

In This Issue:

Page 2

- A Personal Note from Brian Frank
- Our Mission Statement
- Closing For One Week

Page 3

- Sugar Content in SE & HG

Page 4

- Ask Dr. Bill
- End of Season Plan

Page 5

- Planet Ultra

Page 6

- RAAM 2001

Page 7

- Athlete Spotlight

Page 8

- New Racewear!

Page 9

- Free Radicals & Antioxidants

Page 12

- Winter Sale Announcement

Now is the Time to Exercise Your Mind, Body and Soul

by Eric Harr

There is little question that the incomprehensible events of September 11, 2001 have gripped us, horrified us and rattled us to our core. We all remain under a great deal of stress, which has likely taken its toll on us in ways we haven't yet realized. It is precisely during these times that we must fortify our bodies, strengthen our minds, clarify our thoughts and find peace in our soul.

Simple exercise is one of most tangible and positive ways to achieve those things.

Reflection and generosity are the by-products of spirituality, which is fostered during exercise. Unfortunately, the last thing we feel like doing these days is exercising — even as a professional athlete, for days after the attack on America, I couldn't move, let alone train. However, once I gathered myself up and got back on my bike, I began to feel better. Much came into focus.

Tragedy brings out our best - it is so consummately American - but while we are

helping others, we can neglect ourselves. Let's turn off the TV for a moment and make time for our health. After all, creating a stronger body and a more resilient mind will enable us to help others more. Just have a look at the rescue workers at "Ground Hero."

Barbara Everett, CEO of the Canadian Mental Health Association's Ontario Division, says many people will suffer post-traumatic stress as a result of what they experienced or saw from the recent attacks on our country. "These are people who previously were functioning well, but who have had a horrible event enter their lives," says Everett. People will have to "attend to themselves and tap their inner strengths" to get through it, she adds.

For some time now, it has been common knowledge that exercise is good for one's physical health - an easy jog around the lake usually makes our bodies feel better. It has only been in recent years, however, that the

(continued on page 3)

No Simple Sugar?

by Brian Frank

After preaching "no simple sugar" for the past couple of years, it's time to recant. While we have not changed our position one bit in terms of the clear negative impact that manufactured, refined simple sugars have on athletic performance and overall health, we have made a rather embarrassing discovery that contradicts the "no simple sugar" mantra. It seems that both the Hammer Gel and the Sustained Energy have a couple of grams of naturally occurring mono and disaccharides, which technically must be classified as simple sugars on the Nutrition Facts panel. Specifically, the Hammer Gel will now be listed with 2 grams of sugars per serving and Sustained Energy with 5

grams per serving (approximately 1.5 grams per scoop).

Before I go any further, I'd like to take full responsibility for this situation and issue an apology to any of you who feel that you have been deceived or misled. That has never been my intention and as soon as this problem was brought to my attention, I felt compelled to make things right, regardless of how bad it might look. That being said, I want to reassure every one of you who have come to trust and rely on these products that the formula has not changed at all. The Nutrition Facts information is the only thing that is changing.

(continued on page 3)

A Personal Note



from Brian Frank

Welcome to the 32nd issue of *Endurance News*. As you can see, we have a completely new look and feel. This is thanks to Susan, our new graphic artist. I had originally intended to use this space to tell you about all of the great things going on here, the tremendous growth we have experienced and the big plans I have for the

future, but it all seems rather insignificant in light of the catastrophic events of September 11th. By now, there is nothing to be said that hasn't already been said. We are all deeply saddened, hurt, frustrated and angered and so many more emotions that are nearly impossible to verbalize. I have included Eric Harr's article as our lead story because it so aptly reflects the feelings that I have and that I think the majority of the athletic community has in regards to these events and what our response should be.

Like everyone, after much contemplation and re-examination of my priorities, I have come to the inescapable conclusion that whether I'm ready or not, life goes on. The innocence has been lost, but we must continue to live our lives as best we can. Maybe by the time we get ready to put together issue #33 I'll feel like updating you all on the goings on at E-CAPS and Hammer Nutrition in 2001. Until then, I hope you enjoy this issue.

Brian Frank

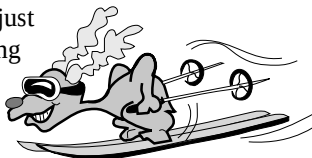
Closing For One Week

by Brian Frank

The offices of E-CAPS & Hammer Nutrition will be closed for the week between Christmas and New Years.

Since 1987 E-CAPS, and since 1995 Hammer Nutrition, has never been closed for more than a day besides weekends. New Years Day, Memorial Day, 4th of July, Thanksgiving and Christmas have been the only week days that we were not open for business. After another record-setting year and a very hectic summer season, I have decided to give

my entire staff a break so they can travel to spend the holidays with family or just relax a bit during the hectic holiday season.



Our offices will be open for business as usual through Christmas Eve, December 24th. They will be closed beginning on Christmas morning, December 25th, and will re-open on Wednesday January 2nd for business as usual.

LOOK FOR our new, full color logo wear catalog in your mailbox by early December. It will feature all of our new styles as well as our other clothing and accessory offerings. See related article on page 8.



PLEASE NOTE: We are discontinuing the use of our post office box on all correspondence.

All future correspondence should be addressed to
4952 Whitefish Stage Road,
Whitefish, Montana 59937.

Thank you!

Mission Statement

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

Endurance News features insightful articles on diet, nutrition, training and other topics of interest 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
E-Caps Co-Founder

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.

SUGAR CONTENT IN SUSTAINED ENERGY and HAMMER GEL

by Dr. Bill Misner Ph.D. & Steve Born

Simple sugars are mono- [single] - saccharides or di- [two] - saccharides. Any other sugars linked 3-or-more-together are called “carbohydrates” or “other carbohydrates.”

The SUSTAINED ENERGY formula's di- & mono- saccharide content is from three specific maltodextrins (complex carbohydrates) and presents a 7.4% sugar content from mono- and di- saccharides, which are interpreted as simple sugar content *adjoined to 92.6% long-chained carbohydrates*. Again, these are not simple sugars added to the formula, they are *naturally occurring* as part of the specific complex carbohydrates used in SUSTAINED ENERGY.

