2/7/10 – Northern Vermont Snowshoe Challenge – Smuggler's Notch, VT
- 2/13/10 – Camp Saratoga Snowshoe Race – Wilton, NY
- 2/13/10 – Pennsylvania State Snowshoe Championships – Drums, PA
- 2/13/10 – Love Me Tender Race – Frisco, CO
- 2/14/10 – Auburn Snowshoe Challenge – Donner Summit, CA
- 2/20/10 – Fairbanks Snowshoe Classic – Fairbanks, AK
- 3/5-7/10 – 10th Annual 2010 PowerSox United States National Snowshoe Championships – Syracuse, NY **HN**

PACKAGING MAKEOVER FOR HAMMER NUTRITION BODY CARE PRODUCTS

We're changing the packaging of a couple of the Hammer Nutrition body care products, which will make things easier for you in terms of both application and carrying. Seat Saver will still contain two ounces of product, Hammer Balm one ounce of product, but the contents will now be in a tube instead of a jar.

Having Seat Saver in a tube should not only make it easier for you to apply but also easier for you to carry during exercise – a tube will be significantly less bulky when carried in the pocket

of your jersey or running shorts. Hammer Balm will come in a slightly larger tube than the volume of its contents, a 1.5-ounce size tube, which will allow sufficient room for you to “blend” the components in the product prior to application.

The new Pelle Eccellente skin cream will also be packaged in tube form, while the Cool Feet powder will remain in its original shaker container.

WE'RE "HAMMERING" THE NORDIC SKIING WORLD AGAIN IN 2010

BY STEVE BORN

For the past several years we've been sponsoring Nordic (a.k.a. "cross country") skiing races; our support for the sport has grown annually and it's stronger than ever in 2010. We sponsor a number of events of all distances throughout the country, including the majority of the races in the American Ski Marathon Series (ASM). For 2010, we're excited to announce that HEED is the official drink mix of the American Birkebeiner, the largest (over 7000 participants!), most prestigious cross country ski marathon in North America.

If you're lucky enough to live where winter means snow and you are a Nordic skier, chances are you'll see a Hammer Nutrition presence at one of the major races near you! Here is the list of the ASM races that Hammer Nutrition will be sponsoring. Be sure to check the Hammer website for additional Nordic races that we may be sponsoring in the future.

- 1/23/10 – Pepsi Challenge XC Ski Race – Biwabik, MN
- 1/30/10 – Craftsbury Ski Marathon – Craftsbury Common, VT
- 1/30/10 – Noquemanon Ski Marathon – Marquette, MI
- 2/6/10 – Boulder Mountain Tour – Sun Valley, ID
- 2/6-07/10 – City of Lakes Loppet – Minneapolis, MN
- 2/13-14/10 – North American Vasa – Traverse City, MI
- 2/20/10 – Minnesota Finlandia – Bemidji, MN
- 2/27/10 – American Birkebeiner – Cable/Hayward, WI
- 3/28/10 – California Gold Rush – Soda Springs, CA **HN**

**Nordic skiing
in style!**

Tights and jersey by Louis Garneau

SKI	PRICE
NJ	\$113.95
NT	\$89.95

Size, see website

HAMMER 1.800.336.1977
www.hammernutrition.com

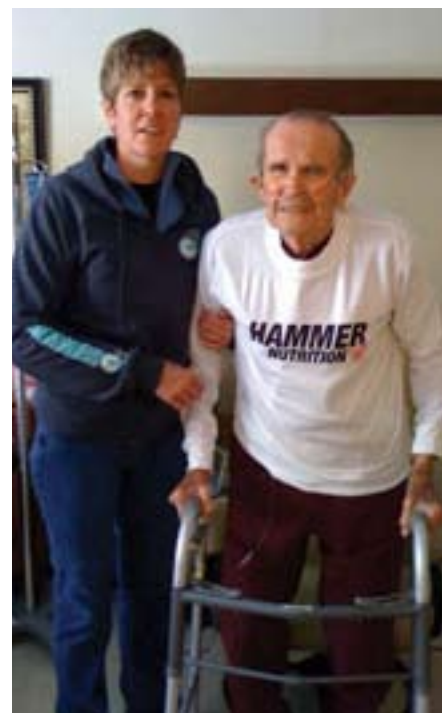


"My partner and I started using your products exclusively this past spring, and LOVE them! **More endurance, less fatigue and no rot gut during ultra events, Thanks!**

