



endurance

NEWS

a newsletter for the endurance athlete

issue
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Karel Tresnak, Jr.

Announcing The Reformulated RACE CAPS!

That old saying, "if it ain't broke, don't fix it," is normally a good rule to follow, but every once in awhile it's necessary to break the rules. And while it's usually difficult, if not downright impossible to successfully update a classic, we've done just that. That's right—Race Caps, one of the original flagship supplements in the E-CAPS line, is now even more powerful and potent. If the original Race Caps worked great for you, then you'll be absolutely amazed at the improved version of this product.

The New Race Caps Formula

Freshness Counts!

You still get the same potent dose of Coenzyme Q10 (CoQ10), an essential constituent in the complex process that converts food and oxygen into ATP, your body's ener-

gy source. The news is that after investigating numerous vendors, we finally found a CoQ10 (and other Race Caps nutrients) supplier who meets our strict quality requirements and is also "closer to home." This is important, because we're very picky about quality control and product freshness. The proximity of our new supplier's state-of-the-art technology production facility means we can frequently produce small, fresh batches of Race Caps, so you receive an even fresher and more potent product, shipped remarkably close to the manufacturing date.

The Idebenone Difference

Idebenone, an analogue of CoQ10 and a superb complement to that remarkable nutrient, may have, according to one expert, even more powerful action than CoQ10 itself! Among its many benefits, Idebenone is an

(see RACE CAPS on page 3)

Introducing MITO-R Caps *by Steve Born*

Super Charge Your Workouts, Races, & Your Overall Health!

NEW PRODUCT!

One of science's greatest discoveries is out of the journals and into a bottle!

Based on the studies and exciting discoveries of Dr. Bruce Ames and his research team, we are pleased to introduce MITO-R Caps, arguably the most potent supplement ever incorporated into the E-CAPS line. Honing in on the issue of mitochondrial regeneration, MITO-R Caps has sensational potential for enhancing both athletic performance and overall health. Moreover, MITO-R Caps can turbo-boost your current supplements, giving you multiple benefits from one new product.

Most people who know me are aware of my deep and enthusiastic involvement with nutritional supplements. For over 15 years I've

studied supplements and personally become probably the world's leading endurance supplement guinea pig. Some remain in my "arsenal"; most I've stopped using because of inferior results. Color me jaded, but after all these years and after reading about and testing so many supplements, I've become appropriately skeptical. New products with dizzying promises seldom really deliver. Undisciplined marketers repeatedly trot out new products based on badly misinterpreted research results or poorly designed studies. Needless to say, these new products quickly become new disappointments, and the search for the holy supplement grail continues.

However, every now and then scientific research comes through with a real, well documented advance that has significant

(see MITO-R on page 4)

Perpetuem Rocks!! Feedback On A Fantastic New Fuel

Perpetuem has been available for less than two months but it's selling like crazy and the feedback we've received has been overwhelmingly positive. You owe it to yourself to put this fantastic fuel to work for you! Here are but a few of the testimonials we've received...

I have tried a combination of Perpetuem, Sustained Energy, Endurolytes, and Hammer Gel for my last few long hard training efforts and it has provided the perfect source of never-ending energy and power. The real test will come in ten days as I attempt a top 5 finish at Ironman USA in Coeur d'Alene, ID. Hopefully this will be a great day for E-CAPS and my triathlon dreams. As usual, thanks for your support. I couldn't do it without you guys.
- Matt Seeley

Just wanted to tell you that I had great success in the Escape from Alcatraz. Using only Hammer Gel, SE, Perpetuem, and Endurolytes for nutrition. Raced to a 4th place in the 30-34 age group...better than expected. I am now focused on IM Canada hopefully qualifying for Kona. Great products!! Can't wait for the next few weeks of training.
- Chris Danesi

Don't know if you recall speaking with me last week but I just wanted to thank you for your advice. I was the guy doing a 1/2 Ironman in Phoenix and needed some assistance in dealing with the heat. The race was not measured accurately and the bike ended up being 62 miles and the run was about 15. There was also a small pro field present due to the availability of prize money for top 3. I was about 8 minutes down after the swim, I am not an aquaman, but had the 2nd fastest bike split. The run started in about 90 degree weather and I took your advice with about 8 electrolytes, 2 every half hour, and a pancake batter mixture of Perpetuem and water in the Hammer Gel Flask. I moved into 2nd overall with the day's fastest run split. I was about 4 minutes out of first but the guy that beat me has been racing as a high level pro for several years and is 8 years younger than me. I can't say I didn't suffer but at least I didn't bonk. Close to 1/4 of the field DNF'ed and the paramedic tent looked like a MASH unit with all the people hooked up to IV's. I even feel

ready to train again today but I am forcing myself to rest 1 more day by enticing myself with a bottle of good wine and a movie tonight. Thanks again for such great products.
-Michael Olson

I field tested Perpetuem during the bike portion of the Keahou Half Ironman on 5/25/03. I was very impressed with the taste and with the nutritional results. During the run portion, I had to rely on Hammer Gel, as my run gear had to be turned in a day prior to the race and I was concerned that the Perpetuem would be a little on the "ripe" side by the start of the race! For ultra racing, I personally prefer the Perpetuem to SE, largely because of the taste and the addition of the protein. I plan to incorporate the product into my nutritional plans for the balance of the racing season. Brian, Bill, Steve and company, thanks for creating such a great product!
- Elias Olson

(Note: Sustained Energy does contain protein and actually has a slightly larger amount per scoop than Perpetuem at 3.5 grams versus 3 grams, respectively)

Used Perpetuem for the first time in a one-hour pyramid interval training session on Monday. Had one of my best speed workouts in a long time. The taste was great - not too sweet but pleasant and satisfying. This may be the drink that triathletes have been waiting for since, based on a one-time use, it appears to be very stable, staying in solution and not settling. It did not require shaking prior to drinking. This means that it may be an ideal drink for aero drinking systems on the bike portion of triathlons. Based on a one-time test use in training, I am a big time Perpetuem fan. Great job from the research and development guys at Hammer Gel/E -CAPS!
- Charlie Bond

I went on a 4-hour ride, mixed Endurolytes Powder with Perpetuem... this stuff's great. Pleasing taste... no separation or settling of product in water bottles. I've found my new Ironman brew!! Thanks Brian, Dr. Bill, Steve, and other E-Caps staff for not settling on just a superior product, but to continually improve and perfect on it!!!
- Dean Koltz

Our Mission

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

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

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

Brian Frank
CEO

Back issues of Endurance News are available online at: www.e-caps.com

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

(RACE CAPS from page 1)

extremely potent antioxidant, preventing iron ions from wastefully and toxically diverting oxygen towards free radical production inside the mitochondria, instead of being used towards producing energy. Idebenone extends the already powerful benefits of CoQ10 and, under hypoxic (low oxygen) conditions, Idebenone's ATP-generating capabilities are even superior to CoQ10.

Idebenone, which has no known contraindications or side effects, is being hailed as one of the most promising energy enhancing, cognitive enhancing, and anti-aging nutrients ever studied. Its availability is unfortunately limited, but we've found an impeccably reliable, high quality, and reasonably priced source of this amazing nutrient and we are excited to include it in the new Race Caps formula. Without question, the CoQ10/Idebenone combination is unsurpassed for energy production, and Race Caps provides an effective dose of both.

Race Caps' Other Potent Components

Completing the antioxidant portion of this unique formula is a substantial dose of vitamin E in its highly absorbed natural form. Inosine helps to promote the production of 2,3 diphosphoglycerate (2,3-DPG), a substance that helps transport oxygen from

hemoglobin into the muscle cells for energy production. Bioperine™, a standardized alkaloid component of the pepper plant, has been called "a technological breakthrough as a safe nutritional supplement for increasing the absorption of vitamins, phytonutrients, and minerals." Glycerol phosphate is a natural preservative, aiding in the stability and absorption of the product. Rounding out the Race Caps formula is the Enzyme Enhancement System™, a synergistic blend of enzymes and extracts that works in tandem with Bioperine™ to assure complete assimilation of all the nutrients.

The Bottom Line

Since its introduction in 1987, Race Caps has been the benchmark for endurance supplements, safely and effectively promoting increased endurance. Our painstaking research and extensive product testing have resulted in an even more powerful product, one that cannot be approached by any other product on anyone's shelf or website. Now, more than ever before, we guarantee that you will not find a better endurance enhancing supplement. Best of all, we've been able to do this with no increase whatsoever in the cost of the product. That's right-Race Caps is now more powerful than ever and it's available to you at the same price!

