

ENDURANCE

NEWS

BY HAMMER NUTRITION

#125 June/July 2021

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IN THIS ISSUE

Hammer CBD Worldwide

CBD becomes available internationally

Adapt to Hot Weather

Hydration is key for your summer events

PLUS

- Lean Out with Hammer PHOOD
- Introducing Endurance C
- Atypical Athletes



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- Steve K.

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Liam Mayo enjoys a training ride on the winding roads near Hammer HQ in Whitefish, MT.

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OUTDOOR GETAWAY

Desert hiking on an escape from Las Vegas. Looking towards Calico Tanks in Red Rock Canyon National Conservation Area.

Photo: Miles Frank

Endurance News depends on authentic photos from our readers and your photo submissions are always welcome! To be featured in the next issue of *Endurance News*, email your hi-res photos to photos@hammernutrition.com.



Welcome to the 125th issue of Endurance News!



Summer is here and racing is back on! In this issue, we celebrate all things racing and bring you news of recent events and more many upcoming. You'll also find articles on new products, updated existing products, why I love jugs/flasks, and all of your feedback, race reports, and stories. We also continue the discussion of incorporating MRPs into a low carb, high pro/lipid diets and intermittent fasting.

Whether you are reading your first issue or your 125th, I'm certain you'll find useful information and inspiration on the following pages. If there is subject or content that you feel is missing or would like to see on these pages, please feel free to let us know. We read and cherish all feedback we get from our clients.

If you are a new client, I want to make sure you know that the Hammer brand is based on authenticity and transparency. For 34 years, I have made it my mission to help you and my other clients in any way I can. This is what we do all day, everyday via phone, email, social media, and outbound communication. Other than some trade secrets regarding my formulae, everything else is out in the open and on display to the world to see. You can come to our offices, meet our staff, take a tour, and see the inner workings of the company. Speak with me directly if you wish, or Steve, or Miles, or any of our other friendly staff. Running a company this way is a lot of work, but it's the only way I am willing to do it, but

we are buoyed by your support and encouragement!

On the racing front, I won't be "racing" this year, but will be competing extensively in the sport of motorcycle observed trials. It's slow, technical, completely mentally consuming (very necessary!). Trials requires strength, endurance, precision, balance, and intense mental focus. **Hammer Gel**[®], **Endurolytes**[®], and **Anti-Fatigue Caps** are my fuels of choice for riding and competitions, but **Fully Charged** is the game changer for keeping my mind sharp during hours of mentally draining concentration! I take it before I ride and throughout the day during competitions.

I have already had three events and a full summer schedule that includes attending all 8 observed trials nationals in Pennsylvania, Ohio, Arizona, and Oregon. So far, I have notched a 2nd, 4th, and 5th place finish and am hoping to move up the results ladder this summer! I am fitter and leaner than I have been in a decade and have new motivation to compete.

If you participate in endurance sports that require keen mental focus—orienteeing for example—Fully Charged needs to be part of your fueling routine. You will love it.

New product development has kept us busy and we have new products on the shelf and on the horizon, as well as reformulations and 2.0 versions of your most beloved products. In this issue we focus on our new vitamin C product. Like our magnesium supplement, **Endurance C** is not just another run of the mill, foreign ingredient tablet or chewable. It's the most potent, comprehensive vitamin C formula we could create and it

came out better than I had hoped. Remember, Linus Pauling won the Nobel Prize for his work on high dose vitamin C therapy and it's curative powers. Can't discuss it here, but I strongly encourage you to learn about this great scientist and his work, very timely for the world we live in today.

On the diet front, Dr. French and I continue to discuss the role of meal replacement products and their many uses. Long time readers will know that our discussion of diets and eating styles is a relatively new addition to *EN*. However, it has been something that I wanted to address for a long time, as each new fad diet is promoted. Let me be clear, I want to do so responsibly and with full deference to the complexities, emotional, social, and clinical that swirl around the act of eating for nourishment. This is why I have enlisted the services of a board certified M.D. and we carefully vet everything we write on this topic.

I can't close without asking you to read the articles on Hammer Gel jugs and flasks! They are so much better than annoying single serving pouches. If you are a gel user of the single serving variety, please take a closer look and reconsider.

Thank you for taking the time to read this far! Have a great summer!

And remember, if you love Hammer, let the world know. We rely on word of mouth as our primary marketing/branding opportunities.

Enjoy the read and pass it on to a friend.

Brian French

Brian



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MISSION

Endurance News provides informative and inspirational content to help endurance athletes like you achieve peak performance and health. The views expressed favor a healthy diet, hard training that emphasizes quality over quantity, and prudent supplementation to improve health and performance. Back issues are available at hammernutrition.com.

OUR GUIDING PRINCIPLES

Service: From day one, we've strived to treat each client fairly, honestly, and individually. Your trust is our top priority.

Education: We educate and empower athletes with free, easily accessed information on health and performance.

Principles Before Profits: Profits never take priority over our values. If it says "Hammer Nutrition," it's good for you.

OUR CORE VALUES

Innovation: Our development of new, cutting-edge products and categories has led the field since 1987.

Product Integrity: Our consumables are researched, tested, and USA-made to the strictest standards.

Read our complete mission statement online at hammernutrition.com/company/mission-statement



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In this issue, learn how fueling right can make summer great.

Read more on pages 10, 22, 30, and 40

ON THE COVER: At Hammer headquarters in Montana, we plan on grinding gravel all summer long with Hammer Gel® close by. Nothing beats an easily digestible gel made with real wild huckleberries and complex carbs served from a convenient jug and reusable flask.



32

Our flavor-free, nonacidic sports drink is back and better than ever! **HEED® Unflavored** is a sports drink that will keep your energy levels high without any aftertaste.

Endurance News: Issue 125
June/July 2021

EN FEATURES

8 **I Love Jugs and Flasks**
by BRIAN FRANK

10 **Endurolytes**
by STEVE BORN

14 **Hammer Dads**

24 **Meal Replacement Products**
by DR BAYNE FRENCH MD DC

28 **Race Caps Supreme**
by STEVE BORN

30 **The Perils of Loading**
by BRIAN FRANK

35 **Web & Shipping Changes**

36 **Introducing Endurance C**
by STEVE BORN

38 **Uganda Outreach**

40 **Recovery**
by STEVE BORN

52 **Atypical Athletes**

54 **All-In-One Fueling Myth**
by BRIAN FRANK

60 **Go Green, Use a Gel Flask!**
by BRIAN FRANK

62 **Ode to Marathon**
by DEAN KARNAZES

64 **Chromium**
by STEVE BORN

50



Liz Karcz shreds into 1st place at the AMA District 38 season opener. Read more about Hammer athletes taking the podium on **page 50**. Photo: Judd Neves

42



Machine-learning technology has helped scientists discover a link between coffee consumption and a healthier heart. Read more on **page 42**.

EN REGULARS

4 **Publisher's Note**

6 **Product Spotlight: Hammer PHOOD**

16 **Starting Lines**

18 **#howihammer**

20 **Ask Hammer**

22 **SOS: Proper Hydration**

32 **Product Spotlight: HEED®**

42 **Coffee Lowers Heart Failure Risk**

44 **Endurance News Weekly**

46 **Laura's Kitchen: Grilling**

48 **International**

50 **From Our Athletes**

56 **Events**

66 **Finish Chute**

LEAN OUT! with PHOOD

by BRIAN FRANK

Now that we offer a true meal replacement product (MRP), many of you have been asking how to use it or incorporate it into your daily routine to good effect. Do keep in mind that this product was developed for athletes like me—who despite many hours a week of cardio training and a healthy diet, still have an extra 5, 10, or 15 pounds of excess body fat that provides additional insulation in winter, but not much other benefit. If you are already super lean, have a hummingbird metabolism, Hammer PHOOD can and should be used in a different way—see below.

During the development of Hammer PHOOD, I tested three different methods that resulted in slow, medium, and fast fat loss. Actually four if you count the 72 hour fast I did on 3 servings a day of PHOOD. I don't recommend this unless done under the close guidance and supervision of a health care professional.