I am writing for a different reason, however. On October 1 2009 my 89 yr old father was admitted to the hospital. He was in intensive care with a dire prognosis. He was in a uniquely precarious position and we needed nutrition that could assimilate without digestion. He had swallow issues so it couldn't be too thin. I wracked my brain trying to think - baby food, protein shakes, all were problematic. I was at work when a thunder bolt hit me, "Why can't we give him thickened Perpetuem?" I consulted the doctors and nutritionist and they all agreed we had nothing to lose. After a week on Perpetuem, he was taken out of the ICU; my Mother swears **it was your product that kept him alive.** He spent a month in the hospital and has been in a rehab facility since November 1. He is about to come home for Christmas and now we can finally celebrate my parents 60th anniversary.

I want to Thank You and your staff for creating such quality products; I owe more to you than just my better athletic performance."

- Lynn F.



DATES SET FOR 9TH ANNUAL HIGHLINE HAMMER!



Cyclists ride past the Weeping Wall enroute to the top of Logan Pass during the 2009 Highline Hammer. Photo - Kelly Pris

It's hard to believe that we've been putting on the Highline Hammer since 2002 but it's true – 2010 marks the 9th year for this epically challenging, yet outrageously fun event. The dates for this year's Highline Hammer are July 14-18. As we appropriately state on the Hammer Nutrition website: "This is an amazing event and all who have experienced it have wanted to return the following year. In fact, some have done it every year since 2002."

The Highline Hammer is an all-encompassing cycling experience that not only includes epic rides (complete with unsurpassed SAG support), but also round table discussions with Brian Frank and the senior Hammer staff, product

and clothing discounts, gourmet meals, shuttle service to and from the airport and events, and more.

With a 25 attendee limit, and with many veterans sure to be returning, slots will be going very quickly. If you've never attended a Highline Hammer before, you really don't want to miss out on this great event. So check out all of the information on the Hammer Nutrition website (simply click on the "HIGHLINE" link at the top of the home page). Then, if you're ready for an amazing, unsurpassed Hammer Nutrition cycling adventure, sign up by contacting Kadidja toll-free at 800-336-1977.

We hope to see you in July! **HN**



Crossing the Continental Divide at Marias Pass.

**9th Annual Highline Hammer
July 14-18, 2010**

"Holy cow, could customer service be any better?!?" - Megan L.

SHANNA'S SENSATIONAL 6TH AND SUZY'S TREMENDOUS 12TH AT ULTRAMAN

BY STEVE BORN

Considered one of the toughest endurance contests on the planet, the 25th edition of the Ultraman World Championships took place on November 27-29, 2009. Once again, Hammer Nutrition sponsored athlete, Shanna Armstrong of Lubbock, TX showed why she has no peer in the women's division of this event, claiming her 6th victory.

Ultraman takes place over the course of three days. Day One consists of a 6.2-mile swim, followed by a 90-mile bike that includes over 7500' of climbing. Day Two is comprised of a 171.4-mile bike that covers a good portion of "The Big Island" and contains 8600' of climbing. Day Three's gruel-a-thon is a 52.4-mile run, a "double marathon" in essence.

As was the case in the 2008 race, Armstrong took the women's lead right from the start and was never truly challenged. After the 10k swim, she had a nearly-nine-minute gap over her closest competitor, and by the end of the 90-mile bike portion she added another six minutes to her lead. Out of 37 total competitors, Shanna was already in 11th place, one place ahead of Kathy Winkler of Mill Valley, CA (12th overall), and first-time Ultraman competitor Trix Zraggen of Aldort, Switzerland (13th overall).

Armstrong's strength as an ultra distance cyclist was clearly evident on Day Two as she set a new course record for the 171.4-mile bike portion in a blistering time of 8:39:40. She needed every second of that margin, however, as Zraggen was a mere 18 seconds back. Zraggen's second-fastest-ever bike leg vaulted her into 2nd place in the women's division, but Armstrong's even faster bike leg—plus the lead she had accrued after Day One—gave her a nearly-17-minute lead in the women's field. Sitting in 9th place overall, Armstrong looked unbeatable...and she was.

After a strong 8:08:57 time in Day Three's 52.4-mile run, Armstrong had cemented her unprecedented 6th Ultraman win. Her overall time of 25:48:48 placed her 8th overall and was a mere 2:57 off of Tina Bischoff's 20-year-old race record. Winkler's fast 7:45:46 time allowed her to jump back into second place in the women's field and finish 10th overall. Ann Heaslett of Madison, WI posted a record setting time of 7:12:07, allowing her to move into the third place position in the women's division, 12th overall.