Ingredients: (per 2 capsules)

- Vitamin E (as d-Alpha Tocopherol Succinate) - 400 I.U.
- Phosphate (as Glycerol Phosphate) - 100 mg
- Inosine - 275 mg
- Coenzyme Q10 (Ubiquinone) - 150 mg
- Idebenone - 25 mg
- Enzyme Enhancement System - 24 mg (a proprietary blend of protease, emylase, glucoamylase, lipase, cellulase, phytase, maltase, and sucrose)
- Bioperine (95% 1-piperoylpiperadine from Piper nigrum fruit) - 10 mg

Suggested Dose:

- One capsule one hour prior to training sessions of 90 minutes or less or on days off
- Two capsules one hour prior to training sessions of over 90 minutes
- One capsule per hour, at the two-hour mark and beyond, during training sessions or races over three hours.

Note:

The endurance enhancing benefits, general health benefits, and potential anti-aging benefits derived from Race Caps are cumulative. We recommend taking this product on a daily basis.

Secrets To Triathlon Success *by Steve Born*
A Handbook Written With Triathletes In Mind

Nate Llerandi and I have teamed up to produce this 21-page booklet for you triathletes. Nate's knowledge, garnered from his 10+ years of racing triathlons and coaching triathletes, could fill hundreds and hundreds of pages in a variety of aspects of the sport. In "Secrets" his expertise, which several hundred triathletes have benefited from, covers specific race strategies and tactics for every distance race. It's good quality information - concise and precise - that every triathlete will benefit from.

I've updated the triathlete fueling guides to reflect the specific needs of triathletes in the various distance events. Part One covers the supplement and fueling program for training, Part Two discusses the race day supplement and fueling program, including some specific guidelines for the pre-race meal. These new protocols incorporate our newest products (well, new at the time of the first printing), so you'll have updated information regarding the use of Endurolytes Powder as well as

Endurolytes in capsules, and Perpetuem.

The goal in the fueling guides portion of "Success" is NOT to "get you to buy everything listed." Instead, my desire is to "arm" and empower triathletes with information regarding the various supplements and fuels I suggest. There are a lot of factors involved in supplement and fuel purchases (not the least of which is the cost of a product) and those decisions can be made a lot easier and with a lot more certainty when quality information, not marketing mumbo-jumbo, is presented. I believe that armed with the information that's provided you will have the ability to determine whether or not a specific supplement or fuel is appropriate for you.

The "Secrets To Triathlon

Success" is free of charge; just ask for a copy with your next order. I do have to confess that this first run of the booklet has a printing error in it: All of what is listed on page 19 should be on page 18 instead, and vice-versa. In other words, Page 18 should begin with "Section Two - The Morning of the Race" and Page 19 should begin with the discussion about Endurolytes. We'll have this corrected in the next print run.

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8-serving \$11.95 16-serving \$19.95

(MITO-R from page 1)

implications for athletic performance enhancement. Among these advances comes an even rarer occurrence: a study with results so profound in their scope that it literally can, and should, change how athletes (all people, actually) perceive nutritional science and nutritional supplements. I can honestly say that in the past 15 years, nothing regarding supplementation has ever excited me as much as the remarkable results of Ames' studies.

Dr. Ames has studied the issue of aging at the cellular level. Specifically, he has looked at mitochondrial activity. Mitochondria (singular: mitochondrion) are one kind of subcellular structure that biologists call organelles. A typical animal cell has a nucleus for reproduction, lysosomes for waste removal, and a variety of other organelles, including the wonderful mitochondria, the energy factories of the cells. Mitochondria combine glucose from food sources with oxygen to produce ATP molecules for the muscles' energy source. As we grow older, these factories begin to lose their efficiency.

The whole amazing story of mitochondrial function could go on for pages, but let's simplify the matter to a few relevant points:

1. Mitochondria, the energy producing organelles, make ATP molecules from sugar and oxygen.
2. Energy production also creates free radicals, which damage mitochondrial DNA.
3. Mitochondrial function decreases and free radical production increases with age. This "double whammy" contributes to the aging process, an ongoing, continual cycle of decreased mitochondrial functioning, increased free radical production, and damaged mitochondrial DNA.
4. The resulting decay in mitochondrial functioning, along with increased production and accumulation of free radicals, has obvious negative effects on athletic performance. The body's ability to make energy decreases while free radicals increase.
5. Even more importantly, mitochondrial aging and decreased function results in health decline and disease processes affecting the heart and brain.

The MITO-R Caps formula incorporates the very same nutrients Ames used in his studies, and more. It has the ability to not just delay or prevent, but potentially reverse the mitochondrial aging process. This would have a profound impact on how well your body performs athletically. Also, mitochondrial aging and deterioration is considered to be one of the primary factors causing age-related diseases. Ames' studies, and the nutrients used in those studies, show a delay and reversal in mitochondrial aging, suggesting a potential chemical basis for extending the length and quality of life. This is extremely exciting stuff!

Synergistic Supplement Benefits

Mitochondria need certain substrates to maintain efficient energy production; that's where the nutrients in RACE CAPS and ENDURO CAPS come in. Certain antioxidants such as vitamins C and E and CoQ10 help protect cells from the continuous onslaught of free radicals. But what about literally delaying, or even reversing, mitochondrial aging? What about restoring capabilities to more youthful levels? Antioxidants such as vitamins C, E, and CoQ10 help protect cells, but can't do the whole job. What if there were nutrients available that would not only complement, enhance, and extend the capabilities of those nutrients, but also provide phenomenal benefits of their own, benefits that until now were simply not believed to be possible?

Ames' extraordinary studies have identified just such nutrients: acetyl l-carnitine (ALC) and r-alpha lipoic acid (r-ALA). When Ames and his researchers fed older rats these two nutrients, both of which occur naturally in some amounts in the body's cells, the results surprised them. Not only did the older rats perform better on memory tests, they had more vigor, and the mitochondria in their cells worked better. Ames is even quoted as saying, "With the two supplements together, these old rats got up and did the Macarena . . . the brain looks better, they are full of energy - everything we looked at looks more like a young animal." Another researcher commented, "The animals seem to have much more vigor than animals not on this diet, signaling massive improvement to these animals' health and well being." These studies indicate (in very basic terms) that the combination of

these two nutrients "tunes up" the mitochondria, likely a major way to minimize DNA damage, improve health and athletic performance, and prolong healthy lifespan.

Ames' studies found that ALC and r-ALA each had a role in improving mitochondrial activity and cellular metabolism. The ALC component boosts the activity of the enzyme carnitine acetyltransferase, which plays a vital role in mitochondrial fuel burning and energy production. The r-ALA component, among its many benefits, helps rid the body of destructive free radicals, while also boosting, revitalizing, and increasing levels of various antioxidants in the body such as CoQ10 and vitamins C & E. The combination of these two nutrients "significantly reversed the decline in overall activity typical of aged rats to what you see in a middle-aged to young adult rat seven to 10 months of age," according to researcher Tory M. Hagen, Ph.D. "This is equivalent to making a 75 to 80-year-old person act middle-aged. We've only shown short-term effects, but the results give us the rationale for looking at these things long term."

The positive, life-extending potential that this combination of ALC and r-ALA has for everyone, not just athletes, is staggering, but there's even more to the story. ALC and other forms of carnitine are the main nutrients the body requires for efficient utilization of fat stores for fuel. ALC also boosts neurological functioning, which would support concentration and mental focus (a major benefit for ultra-endurance events). ALC is also believed to help preserve lean muscle tissue by decreasing excess levels of cortisol. Lastly, ALC seems to reduce the depletion of ATP by forming acetyl-CoA, which one nutritional expert states, "[is] the most important intermediary in the generation of energy from amino acids, fats, and carbohydrates."

The other molecule, r-ALA, plays an important role in cellular metabolism by acting as a coenzyme in energy production. It is a premier antioxidant, functioning as both a water- and fat-soluble antioxidant, with the ability to neutralize several different types of free radicals. It also enhances GSH levels in the body (GSH, or glutathione, an antioxidant produced directly by the body, is a primary immune system protector). Additionally, r-ALA can recycle,

revitalize, and extend the effective life and potency of nutrients such as CoQ10 that play a key role in energy production. This effect alone would yield definite and positive impact on energy production and endurance.