Each three-scoop serving of SUSTAINED ENERGY contains:

338 calories
1 gram Total Fat
0 grams Saturated Fat
0 mg Cholesterol
73 grams Carbohydrates
0 grams Dietary Fiber
5 grams Sugar
10.5 grams Protein
100 mcg Chromium Polynicotinate
100 mg L-Carnosine
50 mg L-Carnitine Complex
50 mg Choline Complex

The complex carbohydrates that comprise HAMMER GEL are from a specific mal-

todextrin and Energy Smart®. Each serving of HAMMER GEL, as a naturally occurring part of the maltodextrin complex and Energy Smart® sweetener and, if applicable, in the fruit purees or concentrates contains 2 grams or less per serving.

The Fructose content of the small percentage of Energy Smart® used ranges between 15-20% by weight in product sample. It should be noted that this source is Levulose, not like HFCS [high fructose corn syrup], which metabolizes as elevated triglycerides. **Levulose from natural fruit juices follows a metabolic pathway increasing blood glucose values, not triglycerides.**

(continued on page 5)

(No Simple Sugar - continued from page 1)

Furthermore, you also have my word that my main goal for the Hammer products has not changed at all. I am still 100% committed to developing fuels that work for real endurance athletes like you and which have a minimal amount of sugar and no junk food additives.

The important distinction remains that the trace amounts of simple sugar in these products, less than 10% of the total carbohydrate content, are naturally occurring and unrefined — similar to the simple sugars found in fresh fruit and whole foods. Dr. Bill's article in this issue helps to make the distinction between natural simple sugar and industrial, chemically refined simple sugar and how differently our body metabolizes them. The latter is used in energy drinks, gels and beverages because it is cheap and sweet, not because it has any health or athletic performance benefits.

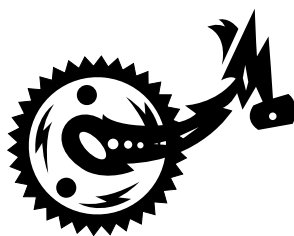
Honestly, this change from a “no simple sugar” to a “less simple sugar” position is a relief for me. The no simple sugar position had made the development of an energy bar or post-workout recovery

drink next to impossible and was just too extreme in certain regards.

Consuming some naturally occurring, unrefined simple sugars are unavoidable and innocuous in moderation and perfectly acceptable after exercise or at mealtime.

Our position can be summed up by saying the less simple sugar you consume during exercise, the better off you'll be.

Secondly, you should still avoid processed simple sugars such as fructose, sucrose and high fructose corn syrup like the plague in your daily diet and especially while exercising. Specifically, you should try to limit your total simple sugar intake to 100 grams per day.



(Exercise - continued from page 1)

scientific community has accepted exercise as an effective tool to improve mental health.

According to the 1996 U.S. Surgeon General's Report on Physical Activity and Public Health, people who are physically active had higher scores for positive self-concept, more self-esteem and more positive moods and affects. The report found that physical activity appears to relieve symptoms of depression and anxiety and improve mood.

To understand why, we need to understand the nature of human stress. The human stress reaction is woven into our genetic code and provides us with the strength and energy to deal with imminent danger; it is a self-protective measure. There is only one problem: unlike a caveman being attacked by an animal, fighting and running away are not likely appropriate responses to stressful situations in the modern world.

The result of facing a stressful situation is that our bodies go into a state of arousal - but there is usually no place for that energy to go. Our bodies can stay in that state of arousal for hours at a time: you feel your



Ask Dr. Bill ?????????????

QUESTION: I had heard from a friend that there's some research that may link glucosamine with elevated blood cholesterol. He had been told this by an acquaintance of his a few years back, and had no details. However, my friend had stopped taking glucosamine (found in Tissue Rejuvenator) when he found his cholesterol had risen 50 points. Do you know anything about this — if so, what's the current thinking?

ANSWER: According to Dr. Ray Sahelian, M.D. and expert on this subject, "There are NO studies that implicate glucosamine with increased cholesterol levels." I have been asked previously if glucosamine influenced blood sugar levels toward contraindictory hyperglycemia. In this arena also there are no known contraindications to taking glucosamine in those with hyperglycemia, however, no formal studies have been done.

The dose of glucosamine, one or two grams a day, is minimal as a sugar source compared to the amounts of carbohydrates found in the foods we consume. Glucosamine is available in two forms, glucosamine sulfate or glucosamine hydrochloride. A review of the scientific literature shows glucosamine is likely to be helpful for many patients with osteoarthritis. I've not seen any reports linking the two with any disorders, however if an individual experiences blood chemistry changes after glucosamine dose, it may be wise to employ a washout then retriial — test the product. If the disorder returns then there may be something of a reaction peculiar to that person, who should avoid concentrated dose use.

QUESTION: Assuming you are well hydrated, is it possible to take too many Endurolytes? If yes, what would be the symptoms of too much sodium in the system? Are there any potential negative side effects of too much sodium during an Ironman?

ANSWER: A relative measure of accurate Endurolyte dose rate is by the influence of isotonic sodium volume when sodium is balanced by other electrolytes. If you take too much sodium distal tissue edema will occur dose dependent. Hands, feet and under the eyelids swelling will abound. Too much sodium intake will increase hormonal "triggers" to stop sparing/recirculating both sodium and fluids telling the kidneys to filter urine specimen to throw off serum fluids with its sodium content.

If an endurance athlete consumes between 100 and 600 mg sodium with 240-280 carbohydrate-rich calories in an isotonic 16-24 fluid ounce solute mixture PER HOUR (3-4 divided dose), sodium and fluids will be minimally filtered by kidneys if the athlete is progressing at a pace within his or her aerobic acclimatized "zone." Too much sodium intake begins to occur when an athlete ingests more than 600 mg per hour, though there are reports of athletes using up to 1000 mg per hour with no reported side effects. This is the exception rather than the rule. Body weight water loss should be at least 2%, no higher than 3%, at the finish of an event.

Too much sodium can increase edema stores or it can act as a diuretic causing excessive fluid loss through urination or profuse sweating. If your hands, feet and eyes are not swollen, your body weight 2% less than when you started the event and your muscles cramp-free, your Endurolyte intake may be evaluated successful. Too much sodium will also elevate blood pressure in time and with dose, but that may be modified when sodium is restricted after an overdose event. It has been our experience that 85% of all athletes are electrolyte replenished taking one Endurolyte every 20 minutes. There are a few who do well on one Endurolyte per hour. The lady winner of the Leadville 100 mile Ultramarathon won on one Endurolyte per hour. Her physician's two blood tests showed that her serum electrolyte profile was exactly the same after this grueling event as it was before... on one Endurolyte per hour for 22 hours! But she is the exception, as are a few other big fellows who use eight Endurolytes per hour.