METHOD 1—SLOW

For this test, I replaced breakfast with a serving of PHOOD. Still eat my normal lunch and dinner. No snacking after dinner. Depending on what you normally eat for breakfast, this represents a reduction of 250–300 in daily calories. This is mostly for convenience, but if practiced diligently, will result in leaning out a bit.

METHOD 2—MEDIUM

For this test I substituted a serving of PHOOD for dinner. Not my favorite way of eating, but by eating normal breakfast and lunch, then just PHOOD for dinner, my rate of weight loss increased noticeably, but there was a huge compromise of being a spectator at dinner! I like dinner too much to use this method for more than a week or two at a time.

METHOD 3—FAST

In this scenario, I am fasting until 11, having a serving of PHOOD for lunch. Then, regular dinner between 6 and 7 p.m. I have found this scenario to be my favorite as dinner time is social time. Once I reached my desired weight/bmi, I just switched to normal lunch and dinner, always limiting starchy carbs, but going big on high water content vegetables and greens.



Continued on page 58

For Zandy Mangold, life is a day at the beach! Zandy knows that getting a good surf-and-sand resistance workout is made that much easier by staying lean. Photo: Kristina Klebe

HAMMER PHOOD

Meal Replacement Drink Mix

- NO** cheap protein source
- NO** added sugars
- NO** emulsifiers
- NO** trans fats



“THE PERFECT MEAL TO GO!”

“HAMMER PHOOD is a healthy, creamy and delicious alternative to stay feeling full and satisfied all day. Thank you Hammer!” - Janice B.

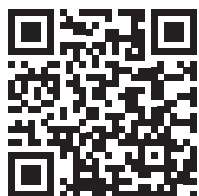


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I LOVE JUGS AND FLASKS!

by BRIAN FRANK

DISPELLING THE MYTHS

In the other article on page 60, I discuss the superiority of jugs and flasks from a cost and environmental standpoint. Both of which should be reason enough for most of you to make the switch from single serving packets to bulk gel. In doing so, you save almost 50% (\$0.77 vs. \$1.40) and reduce wasteful packing at the same time! However, if you are still not convinced, please keep reading for the practical, easy of use superiority of jugs and flasks.

As mentioned previously—developed Hammer Gel to be less viscous than the gel I had been selling since 1989, Leppin Squeazy (truly the first energy gel, sorry GU!). Back in 1994, flasks were not readily available, so I designed my own and found an injection molding company in the Midwest to make it. I chose the “hand grenade” style of the hammer flask to make gripping easier and I put serving indicator hash marks on the side for easy measuring.

When I introduced Hammer Gel to the world in 1995, the hope was that single serving pouches would just be “samples” for people to try, see how it tastes and works, and then come back and buy jugs with free flasks of the flavor or flavors they like best. This is also the intention behind the “gel sampler kit”—

How to use your Hammer Flask

- 1 The first step is to fill your flask with Hammer Gel®. Serving sizes are marked on the outside of the flask. Adjust serving size based on duration of your work out. The flask can hold a maximum of 5 servings.



- 2 Top off your Hammer flask with water and give it a good shake. The water gives the gel an easy-to-sip consistency and makes for a refreshing energy boost.



you can try one of each flavor to discover which you like best. Unfortunately, that’s not how it has worked out so far. Nevertheless, I am going to keep fighting the good fight and encouraging all gel users to switch to flasks!

However, the preference for pouches just seems to keep increasing. When pressed for a reason why they use the single-serving packets rather than

the more economical, reusable flask, gel users cite a variety of reasons.

1. Don’t want to “waste” gel by not using it all during my workout. My response is that you can simply set your flask aside and use it during your next workout, adding more or not. Conversely, I find pouches to be annoying because I have to consume the whole serving all at once, or I have a mess on my hands.

2. Only putting one or two servings in the flask is a problem too, because the gel does not come out easily. Correct, which is why you should 'top off' your flask with water so it's always full at the beginning of your workout and empty at the end!

3. "I have nowhere to put the flask". This may be true if you are running a 5K, which doesn't require a gel or any calories, or maybe a 10K where you'd want only one serving. Otherwise, pretty much everyone is using hydration vests, packs or has storage on their bike.

4. "It's hard to get the flask out and back into my pocket" Other than on hectic single track, I'm not sure this is really a thing. It goes in and out of my jersey pocket without a look. The bottom line is that for exercise over one hour, the flask is actually easier to use than having to retrieve, open, dispose of the tab, consume, replace the spent gel pouch somewhere, etc.

Flask use made easy - no matter the duration of your workout or event

A one-hour workout would require one or a bit more servings; top off with water, shake a couple of times, and then consume the entire contents during that hour workout. The same goes for two-hour or three-hour workouts as well.

When purchased in a 26 serving jug, Hammer Gel is only 77 cents per serving! The reality is that using a jug and flask is more economical, better for the environment, and ultimately even simpler than single-serve pouches. However, If you must use single-servings PLEASE dispose of your empty pouch properly. Hammer trash is not our idea of good advertising. ©EN

No side effects, just relief!

HAMMER CLEAR DAY

- Reduces seasonal sensitivity symptoms
- Reduces the need for unnatural remedies



"A SEASONAL ALLERGY HIT!"

"I rely on this product every allergy season. I never need medications anymore! I don't know how Hammer does it but they hit a home run with Clear Day!" - Gregory H



60 Capsules
\$22.95

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Endurolytes[®]

Essential all year long...especially now!

by STEVE BORN

Training duration and intensity is at or near its peak right now, and the weather throughout most of the country is trending toward downright hot. Higher training duration/intensity, coupled with escalating temperatures, can significantly increase the opportunity for cramping, which can ruin your workout and might even leave you locked up in near paralytic pain. If you've ever been there, you'll know that's a bridge you only want to cross once. (If you've never been there, keep it that way.)

Fluid and calorie intake are certainly important to keep track of at all times, but when the weather starts cranking up you'll need to pay extra attention to your electrolyte replenishment. We've

said this many times, because it's true: electrolytes are like the motor oil in your car; they don't make the engine run, but they're absolutely necessary to keep everything running smoothly. Proper functioning of the digestive, nervous, cardiovascular, and muscular systems—and that last one is where cramping can be an issue—depends on adequate electrolyte levels.

Just as you shouldn't wait until you bonk before you put some calories back into your body, or wait until you're dehydrated before you replenish fluids, don't wait for cramping before you take electrolytes. Your fueling regimen should always include these essential minerals for consistent replenishment.

Continued on page 12

Photo: Jeremy Heath



Electrolytes done right!

HAMMER ENDUROLYTES[®]



“THIS IS THE TOP SUPPLEMENT FOR ATHLETES!”

“I use *Endurolytes* daily and don't ever go without it. It keeps me hydrated much more efficiently than pounding fluids in a short period of time.” - Melanie R.

- Superior cramp prevention
- Rapidly assimilated
- Versatile dosing



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SUPERIOR FORMULAS, NUMEROUS OPTIONS ENDUROLYTES HAS YOU COVERED

by STEVE BORN

Continued from previous page

No matter what crazy-hard workout you've got planned, how much you weigh, how fit you are, or what weather conditions Mother Nature might throw at you—one of Hammer Nutrition's Endurolytes products has you covered!

Endurolytes

Our original full-spectrum formula remains the go-to product for thousands of athletes. Why? Because its precise balance of necessary electrolytic minerals works! Endurolytes is supplied in capsules for greater dosing flexibility, and its low salt content complements a healthy diet.

DOSING

Depending on heat stress levels, 1–6 capsules per hour are recommended, with 2–4 capsules per hour the most common dose. Remember that you can—and should—adjust the dose up or down, depending on the intensity of the effort and/or the temperature conditions and/or if you feel even the slightest twinge of a cramp. Take your first dose 15–30 minutes prior to the start, and dose every hour.

Endurolytes Fizz

If swallowing capsules isn't for you, Endurolytes Fizz could be exactly what you're looking for. Adding a rapidly dissolving tablet to your water bottle creates a delicious, sugar-free, full-spectrum, effervescent electrolyte drink.