However, we have added to the benefits of ALC and r-ALA by adding a few additional compounds to MITO-R Caps, making it a formula like no other. DMAE, PABA, and Pyridoxine (vitamin B6) are important components of MITO-R Caps because they are believed to assist, treat, and delay the onset of many of the symptoms and side effects of aging. In addition to their own benefits, these three nutrients will most likely potentiate the already powerful effects of ALC and r-ALA. This is important to note because the amount of ALC and r-ALA required for humans (extrapolated from the animal studies) would be tremendous. We believe that the combination of these three nutrients would mimic the effects of a popular, but not FDA-approved, life-extension supplement called GH-3 (Procaine HCL), enhancing and accelerating the effects of ALC and r-ALA, but in a completely safe and approved way. In other words, the synergism of DMAE, PABA, and Pyridoxine would increase the effectiveness of ALC and r-ALA, which may result in substantial benefits without having to consume such large doses.

Look at what we've added to fill out the health benefits of MITO-R Caps:

DMAE: Dimethylaminoethanol is a naturally occurring nutrient found in fish. It stimulates the production of choline, which in turn allows the brain to optimize production of acetylcholine, a neurotransmitter involved in learning and memory. DMAE has been reported to inhibit the formation of the pigment lipofuscin, which is formed by the inefficient metabolism of fatty acids. Lipofuscin accumulates with age in all body tissues; in the skin it appears as liver spots. DMAE not only prevents the formation of lipofuscin, but also has been observed to remove liver spots completely. This may be equated with internal removal of aging cells by long-term supplementation with DMAE. One study evaluated the life extension effect of DMAE on old mice. Oral DMAE administration in the drinking water resulted in a reduction of mortality rate and in increase in

both mean and maximum survival time in rats.

PABA(Para-amino benzoic acid): is a B-complex vitamin that acts in a structural role with folic acid and also functions in the formation of red blood cells. It is also a potent neutralizer of singlet molecular oxygen, a free radical that is a common by-product of metabolism. PABA's free radical neutralization is a most powerful effect because it retards collagen cross-linking, promotes flexibility, and promotes healthy cell structures and membranes. Glycosylation (or glycation) is a process where glucose molecules attach themselves to proteins, eventually resulting in protein binding, or cross-linking, which alters their biological and structural roles. Cross-links, also known as advanced glycosylation end products (AGEs), have been linked to the loss of flexibility and deterioration of connective tissue associated with aging.

Ascorbyl Palmitate: This is the fat-soluble form of vitamin C. Most everyone knows that vitamin C has its own antioxidant capabilities, but it's also beneficial for enhancing carnitine synthesis. Vitamin C enhances the bioavailability of carnitine, which results in greater fat utilization capabilities. We've included the fat-soluble form of vitamin C and a dose of d-alpha tocopherol succinate (vitamin E) in MITO-R Caps to support r-ALA's fat-soluble antioxidant capabilities (remember, r-ALA can recycle vitamins C and E).

When it comes to optimizing athletic performance, and even more importantly, health in general, it's hard to overstate the potential benefit of improved mitochondrial functioning. We've formulated MITO-R Caps to do just that. It is perhaps the most potent product we've ever designed. It works in perfect harmony with all other E-Caps supplements (especially Race Caps, Enduro Caps, Premium Insurance Caps, and Super AO) and will perfectly complement and extend their already powerful benefits. This is a supplement I believe ALL people, not just athletes, should seriously consider. It is that powerful; it is that beneficial.

The MITO-R CAPS FORMULA

- Ingredients: (per 1 capsule)
- Vitamin C (as Ascorbyl Palmitate) - 12.5 mg
 - Vitamin E (as d-Alpha Tocopherol Succinate) - 12.5 I.U.

- Vitamin B6 (as Pyridoxine HCl) - 5.0 mg
- Acetyl L-Carnitine - 125 mg
- R-alpha Lipoic Acid - 50 mg
- DMAE (Dimethylaminoethanol) - 50 mg
- Para Amino Benzoic Acid - 25 mg

Physiological benefits:

Increased energy and endurance, enhanced recovery from hard training, improved immune system function, improved cognitive function

Mode of Action:

Improves mitochondrial cell energy metabolism, enhances utilization of fatty acids in energy production, supports optimal brain metabolism and function, provides wide-ranging antioxidant benefits, and extends the benefits of other antioxidants such as vitamin E and Coenzyme Q10.

How Supplied:

Bottles of 90 vegetable caps (VCaps)

Suggested Usage:

1-2 capsules three times daily with food

Notes:

May be used hourly during workouts and races

OPTYGEN RETRACTION

by Brian Frank

Issue #38 of Endurance News featured an article on Optygen. We are hereby retracting any and all statements made in that article which implied or could be construed to imply that Optygen or any of it's constituent ingredients do or may possibly cause hypertension and or cramping. We affirm that there is no published clinical research that proves that Optygen or any of it's constituent ingredients cause hypertension and or cramping. We apologize for any confusion that this may have created.

The Best (and worst) Part of Getting Old *by Tony Schiller*

The best part of getting old is that since you can't do what you used to do, you don't have to keep trying to do it anymore. Of course that brings us to the worst part of getting old which is that it's so very hard to accept that we can no longer do what we used to do.

Take, for instance, the example of baseball players Barry Bonds and Cal Ripken. While I absolutely love Ripken's example and was captivated by his 2632 consecutive games record, he reached 40 years old like a lot of endurance athletes we all know - pretty well mashed to pieces. Long before he'd replaced Lou Gehrig as "Mr. Ironman" (sorry triathletes, Lou had the name 45 years before we did), his performance had dropped as he played each day in pain (yea, I know, it's hard to imagine a stand-around sport like baseball being hard on the body, but that's our endurance sport bias).

On the other hand, in order to extend his career, Bonds has been taking Sunday's off for years. It might not seem like much but that extra day off has made all the difference in the world. He's been able to let nagging injuries heal and the slugger has turned in a pair of amazing back-to-back MVP seasons at age 37 and 38.

As endurance athletes, I'm afraid our very nature is to be more like Ripken than Bonds. We find it very difficult to back off, let alone take a day off. How many athletes are so obsessed with racing that they'll choose cortisone shots over rest and recovery? The benefits of training are so powerful that many aging athletes refuse or cannot bring themselves to back off when their bodies say no. But we must. Just as most of us have learned that we'll gain weight if we keep eating and drinking as we did in college, we're also likely to breakdown if we train like we did in our 20's.

Health "experts" claim as much as a 10% drop in base performance can be attributed to each decade we age but I truly believe that's a bunch of bunk. The reason most athletes slow down that much (if not a lifestyle choice or mental burnout) has more to do with the residual effect of being stuck chasing old - and now outdated - training methods than it does the mere fact of being older.

But the lesson of Barry Bonds is that you

CAN still turn in spectacular performance if... you try to do it less frequently. That's the good news. If you accept it, it means a whole new world of training opens up to you as you age. In this new world there exists room for more rest days, more easy days, more social training, and an assortment of training options you knew about but never let yourself believe in. In short, you should feel less fatigued and stressed by your training program than ever before. It's a great thing.

Now, that doesn't necessarily mean fewer workouts or less total hours in training. Since we are going slower, we might well need more minutes. The secret is really in the mix. The mix includes more focus on efficiency, form and technique. In all likelihood, we'll need to steal time from intensity and give it to training for flexibility and correct posture by adding yoga, stretching and massage to enable injury-free performance.

And more than ever, we need to breakaway from the "average speed and miles covered" mentality. This means less comparing of times to others or to our old favorite loops. Definitely breakaway from the goal of setting PR's in training. They're no longer relevant. Instead, shift to a noticeably greater range of speed variations in your training. This is huge. For instance, 20 years ago I ran 70-100 miles a week as fast as 4:45/mile on intervals to 6:00 pace on long runs. Now I run 30-35 miles a week ranging from 5:00/mile on speed sets to 7:30 pace on distance - that's double the pace range. The same is true on the bike where 80% of my training use to be between 22-24 mph with 10% slower and 10% faster. Now 60% is 18-20 mph, 30% is 21-22, and about 10% is faster.

While the majority of my miles are far slower than the old days, the high-end work is very close to the old levels. On those fewer occasions I go there, it's with longer warm-up times and greater rest during, and it's followed by more attention paid to post workout stretching, recovery nutrition, and next day rest/easy train-

ing. If I don't have the time to add in all of those elements, then it's not the right time for me to do speed work.

Finally, I've had to become acutely aware of the signals my own body is sending me. For that reason I rarely do high-end workouts with other people and no longer let myself get sucked into training races during group workouts. If your sport requires group tactics, like cycling, just be aware of your own personal needs. It's all about choosing your battles. Even races have to be viewed that way. While it's hard to sit on the sideline when some of your favorite races come to town, sometimes that's just the needed mix needed to preserve your peak for when it means the most to you. That's the best part.