Yes, you can use too much and do more harm than using too few. I suggest starting with 3 per hour in a 3-5 hour hyperthermic training effort first, then bump it up to four if muscle spasms or stomach cramping are problematic. Be sure not to overhydrate or overeat, a balance of 16-24 fluid ounces with no more than 24-280 calories with three Endurolytes remains a pivotal premise supporting aerobic endurance exercise.

End of Season Plan

by Nate Llerandi

Some of us have raced our last race of the season. For others, the last race is right around the corner. We train hard and focus even harder for that final event, hoping for results that will make all of the sweat and exertion worth the while. But once that race is over, what do we do?

I recommend taking at least two weeks completely off. That's right, no training whatsoever. I used to take a complete month off at the end of every triathlon season when I raced as a pro. Your body and mind need time to recover from the long season. The mental break is actually more important at this time than the physical (if you've been smart with your training plan throughout the year). All internal batteries need time to recharge.

If you're adamant about not taking time off, then I recommend transitioning into sports that aren't primary to your training. Cut back to fewer than 50% of your normal training volume, keep your effort sub-aerobic (below 70%), and enjoy sports/activities you don't normally. For example, run or hike instead of cycling. Or swim instead of running. If you're a triathlete, then avoid swimming/running/biking and instead rollerblade, for example. You're still active, but you are still allowing yourself a break from the normal grind.

If you decide to keep exercising (it's NOT training at this point... be clear on this), then I recommend a five-week transition phase. After that, if you want to get back into your primary sport, ease into it. You'll be surprised how quickly your top level of fitness returns and how excited you are about tackling your training to prepare for 2002.

Happy Training!

Nate Llerandi is a former national class swimmer/world class triathlete who, after a five-year retirement from the sport, is getting back into it. He has been coaching since 1990 and creates programs for athletes of all sports and ability levels.

PLANET ULTRA Takes Over Southern California

by Steve Born

Augmenting his existing AdventureCORPS ventures, long-time ultra marathon cyclist, runner and all around endurance athlete/endurance sports promoter Chris Kostman has formed Planet Ultra. This enterprise has taken over the production and promotion of a large group of century, double century and brevet rides in southern California that were formerly produced by HMP/Badwater Adventure Sports. Kostman, a finisher of the 1987 Race Across America (the youngest to ever finish RAAM), is also the race director of the Badwater Ultramarathon foot race and the Furnace Creek 508 bicycle race.



E-CAPS and HAMMER NUTRITION are pleased to be associated with Planet Ultra (as we were with HMP) as nutritional sponsors of all the events. A full list of the scheduled events and ongoing information can be found by subscribing to the Planet Ultra mailing list at: www.PlanetUltra.com/maillinglist/sub.html

Being from California, I've been able to do a good majority of these rides and can tell you that they're a lot of fun. Kostman's events are known to be extremely well organized and well supplied, so if you're ever in the southern California area during any given time and are looking for an excellent cycling challenge, check out one of the many Planet Ultra events.

(Sugar Content - continued from page 3)

A serving of HAMMER GEL (slight variations based on flavor) contains:

0 grams Total Fat
0 grams Saturated Fat
0 mg Cholesterol
23-27 grams carbohydrates
0 grams Dietary Fiber
2 grams Sugar
0 grams Protein
18-27 mg Sodium
1-20 mg Potassium
3-7 mg Calcium

FRUCTOSE METABOLISM

My [Dr. Bill] understanding is that fructose is fructose and the resulting effect is the same when natural fructose is removed from the fruit. **If fructose is consumed in natural state as in a fruit with other carbohydrates, vitamins, minerals and fiber the harmful result in blood markers is minimal.** A high carbohydrate banana, sweet potato, or other starchy fruits may be a good solid food choice anytime. The more processed, and more "empty-calorie" the fructose, the more harmful it is.

Regarding HIGH-FRUCTOSE CORN SYRUP (HFCS), it's important to know that there are several factors other than fructose to consider. This quote from Zeman's *Clinical Nutrition and Dietetics* (1991) has significance: "High-fructose corn sweetener is composed of 'corn sugar' (primarily glucose) and fructose. HFCA contains 42%, 55%, or 90% fructose. The remainder in each case is predominantly glucose. Indications are that the action of HFCS on plasma glucose and insulin is the same as sucrose." (See: Akgun S, The effects of sucrose, fructose, and high-fructose corn syrup meals on plasma glucose and insulin in NIDDM subjects. *Diabetes care* 8:279. 1985.)

FRUCTOSE SUPPLEMENTS: DR. MIRKIN TELLS US, "THERE ARE NO HEALTH BENEFITS"

"Entrepreneurs try to convince diabetics to use fructose in place of regular table sugar. Recent research shows that taking large amounts of fructose can harm a diabetic. Entrepreneurs try to sell fructose to diabetics, claiming that it doesn't require insulin to enter cells. Diabetes occurs when the body lacks insulin or cannot respond to insulin. Insulin is supposed to drive sugar from the bloodstream into cells. When insulin does not do its job, the sugar, glucose, accumulates in the bloodstream, causing a diabetic to feel sick and weak and even pass out. So, some people incorrectly recommend that diabetics take fructose because it can get into cells without insulin.

However, in the intestines and the bloodstream, fructose is converted to the sugar, glucose, and a diabetic gains no health benefit. A recent study shows that large amounts of fructose can cause blood triglyceride levels to rise very high. It blocks the body's ability to respond to insulin, so even more insulin is required and it causes blood pressure to rise.

So, not only is fructose of no benefit to a diabetic, it can also cause harm. Diabetes causes blood sugar levels to rise too high which causes severe nerve damage. The treatment of diabetes is to keep blood sugar levels from rising too high by restricting dietary fat, losing weight if overweight, and exercising. It is not treated by taking fructose." [1, 2]

REFERENCES

- [1]-[Dr. Gabe Mirkin on Fitness-Report #6199 5/15/94.]
- [2]-High-Fructose Feeding Elicits Insulin Resistance, Hyperinsulinism, and Hypertension in Normal Mongrel Dogs. Author FJ Martinez, RA Rizza, JC Romero. *Hypertension* 1994 (April); 23(4):456-463.