Another amazing story at this year's Ultraman was longtime Hammer sponsored athlete, Suzy Degazon of Glendora, CA. Suzy set a new standard by completing her 12th straight Ultraman. Suzy's time of 32:32:19 was 9th fastest among the women, and good for 27th place overall. Although not her fastest Ultraman, Degazon was very pleased nonetheless, especially considering the amount of training she missed due to dental surgeries. In the men's race, Alexandre Ribeiro of Brazil claimed his 4th victory in a time of 22:10:12.

Hammer Nutrition congratulates Shanna on her outstanding 6th victory and Suzy for her 12th consecutive finish. Reports and details about the 2009 Ultraman World Championships can be found at www.ultramanlive.com. **HN**



Suzy Degazon flashes a smile during the Ultraman World Championships. Photo - Michael Lee

MAX DURTSCHI



Photo - Courtesy
Butch Martin

Last spring I had the opportunity to introduce Hammer Nutrition's own Jr road team, Team CMG. Now I have the chance to reflect on the success of the 2009 season. If any of you raced in the Northwest, you may have raced against these talented kids and gotten the chance to see just how good they are.

One of the teams great highlights this year was the success of Max Durtschi—winner of 2 national championships in one weekend. All made possible with hard work, a good team, and the best nutrition available. Due to his huge success at nationals this year he caught the attention of some big teams who made him an offer to help build his future in the cycling world even further. We here at Hammer want to wish him the best in the years to come and we are happy to have had a hand in his personal success of 2009. Good luck Max!

The following is his account of the Nationals weekend:

This year was a break through year for me. I believe that Hammer Nutrition was a vital part of my success. The products helped me train and race at a high level throughout the whole season. The highlight of my season was winning two US Junior National Championships. The first title came in the road race and the second came in the criterium.

The morning of the Road Race I was confident. I knew it was going to be an extremely hot day and the race very difficult; however, I knew that Hammer Products would help me race to my potential. Before the race I was sure to take Race Cap Supreme (my favorite product) and Endurance Aminos. These two products had worked very well for me all year. I next filled my water bottles with HEED and a small amount of Endurolytes. While temperatures reached 90+ degrees, the HEED prevented me from cramping and the Mild Melon flavor was very refreshing.

Finally it was race time. I was very aggressive during the entire race. I knew that in order to win the race, I would have to break free of the group before the finish sprint. After two unsuccessful attempts I finally made the winning break. I had spent most of the race solo, but I was now with one other rider, 40 km from the finish line. Eventually my previous efforts began catching up with me and I began to bonk and feel tired. I remained calm and ate two hammer gels in the last 30 km. Sure enough, my energy came right back to me and with 5km to go I broke away and soloed to my first National Title.

The key to my Criterium win was actually recovering well after the road race. I had worked extremely hard in the road race and by the finish the temperature was exceeding 95 degrees. I had made sure, of course, to take Xobaline and Recoverite after the road race, knowing that these two products work extremely well for me.

Over the next two days leading up to the criterium, I made sure to continue ingesting Endurolytes to keep my electrolyte levels high. As I expected, I arrived at the start of the criterium with a full tank of gas. The day was again very hard, and saw me riding 35 of the 50k off the front. I rode with one bottle of HEED and a Hammer Gel tucked into my skin suit. Like always, these two products did not let me down. Shortly after eating the gel I felt an energy surge and a feeling of power in my legs. That added power proved to be enough to hold off the group and win my second national title of the week. I owe a huge thanks to Hammer Nutrition for my success during US Nationals and the entire season.

The fact is the products work and the evidence is cleared when they are used. The company is run by very professional individuals and I hope to re unite with Hammer Nutrition in the future. **HN**

"The morning of the Road Race I was confident. I knew it was going to be an extremely hot day and the race very difficult; however, I knew that Hammer Products would help me race to my potential."



Photo - Courtesy Butch Martin

RAIN REIGNS AT STEAMTOWN

Just want to send a quick thanks to everyone here [on the Endurance List], especially the folks at Hammer Nutrition. I was finally able to run a sub-three hour marathon this past Sunday at the Philly Marathon, thanks in large part to the expert advice and many questions posted here.