Tony Schiller is the reigning master's world champion triathlete and recently won the overall title at the 2003 Galena Triathlon at the age of 45. He won his 5th ITU age group title last year in Cancun, Mexico and was named 2002 Master of the Year by USA Triathlon. Tony is also a nationally known business speaker who has helped hundreds of organizations with his positive approach to work and life. He coaches a select few triathletes.

Contact information:
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The Handbook Every Triathlete Should Have!

Written by Nate Llerandi and Steve Born, the "Secrets to Triathlon Success" handbook is an invaluable resource for any triathlete. Call today for information on how you can get your free handbook.



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Hydration Issues *by Bill Misner, Ph.D., C.S.M.T.*

Dr. Ian R. Rogers, MD, FACEM explains the differences of opinion regarding fluid consumption for endurance athletes:

"It is important to realize that longstanding advice about appropriate fluid intake for exercise was formulated on research done on much shorter events when the "limit of human endurance" was much less. The applicability of this to longer events is questionable. The American College of Sports Medicine in its position statement currently recommends a fluid intake during exercise of 600-1200 milliliters/hr (20-40.5 fluid ounces). The fluid intake of most of the reported cases of exercise-associated hyponatremia has been at the middle or upper end of this range (30-40 fluid ounces per hour) challenging this as an appropriate fluid intake. A more realistic intake is likely to be 500-750 milliliters/hr (16.9-25.4 fluid ounces per hour). Whether this fluid should contain salt as well remains unproven. Intuitively, it seems prudent to use a proprietary sports drink containing 20-30mmol/l of sodium if this is available, rather than just water. While the old mantra, "If you don't drink you die" is not yet dead, it has certainly been challenged. We can no longer assume that excess fluid taken during prolonged exercise will just be passed out in the urine. Like most things in life, balance is the key and the balance is likely to be at a fluid intake not much above 500 milliliters (16.9-25.4 fluid ounces per hour) per hour in most situations, unless predicted losses are very substantial [1-8]."

Ideally, every liter (33.8 fluid ounces) of water consumed should contain 0.5-0.6 grams of sodium; this corresponds to an Endurolytes dose of three to six capsules (or three to four scoops of Endurolytes Powder) per 24 fluid ounces consumed each hour during an event. I have collected in my files over the past six plus years, since Endurolytes was initially formulated, data from endurance athletes who drank more than 30 fluid ounces per hour but who consumed no electrolytes (especially no sodium), or who ingested more than 280 calories per hour. These athletes suffered from muscle cramping, gastric stress, malaise, dizziness, headaches, and excessive fatigue, sometimes resulting in DNF and/or medical tent treatment.

During hyperthermic conditions, sodium loss may exceed fluid loss. The more an athlete drinks in excess of 24 fluid ounces per hour, the more likely hyponatremia will result. Not only does sodium help keep electrolyte balance within the exercising system, it also helps return carbohydrates to the energy cycle. Thus we have the necessity of electrolyte supplementation along with water intake.

Energy expenditure can range from 10-15 calories per minute at 75% VO₂ Max HR up to an astonishing 45 calories per minute calculated when Michael Johnson anaerobically ran a world record 400-meters in 43.18 seconds. However, energy re-supply from consumed food/fuels will not exceed 4.6 calo-

ries per minute, regardless of output.

Many athletes mistakenly think that they can replace nutrients as fast as they expend them. This, however, is not the case; in fact, physiologists have a specific terminology to describe this inequality: "LTD → LTP," which means, "Long Term Depression followed by Long Term Potentiation." To suggest that fluids, sodium, and fuels-induced glycogen replenishment can occur at the same rate of exercise depletion is simply not true. Endurance exercise beyond one to two hours is a deficit-spending proposition, with proportionate return or replenishment always in arrears.

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Ian Rogers is an Emergency Medicine physician in Verdun, Nedlands, Western Australian. He is a frequent contributor to the Journal and popular speaker at WMS conferences. The quote is from *Wilderness Medicine Letter*, Volume 18, Number 3, Spring 2001.

Nate's Corner *by Nate Llerandi*

Mid-Summer Blues - Keep it Fun!

I don't know about you, but mid-summer I always hit a lull in motivation. I've been very concentrated on training hard for several months and I've done my first 2 races. Everything is going extremely well - better than planned - yet I'm losing a little bit of steam.

A week's vacation at the beginning of July really helped. I trained a little bit, but nothing structured. I instead concentrated on enjoying my surroundings rather than focusing on where my HR was or how long/far I was going. It was a refreshing break both mental-

ly and physically. My focus is somewhat renewed and I'm ready to attack the rest of the season.

Take time to smell the roses. Use recovery days to back away from the inherent structure and work more on enjoying the workout. Look for sights you've never noticed before because your nose is to the grindstone. Try out new training routes.

When our focus gets so honed during the race season, it's easy to get too focused. Sure, a structured, well thought out, super-focused plan will yield great gains and prepare you well for racing. But it's that same plan that

can run you down mentally (not ANOTHER anaerobic track workout!!!).

If you feel this happening, take a refreshing step back and institute a transition week. Work out less (about 50%) and do so in disciplines you don't normally do (rollerblading, swimming, hiking, what-have-you). You'll be amazed at the therapeutic affect of such a week; you'll be even more surprised at how much fitness you DON'T lose.

Happy Training,
Nate Llerandi



Question:

Dr. Bill, is there any difference in the amount of nutrients contained in the encapsulated Endurolytes versus the Endurolytes Powder?

ANSWER:

Yes, there is a slight difference. The product is identical, but the delivery method can lead to slight differences in what constitutes "one dose." Endurolytes capsules contain a precisely measured pre-packaged amount. Six Endurolytes capsules contain precisely six times as much as one capsule. However, a measuring spoon cannot deliver such precisely reproducible results. Six spoons might be slightly more or less. It is very difficult to measure precisely using a plastic spoon. Spooning typically over-measures, as one is more likely to scoop out a "heaping" (convex) spoonful than a "scant" (concave) spoonful.

When Endurolytes powder first came out, I determined by repeated gram-scale measures that one scoop of Endurolytes powder approximated 1.3 Endurolytes capsule contents. An athlete switching to Endurolytes powder can use these conversions: two to two-and-a-half heaping scoops of Endurolytes powder equals three capsules; five scoops equals six capsules. If precise accuracy is required, use capsules, but it's unlikely that these small differences will yield any performance difference one way or the other.

Steve's note: We formulated Endurolytes Powder primarily for the convenience of those athletes who absolutely don't want to carry or consume capsules. If you do switch to bulk powder, it's still a good idea to carry a few capsules with you in case your pre-mix comes up short (e.g., the weather turns beastly hot and humid). It's much more convenient to carry extra Endurolytes supplies as capsules rather than try to measure and mix on the fly.

Race Report

Catching Up With Our Athletes

Gregg Geser 2003 RAO Champion

Steve- I wanted to thank you and Hammer Nutrition for being such a big part of my success in the Race Across Oregon. Your guidance after my first Ultra (Furnace Creek 2002) has been very important in not only my recent win in the race but also in my daily workouts. I have been using the Hammer Nutrition products before, during and after every workout. Enduro Caps, Race Caps, and Endurolytes prior to workout, Hammer Gel, Sustained Energy and recently Perpetuem, and more Endurolytes during workout, and Hammer Pro Whey mixed into a protein shake after my workout.

Because of the timing of the Perpetuem availability I had only a couple of weeks to try it out prior to the race. I was a bit nervous about using it exclusively but made a commitment to do so until I had a problem. We had a supply of Sustained Energy as a backup. Everything was working as per plan until I introduced some fruit and yogurt to the mix. My stomach reacted to the solids and I quickly informed my crew to ignore any more requests for solid foods. I continued to rely completely on the Perpetuem, Hammer Gel, Endurolytes, Enduro Caps, and Race Caps and finished strong. Now if you and the rest of the good people at Hammer Nutrition could just come up with something for the race day "demons".

Thanks again and keep up the good work.
Gregg Geser

Team EPI Champs at Cal Eco

Hi Steve - Just wanted to check in and let you know about the Cal Eco race this past weekend. A killer event held in Southern Yosemite...what a place to race.

We started the race anticipating about 15-18 hours of racing (that's what the event organizers anticipated)..lots of biking (our fav..) and some killer trekking with lots of big hills... (bring it on) So we were psyched and ready to go - oh yeah and a swimming leg instead of the standard paddling leg (our weakest discipline - but we're working on it). Sounded like a race for us for sure.