Back issues of *Endurance News* are available online. Point your browser to www.e-caps.com/oncall/enews.cfm

E-CAPS/HAMMER NUTRITION dominates the 2001 Race Across America (RAAM)

by Steve Born

Following the same mountainous (100,000+ feet of climbing!), 2983-mile course that was used in 2000, 18 solo riders (16 men, 2 women), 8 two-person teams and 2 four-person teams began the 19th annual Race Across America in Portland, Oregon on June 17th. When it was all over, 12 solo riders, 5 two-person teams and both four-person teams had finished the grueling race. Riders using E-CAPS/HAMMER NUTRITION products dominated the results. We'd like to recognize and congratulate them!

Cassie Lowe successfully defended her title in a time of 10 days, 7 hours, 42 minutes, which was also fast enough to place her a superb fourth place overall. Cassie's primary fuel was Sustained Energy (three scoops per serving) or Hammer Gel (three servings) consumed on an hourly basis. On average, she drank up to 15 bottles of Sustained Energy along with nearly one half bottle of Hammer Gel a day. She did enjoy occasional consumption of solid food as well.

She also relied heavily on Race Caps, Enduro Caps, Endurolytes, Anti Fatigue Caps, Tissue Rejuvenator and Super AO, which she took at regular intervals during the 21+ hours she rode daily during RAAM. By the time she reached the finish she had taken over 200 Race Caps, over 400 Enduro Caps, over 600 Endurolytes, over 200 Anti Fatigue Caps, 80-100 Tissue Rejuvenator, and 40 Super AO. In her own words, "these fuels and supplements were the backbone of my race food again this year. I was determined to rely on quality fuel and stay away from sugary foods, things I knew weren't going to give me the energy I required." As her crew chief again this year, I am pleased to say that the fuels and supplements worked perfectly.

Former champion **Rob Kish**, who has finished every RAAM he's entered, an astonishing 16 RAAMs, had his best race in years, finishing a strong second behind eventual winner Andrea Clavedetscher of Lichtenstein in a time of 9 days, 21 hours, 18 minutes. This was the first year Rob had integrated E-CAPS/HAMMER NUTRITION products into his training and in RAAM; the proof of their effectiveness was seen in his results.

Another former champion, **Danny Chew** has never finished lower than 3rd place in RAAM and finished in that position this year in a time of 10:03:07. Danny is a long-time user of E-CAPS products.

Mark Patten continues to get stronger and faster with more and more RAAM experience. His strong 4th place finish in the solo men's division (10:13:18) is his highest placing to date.

Wayne Greenway was the second rookie to finish the race this year (behind Rainer Klaus of Germany) in an impressive 6th place finish with a time of 10:19:08. From my vantage point Wayne appeared to get stronger the longer the race progressed. Should he decide to compete again, I believe he can finish with an even faster time.

The same can be said for another first time RAAM entrant, **Dan Jordan**. He and his wife Heather own The Wheel Cyclery in Kansas City, Missouri so they not only use the products; they sell them as well. Dan's time of 11:00:55 gave him a 8th place finish.

Jeff Stephens is perhaps the biggest rider to ever qualify for and compete in RAAM. Built more like a linebacker than what one would consider ideal for RAAM, Jeff silenced all the potential critics with a solid 10th place finish.

At 60, **Peter Lekisch** became the oldest person to complete RAAM. His time of 12 days, 20 hours, 50 minutes is remarkable and shows that age should never keep you from realizing your dreams.

Peter Pop and Jim Pitre (Team E-CAPS) finished in third place (7 days, 20 hours, 57 minutes) in the highly competitive two-person team division. One thing to note about this team is that Peter is 51 years old, Jim 61. They were a decade or two older than all the other teams in the race, yet, like Lekisch in the solo division, showed that age need not be a negative factor in RAAM.

Nina Norris captained the four-person women's team, Team RB4/BIK that



Cassie Lowe, near the Utah border, defending her RAAM title.

won their division in 6 days, 20 hours, 20 minutes.

More information about RAAM, including all the results, time splits and interviews can be found at www.ultracycling.com or www.raceacrossamerica.org.

Athlete Spotlight — Werner Schweizer

by Steve Born

On June 23 of this year, Switzerland's Werner Schweizer, at age 62 completed the Western States 100 Ultra Marathon Run in a superb 20th place overall in an amazing 20 hours, 33 minutes, 19 seconds. Werner is a long-time user of E-CAPS and HAMMER NUTRITION products. I recently emailed Werner to congratulate him on his tremendous accomplishment, to ask him a couple questions and to ask him to share a little bit about himself with us.

STEVE: Werner, Brian, I and all the staff at E-CAPS want to congratulate you on your most impressive performance at this year's Western States 100. Can you give us a little background on yourself and your running career?



WERNER: First of all, I apologize for my bad English. I am not a writer and have difficulties to say what I really feel and would say.

Secondly, I am rather confused receiving your congratulations. I rather need to say thanks to you, E-CAPS and HAMMER NUTRITION, to give me all the advice that enables me to enjoy life, running and being myself. The advice I received through the endurance list and your products help me to have a good quality of living.

And running is just what I need to maintain that quality. I would also say that I am a "recreational runner," running just because I've got two legs and love to be outside, living with and admiring the beauty of nature. Considering that I do a full time job inside, I need to feel the outside breeze whenever possible.

I am a "late starter" beginning with some cycling when I was already 40. From 1979 to 1988, I commuted to my job by bicycle (50km each day), all year round, for almost 10 years, which gave me a base of endurance. And which took me away from illness. Once we began our jewelry job, I had no more the opportunity to commute (or just for 10km) and I increased my running. But running means mountain running, especially uphill. I was never a "frontrunner," but with the help of E-CAPS (I use Race Caps and Enduro Caps since '88 or '89), I became an endurance runner, and had some good results on multi day stage running.

STEVE: How did it all come together for this year's Western States?

WERNER: Why running Western States? Taking care of the American runners joining the Swiss Jura Marathon, I had Bernd Leupold with me in 1997. He is a 10 times Western States finisher under 24 hours, living in Forest Hill

almost on the Western States trail. We went out for the usual morning run and, after an hour of running he told me that I have to try Western States in 1999, because then, I will be 60 and may win my age group.