DOSING

Each Endurolytes Fizz tablet is roughly equivalent to a ½ capsule of Endurolytes, so 1–2 tablets per hour is usually sufficient. Remember to carry additional Endurolytes Fizz tablets or Endurolytes capsules as a backup emergency stash, just in case your premixed dose of Endurolytes Fizz isn't enough.

“Electrolytes are like the motor oil in your car; they don't make the engine run, but they're absolutely necessary to keep everything running smoothly.”

Endurolytes Extreme

When the weather conditions are way out of your comfort zone (i.e., hotter and/or more humid than you're accustomed to), it's time for Endurolytes Extreme. Each capsule contains three times more salt (sodium chloride) and potassium as a capsule of Endurolytes, which helps offset higher-than-normal losses of those specific minerals. Athletes who consume a high-salt diet will require Endurolytes Extreme—at least until they lower their salt intake to healthier amounts—as their dietary practice predisposes them to greater salt losses during exercise.

DOSING

1–2 capsules every hour. Take your first dose 15–30 minutes prior to the start.

Endurolytes Extreme Powder

All the benefits of Endurolytes Extreme capsules in an easy-to-mix powder. Endurolytes Extreme Powder dissolves quickly and completely, providing a subtle watermelon flavor. Mix it with plain water, or add it to other liquid fuels to meet your dosing needs. The mild flavor makes it easy to drink all day, while the lack of residue makes it perfect for hydration packs and bottles of any type.

DOSING

1–2 scoops hourly. Start sipping on your first hour's bottle 10–15 minutes prior to the start. Carry additional Endurolytes Extreme capsules as a backup emergency stash, just in case your premixed dose of Endurolytes Extreme Powder isn't enough.

CHOOSE YOUR ENDUROLYTES®

FLAVORED DRINKS

IF YOU:

Have cramping problems
Have a high sweat rate
Get salt stains on clothes/
skin after exercise
Are in extreme heat
environments

IF YOU:

Have no cramping history
Have a low sweat rate
Prefer smaller doses of
sodium



**Endurolytes Extreme
Powder**



Endurolytes Fizz

CAPSULES WITH WATER

IF YOU:

Have no cramping history
Have a low sweat rate
Can take up to 6
capsules per hour
Prefer smaller doses of
sodium

IF YOU:

Have cramping problems
Have a high sweat rate
Get salt stains on clothes/
skin after exercise
Are in extreme heat
environments



Endurolytes



Endurolytes Extreme

We also offer **HEED®**, Hammer Nutrition's superior nonacidic, no-added-sugar/no artificial ingredients sports drink. It contains 110 calories per scoop and the same amount of electrolytes found in one Endurolytes capsule.

SUMMARY

Hammer Nutrition's Endurolytes, Endurolytes Fizz, Endurolytes Extreme, and Endurolytes Extreme Powder all meet the body's electrolytic mineral requirements. Their proper use will help you optimize numerous bodily functions, enhancing exercise performance, and avoid the unpleasantness of electrolyte imbalance or depletion. No matter what the weather throws at you, one of Hammer Nutrition's Endurolytes products has got you covered! **EN**

HAMMER DADS

Happy Father's Day to all the Hammer Dads out there, for leading the next generation of Hammer athletes and all-around superstars. Thank you for being good role models and passing on the values of good health, adventure, dedication, and sportsmanship.

Hammer Founder BRIAN FRANK and son MILES



In case you missed our shout out to all the Hammer Super Moms too, check it out here:



KEEP HAMMERING!

ARE

NAILING IT!



John Benham IV



Mitch DeYoung



Ryan Mortensen



Stephen and Erik Armes



Paul Monaco



Ryan Ingham



Chris and Aydan Flint



Evan Perperis

Nick DiNapoli

The Cactus Cup
Fountain Hills, AZ



Hammer Nutrition sponsored the annual Cactus Cup mountain bike event in Fountain Hills, AZ. Hundreds of racers eagerly gathered at the vast desert trail network of McDowell Mountain Regional Park. Three days of action-packed racing in ideal Arizona weather made packing up Sunday evening bittersweet. Let's hope for more racing between the tape soon!

At the beginning of 2020, I was looking forward to the new challenge of cross-country racing after being focused on enduro for years. Unfortunately, this was quickly put on pause, leaving me anxious to get back out there. With the physically demanding racing, it was a huge bonus to have the Hammer Nutrition crew of Victor Sheldon and Brian Frank at the event to help with my fueling.

During the 12-hour drive from Northern California, **HEED** and **Fizz** tabs were my friends and filled the need for yummy drinks on

the road. While riding, I always mix **HEED**® and **Hammer Gel**® in my bottles for hydration and calories. (Montana Huckleberry has been my favorite flavor lately.) Afterwards, I drink **Recoverite**® and take my **Endurance BCAA+** tablets and **Tissue Rejuvenator** heading into evening recovery.



The first day of racing was the Time Trial. The 5.8-mile lap consisted of fast-rolling single track, mixing punishing climbs with high-speed rocky descents. It was high intensity for a short period compared to typical XC racing, and definitely not my strong point, but I was excited to push my comfort zone. Twenty two minutes later, I landed a time good enough for 3rd place in Open Men 19–29—a great way to start the weekend.

Saturday was the race which this famous event is known for...the 40-mile XC! The course traverses one big loop where no trail crosses twice. Off

the start, I jumped in behind the leader to set a fast pace.

A group of about five of us broke away, setting the tone for the next couple hours. I knew my fitness and the power/heart rate numbers I could hold, but pushing past what is sustainable can be easy to do once in race mode.

About halfway through, the course opened up with false flats and gradual climbs where staying in a group would be key, especially fighting the headwind. I soon began to drop from the leaders. In the following miles, I worked to keep my speed. The next hour, I started catching riders from the rows ahead, which fueled my motivation. Then, with five miles to go, I began to feel my legs reaching their



breaking point. Honestly, I was a bit surprised to feel as good as I did since I've never previously raced more than 90 minutes of XC intensity. With a couple of grueling climbs before the finish, the two riders behind me were closing

Photos: Nick DiNapoli and Let's Wander Photography.

"It felt amazing to be back at the races and made me remember how much I enjoy this sport!"

quickly but I managed to hold them off. After 2 hours and 48 minutes, I was pumped about the day!

Finally, the Enduro closed out the weekend's festivities. This is definitely up my alley on a normal day so I was looking forward to some fun. But I was tired! As soon as I started out on the 40-minute pedal over to Stage 1, I knew my legs were not up to sprinting. Luckily, some Hammer **Anti-Fatigue Caps** and **Fully Charged** got me going. I ended up having a blast and enjoyed finishing the morning's race.

It felt amazing to be back at the races and made me remember how much I enjoy this sport! Having the Hammer Nutrition family in attendance and provided the fuel I needed for three days of grinding was icing on the cake.

Thank you Hammer!

Nick DiNapoli



SEND US YOUR LETTERS!

Drop us a line, share a tip, or tell us about your latest adventure.

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SHARE YOUR REVIEWS ON FACEBOOK!

We welcome your reviews. We check our Facebook page regularly and enjoy hearing how Hammer Nutrition has helped you. KEEP HAMMERING!

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ESSENTIAL KNOWLEDGE

HEED
The most sports drink

- Sustains energy with no sugar crash
- Reduces cramps
- Buffers lactic acid
- Supports dental health

SERVING SIZE: 1 level scoop (30-32g)
Contains 110 calories per serving

PRE-EXERCISE	DURING EXERCISE
10 min before	2-3 hours

The "one bottle solution" for athletes who prefer a drink over Gel and water. HEED contains a full-spectrum electrolyte profile and key auxiliary nutrients. It may be used to meet all fueling needs for short workouts, or as part of a comprehensive system for long-duration activities.