Anyways long story short.... the race lasted a bit longer than anticipated - 28 hours for the winners - TEAM EPI. Only 7 teams made it to the finish. We attribute our success (and the success of our good friends on the second place team) to E-Caps, Sustained Energy and Perpetuem! Seriously....everyone was short on food and short on energy because the course was so long...we kept our energy levels high, avoided bonking and kept things generally in balance with E-Caps. We tell everyone along the way and share on the course with other teams whenever we can.

Sounds like a commercial, but thanks to E-Caps our team made it to the finish line of the toughest Cal-Eco in FIRST place.

Thanks.
We're proud to be a part of your program.
Team Epinephrine

HAMMER HALF-PINT



Many thanks to Dave Javaheri for sending this great picture of his son. Looks like it was quite a workout!

Race Report

Catching Up With Our Athletes

Josh Frick

Rockin' With Race Day Boost

During the off-season, I read about sodium phosphate, and the benefits of using it prior to a race. I'm always skeptical about too-good-to-be-true accounts. Then I saw that Joe Friel advocated it's use, and found a study where participants using sodium phosphate reduced their 40K TT times by eight percent. Eight percent?!? When I found out that E-Caps' Race Day Boost was one in the same, it convinced me that I had to try it. I knew that Hammer Nutrition wouldn't market a product that didn't work, or that was going to end up banned.

My most important early goal was the Hump road race, the most difficult Mid-Atlantic race of the Spring. The Hump, true to it's name, has two back to back climbs each lap. 12 laps always weeds out the pretenders, and yields a winner with solid bragging rights. Past winners include Dale Sedgewick, John DeLong, Jon Hamblen, and Brian Walton (all pros).

Justin Thomas

Xcellent at Xterra

Hi E-Caps/Hammer Nutrition, wanted to give you a quick update on my latest races. On June 1st I competed in the first National Xterra this year in Big Bear, CA. I finished as the 5th Pro and had a decent race the whole way through. The altitude didn't affect me too much until the run when we had to run/CLIMB straight up the ski slope-twice! It was brutal and I lost contact with 3rd and 4th place. My goal was to finish Top 5, so mission accomplished.

This past Sunday was the 2nd National Xterra here in my home state in Richmond,

4 days prior to the Hump, I loaded Race Day Boost as indicated. I was excited and nervous to see how it would make me feel. Also, after announcing to my teammates that I intended to win the Hump, there was a certain pressure on to produce. I felt normal riding during the loading cycle, and didn't feel particularly good the morning of the race. In fact, I never felt particularly good, or like I was "flying." But I was flying.

The first three times over the Hump, I advanced through the field, staying composed while others were panting around me. That was encouraging, but I still didn't feel great. On the fourth lap a rider was away. I pushed the pace on the climb to reduce the gap. At the top, I glanced back. To my surprise, I had 10 meters to a strung-out group. It was very early to be showing my cards, but I hadn't really intended to.

I pushed my advantage, bridging to the escapee, with one other rider eventually com-

ing across. I drove it up the next set of Humps and shed one of my companions, leaving two of us with a 20 second gap. We worked well together, eventually building a 2'40" advantage over the field. The whole time, I didn't feel great, but when it was time to sustain 400 watts on the climb, the other guy was suffering, and I stayed calm. In the end, I took the two-up sprint, with a teammate rounding out the podium. It was a great result for the team, and a great result for me.

My take is that the Race Day Boost definitely had a positive effect. I was never in the pain I should have been in at crux moments of the race. However, I never felt fresh or snappy. I suppose riding like you're fresh and snappy is better than just feeling that way. I'm looking forward to using Race Day again at the district TT championships.

Josh Frick
Team Snow Valley

with some Endurolytes mixed in and Sustained Energy for late in the race. As always I've been using Cardio and Race Caps pre race and Hammer Pro Whey with some Gel for recovery. The products have been awesome and these results are my best ever in Xterra.

Thanks,
Justin Thomas

For both races I used a flask of Hammer Gel

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3 or more

Dry Powder vs. Wet Powder *by Bill Misner, Ph.D., C.S.M.T.*

Why Should Powdered Supplements Be Kept Dry?

An old adage for soldiers muzzle-loading gun powder prior to battle states, "Keep your powder dry." This is not only sound advice for them but also for those who supplement powders and potions in training for wars held on race day in an endurance event.

When I first heard that supplements should be refrigerated for preserving their potency by reducing the amount of deterioration from exposure to light, heat, and moisture, I challenged the notion that less humidity existed inside refrigerators where produce and bottled fluids were stored. To my surprise the humidity in the refrigerators I measured ranged from 30% to 50% less moisture than the external air environment. Athletes typically buy a 30-day supply of supplements (some buy a 60-day supply) with the expectation that maximum potency will reproduce performance expectations on race day, but if the supplements are left in a humid, warm environment, some deterioration may reduce the original potency. One research paper examined tablet ibuprofen calls this, "Serious Reduction" of original potency. This is one reason why E-CAPS formulates all products in a dry encapsulated form (with the exception of two specialized liquid products). Keeping your powder dry (away from heat, light) will deliver the original potency desired. Supplements and most medications should be stored in a cool, dry, light-free place.

THE BEST ENVIRONMENT for maintaining the original product potency is in the refrigerator where the temperature is kept at 39-41° F (4-5° C), in relative humidity of approximately 10-20%. The optimum relative humidity range (RH) for the well being of the home and for the health of the occupants is between 30% to 50% relative humidity. The saturation vapor pressure in the air varies with air temperature: the higher the temperature, the more water vapor it can hold. Since warm air can hold more water vapor than cold air, the relative humidity of the air can be changed by simply changing its temperature. If in the winter, outside air at 20 degrees F and 65% RH is drawn inside and heated to 70F without humidification, its RH drops to about 10%. In summer, outside air at 70F and 60% RH flows into a basement at 60F causing an increase in RH up to 82%. In warm air the humidity is always potentially higher than cold air. The warmer the ambient temperature, the more a powdered supplement will deteriorate losing its potency relative to time of exposure.

The Environmental Protection Agency advocates controlling relative humidity indoors: "By controlling the relative humidity in a home, the growth of some sources of biologicals can be minimized. A relative humidity of 30-50% is generally recommended for homes. Standing water, water-damaged materials, or wet surfaces also serve as a breeding ground for molds, mildews, bacteria, and insects. House dust mites, the source of one of the most powerful biological allergens, grow in damp warm environments."

Describing how to preserve the quality of an open bottle of wine, Pandell wrote, "The chemical reactions leading to spoilage of fermented wine (primarily oxidation-reduction) is reported slowed down by a factor of 6-16 times in 39-41° F as compared to storage at room temperature 73°F. This application specific to wine chemistry presents a model reference for keeping the original potency longer in the refrigerator than at room temperature [1]."

HOW TO STORE MEDICATIONS OR DIETARY SUPPLEMENTS

- A. Keep out of the reach of children.
- B. Store away from heat and direct light.
- C. Do not store in the bathroom, near the kitchen sink, or in other damp places.
- D. Light, Heat, or Moisture may cause medications or supplements to break down losing potency.
- E. Keep the oral dose products cold, dry, and dark but avoid freezing.

THE WORST ENVIRONMENT for storing over-the-counter products, prescription medications, or supplements is above 72 degrees Fahrenheit, especially if the humidity is above 50%. Molds, dust mites, bacteria, viruses, and other harmful microbials thrive when the relative humidity in your home exceeds 50-55%.

Two studies reported oral dose potency loss proportionate to their exposure to humidity and heat. The first one was an over-the-counter anti-inflammatory, the other was a prescription anti-inflammatory medication. Heat and humidity increase the rate of biodegrading biochemical reactions rapidly.

"Studies performed on ibuprofen tablets (one brand of 400 mg, two brands of 200 mg sugar coated and one brand of film coated tablets) are reported. Tablets were subjected to condi-

tions of 23 degrees C (73.4 F), 30 degrees C (86 F) and 40 degrees C (104 F); at 75% RH and 96% RH for periods of up to 4 weeks. Tablets were stored in different ways—unpacked, packed in air-tight/moisture proof containers, packed in tablet vials and packed in two unit dose packs. Dissolution was carried out in pH 7.2 phosphate buffer using USP or FDA conditions for ibuprofen (Basket-150 rpm or Paddle-50 rpm) with sampling and UV analysis up to 90 or 120 min. SERIOUS REDUCTION IN DISSOLUTION WAS NOTED for the 400 mg sugar coated tablets exposed to moisture. Mean % released at 30 mm (USP conditions) was as low as 1% and, for these tablets, dissolution continued to proceed extremely slowly for the full dissolution period. The film-coated tablets were not affected. The tablet vials and unit dose packs showed some protection. Investigation showed not only a change in the subcoat properties (which did not break down easily) but also in the tablet core, which became hard and non-disintegrating [2]."