But how to train for Western States? To make a long story short, I got injured three weeks before Western States [1999], made it to the start and through the race, but I said "never again." It was the toughest race that I ever did. Why running again in 2001? I have runner friends who enjoyed three times Western States. Therefore, I said, try it again. And 2001 was perfect (except that I fell on the ground after 20 miles and injured my left upper leg). I did a good training on the trail (150 miles the 14 days before), and had a lot of fun running alone for hours in the heat of the Sierra. The race day began with a late start of five minutes due to our car which broke down on the motorway at 4 AM. But once in the race, no pressure — only fun. I was only a little bit disappointed when Emma Davies overtook me. But it was downhill where I have to be very, very careful. Is it because of the age? I do not understand but it seems to me that I am no more as loose as when I was younger and therefore I always lose contact downhill with my racing partners. But the most important is that I enjoyed the race and would return or do another 100 Miler whenever it is.

STEVE: How does it feel to pass runners a few decades younger than you?

WERNER: It is the same feeling as if you pass someone. Never think of nor feel your age otherwise you become old. And I sometimes think I may go too fast and that I will pay afterwards.

"Winners never quit and quitters never win and the secret of success is hard work and that is why it remains a secret to so many."

Werner Schweizer

STEVE: What kind of strategy did you use for this race?

WERNER: My strategy is to start at a strong pace and hold as long as possible. There are always good and bad moments. And you know that you remember the good ones and you forget the bad.

STEVE: What is the hardest part of the Western States?

WERNER: Certainly the downhill from Highway 49 to No Hands bridge. In the night, on a difficult trail with the muscles aching, this seems to be the most difficult. After a rest for shoe change and after crossing the river I felt some difficulties to restart.

STEVE: How do you work through those difficult spots? Mental toughness?

WERNER: Is it mental toughness or human being stupid? I think that once I made up my mind to start and if my overall health permits, I am going to the end making the best of it. Winners never quit and quitters never win and the secret of success is hard work and that is why it remains a secret to so many. Is this mental toughness?

STEVE: Can you tell us what supplements and fuels you used in the race? How much? How often?

WERNER: I used SE and HG, the normal quantity of 1/2 liter bottle, nothing else for nutrition even though at some aid-stations there were marvelous strawberries. The only "not optimal" was that I added half of water and half of Gatorade. It was mainly because the water at the aid stations had that chlorinated smell. They should serve bottled water or ground water from Robinson Flat. I took also E-CAPS for each 1.5 hours. I prepared in a plastic bag: 2 Enduro Caps +1 Race Caps, 2 Endurolytes, 2 Anti-Fatigue Caps, 2 Super AO and 2 PIC. In addition, I added 2 Endurolytes to each bottle. From Forest Hill, mile 60, I used HG whenever I felt without fuel.

STEVE: What supplement program do you follow in training?

WERNER: All year I only use your products, but and certainly, not enough scientifically. I would need more advice and therefore I read the endurance list and visit your site.

STEVE: What are some of the other athletic events you've done this year?

WERNER: As I mentioned at the beginning, I am a recreational runner and run certainly too much. Before Western States, I did six trail runs here, ranging from 50 to 70 kms. This was my Western States training. After Western States, I did the Swiss Jura trail, seven days and 323 km, two weeks later a 110km mountain-trail, another week later a 65km mountain-trail. Since then, I do smaller races, uphill mountain, but I race almost each weekend. I will run a marathon (on trails) on Oct. 7. I feel that E-CAPS make me recover much easier.

STEVE: Werner, you're very humble but I hope that you'll allow all of us here to say congratulations one more time. Thanks for taking the time to talk and for your answers.

Voler Clothing Update

by Brian Frank & Steve Born



The current E-CAPS cycling clothing will soon become collector's items! Our new clothing will still be from VOLER, noted for their high quality material and sublimation, but will have entirely new graphics. Brian Frank and Susan Conrad, our graphic designer, have been working feverishly with VOLER'S design team to come up with the perfect color/graphics combination. And we believe we've come up with a classic.

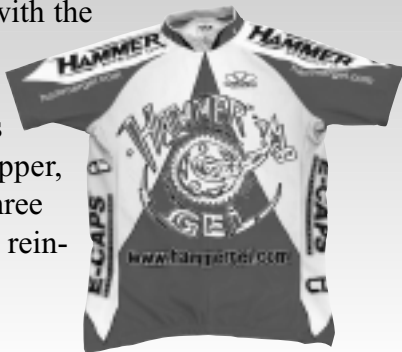
The new clothing has arrived and it's awesome! The color scheme is an eye-catching, eye-pleasing red/steel gray combination. This time we're using primarily Hammer Gel logos (the front and back will have our awesome 3-D/liquid steel Hammer Gel crank logo) along with smaller E-CAPS logos for the graphics. It's really cool looking gear and still at prices well below what you'd expect to pay for such high quality clothing.

Here's what we have in stock, with updated prices:

Hammer Gel Jersey - \$34.95

These are made with the same material as the E-CAPS jerseys and includes the 20 hidden zipper, high collar and three rear pockets with reinforced stitching.

S-XXL



Hammer Gel Sleeveless Jersey - \$34.95

New to our clothing line, this quick drying sleeveless jersey is made with a 100% polyester micro-mesh material and has the same 20 hidden zipper and three rear pockets as the regular jersey.

S-XL



Hammer Gel Wind Jacket - \$49.95

A wind jacket at this price with this quality and durability that looks this cool is a **STEAL!** This is a first rate jacket and the color scheme and graphics are sooooo sweet.

S-XL

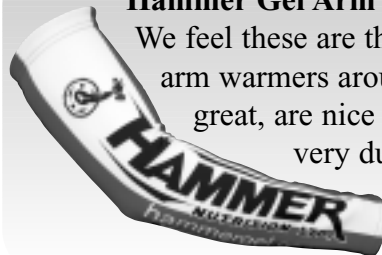


Hammer Gel Bib Short- \$39.95

(Same material/padding as the regular shorts in the two new color schemes). **S-XL**

Hammer Gel Arm Warmers- \$24.95

We feel these are the highest quality arm warmers around. They fit great, are nice and warm and very durable. **S-XL**



Hammer Gel Shorts- \$34.95

Voler's top-of-the-line Peloton shorts with the comfy Cantara padding. We have TWO color choices: a red/granite short with black Hammer Gel graphics and a black/granite short with black Hammer Gel graphics). **S-XL**



Sometime in late November or early December you will be receiving a copy of our new logowear and racewear catalog featuring all of our logo apparel and the new cycling uniforms. If you don't want to wait until then, log onto www.e-caps.com/softgoods.cfm. By the way, our premium quality clothing at unbelievably low prices make ideal presents for you, your spouse and/or friends.