Over the last three years, I've run five marathons, ending up in the medical tent in the first three. This past summer I decided to give Hammer Nutrition a try and started playing around with the different products. I settled on Endurolytes, Perpetuem, and Banana Hammer Gel. I also had some of the same digestion issues with Perpetuem that were posted throughout the summer and fall. I live in the south so it was hot. After playing around, I switched to the paste which worked much better.

Six weeks ago, I ran the Steamtown Marathon. At times, I felt a bit sick and went back to my race plan after reading comments about too many calories. I readjusted the plan only during the race. I cut down the Perpetuem to two scoops and one gel rather than four scoops and one gel during the run.

Here's the breakdown from Sunday's run.

Breakfast – Finished three hours before:

- Two scoops of Caffé Latte Perpetuem mixed with 20 oz. water and a banana (not Gel).
- Cup of coffee
- Endurolytes
- Ten minutes before race:
- Two Endurolytes and 1 Banana Hammer Gel

Race mix:

- Two scoops Perpetuem and one

Hammer Gel mixed in a small flask.

- Small sips after the 45 minute mark & I took water at every stop. With a little left at mile 24, I threw the bottle down at my last water stop; I didn't need it.
- Six Endurolytes consumed during the race. Approximately two at mile nine, two at mile 14, two more close to 20. Kept them in baggies (cut down) stuffed in shorts. I wasn't any slower at the water stop than anyone else. Wish I had a couple more later on. Note to self for next time.

Finished, walked away, and was able to eat within an hour. Amazing.

Just one side note: there were complaints from runners about the strength of the sports drink mix (*Steve's note: a simple sugar-based, non-Hammer drink, by the way*) being way too strong and causing some problems for some of the runners around me.

Thanks again – Chris Rain

*Note: This article originated as a post on the Endurance List, where Chris not only received information from the Hammer Nutrition staff, but from other knowledgeable list members as well. If you're not yet a member of the Endurance List, you're not only getting helpful information such as this months later than list members do, you're also missing out on a wealth of other interesting discussion topics and useful information. It's easy to join the Endurance List and there's no cost whatsoever. Click on the "HAMMER FORUM" link—found in the left column on the home page of the Hammer Nutrition website—for information on how to become a member. **HN***

Join the Endurance List!

Have all of your questions answered, share ideas, and learn with our friendly community.

Our "clients only" discussion group is hosted by Brian Frank, Steve Born, and a panel of professional athletes, coaches, and experts in just about anything even remotely related to endurance training.



"Last weekend I ran a demanding 50K trail ultra. Yet another race where Hammer proves its excellence!" - Sebastian L.

PAUL ROMERO



Paul Romero was part of a 4-person team at the 12 Hours of Temecula (mechanicals caused them to finish in 4th place), and less than a week after his first triathlon ever... the Silverman Triathlon, where he finished the full iron distance race in 12:40.

Paul wrote: "I didn't touch a bike since I got off my roadie at the Silverman, until Saturday AM at the big 12 hours of Temecula. I ripped off the fastest lap of the day, against 840. I was more shocked than anyone. ALL THANKS to Hammer. Incredible regimen I've nailed down."

LOIS MARQUART

Greetings from Maui, Hawaii: 2009 Xterra World Championships. I must thank you again, Hammer Nutrition, for helping me complete my goal to podium at Worlds - I took 2nd place in my age group! This race made Ironman feel like a warmup. Swimming through waves and riding and running on lava sand took total concentration, skill, and physical stamina. My hourly protocol of Anti-Fatigue Caps, Endurance Aminos, and Endurolytes aided me in my success. Of course I took my Recoverite and Premium Insurance Caps immediately after the race. Life is so sweet right now! Thanks for the great products!

JOHN ROSNER

I finished Ironman Florida last Saturday (11/7) in 11:58:06 by following your 'Tips for a successful Half or Full Ironman' to the letter. It was my first full Ironman! Just wanted to let you know that the nutrition plan presented in that paper is awesome. I felt great the whole race thanks to Hammer Perpetuem and your great advice.

RYAN CLEARY

I just wanted to say thanks for the "Epic Ride Supplement Suggestions" article in Endurance News. I was excited to find such an article a few weeks before my first century, which included 6500 ft. of climbing. I used 1.5 scoops of Perpetuem per hour, and followed your supplement suggestions, and I was blown away at how good I felt at mile 100. I have not ridden over 64 miles all year, but I rode away from a group of riders on the last climb at mile 90 and rode solo all the way to the line. Thanks for making this ride one to remember!