"The effects of packaging and storage in multiple-unit and unit-dose containers on dissolution rate of model prednisone tablets are reported. USP PREDNISONE Dissolution Calibrator Tablets were packaged in three multiple-unit and five unit-dose containers. Packaged tablets were stored for 3-6 months under three conditions: 40 degrees C (104 F.) and 85% relative humidity (R.H.), 37 degrees C (98.6 F.) and 75% R.H., and 22 degrees C (72 F.) and 75% R.H. Dissolution rate was measured at pre-determined intervals during storage. For each condition tested, two separate runs of six tablets each were performed. Tablets in the least moisture-permeable containers were LEAST affected by storage. The conditions of HIGH HEAT + HUMIDITY caused the greatest change in dissolution rate. When stored at 22 degrees C (72 F.) and 75% R.H., little change in dissolution rate occurred in any packaged tablets. It is concluded that packaging and storage conditions affect tablet dissolution characteristics markedly. The practice of labeling repackaged tablets with the expiration date of the original container is shown to be invalid [3]."

Keeping supplements dry and cool preserves their explosive nutritive impact until set free for required endurance performance demand.

References Available Upon Request

A Word Or Two About Mito-R Caps by Bill Misner, Ph.D., C.S.M.T.

(Note: The full text of this article will appear on the E-CAPS website. These are excerpts from that article)

Mitochondria cell metabolite deficiency, which occurs in time to energy expenditure rate or with age, has been hypothesized to reduce the efficient reproduction of energy in terms of both exercise and mental sedentary states. Mitochondria cells appear to become dormant both with demand-use and time.

Mito-R Caps is NOT formulated at repletion dose levels, nor is its use in a loading dose intervention known. The idea behind adding a supplement in concentrated form is to "aid or add to" the substrates extracted from individual foods consumed. However, a food list that contains these substrates would be a lengthy list and not one that but a few of us attempt to eat regularly. Even if we did endurance training increases the rate of energy depleted further requiring supplementation.

In other words, the specific mitochondria substrate dose levels proposed are not likely going to be replaced by the whole food nutrition of endurance athletes for two reasons:

- (1) Endurance Athletes Dietary Choices/Habits/Genetic make-up
- (2) Endurance Exercise always depletes substrates faster than they can be replaced, which leads to accumulated deficiencies of those substrates which potentiate mitochondria cell efficiency.

The hypothetical "Secret" mechanism written into the Mito-R Caps formula proposes synergistic properties of the Romanian anti-aging supplement GH-3 (Procaine) to the Ames's r-ALA/ALCAR formula. (Note: Acetyl l-carnitine is often referred to as ALC or ALCAR; it is one and the same)

By adding essentially what are Procaine [GH-3] ingredients, including DMAE and PABA [potentialized by vitamin E, B-6, and Ascorbyl Palmitate], the resulting effects of Acetyl-L-Carnitine and alpha-Lipoic Acid are remarkably multiplied, literally reversing mitochondria cell rate of aging in 180 days

duration. This is in spite of the animals in Ames research receiving much higher doses. How much r-ALA + ALCAR did they give the animals to achieve mitochondria reversed rate of aging? The Ames research says that the ALCAR dose of 0.5 g/kg of body weight per day + a-LIPOIC ACID dose of approximately 0.166 g/kg appear to have reversed mitochondrial aging rate. In a 70 kg human being that dose is 35 grams [over an ounce] of acetyl-l-carnitine and 11.6 grams of alpha-Lipoic Acid per day. If you could even dose that amount throughout the day it would cost around \$50.00 per day. So you see I am suggesting that this may be a way to make a lower dose more effective, which is what Mito-R Caps report to do on paper and anecdotal from my tests in vivo.

May I qualify that the Mito-R Caps product is a plausible safe supplemental intervention that may reduce mitochondria substrate depletion imposed by age and endurance exercise stress? There is no suggestion that dose levels in this supplement are harmful even if taken in much larger doses. Though if you are taking a prescription drug, the ingredients need to be presented to your physician for his review.

As an anecdotal sidebar, I have taken these substrates for over a year now in several formulae at both the dose used in the Mito-R Caps and above without any known side effects...except less fatigue, better endurance performance, and less required sleep. 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 every thing formulated in this compound influences mitochondria cell biochemistry function synergistically and remarkably. Mito-R Caps is a product that I recommend taken year-round.

Ironman Accolades HAMMER ATHLETES SHINE!

The course was difficult, the weather conditions very tough (mid to upper 90's) but in spite of this Hammer Nutrition athletes produced excellent results. 1500+ athletes started the race and there were over 200 DNF's... tough race indeed! Congratulations to the following Hammer Nutrition athletes for their great performances:

- Matt Seeley** (Pro)
3rd overall
- C.J. Castle** (Pro)
7th overall
- Timothy Valley** (30-34)
2nd in age group; 16th overall
- Scott Gaiser** (40-44)
8th in age group; 64th overall
- Scott Powell** (30-34)
16th in age group; 74th overall
- Glenn Peroni** (35-39)
32nd in age group; 150th overall
- Eric Marquard** (35-39)
56th in age group; 227th overall
- Jess Draskau-Petersson** (25-29)
1st in age group; 5th woman; 59th overall
- Jessica Gillett** (25-29)
2nd in age group; 7th woman; 78th overall
- Christine Mackrides** (35-39)
3rd in age group, 21st woman; 184th overall
- Kyle Ann Dees** (45-49)
3rd in age group; 61st woman; 466th overall

If your name was not included (with 37 pages of results and over 1500 athletes it's easy to do!) send me an email (steve@e-caps.com) and I'll be sure to include it in the next issue of Endurance News.

Athletes....want the E-Caps/Hammer Nutrition community to know what you're up to? Send us a short email to graphic@e-caps.com (please put Race Report in the subject line) about your recent accomplishments and we'll try to include it in our Race Report

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Welcome to the summer edition of Endurance News! This issue is loaded with great information about products, performances, and people, and I hope you'll enjoy reading about it all.

For a supplement "junkie" like me, it's always exciting when a new product is developed... even when it's not by E-CAPS. I find it interesting to dissect everything about the product - why the company decided to produce and market it, what they've put in the product, what amounts of a particular nutrient they've put in it, and why. Far too often I end up saying to myself "what were they thinking?" when said product is being promoted and I often wonder how many unsuspecting athletes are going to be duped into spending (wasting) a lot of money on it.

Fortunately, you don't have to worry about that with any E-CAPS/Hammer Nutrition product. We take a long, long time evaluating the science and in product development before we ever consider introducing a new product or upgrading an existing one. A lot of products that look good on paper never make it into the E-CAPS line. Simply put, unless we determine that the product will be of value to you, and unless we ourselves would take the product, it never makes it into the line.

After lengthy evaluation and testing we are excited to be introducing one new product into the E-CAPS line. We call it Mito-R Caps, which I would argue is the most powerful and potent product we've ever introduced in terms of benefiting both athletic performance and overall health. Dr. Bill and I go way back in our discussions about the studies this new product is formulated from, as well as the

benefits of the two main nutrients in Mito-R Caps - Acetyl L-carnitine and r-alpha lipoic acid. I have to tell you that it's doubtful that both Dr. Bill and I have ever been so excited about a series of studies, the ones supporting the Mito-R Caps formula, or have we been so enthusiastic about the introduction of a new product. It really is an excellent product, one with profound potential for so many areas of athletic performance and general health, and one I believe everyone - athletes and non-athletes alike - should take all year long. The article in this issue regarding Mito-R Caps should provide all the info you need. As always though, if you need more information or have any questions, we're here to help.

We did some tweaking on the Race Caps formula and the result is going to knock your socks off. The new formula includes a powerful antioxidant called idebenone and it's a perfect match with the CoQ10 component of the product. We've also added a blend of enzymes - the Enzyme Enhancement System it's called - to enhance the absorption and assimilation of the nutrients. It's a rare day that we would tinker with a classic product, one that's already been proven effective time after time after time. However, we know that these updates to Race Caps are going to make this great product even better; we think you'll agree. A full-length article about the revised formula is in this issue.