Free Radicals and Antioxidants: Balance is Key — A Review

by Bill Misner, Ph.D.

Once an endurance athlete commences training, they subject themselves to 12-20 times more free radicals than at rest. Too much free radical increase will impose harmful tissue-degrading substances from increased exercise metabolism, which may damage lipid cell walls degenerating skin into wrinkles, predisposing DNA to mutagenic cancerous growths, adding immune-related illnesses, allergies or simply a general feeling of fatigue. Increasing free radicals to the human system should make us older faster, yet endurance athletes, who neutralize free radicals by resting periodically, eating fresh raw vegetables and fruits, while supplementing high dose antioxidants appear to defy the aging process. By slowing down the aging-process, athletes also enhance post-workout recovery, avoid overuse injuries, and maintain a powerful immune response from systemically neutralizing free radicals with specific but potent micronutrient anti-oxidant scavengers.

WHAT IS A FREE RADICAL AND HOW DOES IT INFLUENCE PERFORMANCE?

A free radical (FR) is a highly reactive molecule that contains at least one unpaired electron in its outer orbital shell. Once it is “freed” in living tissues, the unbalanced molecule causes multiple cellular damage until it is neutralized by a scavenging antioxidant enzyme. FRs are perhaps “Public Enemy Number One” to cellular longevity and quality of life. A tissue reaction from free radical excess are suspect for premature aging, cancer, atherosclerosis, immune function disorders, allergies and a wide assortment of degenerative diseases. FRs result from a number of exogenous pollutants introduced from air, water, food, medications, cigarette smoke and sunlight radiation. Endogenous FRs are formed within all of us during energy metabolism. When a muscle contracts, oxygen combines with water in muscle mitochondrial cells up to 5% of the inhaled oxygen forming superoxide (O_2^-), hydrogen peroxide (H_2O_2) and hydroxyl (OH^-) radicals throughout the multi-phased electron transport chain [1]. Once formed, free radicals continue to react and interact negatively damaging cellular tis-

sue. The extra unbalanced electrical charge assumed by peroxides and superoxides causes them to manifest a strong attraction to polyunsaturated fatty cell membranes, nucleic acids found in the DNA code for cell replication, and other cellular proteins. Upon contact with a target, the FR is neutralized, but unfortunately whatever it “hit” becomes an electrically unbalanced FR also. A chain reaction may produce thousands of FRs before an antioxidant enzyme reduces its reactive nature [2]. Damage losses mount beyond the living tissue replication, repair and rejuvenation capacities, causing constant degeneration until cellular death occurs. When a cell membrane is initially damaged, it no longer has the capacity to transport nutrients, oxygen, water or waste matter.

Cell membranes may rupture, spilling their contents into surrounding tissues, and creating further damages to surrounding cells. The worst of these destructive reactions may be found in the chromosomes and nucleic acids of the cell, which may alter the cell replication rate or order resulting cancer cell mutations [3]. The origin of most cardiovascular disease may be closely tied to unrestrained free radical damages to cell membranes lining the blood vessels and are the implicated “villains” in LDL-cholesterol plaque accumulates linked to the causes of cardiovascular heart disease [4, 5, 6]. During unchecked oxidative stress, fatty acids within each target membrane advance the rate of oxidation to Low Density Lipoproteins (LDL) cholesterol, which advances the rate of aging, adult onset diabetes, atherosclerosis and coronary artery disease [6].

Production of free radicals is inevitable. An exercising athlete provides an excellent model-combatant for opposing excessive free radical production. During intense exercise, 2-5% of the inhaled oxygen increases the tissue contents of free radical exposure. Brooks [7] measured rates of FR metabolite increases from 12 to 20 times above resting values. Later, Quintanilha [8] discovered up to three times the normal muscle damage rates in rats (post mortem) who were subject to light aerobic exercise sessions for two hours duration. On the other hand, animals who are exer-

cised intensely until exhausted were observed to deplete 40% of their muscle glutathione antioxidant stores while reducing liver glutathione stores 80% (the main storehouse for antioxidant glutathione) [9].

The model for free radical research is the exercising athlete. Jenkins [10] inferred that large quantities of inhaled oxygen during exercise clearly induced harmful free radical chemistry, namely lipid peroxidation. Lovlin [11] monitored the indices of free radical damage during exercise, correlating increased peroxidation of lipids after intensive workouts. During such intense exercise sessions when maximal oxygen rates are reached (VO_2 Max), plasma malonaldehyde (MDA), markers of lipid peroxidation, dramatically increase to 26% above resting value markers (serum MDA levels). Light workouts performed at 40% VO_2 Max rate, however, actually decrease serum MDA by 10% below resting values. If serum markers (MDA) of free radical production were interpreted as indicators of aging, light aerobic exercise should prolong life span by 10% in those who regularly practice it. This may explain the health implications of how light stimulation of the natural antioxidant system within human physiology may impact both quality of life and longevity in terms of quantity of life. The rate of aging is slowed down when an increase in the antioxidant capacity stores of glutathione occurs. Reduced plasma levels of glutathione appear to correlate with muscle stores of this natural free radical scavenger and how long the individual may yet live [12, 13].

Over training or too much intensity in exercise, without intermittent rest and recovery sessions, tend to peak glutathione depletion on day 11 following 10 consecutive training days. A variable rate of recovery was observed in each of these subjects who trained 10 consecutive days after 5-6 days of not training [14]. Nieman [15] documented the lowest concentrations of immunoglobulin (Ig) to occur 90 minutes after continuous running. C-reactive protein levels, observed indicators of tissue death, begin to rise in runners who race beyond 21 kilometers of roughly 13 miles distance, and becomes progressively worse as distance raced is

Free Radicals - continued from page 9

increased [15, 16]. There is a hypothetical correlation for exercise time, 90 minutes versus a distance (21km.) of a 13-mile half-marathon distance when systemic markers of tissue damage appear. Blood serum markers of aging and increased predisposition to degenerative disease are similar to those found in an over-trained athlete, yet the athlete rebounds during periods of rest because the exercise-induced free radical accumulates are mostly neutralized, but not all, by his or her conditioned antioxidant defense system.