SHEILA CARPENTER-VAN DIJK



At this year's Aaron Piersol's Race for the Oceans, I finished first in my age group in the 1,000 meter race. I was, once again, the oldest female competitor. Yes, I trained hard for the event, but it was the Hammer products that gave me the extra energy to take 6 minutes off my last year's 1,000 and go on to party after the race!

KAYLEEN UIBEL

Silverman Triathlon, half iron distance:
1st place - Female 35-39 division, 3rd place - woman overall, 23rd finisher (male and female), Time - 5:22:44.

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 athleteupdates@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. Photo note: please ensure that all photos submitted are high resolution at 300 dpi or at least 500 kb in size. Thanks!

MICHAEL KAUNITZ



I just want to say thanks for all the brilliant fueling advice that you provide through the "Guide" and Endurance News. I just completed my first Ultra-Marathon (JFK50) fueled solely on Perpetuem and Hammer Bars. I took my Endurolytes religiously and an hourly Anti-Fatigue pill and I felt great the entire day - I was never hungry during the entire 11 hours 38 minutes it took me. Many ultra runners I know questioned my logic - and wondered why I was not going to bring any real food or take anything from the rest stops - but the proof is in the results. Next stop . . . 100!

JASON PEREZ



I thought I'd share a story of a fellow road and mountain bike rider, Jason Perez, who introduced me to your products. He is an ultra distance runner and an avid road and mountain bike rider. He won the men's 19-29 solo division of the 24-hour Boggs Mountain in June and was on the 4-man championship team at the 24 Hours of Adrenaline Laguna Seca. He's won so many running events I could not list them all.

Bill Honeycutt

JIM DONALDSON

I thought I would give you a race report and product feedback all in one. On November 7, 2009 I competed in the IM Florida finishing second in the 65-69 age group. I was second out of the water, second on the bike, and second on the run.

As you know I trained and recovered exclusively on Hammer products. During the race every 45 minutes to 1 hour I took 2 Race Caps Supreme, 2 Endurolytes, 2 Anti-Fatigue Caps, & 2 Mito Caps. I used Perpetuem, a banana, Hammer Gel, HEED, plus a Hammer Bar for my pre-race meal. This was perfect.

On the bike I used HEED and Hammer Gel in my water bottles and an additional 4 hour Perpetuem and Gel too. On the run I used Hammer Gel, water and my Endurolytes packets.

I have to say I never had a problem all day with my energy level or cramping. Just had a great race.

But that is only half the story. One week later in Clearwater, Florida I competed in the IM 70.3 World Championships, finishing 12th out of 33 athletes in the 65-65 age group.

I started as soon as I could using Recoverite and Hammer Whey protein, plus some good massage and rest. Had no great expectations at this race, just coming off an Ironman the week before, but I had another great race in Clearwater too. I know I could not have done so well without using Hammer products.

Thanks for all your great products and your support of me and my events.