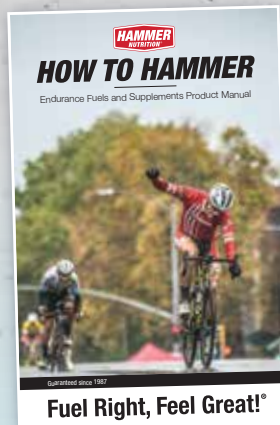
HOW TO USE
Individual dosage benefits will vary. Read 5 Secrets of Success at hammernutrition.com for more information.
Mix 0.5-2 scoops of HEED in 16-28 ounces (475-828 ml) of water. Sip continuously during exercise.

TIPS AND CONSIDERATIONS

- For many athletes, 1-2 scoops of HEED will completely fulfill electrolyte requirements in normal conditions.
- In hotter climates or during longer activities, add Endurolytes or Endurolytes Extreme.
- In all instances, carrying backup Endurolytes capsules is recommended.
- When exercise lasts longer than 2-3 hours, Perpetium® or Sustained Energy may be preferable.
- Cherry Bomb HEED contains 25 mg of caffeine and 500 mg of taurine.

22 Call for expert advice from friendly people at 800.336.1977

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How To Hammer provides all the vital information you need to Hammer to the next level. The final word on usage, with advanced details and specific applications.





#howihammer

**WHEREVER YOU GO,
SHOW US HOW YOU HAMMER.**

Use the hashtag #howihammer to share your photos!



ejplantain



Emily Plant It was absolutely blissful to race yesterday in the Montana Cyclocross Merckx Time Trial series. My goal for the day was “be safe, have fun.”



billy.bonner_



Billy Bonner Always focused, always motivated, always looking forward. On and off the bike the determination to succeed is the same...100% effort in all things all ways.



markaaldrige



Mark Aldridge I live in the state where my next race is, so it's easy to drive down south on the weekends and work on getting my body acclimated to the environment I'll be racing in.



phineymastersracing



Davis Phinney Masters Racing Aaron absolutely crushed the Planet Ultra Mullholland Challenge, riding 109 miles in 5 1/2 hours, at 20 mph average with close to 12,000 ft of climbing, 1st place overall.



ana_filipa_santos_tri

Rio Maior, Portugal



Pipa Santos Ohh easy days...first time I've reached Thursday feeling good.



kol_bailey



Photo: CanadianKartingNews.com



Kol Bailey Good weekend in Sonoma! @cooperocclair ended up with a 2nd and 1st. Progress is going along nicely. Thank you to @whsports!



s_tomal_ee



Sarah Tomal Learning new things is often ugly. It's difficult and messy and full of failure. It is, at least, if you're doing it right. So embrace that struggle, my friend, and I'll ugly-learn right along with you.



You ask, we answer

Why are nutrient servings being changed on Hammer labels?

CH-CH-CH-CH-CHANGES!

With apologies to David Bowie, we wanted to go over a couple of the required changes that you'll start seeing on Hammer Nutrition labels, especially with regard to the measurement of certain nutrients.

The nutrients vitamin A, beta-carotene, vitamin D, and vitamin E have historically been listed in International Units (IU). All of these will now be listed in either milligrams (mg) or micrograms (mcg).

Hammer Nutrition products do not contain vitamin A (we use beta-carotene instead).

Are high amounts of vitamin A toxic?
Read more on *Endurance News Weekly*



Below are the conversions for the other three nutrients:

Beta-carotene

1 IU = 0.15 mcg

Example: A 7-capsule dose of Premium Insurance Caps contains 12,500 IU of beta-carotene, which will now be listed as 1,875 mcg.

Vitamin E

1 IU = 0.67 mg

Example: A 3-capsule dose of Race Caps Supreme contains 399 IU of vitamin E, which will now be listed as 268 mg.

Vitamin D

1 IU = 0.025 mcg

Example: A 7-capsule dose of Premium Insurance Caps contains 500 IU of vitamin D, which will now be listed as 12.5 mcg.

Another change on our labels is the new intake standard for Folate (5-MTHF), which is found in Premium Insurance Caps and Xobaline. Instead of a Daily Value (DV), folate is now listed using the Dietary Folate Equivalents (DFE). The Food and Nutrition Board developed the DFE standard to reflect the higher bioavailability of folate from supplements than from food.

Please note that although the numbers may look a little different, the amount you receive of each nutrient has not changed at all. Same amounts, different measurements! **EN**

I've been interested in Race Day Boost for a while. What is in Race Day Boost and what does it do?

The main component in Race Day Boost is sodium tribasic phosphate, a compound that enhances all three of our body's energy producing systems.

1. The ATP-CP (adenosine triphosphate and creatine phosphate) system

Sodium tribasic phosphate supplies phosphate groups that are used in the re-synthesis of ATP and CP, thus improving the performance of this short-term energy system.

2. The lactic acid system

Sodium tribasic phosphate helps maintain a more-ideal acid-alkaline balance and effectively buffers excess lactic acid, providing longer-term energy.

3. The oxygen/aerobic energy system

Phosphates form part of a compound found in red blood cells known as 2,3 diphosphoglycerate (2,3-DPG). This molecule helps release oxygen from hemoglobin into the muscle cells. An increase in 2,3-DPG helps improve the availability of oxygen to working muscles, creating ATP (energy).

BENEFITS

- More efficiently produced energy = more energy
- Less lactic acid buildup
- Greater endurance
- Up to an 8% improvement in exercise performance



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SOS: 5 Secrets of Success for Endurance Fueling

#3

▶ **PROPER HYDRATION****Hydration in Hot Weather: How to Adapt**

In hot conditions, especially beyond a 1.5-hour effort, your body's core temperature can increase dramatically. Your internal cooling system responds appropriately, producing copious sweat; however, unlike your car's radiator, which recycles its coolant, your sweat evaporates, drips away, and is gone.

Unreplenished fluid loss causes endurance athletes several problems:

- Your heart must work harder in order to pump a decreased, but thickened, blood volume.
- Fluid depletion inside and outside muscle cells may slow down the metabolic reactions necessary for efficient muscle fuel transport.
- Inadequate fluids result in higher cell temperatures, altering metabolic rates for less-than-optimal endurance performance.

At the very least, excess body fluid loss means premature fatigue and decreased performance. If the loss goes unchecked during extended exercise, the potential for dehydration and its serious consequences increases. Once you get into the dehydration range, you're cooked—literally and figuratively—collecting a DNF and possibly an IV, too. Your basic strategy for staying cool in the summer months should begin with appropriate hydration during exercise.

Be aware of water weight loss during exercise

A good scale (preferably one that measures in less than one-pound increments, such as a balance scale) may well prove to be your most valuable fitness investment. Weigh yourself before and after each outing, carefully noting the time, exertion level, miles, and weather, as well as fluid, fuel, and electrolyte consumption. If you finish weighing the same or more than when you started, you have overhydrated. If you've dropped 3% or more, dehydration has occurred. Up to 2% weight loss is safe and reasonable.

Piper Sheldon hydrating on a ride down the Pacific Coast Highway in Carlsbad.
Photo: Wildglass Photo

For very long events, such as a century bike ride, the average rider will also lose a pound or more in energy stores (glycogen, fat, and muscle tissue) in addition to water, so calculate that into your weight difference.

Once you begin to log your fluid consumption and weight fluctuations, you'll have the data to accurately calculate your personal needs. Another low-tech hint that will make it easier to track your training data much: make sure you know the capacity of your water bottles and hydration packs.

Rehydrate in the correct amounts

Just like calories and electrolytes, you can't replenish fluids at the same rate that you deplete them; your body simply won't absorb as fast as it loses. And since fluids and electrolytes (especially the latter) perform many roles to maintain exercise performance, that will also cause depletion.

Your body will accept and utilize a certain amount from outside sources, so maintaining fluid intake within a specific range will postpone fatigue and promote peak performance.