One of my jobs here at E-CAPS is procuring and securing sponsorships at various events throughout the U.S. and Canada. A few years ago we had less than 100 events on the calendar. Oh, how things have changed! Now, in the month of July alone, we are sponsoring 82 events! In fact, for the entire 2003-year we have now reached the 800 mark in terms of events we're sponsoring! Thankfully I have two very reliable people - Robin Crever and Sara Moore - to assist me in making sure all the event's supplies (race bags, brochures, product samples, product prizes) get ordered and to the race director on time. At this time of the year it's a real challenge (there's 30 races happening on the weekend on July 12-13 alone) but we're managing to keep things rolling smoothly. Thanks Robin and Sara!

We increased our exposure in all endurance sports but two that we've seen an extremely large increase in are triathlons and adventure

racers. It's becoming more and more apparent that E-CAPS/Hammer Nutrition products are becoming the choice of more and more athletes in these two specific sports and I want to thank all of you that have turned us on to various race directors of these specific events. If there's a triathlon or adventure race that you know of that we should consider sponsoring, or if you know the race director(s) of any of these events, please contact me at steve@e-caps.com with all the pertinent information. I'm always looking for good events to sponsor, not just triathlons or adventure races, so the same is true for all ultra distance running, mountain bike, or road bike races. I can't sponsor them all but I would certainly be interested in considering sponsorship of these longer distance events. Again, please feel free to email me with any and all information.

I hope your summer is going well so far and that you're meeting your fitness and racing goals. As always, we are here to assist you in whatever way we can. YOU are the reason for our success, we never forget that, so please don't hesitate to contact us if there's anything we can do to help you achieve your athletic and health goals.

Continued best to you for a healthy and happy summer!

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Grueling 48-Hour Adventure Race

Supplements & Fuels Shine After Rigorous Test

by Jack Crawford

The event was the Adventurous Concepts Florida Coast to Coast Adventure Race. It started in Ormond Beach, on the east coast, just north of Daytona. The course went west winding across Florida to finish near Cedar Key. The disciplines in the race included a beach run, hiking, mountain biking, sea kayaking, and some rope work.

The race started with a 7-mile beach run. This was probably the easiest section to plan for. We decided to pace ourselves at about ten minutes per mile. I would reach the first transition in about 70 minutes so all I needed with me was some water and the mandatory gear in a small pack.

At the transition I downed an individual packet of Hammer Gel, and then jumped into the kayak in about 2 minutes. The kayak section ahead was 12.5 miles, which could take up to four hours. The supplements are fairly easy to take along. I use a Ziploc type baggie made by Alokasak. It is thicker and more waterproof than the standard baggies. I counted out the capsules of each type and put them into those tiny baggies. I made different packets in units of 6 hours. The race was supposed to take us 48 hours to finish, so I made many packets before the race.

The Sustained Energy and Perpetuem usage gets a little difficult from here. The obstacles to overcome are how to carry enough and how to keep it from spoiling in the hot Florida sun. Each discipline has a different problem.

For kayaking the issue is to figure out how to have access to your food while continuing to paddle. If you have to pause to eat you lose ground to your competition. I chose to use Perpetuem for the kayaking sections. I made a pocket on the front of my PFD that could hold a small bottle. I inserted a hose into the bottle so I could drink with out pausing. For the first section of kayaking I made a mixture of 6 scoops in the bottle.

We finished the kayaking in about 2.5 hours. The bike ride was 52 miles, so we figured it would take about 3 hours. During cycling it gets easier to drink, but more difficult to take the supplements. This section I had a bottle of Sustained Energy with 9 scoops. I am still carrying the same bag of supplements. I sim-

plified the process by taking a prepared packet that would last me 12 hours. I had other 12-hour packets prepared and waiting for me in my transition bag when I needed them.

The cycling section was finished in about 3.5 hours. The bottle of Sustained Energy was empty and I had managed to take my first course of supplements. I had to be careful not to drop my baggie while riding no-hands at the tail of the draft-line with my team.

The next section was another kayak. This one was 13.4 miles long, another 4 hours. I went with the Perpetuem bottle mounted on the PFD again. It took us a little over 3 hours then it was back on the bike for 31 miles.

We planned for 3 hours because parts of the course would be off-road this time. The support crew made a fresh bottle of Sustained Energy for me with 9 scoops in it. There was one place we had to stop to have one teammate climb up some ropes. They had a rope set up in a tree to climb up using mechanical ascenders. I used the time to take another course of supplements. This part actually took us four hours to complete.

It's dark now, entering the first night on foot. This hike was 21.5 miles, so we estimated about 5 or 6 hours based on a 4 mph pace. I had my bag of supplements, a flask of Hammer Gel, a bottle of Sustained Energy, and a bottle of Perpetuem. I decided to put about three hours worth into each bottle. I figured if we went over I had a few hours of Hammer Gel to back me up.

We started the hike jogging. Since the pace was faster and the heart rate was increased I decided to begin with the SE. I nursed the bottle for a couple of hours. We slowed to a walking pace then I decided to switch to Perpetuem. We got to the transition in about 6.5 hours.

We got back on the bikes for another 22 miles, to be finished off with a 2.3 mile hike-a-bike through a swamp. There is nothing like dragging your mountain bike through a swamp in the morning to wake up. The bike was a little more than two hours, but the bikewhack took us almost another 2 hours.

We followed this up with a short paddle, and

a long portage. It only took us 1 hour 20 min..

The course takes us back to the mountain bikes. This time we have some single track riding to do. It's about 20.5 miles in total, with the majority of it being off-road. We gave ourselves about 3 hours knowing that this section would be tough. We also had an injury on the team that was slowing us down a bit. It took us an hour to find an unmanned checkpoint. We didn't finish this bike until 2:42PM, taking us 3.75 hours. The heat of the day was building.

The last hiking section was only 12 miles long. It was made more difficult by the high heat and the pesky horseflies that kept biting our legs. We planned for 4 hours because the injury on the team was slowing us down.

All we had left to do was one more bike one more kayak. The trouble was the last bike was 68 miles long. We felt it looked straightforward and planned on 5 hours. I had a bottle of Sustained Energy and a flask of Hammer Gel. This time I went with 9 scoops. I had gone for about 36 hours without eating anything but Hammer Gel products. The support crew had some barbecued chicken sandwiches, which I could not resist.

Some of the unmanned checkpoints in this section were improperly marked on the maps. We spent almost two hours looking for a flag in the middle of the night. We finally finished the bike at about 3AM. Then it's off on the final paddle to the finish line. Of course I used the Perpetuem on the PFD as before. It was supposed to be about 10 or 11 miles. It was dark so we had to account for some navigation time. We gave ourselves four hours.

We finished at 6:49 AM with second place. Overall, the E-CAPS supplements and Hammer Nutrition products (especially the Perpetuem...fantastic stuff!) worked great. I didn't have any issues with the heat, or any lack of energy throughout the 48 hours.

Jack Crawford is an E-CAPS sponsored adventure racer. He is the founder of Beyond Adventure Sports® (www.beyondadventuresports.com), an all-encompassing adventure racer's site and the author of "Surviving Sabah, which chronicles his Borneo adventures at the Eco-Challenge.

2003 Race Across America

Hammer/E-Caps Athletes Larsen and Team Goodwin/Rieper Take Top Spots

As we go to press, the 2922-mile 2003 Race Across America (RAAM) is nearly completed. After three years on the Portland, Oregon to Pensacola, FL course, race director Jim Pitre and staff designed a slightly faster, yet still very tough course from San Diego, CA to Atlantic City, NJ. This course incorporated parts of previous RAAM routes and included every type of terrain and weather condition imaginable.

This year's champion, Allen Larsen of Cle Elum, WA, won in a time of 8 days 23hrs 36mins. Larsen was near the lead from the beginning of the race and took the lead for good after reaching the time station in Congress, AZ., less than 350 miles into the race. After assuming the lead Larsen, who used a variety of E-CAPS supplements (Race Caps, Enduro Caps, Anti-Fatigue Caps, and Tissue Rejuvenator) and Hammer Nutrition fuels (Hammer Gel, Sustained Energy, Perpetuem, and Endurolytes), was never truly challenged the entire distance, usually maintaining a 150 - 200 mile lead over his closest challengers. He finished over 14 hours ahead of second place, Jure Robic of Slovenia, who completed the race in 9 days 14hrs 48mins.