Over time, free radical accumulates may result in increased onset of fatigue, decreased recovery rate, deteriorated cellular immune response, increased predisposition to degenerative disease, and eventual death. Dekkers [17] notes, "Increased oxidative stress induced by exercise is compromised by increased antioxidant activity, preventing lipid peroxidation after exercise." Human studies have shown that dietary supplementation with antioxidant vitamins has favorable effects on lipid peroxidation after exercise. Olin [18] has shown that intake of antioxidants with food can reduce exercise-induced oxidative stress. The technology of all the forces of modern Science is at this date unable to prescribe a synergistic perfect individual formulation of antioxidant substances to prolong your life or provide extreme quality of life at this date. Some of the antioxidants discussed in this treatise may, when combined with others, provide intermittent reduction of free radical activity in most people, when consumed with food sources. The benefits of oral antioxidant intervention may reduce free radical damage rate, elevate the immune system response, and increase the rate of recovery from daily activity resulting in both enhanced quantity and quality of life.

The body has three main endogenous enzymatic defense antioxidants with which it defends itself against FR exposure; SOD & GLUTATHIONE are briefly discussed:

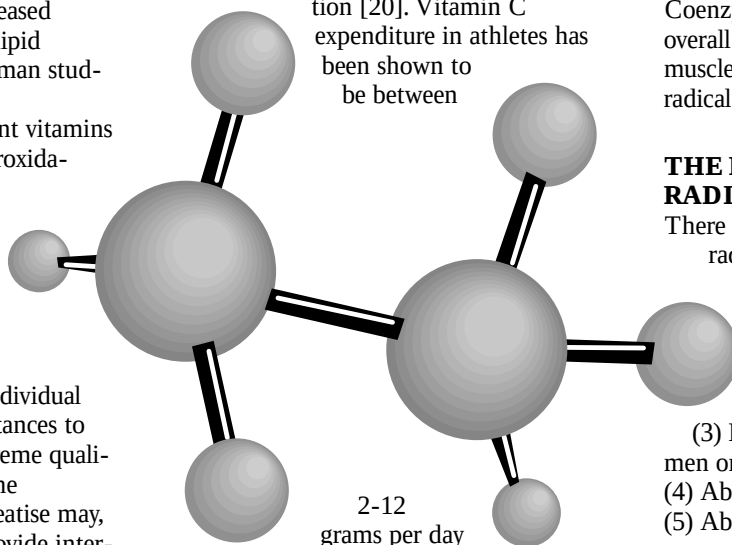
- (1) CATALASE neutralizes peroxides
- (2) SUPEROXIDE DISMUTASE (SOD) destroys superoxide radicals
- (3) GLUTATHIONE PEROXIDASE detoxifies peroxides.

SUPEROXIDE DISMUTASE (SOD)

naturally occurs in barley and wheat grasses or most green plants, but scientists are disagreed on whether the SOD molecule may make it intact through the acidic digestive system, and, if it does, whether its large size is negotiable through membranes to cellular tissue sites where it is needed. Some manufacturers of SOD enteric coat it, insisting that it is permeable only in a less acidic environment, such as the small-intestinal villi entry ports.

GLUTATHIONE is made from cysteine, selenium, and other amino acid substrates. Several other exogenous substances have antioxidant scavenging properties known to reduce free radical reactions in human tissues. Vitamin E absorbs free radicals forming tocopherol and tocopheroxyl radicals. Vitamin C not only assists by its neutralizing tocopheroxyl radicals but it regenerates and recycles Vitamin E for

additional potent FR absorption [20]. Vitamin C expenditure in athletes has been shown to be between



2-12 grams per day because of its regenerative role with Vitamin E during high oxygen turnover during exercise [21]. The mineral selenium (200-400 micrograms) forms the active site for glutathione absorption and neutralization of FRs. It also potentiates the efficiency of Vitamin E within the active sites where FRs are absorbed [22]. Glutathione has the capacity to regenerate Vitamin C & E, and will influence free radical reduction in both fat and water cellular mediums. As noted glutathione has helpers in both water-soluble and fat-soluble arenas. Vitamin A (Retinol) and its precursor, Beta Carotene, are also active fat-solubles necessary for lipid metabolism throughout the body protecting against free radical cellular mutants known to cause some cancers of the skin, breast and lungs [23].

The high rate of oxygen metabolism during exercise saturates muscle cells with free radical activity. As energy levels are spent from exhaustive workouts, the last enzyme catalyst to regenerate ATP for muscle energy is Cytochrome c Oxidase. Even during lighter amounts of oxygen expenditure during endurance exercise, Cytochrome c levels, which precede Cytochrome c Oxidase in the metabolic order are reportedly depleted to less than 50% of their sedentary state levels [24]. An all-out effort may cause Cytochrome c levels to fail entirely. When and if Cytochrome c is depleted, Coenzyme Q-10 is recruited to regenerate ATP by electron-transfer activity within the mitochondria's energy cycle. Elite, very fit athletes tend to show higher muscle mitochondrial levels of Coenzyme Q-10 than their less fit counterparts [25]. Researchers have further indicated that in spite of incidental superoxide radical production when Coenzyme Q-10 enters tissues, the net overall effect of elevated CO-Q-10 in muscle cells results in a decreased total free radical count [26].

THE PROBLEM: EXCESS FREE RADICAL LEVELS

There are five factors that increase free radical tissue levels:

- (1) Workouts lasting two hours or more
- (2) Any workout where heart rate equals or exceeds 80% maximum values
- (3) Body fat percents above 15% for men or 20% for women
- (4) Above 45 years of age
- (5) Above 200 lbs. body weight

BALANCED SOLUTION: REDUCING EXCESS FREE RADICALS

Exogenous supplementation in optimal-dosed weights may induce free radical scavenging and absorption to reduce cellular damages from normally unopposed reactions. The induction of antioxidant substances may require up to three months for enzymatic count adaption to occur. Free radical reduction may occur at a faster rate with use of the following daily supplements:

- (A) Glutamine-Enhanced Whey Protein Concentrates 40 grams/day and or N-Acetyl Cysteine @ 350-500mg/day
- (B) Glutathione @ 200-2000mg/day
- (C) Vitamin E @ 600-2000IU/day

(continued on page 11)

Free Radicals - continued from page 10

(D) Coenzyme Q-10 @60-75mg/day
(E) Vitamin C @ 2000-12,000mg/day
(F) Selenium @ 200-400 micrograms/day
(above 800 micrograms may have toxic side effects)
(G) Vitamin A or Beta-Carotene @ 25,000 IU/day
(H) Alpha Lipoic Acid 300-800mg/day
(I) Melatonin 1-10 mg/day
[6, 11, 13]

A POSTSCRIPT WITH PRECAUTION:

This article suggests control of free radical excess, not to eliminate FRs entirely. Free radicals are used by your body to maintain

homeostatic balance and to control microbial proliferation. The adage, "if a little is good, more is better" does not definitively apply. Balance is key. Antioxidant supplements should be ingested with food. Consulting an alternative medicine physician or health care professional before ingesting large antioxidant supplemental combinations is advised. One size does not fit all, and if you are under the care of a knowledgeable alternative medicine provider, confirm the information provided here with specificity to your healthcare needs.