Research suggests that while electrolyte needs for individual athletes may vary dramatically, fluid loss remains fairly constant. Based on this research, along with the thousands of athletes we have monitored, we recommend the following:

- For most athletes under most conditions: 20–25 oz/hr (approx 590–740 ml/hr)
- For lighter weight athletes, or those exercising in cooler temperatures: 16–18 oz/hr (approx 473–532 ml/hr)
- For heavier athletes or athletes competing in hotter conditions: up to 28 oz/hr (approx 830 ml/hr.)
- To avoid dilutional hyponatremia (over-hydrating), fluid intake should not routinely exceed 28 oz/hr (830 ml/hr). The exceptions are: heavier athletes; athletes exercising at extreme levels (prolonged periods at a high percentage of VO_2 max); and athletes competing in severe environmental conditions. (Note that increased fluid intake necessitates an increase in electrolyte replacement as well.)

A typical water bottle contains 20–25 oz of fluid (approx 590–740 ml), so consuming one bottle per hour is an excellent approach.

Adapting to the heat

While there are limits to how much heat the body can withstand during exercise, there are ways to improve your adaptation to heat stress.

1. Train to get fit in the heat by distance training at an aerobic pace for 14–21 consecutive days. Heat acclimatization and fitness reduce fluid and electrolyte losses by up to 50%.
2. Train your body to appropriately refuel, rehydrate, and process electrolytes.
3. Train at a reduced pace to compensate for overheating (lower gears, easy cadence, slower pace).
4. Slightly increase electrolyte intake; the more fluid lost, the more electrolyte stores are depleted.
5. Increase fluid volume cautiously; resist drinking above 30 oz per hour.
6. Keep head, trunk, and quads wet to increase evaporative heat loss.

Pre-race days

Far too many athletes try to get a jump on race day needs by over-doing it with fluid, calorie, and salt intake. We are not camels and cannot store water. In the days leading up to an event, the only thing that excess fluid intake will do is overly dilute and flush out your body's electrolytic mineral content. Neither of these will help your race day performance; actually, they greatly increase the potential for ruining it.

Continued on page 58



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MRP

Meal Replacement Products

by DR BAYNE FRENCH MD DC

Many of you reading this already are lean. But many of you also have an extra 5, 10, 15 pounds or more of excess body fat that's not helping you in any way. Still more of you know or love someone who has struggled with their weight, right? The following discussion on low carb, high protein/fat diet choices and effective ways to use a meal replacement product (MRP) has application to most people and can confer an impressive array of benefits. These include a higher metabolic rate, less hunger, less cravings, more energy, and a slow but sure shifting of the dial from a fat storage state to a fat burning state, among many others. But

what if you're already lean? The healthiest lean patients I see are fat burners.

First, let me digress a bit to talk about my bariatric work. It is critical for all of us to understand that obesity is a chronic disease. A disease categorized by widespread neurologic and hormonal dysregulation. A disease with many drivers and many causes; not a homogenous result of choice, lack of willpower, and gluttony but rather a heterogenous and extremely complex disease driven by physiological factors largely beyond individual control. It's chemistry folks, not character. It is also the

“The convenience and nutritive value of a quality MRP may be attractive to anyone on the go.”

disease that drives most others. Its burden on human morbidity and mortality is staggering. Much of this suffering and associated diseases are offset by weight loss. The greater the weight loss, the greater the benefit.

We as a medical institution have done a deplorable job assisting individuals to achieve and maintain a healthy weight. There are many reasons for this (lack of time, lack of knowledge, lack of reimbursement, disinterest, etc.) and I have written about this before. The days of half measures, faulty information, weight bias, and terrible advice need to go extinct in a pressing way. In my opinion, every reasonably safe means of intervention including FDA off-label measures, need to be employed. The full-court press of education, advice, coaching, and medical intervention designed with sustainable weight loss in mind is becoming an ever greater part of my practice. More and more this is being done remotely, via telehealth, and is an emerging and exciting means of healthcare delivery.

In 2016 during my studies for board certification in Obesity Medicine, I was told by an “expert” that it is simply not possible to adequately manage overweight and obesity without the use of meal replacement products. Most obesity guidelines would not support this notion but hey, this person clearly knew more than I did so I thought “I need to get me some of that”. Until I realized that “that” was largely crappy, chemically enhanced, low fat, and an amalgamation of items I would not put in my own body. Thus, I never recommended them to

my patients. Instead, emphasis was given to help them change their relationship with food. To help them realize the joy of food procurement, preparation and consumption. Human animals eating human animal food. This approach however was not without its shortcomings. Many people simply did not enjoy cooking. They had a very limited budget, or were consumed with juggling single parenting, work, school, and myriad other factors that frankly made me feel guilty when I complained about my own job. Although not essential for weight loss by any means, a quality MRP many times sure would have come in handy. The traditional teaching was that MRP provides a reliable and convenient means of “energy restriction,” i.e. caloric restriction. I do not operate in the calories in/calories out paradigm anymore. Instead, for me MRP should provide good nutrition, satiety, convenience, portability, and reliability with taste and flavor one looks forward to.

Photo: Drew Silvers



DEFINITION

There is no unifying definition of a meal replacement product. In general a MRP is a discrete food product or drink used to replace

usually consumed foods. Some include fiber, vitamins, and minerals. Others simply provide macronutrients (carb, fat, protein), with fiber and vitamins obtained by other means like supplementation. Most MRPs do not exceed 300 calories per serving.

One or two meals per day are replaced in a **partial** meal replacement strategy. This method may be used both for weight loss and weight maintenance. But also for individuals NOT seeking weight loss. The convenience and nutritive value of a quality MRP may be attractive to anyone on the go.

A **full** meal replacement strategy is where all daily nutrition is provided via MRP. This method is considered a VLCD (very low calorie diet), and is between 500–800 calories per day. I have assisted individuals with this method but only as a “means to an end.” Primarily to help them shrink their liver and/or lose a large amount of weight prior to bariatric (weight loss) surgery or to become a candidate for a joint replacement. As the Biggest Loser Study shows, these folks more often than not become damaged metabolic goods, with a prompt regain of all their weight loss plus some. Not good. It also requires close medical monitoring.

A hybrid model could include full MRP for a period of time, followed by 2–3 MRP daily with 1 daily meal and a slow increase in meals and reduction in MRP. As the Obesity Medicine Association says “no matter the context, meal replacements are both convenient and effective.”

Continued on next page

RATIONALE FOR MEAL REPLACEMENT PRODUCTS (MRP)

- Portion control
- Energy/calorie control
- Structured eating
- Stimulus control (avoiding contact with obesogenic foods)
- Stimulus narrowing (drastic simplification of food choices)
- Less cost
- Portability
- Long shelf life

Meal Replacement Products

by DR BAYNE FRENCH MD DC

Continued from previous page

WHAT DOES THE DATA SHOW?

A study described in a 2018 *Journal of Obesity* article compared two groups: one used a meal replacement for dinner and the other control group continued their regular diet. They were followed for 12 weeks and significant differences between the groups emerged. The meal replacement group exhibited significant improvements in waist circumference, body fat mass, and BMI. These physical changes more importantly resulted in metabolic improvements. Almost a 10% improvement in blood sugar and 7% improvements in blood pressure were seen in the MRP group.

A similar study in 2004 followed two groups. One group used two MRPs per day but both groups were weight loss focused. Weight loss in each group

was comparable but “dietary compliance and convenience were viewed more favorably by participants who consumed meal replacements than by those in the conventional weight-loss program.” Hmm, something that can be effective *and* enjoyed.

A very large meta-analysis (study method looking at several different studies) was reported on in *Obesity Reviews* in 2019. Almost 3,000 studies were reviewed and 23 were found to meet their criteria, including almost 8,000 studied adults. Not only was the use of MRP found to be safe and convenient but actually more effective in the first year than other weight loss interventions that did not include MRP. When MRP was coupled with medical support, patients did even better. And those that received the most support did the best. If you’ve read any of my articles you know that I strongly suggest advocating for YOURSELF primarily through sound education and action.

But utilizing the services of properly trained coaches and obesity specialists offers the best outcomes. This study also showed that blood sugar (as measured by hemoglobin A1c) also improved. One conclusion drawn from this meta-analysis is that the employment of MRP is suitable for community use. This means that using one or two MRP per day required NO medical supervision. Yay for that I say, unless you enjoy long waits, white coats, and no sense of humor.