Jim Donaldson

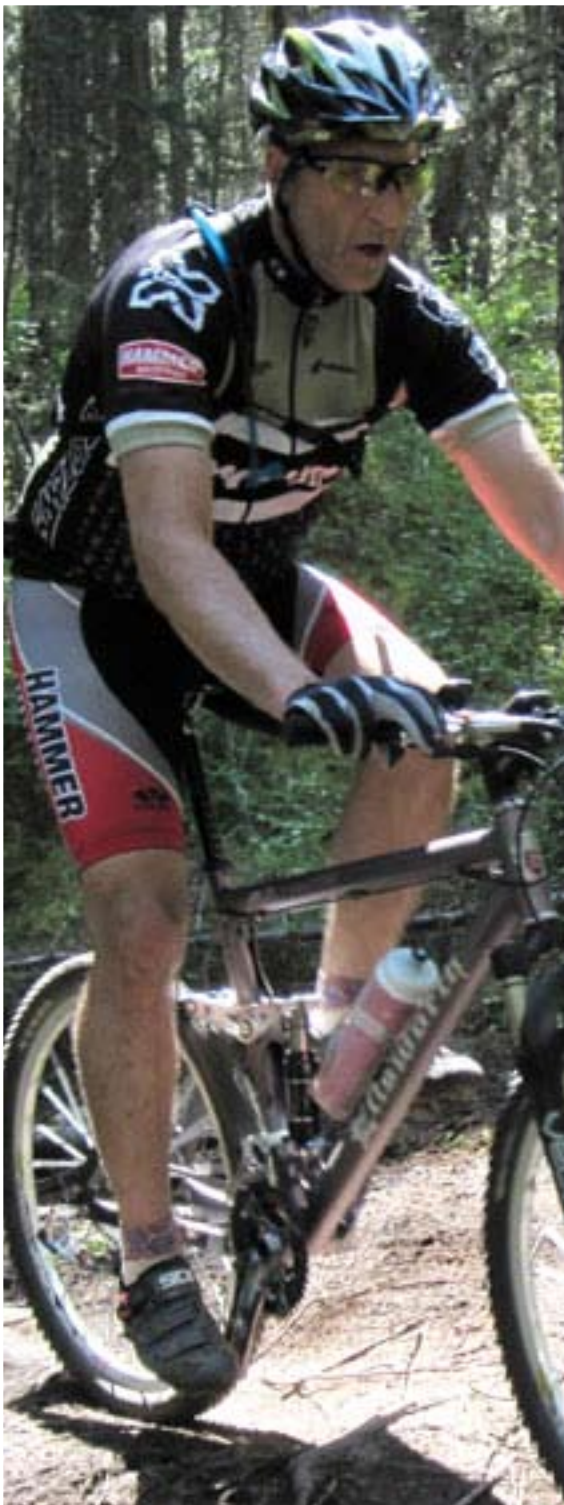
MAX KING



Photo - Niis Nilsen

Hammer sponsored athlete Max King took first place at the XTERRA Trail Worlds this past weekend. Max turned in a 1:14:26 on the grueling 12 mile course, almost 3 minutes ahead of second place. Congratulations to Max for becoming the 2009 XTERRA Trail Run World Champion!

HAMMERBUCK\$



24 hrs of Adrenaline
Canmore, Alberta
July 25th, 2009
1st in 55-59 age group
\$1000 cash

The following is an excerpt from a press release about Randy Profeta and his win.

Endurance Racer, Hammer Nutrition show support for Raisin Hope Foundation

Hammer Nutrition, a leading supplier of endurance nutritional products and supplements, and Masters age endurance racer Randy Profeta who was seriously injured in 2008 while training for a 24-hour solo race, have teamed up to support the Raisin Hope Foundation. Profeta, with assistance from Hammer, is donating \$500, or half of his "HammerBuck\$" award for his age category first-place finish at the 2009 24 Hours of Adrenalin World Solo Championships held this July in Canmore, Alberta to the Foundation.

The Raisin Hope Foundation was started by pro road racer Saul Raisin and his parents, Yvonne and Jim Raisin, after Saul was involved in a horrific crash in 2006 while racing in France for pro cycling's Credit Agricole team. He miraculously made a full recovery and is now riding and racing again. As Saul recovered from his life-threatening injuries he vowed to help others affected as he had been by brain injury.

A Hammer-sponsored amateur endurance racer, Profeta qualified for Hammer Nutrition's "HammerBuck\$" award when he placed First in the 55-59 age category at the 2009 24 Hours of Adrenalin World Solo Championships held this July in Canmore, Alberta. His win came less than a year after sustaining his own head injury as the apparent victim of a hit-and-run accident, being struck by a passing vehicle while training.

Randy is back to riding, training hard, and racing. He has an aggressive schedule for 2010 and plans to race again at the 24-Hour World Solo Championships in Australia. "I have been a Hammer advocate for years and I am a Hammer customer for life. Sure their products work, but they are a great company and their support for the sport and its participants is unmatched", adds Profeta. **HN**

Turn race day into payday!

We're increasing the number of HammerBuck\$-eligible events in 2010. That means more opportunities for you to earn cash or credit!

Check out our ad on the back cover for more information or go to [www.hammernutrition.com/buck\\$](http://www.hammernutrition.com/buck$)



Turn race day into payday in 2010!

Over \$31,000 in cash and credit awarded to 36 winners in 2009!



Take a look at these payouts, which have already been earned by a significant number of Hammer Nutrition clients over the past two years:

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

Those are some pretty nice earnings! Now it's your turn!

Due to the overwhelming success of the HammerBuck\$ program in 2008 and 2009, we're increasing the number of HammerBuck\$-eligible events in 2010. All the details about the HammerBuck\$ program can be found at [www.hammernutrition.com/buck\\$](http://www.hammernutrition.com/buck$).



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