Optimistic studies suggest a promising antioxidant role for several other substances, whose suspected antioxidant

scavenging activity against FR reactions. They are Ginkgo Biloba, Garlic(Allicin), Milk Thistle(Silymarin), Echinecea, Lycopene, Astaxanthin, Alpha-Lipoic Acid, Quercitin, Gamma Linoleic Acid (GLA), Flaxseed Oil, Germanium, Aloe Vera, Bromelain, Cats Claw, Essiac, Hydrochloric Acid (Betaine), Modified Citrus Pectin, Pau d' Arco, L-Carnitine, Ipriflavones, Astragalus, Carnosine, Grape Seed Extract, Cholestin, Bromelain, Tumeric, and several of the alpha- and beta- Carotenoids.

References are available upon written request by contacting Endurance News, 4952 Whitefish Stage Road, Whitefish, Montana 59937.

(Exercise - continued from page 3)

blood pressure rise, your breath-rate increases, you sweat. During times of high stress, we could benefit from an immediate physical outlet - a bike ride with friends, a hike, an easy swim or a game of basketball. Regular exercise can melt away ongoing stress and keep things under control. David B. Posen, MD in an April 1995 article in *The Canadian Journal of Continuing Medical Education* stated "As a way of draining off stress energy, nothing beats aerobic exercise."

A REDEFINITION OF EXERCISE

Exercise should do two things: strengthen your body and make you feel better. However, achieving those goals may require a fundamental shift in how you see and do it. I believe that Americans are exercising less because it has evolved into a painful, boring and overhanging chore in our lives. View exercise less as a "workout," that burns calories and more of a "payout," a pause — a celebration of life and a function to maintain wellness.

The next time you exercise, try to reconcile your negative stress - fear, anger, anxiety - and transform those feelings into clear, positive action. That skill is the hallmark of every champion athlete across all sports: they use negatives to strengthen their resolve. Just as our country is right now. Master this skill and your life will change.

HERE'S HOW

Many of us feel tired or sore after exercise,

which is precisely how you should not feel if your aim is stress management.

According to Kathy Waller, assistant professor of medical technology at Ohio State University, if you exercise too much or too hard, you will "suppress your immunity and wear yourself out unnecessarily."

Clinical psychologist Eliezer Margoles, Ph.D., of The Neuro Behavior and Rehabilitation Network, Inc. in Chicago, Ill. states that "feeling joyful and the pleasure of being in one's body is very beneficial." He urges people to "take time out, and instead of saying no to exercise say no to something else." He also cautioned against a "punitive mindset" in which some people engage during exercise, viewing it as a task or punishment instead of a pleasure. Let me suggest four things that will make your exercise a more rewarding and relaxing part of your life:

Above all, do things you enjoy. The more fun you have, the more you'll perform that activity and the more you'll get from it. It is also beneficial to have a variety of exercise outlets — ruts extinguish passion.

It should feel easy. Wear a heart monitor and keep your heart rates in a "comfortably challenging" zone, not a "My-head-will-pop-momentarily" zone. Contrary to conventional wisdom, you will get plenty of cardiovascular benefits from easy to moderate aerobic exercise.

Choose more beautiful exercise venues. Nature is the best "therapist" you'll find. Take the pressure off yourself. Exercise need not be a 10-mile run. To me, the best activity to bring about mental and physical clarity is a simple hike on the trails with family and friends.

I saw a father kicking a soccer ball in the park with his son the day after the attack on America - likely reflecting on the events with his boy. That struck me as a wonderfully healthy and positive way to deal with this tragedy. The soccer provided dad with a needed sports diversion and showed the boy - by example, and on his turf - that deep breaths, dialog and togetherness are more far effective ways to deal with scary or difficult things than turning to drugs or alcohol or, worse, directing one's anger towards others. Lessons for us all, indeed.

Eric Harr is a professional triathlete, author and television host. His new book, "The Portable Personal Trainer: 100 Tips to Energize Your Workouts and Bring out the Athlete in You," is available in bookstores and online at www.Amazon.com.

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The Last Lap

Annual Winter Sale Announcement

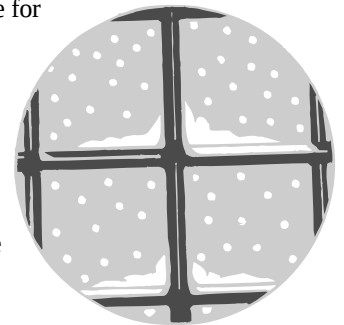
by Brian Frank

sale

Every year we have a huge winter sale offering the biggest discounts on all E-CAPS and Hammer Nutrition products. Historically, the sale has always been held during the month of December. For the first time we are going to have the sale in the month of November instead.

In the past some customers have thought that our annual winter sale was an inventory reduction sale or a means to unload old product that is near its expiration date. This is definitely not the case. My motivation for having the sale has always been a “customer appreciation sale” that enables those of you who are so inclined to stock up on your favorite products for the upcoming season. Of course, we benefit too because November, December and January are our slowest months of the year. However, with the increase in sales to athletes competing in winter sports and a broader product line that includes many year ‘round products, slow sales during the winter months have not been an issue for the past four to five years.

So, look for a Winter Sale flyer in your mailbox in late October or early November. It might be a good idea to mark your calendar now so you’ll remember in case you don’t get a flyer. We anticipate very high call volumes during the winter sale. To avoid long delays and frustration, we encourage you to order online at www.e-caps.com. All online orders will receive winter sale pricing when processed whether they are reflected on the web site or not. Please also note the article on page two about our being closed during the week between Christmas and New Years.



It is never too late to be what you might have been. - George Eliot