Lancet in 2018 published the DiRECT study. It showed that in patients with type 2 diabetes, 46% of those that lost 15 kg (33 lbs) CURED their diabetes. Meaning they no longer had a disease many authorities considered only manageable, not curable. Maybe I just align with the anti-expert and love to stick it to “authorities” but considering 451 million people in our tiny planet had type-2 diabetes in 2017 and 1.5 million

died of it in 2012, a 46% cure rate should at least raise your eyebrows, even if you're a boring authority. Here's the rub, weight loss it tough. And the maintenance of weight loss is brutal. It requires an effortful task on the part of patients and medical team to possess the self-care, knowledge, and skill needed for ongoing efforts. Get knowledge (few providers have it to give), implement knowledge (few patients can with time limitations, financial constraints, and family responsibilities), and repeat forever (yah right). Meanwhile, there are dozens of homeostatic, protective, hormonal mechanisms all conspiring to bring them back to the weight at which they started. Ongoing implementation (many term this "compliance" which connotes puppetdom to me) is enhanced by simplicity. And THIS is where MRP can help. In the famous Look AHEAD study, over 5,000 patients benefited from MRP as part of intensive lifestyle intervention that resulted in significant weight loss and improvements in blood sugar. MRP was deemed

not only effective, but safe and easily delivered.

And lastly, *Nutritional Journal* in 2010 published a compelling study comparing a meal replacement plan using Medifast, with a food-based diet plan. The most interesting part of this study was that 7 of the 8 authors were Medifast employees. I'll move on.

CONCLUSION

Until recently, I have been reticent in recommending MRPs as part of a weight loss regimen, but not anymore. Its power is primarily in its simplicity and convenience. They offer an effective tool when hunger or cravings kick in as they invariably do. These adaptive mechanisms can result in decompensation and derailment in the most well-intentioned and motivated patient. Low carb, higher protein and fat are a must. This macronutrient ratio results in satiety and lower levels of our hunger hormone ghrelin. The vast majority of meal replacement products focus on having a low percentile of fat. This is because of the calorie-centric focus, which needs to

go the way of the dinosaurs. Higher fat equals lower insulin. When this occurs, all things are possible including a higher metabolic rate, less hunger, less cravings, more energy, and a slow but sure shifting of the dial from a fat storage state to a fat burning state. But what if you're already lean? The healthiest lean patients I see are fat burners. They possess the lowest inflammatory levels (C-reactive protein), lowest insulin levels, lowest triglycerides, highest HDL (favorable cholesterol), and the most favorable LDL particle size and number on advanced cholesterol analysis. They also hurt less, and have less acne and bowel issues. The convenience and packability of an MRP cannot be overlooked. If your interests like mine involve the mountains, backpacks, and perhaps a bow and some arrows, you might agree that a packet of quality MRP weighs a bit less than a can of anchovies.

As with everything involving you, remain at the helm. Collect data, consider opposing views, read, and listen to your own body. It's a short and beautiful voyage. **EN**



Dr. Bayne French MD DC is Hammer Nutrition's medical advisor. Along with an MD from the University of Washington, Dr. French brings over 20 years of health experience, with a focus on wellness, to

the Hammer team. Dr. French currently works at Glacier Medical Associates and is double board certified in Family Medicine and Obesity Medicine. Bayne picked up obstacle course racing in 2013. He won the Masters division of the Bigfork, MT Spartan Beast (2016) and the Monterey, CA Spartan Super (2016). He competed in the Spartan World Championship Ultra Beast in 2016 and earned a 2nd place finish in his division.

ENERGY ENDURANCE RECOVERY

Since 1987!

by STEVE BORN



34 years ago, most people had never even heard of Coenzyme Q₁₀ (CoQ₁₀), and fewer still knew about its multiple benefits for athletic performance and overall health. There was one company, though, that was already “in the know” about this remarkable nutrient; Hammer Nutrition (known as E-CAPS back then) harnessed the power of CoQ₁₀ into a product called “Race Caps.” It didn’t take long for word to get out that a truly effective, safe, and perfectly legal endurance-enhancing supplement was finally available. If you were a serious endurance athlete in the late 1980s and 1990s, Race Caps were a part of your arsenal.

As athletes and non-athletes have become more informed about the many benefits of CoQ₁₀, CoQ₁₀ supplements have become more readily available—and Hammer Nutrition continues to blaze the trail. In 2003, while other companies were still playing catchup, the

original Race Caps formula was revised to include a potent, multi-beneficial nutrient called idebenone. A great product became even better, leading to a new name: Race Caps Supreme.

Whether you’re a full time competitive athlete, a recreational athlete, or just someone whose primary goal is to stay fit and enjoy optimal health, Race Caps Supreme is a must-have, daily use supplement. Since 1987, Race Caps Supreme has supplied the following benefits:

- **Higher energy levels during workouts and all day long, without the unpleasant stimulant side effects of many other supplements**
- **Noticeable increase in endurance**
- **Less muscle soreness and enhanced recovery after training sessions**
- **Antioxidant support for optimal immune system function**

THE KEY PLAYERS

Coenzyme Q₁₀ (CoQ₁₀)

Known also as ubiquinone (from the word “ubiquitous,” meaning it exists just about everywhere), CoQ₁₀ is a vitally important substrate for the efficient production of energy from your food and oxygen intake (think “spark plug”).

CoQ₁₀’s importance goes far beyond athletic performance enhancement; its role in maintaining clean, efficient energy production is crucial for optimal health, especially with regard to cardiovascular and brain health and a strong immune system.

Nutritional scientists are universally in agreement about the importance of CoQ₁₀:

“Without CoQ₁₀ or a good substitute, human life quickly ends.” - James South, MA

“CoQ₁₀ is energy on call. I have long considered CoQ₁₀ a wonder nutrient because of its ability to support heart health.”

- Dr. Stephen Sinatra

Idebenone


An analogue of CoQ₁₀ and a superb compliment to that remarkable nutrient, idebenone (eye-DEB-uh-known) has garnered “superstar” status as one of the most remarkable energy enhancing, cognitive enhancing, and potential anti-aging nutrients ever studied. One nutritional scientist explains: “Idebenone supplies all of the same benefits as CoQ₁₀—acting as a ‘spark plug’ for the production of energy (ATP) as well as being a potent antioxidant—plus some distinct advantages based on its more complex chemical structure.”

“The most effective one-two punch for hard-training athletes.”

These “distinct advantages” are especially true for brain health; “brain benefits” attributed to idebenone include improved cognition and mood, reduced damage from Parkinson’s disease and Alzheimer’s disease, and protection against damage caused by excitotoxins (a class of substances produced from the consumption of substances such as MSG and some artificial sweeteners), which can impair neuronal functioning.

SUMMARY

No other athletic-specific supplement delivers the range of benefits that Race Caps Supreme can; it continues to be the athlete’s supplement of choice, withstanding the test of time in a market flooded with other less effective products. The nutrient blend in Race Caps Supreme is unsurpassed for safely and effectively enhancing athletic performance and recovery. Perhaps even more importantly, the Race Caps Supreme formula powerfully supports many areas of human health.

Race Caps Supreme remains the most effective one-two punch for hard-training athletes, and it is also highly beneficial for everyone. 

References available upon request

Read more about Race Caps Supreme on *Endurance News Weekly* →



RACE CAPS SUPREME



“A GAME CHANGER!”

“Race Caps Supreme has been a game changer! It not only allows me to increase my training, but lets me enjoy it too! Thanks Hammer!”

- Andrea H

- Helps increase energy
- Supports vascular health
- Enhances cognitive function

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Dean Karnazes stays a step ahead during a Fitbit run rounding Mt. Tamalpais, north of San Francisco, CA. Photo: Fitbit



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THE PERILS OF LOADING

by BRIAN FRANK

When you have a big event, competition, or adventure, DO NOT attempt to:

LOAD CARBOHYDRATES • LOAD WATER • LOAD SODIUM IT DOES NOT WORK!