Rob Kish held on to the second spot for a good portion of the race but was passed by Robic in the last 200 miles. Still, the ageless Kish finished his 18th consecutive RAAM (a

remarkable achievement, one that will most likely never be surpassed) in third place in a time of 9 days 16hrs 29mins, mere minutes ahead of Liechtenstein's Marcel Knaus (9 days 16hrs 45mins).

Fifth place went to California's Rick Ashabranner who made up an incredible amount of time after falling as far back as 12th place early on in the race. The heat on the first day through the Southern California desert reached 115 degrees, which affected Ashabranner and all the riders. However, as the days progressed Ashabranner, who also used a full complement of Hammer Nutrition fuels, worked his way through the field and reached the finish line on the boardwalk in Atlantic City, NJ in 9 days 22hrs 44mins.

Italy's Dino Nico Valsesia, a veteran of the Furnace Creek 508, finished sixth in a time of 9 days 23hrs 43mins. Terry Lansdell, another long-time E-CAPS/Hammer Nutrition product user, had his strongest RAAM finish, placing seventh in 10 days 3hrs 18mins, six hours, ahead of Switzerland's Martin Lorenz (10 days 9hrs 24mins). Californian Ish Makk (another E-CAPS/Hammer sponsored rider) finished his first RAAM, placing ninth in a time of 11days 2hrs 32mins.

As this article was being written, four other riders are still on the course, yet to finish. Five

solo riders dropped out.

Averaging nearly 19.5 mph for the 2922-mile distance, Team Harreither from Austria won the 4-person team division in 6 days 6hrs 13mins, about 9 hours ahead of Team Arete Racing (6 days 15hrs 3mins)

Team Goodwin - Rieper (both using E-CAPS supplements and Hammer Nutrition fuels) won the 2-person team division in a time of 7 days 15hrs 56mins over Team Epic Racing (7days 21hrs 0mins).

Sadly, this year's RAAM marks the first time since its beginnings in 1982 that a rider has died. Brett Malin, a 30-year race from Vail, Colorado, was killed in an accident on the RAAM route near Pie Town, NM. Malin, a member of the Team Vail - Go Fast 4-person team, was struck and killed by an 18-wheel tractor-trailer rig coming from the opposite direction on U.S. 60, a two-way highway, at around 2:30AM E.S.T. on Wednesday, June 18. RAAM officials reported that Malin had just completed a 30-mile relay leg and was turning around in the road when the semi came over a rise and could not stop in time.

E-CAPS/Hammer Nutrition is a proud sponsor of RAAM and many RAAM racers. For results, photos, and commentary on this year's race visit www.raceacrossamerica.org

2003 Race Across Oregon

Gregg Geser Pedals To Victory In Oregon

Fast becoming recognized as one of the toughest ultra cycling events in the country, the annual Race Across Oregon (RAO) began on Saturday, May 31st. The 538-mile route, which is actually more of a race around Oregon than it is across the state, contains well over 30,000 of climbing including a vicious 10-mile climb to the finish at Timberline Lodge at the base of Mt Hood. The weather throughout the majority of the race was favorable and if anything, was a bit on the warm side compared to previous editions. E-CAPS/Hammer Nutrition is a proud supporter of this epic race, which is a RAAM qualifier race.

This year's winner was Gregg Geser of Sisters, OR in a time of 35 hours 25 minutes. From the beginning, Geser, who claimed 5th place in last October's Furnace Creek 508, was

never in a position lower than 2nd. After claiming the lead around the 225-mile mark he never looked back. Finishing second was Italy's Enrico DeAngeli in 36:10. DeAngeli had led through the first 200+ miles but had to take a longer-than-expected break due to fueling-related problems. Once back on his bike, DeAngeli had dropped back to 6th but made a remarkable recovery through the night and into the second day to claim the second position. Moscow, Idaho's Bruce Carroll, a first-time entrant in RAO, worked his way up from 7th place at the first time station and eventually took the third spot in an impressive 36:37. Another Italian, Alessandro Colo, finished in 4th place in a time of 37:35. Carl Poppe followed up his successful 2002 Furnace Creek 508 race with a solid 5th place effort in RAO in a time of 38:14. Three more men and one woman (Patty Jo Struve) com-

pleted the course, five others dropped out.

In the two-person team division Richie Kodzielaski and Michael Packard (Team Thunder/Lightning) claimed the victory over two other teams in a time of 30 hours, 59 minutes. For the Nth consecutive year, Team Shark Attack (Jeff Tedder, Peter Gierga, Tim Beatty, John Bravard, and Dean Lucas) won the 5-person team division (over five other teams), this year in a time of 26:08.

An interesting note: All the winners in each division - solo, female, 2-person team, 5-person team - were using a variety of E-CAPS supplements and Hammer Nutrition fuels.

Next year's Race Across Oregon is scheduled for June 5th and 6th. More information about the race can be found at www.raceacrossoregon.com



Karel Tresnak, Jr.

In this issue of Endurance News we're talking with Karel Tresnak, Jr.. Karel is a record-setting 4 time winner of the 'Oiwi Moloka'i World Championships, a 32 mile course from Kaluako'i Beach in Moloka'i to Hawai'i Kai in O'ahu. Here Karel talks about his start in outrigger canoe paddling, his toughest races, and the goals he has for this year.

Karel, a lot of our mainland clients may not be familiar with your sport. Can you tell us more about it?

Outrigger Canoe Paddling is the state sport of Hawaii. The outrigger canoe is basically a canoe with an outrigger mounted on the left side. It was originally used by the Polynesians for voyaging, fishing, and war. It was the craft that brought the first settlers to the Hawaiian islands. Today there are competitions for 1,2, 4, and 6 person canoes. The most popular are the 45 foot six man canoes which are used every summer in regattas that draw thousands of participants.

How did you get started paddling and how long have you been competing?

I got started with Lanikai Canoe Club when I was about 10 years old and have been competing for the last 12 years.

What are some of the highlights of your paddling career?

Winning the Molokai Channel Race with Lanikai Canoe Club and Team New Zealand Hawaii. Winning the One person Molokai Race for the fourth time.

What do you like to do outside of paddling?

Surf, snowboard, and travel

What is a typical training day for you?

Paddle for at least an hour and a half in rough conditions on windward Oahu.

How long is the paddling season and how many races do you typically compete in?

There are two seasons. The one man season is from January to May and I compete in about 15 races. The six man season is from June to October and I compete in about 12 races.

What is your favorite race/course?

My favorite course is the Molokai Channel because it's always unpredictable.

What has been the toughest race/course?

The toughest race was the 2002 Six man Molokai Channel Race. The conditions were horrible due to the headwind and hot weather. We also battled with Tahiti the entire race, so we couldn't let up at all.

What are your goals this year?

To do well in the Six man season and hopefully win the Molokai Race.

Which E-CAPS/Hammer Nutrition supplements do you use and why?

I use the Sustained Energy powder and the Endurolytes. The Endurolytes help me recover and feel good during and after the race. The Sustained Energy never upsets my stomach and keeps me full of energy throughout the race or work out.

What advice would you give to beginning athletes in regards to training and staying motivated?

Set up a training schedule that works for you and know what you're going to do before you begin your workout. Make goals for yourself not only for long term, but short term. Having goals and fulfilling them will keep you motivated. But, most of all, have fun.



Karel hard at work!



Team New Zealand/Hawaii



Karel and the guys of Team New Zealand/Hawaii

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The nd

Mangan Makes History!

Hi Steve,

Thank you for your help in the build up to my successful Guinness World 24-hour treadmill record attempt. I ended up running 216.37 kms/134.45 miles.

I'm sure you will be interested to know that I only took Sustained Energy, Hammer Gel and Endurolytes for the entire attempt. Not a single morsel of solid food or candy passed my mouth and I felt great. I am at present preparing a submission for the Ultra site and hope to have it listed in a few days. I will of course be speaking favourably of these products and you may want to check it out at www.ultramarathonworld.com

I did not get off the treadmill once and only

stopped the mill 2 times (at 100 and 200 kms) to reset it. Other than that I did not stop moving; I felt strong the whole way. My last hour was the fastest, 10.4km. Hours 1-23 were very steady i.e. all 8.80 - 9.10 kms per hour. I actual recorded "negative splits for the 2nd 12 hours, running exactly 2km more for the 2nd 12 hrs!

Your products were the secret to my successful 24-hour World record attempt. Thanks for all the advice and I am looking forward to ordering more in the future...

Sincerely,
Tony Mangan
World 24-hour treadmill record holder.



Congratulations to Matt Seeley who took 9th at the 2003 Wildflower. All that cold weather training must have worked!