You have almost certainly heard experts and veteran athletes say you should “race like you train” and “never try something new on race day,” right? Evidently, most athletes don’t think this applies to the days leading up to the event too. I constantly see athletes massively changing their calorie, fluid, and sodium intake just before a big endurance event. **These practices contradict the old adages and human physiology!**

Maintaining constant calorie, fluid, and sodium intake while simultaneously reducing expenditures in the taper phase leading up to your event allows you to “load” all of these things as much as possible.

Hopefully, you have read our fueling booklet, *SOS: 5 Secrets of Success*, and incorporated those practices immediately prior, during, and after your training and racing routine. **But what do you do in the 72 hours prior to racing?** Keep reading for the answers.

In the old days, athletes were erroneously told that consuming

copious amounts of calories, fluid, and sodium during endurance events would allow them to achieve optimum performance. In the 80s, 400–600 calories, 40–60 ounces of fluids, and 1–3 grams of sodium per hour were recommended. Whenever exercise or competition went beyond three hours, stomach and GI problems were almost universal. Today it’s rare to find anyone still advocating these crazy numbers, at least in the U.S. Europe and Asia are another story.

As you know if you have read our literature, we recommend hourly intakes of 120–180 calories, 20–25 oz of fluids, and 400–600 mg of salt (as part of a full-spectrum electrolyte replenishment product) as more reasonable and effective. We’ve been advocating this for three decades, and these numbers are now more or less the accepted wisdom.

Unfortunately, the myths regarding “loading” in the days leading up to a big, hot event are still surprisingly pervasive. So, let me dispel this one more time to help you avoid making these mistakes this year and beyond.

“The idea of loading anything in the days prior to a big event is not only outdated but completely counterproductive.”

DON'T DO IT!



CARBS

We typically eat too much already. Increasing calorie intake during days of lower physical activity before an event only makes more work, fills your stomach and intestines, and likely leads to increased fat storage.



WATER

We are not camels and cannot store water. Suddenly increasing daily intake by more than 10% will overly dilute the electrolytes in your blood, which increases the potential for serious issues associated with hyponatremia. Additionally, all that unnecessary water will excessively fill your bladder, causing you to prematurely lose electrolytes courtesy of frequent elimination.



SODIUM

Again, we typically consume too much. Increasing it even more will not improve heat tolerance. In fact, it puts the body into survival mode where it seeks to jettison the excess to avoid toxicity. Whatever your normal daily sodium intake in the weeks prior to an event, keep it the same all the way up to race start. Then, from the start of the event, consume reasonable amounts throughout.

“Unfortunately, the myths regarding ‘loading’ in the days leading up to a big, hot event are still surprisingly pervasive.”

WHAT ABOUT LIQUID ENDURANCE?



YES!

When it comes to fluids, drinking excess amounts only increases the risk of overly diluting blood levels of sodium and other electrolytic minerals.

That said, there is a way to maximize cellular fluid storage, and that's via the glycerol component in **Liquid Endurance**. Glycerol is a naturally produced metabolite of fatty-acid oxidation, and it absorbs rapidly when taken with water or sports drinks, increasing the water content in blood, cells, and extracellular spaces. All three of these compartments contribute to sweat volume, resulting in a significant increase in cooling efficiency during prolonged exercise.

The key to maximizing—not over-supplying, but naturally maximizing—how much fluid the cells can hold is to use a specific amount of Liquid Endurance in a specific amount of water (ranging from 16–28 ounces) for a three-day period prior to a hot-weather workout or event. Follow product dosing instructions for best results. **EN**

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HAMMER HEED®



SUMMER IS TIME TO MIX IT UP!

by STEVE BORN

June 20th is the official start of summer, but in many areas the weather has already been quite warm—with the promise that it's going to be flat-out hot pretty soon. At this time of year, athletes rely on sports drinks to stay hydrated and fueled during workouts and races.

Unfortunately, most drink mixes are so loaded with sugar they coat the mouth with layers of what is best described as syrupy-sweet yuck. Forget about feeling refreshed with these drinks—not when you spend your entire workout scraping sugar coating off your tongue and the roof of your mouth. And this is only the

least offensive issue with sugar in sports drinks (we'll discuss the more offensive stuff in a bit).

If what you're drinking during exercise ends up as a chore with unpleasant effects, you're less likely to maintain sufficient intake consistently. That can lead to dehydration, cramping, and other performance-ruining scenarios.

Enter HEED, Hammer Nutrition's premium-quality sports drink. We introduced HEED 16+ years ago, partly in response to a frequent question: Can anyone PLEASE make a sports drink without all the sugar syrupy sweet taste? HEED is subtle and pleasant-tasting, a refreshing alternative. It's a sports drink you don't have to choke down—you'll actually enjoy drinking HEED!



"Our whole family loves HEED. From hiking to biking or skiing or running this is our go-to fuel." - Sarah



"I love this for long hikes or runs and heavy lifting sessions. It tastes great without being too sweet and ensures I will have plenty of energy!"

- Team LOFT OCR



"HEED never lets me down. Perfect for any distance run and never upsets my stomach. The new Cherry Bomb flavor with caffeine was such a boost in my last ultra race. I really felt the difference." - Julie



"Good taste and one that does not get ugly when hot." - John

AND THERE'S SO MUCH MORE TO HEED THAN ITS GREAT TASTE!

1. No artificial colors, flavors, or sweeteners

There are absolutely no health benefits (and plenty of potential negative effects) from consuming junk ingredients, so it makes sense that there aren't any performance-enhancing benefits either. HEED contains no artificial ingredients, only healthy sweeteners—stevia and xylitol—and natural flavors.

2. No simple sugars

There are two primary problems with fuels comprised of simple sugars (glucose, sucrose, fructose, etc.), including so-called healthy sugars like cane sugar, which is simply sucrose (table sugar):

- Simple sugar calories are severely limited in what you can efficiently digest and utilize for energy.
- Simple sugars cause wild fluctuations in energy levels, a flash-and-crash that you definitely want to avoid.

For ease of digestion, even at a more calorically dense concentration—which means more available calories for energy production—HEED contains only complex carbohydrates (maltodextrin) with no added simple sugars.

3. No citric acid

When teeth are regularly bathed in a citric acid solution, whether it's added to a sports drink to stimulate saliva production and provide a tart taste or chelated to a mineral (e.g., calcium citrate), permanent damage can result. Citric acid isn't necessary in a sports drink, so it's not in HEED.

4. Appropriate amounts of sodium

Nearly everyone is consuming far too much sodium in their daily diet. It negatively impacts athletic performance, and more importantly, overall health. But companies continue to ratchet up the sodium content in their sports drink mixes, saying that it's replenishing your electrolytes. It's not—and that's why only sufficient amounts of sodium are included in HEED.

HEED contains a full-spectrum electrolyte profile that more adequately and completely replenishes electrolytes.

5. No unnecessary vitamins, minerals, or auxiliary nutrients

Why put any extras in a product if the amount isn't enough to make a difference? For example: Having 2% of the

Daily Value (DV) of vitamin C (a minuscule 9 mg) isn't going to provide much of a health benefit, but it will increase the product cost. All the vitamins, minerals, and other nutrients included in HEED are for specific reasons and in effective amounts.

Bottom Line: Many years ago, when countless athletes and active people cried out, "Enough is enough! We want a better sports drink, one that works and actually tastes good!" we listened and delivered. Since that day, HEED has been the refreshingly healthy and highly effective alternative to the syrupy swill too often disguised as sports drinks. Containing only beneficial ingredients (in effective amounts!) and devoid of all the earlier-mentioned junk, HEED is exactly what you need. **EN**



BIG NEWS! UNFLAVORED HEED IS BACK!

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One caveat: Our ability to produce and sell Unflavored HEED is dependent on whether or not you purchase it. If we can keep sales for Unflavored HEED at levels that justify keeping it in stock, we'll keep making it.

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“HEED has made a noticeable difference for me. I feel so much better in every way. I wish I had found this earlier, and will definitely always use HEED for all my future events!” - Janice B.



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Representing Hammer Costa Rica, **Elena Fornoni** makes time for a training run on the first day of Spring while visiting Hammer HQ in Whitefish, MT.

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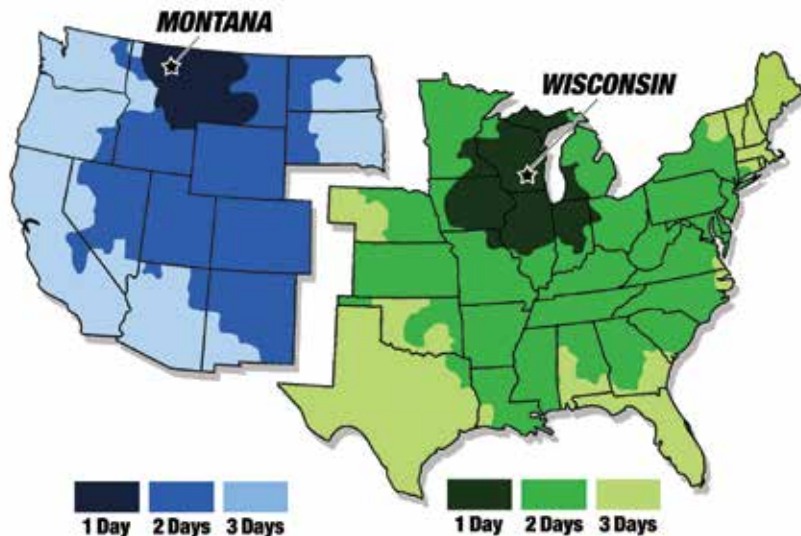
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NEW PRODUCT ALERT

Endurance C

by STEVE BORN



COMPREHENSIVE VITAMIN C BLEND

We're super excited to announce the arrival of this unique, comprehensive, and potent formula. Endurance C contains three types of vitamin C, as well as numerous bioflavonoids that perfectly complement vitamin C and its all-important effects.

The benefits of vitamin C supplementation are so numerous and wide-ranging that space prohibits listing them here. (Do an Internet search on "benefits of vitamin C" and you'll be scrolling for a long, long time.) So we'll only mention the most important, which comes from research examining the relationship between vitamin C blood levels and patient health:

People with higher blood levels of vitamin C were at significantly lower risk for heart disease and cancer death—and were up to 25% less likely to die from any cause.¹

The study showed that people whose blood samples at age 16 contained the highest levels of vitamin C had significantly lower risks of dying. Those in the top quarter of baseline blood vitamin C levels had a 25% reduction in mortality rates compared to those in the lowest quarter. The top 25% were also at a lower risk for both heart disease and cancer deaths, 16 years later.¹

Vitamin C is classified as an essential vitamin because unlike other animals, humans cannot make vitamin C. We must get it from diet or supplements. While many foods contain vitamin C, the amount that most of us consume is insufficient. That's why we designed Endurance C.

THE ENDURANCE C FORMULA

Amounts per 3-capsule dose

Calcium Ascorbate (1000 mg)

Unlike "regular" vitamin C (ascorbic acid), which is extremely acidic and may cause gastric distress, calcium ascorbate (also called "neutral C" or "non-acidic C") has a pH of 7.0–7.4. The calcium ascorbate compound is 10% calcium and 90% vitamin C, so you receive the benefits of both nutrients supply.

Ascorbyl Palmitate (12.5 mg)

This is a non-acidic, fat-soluble form of vitamin C that reaches specific areas of tissue that standard vitamin C cannot, allowing it to neutralize specific free radicals.

Hesperidin 95% HPLC (500 mg)

A major bioflavonoid found primarily in lemons, oranges, and tangerines, hesperidin supplies a number of benefits for vein and cardiovascular health. It is also an antioxidant and helps to reduce aches and soreness.

Rutin (500 mg)

Another powerful antioxidant, this bioflavonoid is found in a variety of fruits and vegetables, especially apples and figs. Rutin helps enhance circulation, is believed to help lower LDL ("bad") cholesterol, and also helps alleviate aches and soreness.

ENDURANCE NEWS REMEMBERS

"We are honored to continue our support for this mission to further instill a sense of pride, hope, and sportsmanship by competing for the greater good."

Racing in Uganda

Back in 2007, in Issue #55 of *Endurance News*, we brought you a follow-up report on our involvement with the International Christian Cycling Club. We introduced the team to our *EN* readers previously in Issue #49. Today we recall the team and all of their success with the continued support of Pastor David Ssebuufu and the Oasis of Life Church in Jinja, Uganda.

When we reported last, in 2007, the team had 12 riders with their sights on further expansion. Today, Pastor David's team has inspired the evolution of other humanitarian mission-oriented teams across the region such as the Maska Cycling Club in Southern Uganda. Maska is largely funded by the Global Cycling Community as part of the Project Amani Initiative.

Meanwhile, the 13th annual Tour du Rwanda has grown to be a race of significant global status with 15 teams competing this year from around the world.

We are honored to continue our support for this mission, these teams and their humanitarian efforts, to further instill a sense of pride, hope, and sportsmanship by competing for the greater good. Pastor David and the church continue to provide both spiritual and material assistance for their team and families across the region with food, education, and shelter.

To follow the teams and regional events, contribute, and find out more information:

servantsofchristinternational.org/ssebuufu-david-uganda/masakacyclingclub.com
tourdurwanda.rw



ENDURANCE NEWS: The Newsletter For Endurance Athletes

Uganda Update

Gary Pennington

In November of 2005 we introduced Uganda who needed support. With the help of our friends at the International Christian Cycling Club (ICC), we provided the group with road bikes, supplies, clothing, and other necessary items to help them further their ministry. Our combined efforts have since the team. In the latest round of support, Pastor David returned from Jinja to Uganda with 25 boxes stuffed full of cycling related items desperately needed for his church. Currently, the team has 12 riders, and they hope to expand its membership of bikes and other gear and make it into their hands.

The team is part of Pastor David Ssebuufu's Oasis of Life church (www.oasisoflifeministry.org) in Jinja, Uganda. The church has about 1,000 members, and the members are growing rapidly. The members are growing like the cycling team. In many small towns throughout Africa and south of the Sahara, churches like the Oasis of Life Church help people meet not only their daily spiritual needs, but also their day to day needs, by providing food, education, and sometimes shelter.

The team's public image is growing throughout Uganda and Africa, and is a source of pride for the people of Uganda. Several months ago the Chairman of the International Olympic Committee visited Uganda, and the team paraded with the Chairman's motorcycle as he toured Uganda.

The team regularly competes in races in Uganda and in neighboring countries to help spread the love of Jesus Christ in a region that has been plagued with war, disease, and famine for so many years. In June, the team is participating in the six-day Tour of Rwanda that showcases riders from other African nations. Last year August Oona, the team's leader, finished second in the race and was then invited to participate in the World Championships in Austria. More recently, he was selected as Uganda's Cyclist of the Year.

We are honored and grateful to support them in their mission in a part of the world so desperately in need. It's been exciting to watch this team grow over the past few years, and we will continue to support them going forward. As you can imagine, the needs of the team and the ministry offer abundant opportunity for generous contributors. If you would like to find out how you can help, please contact Gary Pennington (the U.S. liaison for the church) or David Ssebuufu.

Gary Pennington
 (gary@chrisinternational.com) or
 (813) 905-3232

David G.M. Ssebuufu
 (ds2@oasisoflife.org)

Also, visit these websites for more info, pictures, and videos of the team:
 (www.christiancycling.com)
 (www.oasisoflifeministry.com)



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ENDURANCE C

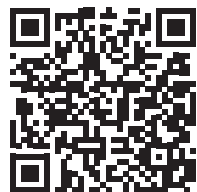
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RECOVERY

A crucial key to being a better and healthier athlete

by STEVE BORN

After 20 years at Hammer Nutrition, one of the questions I still regularly receive is something along the lines of, “What is the easiest way for me to be a better athlete?” While that’s a fairly broad question with a number of totally feasible and logical answers, the answer I always offer first is, “Make sure you’re doing everything you can to recover properly between your workouts, starting with replenishing your body with fuel ASAP.”

Now that the summer season is in full swing and workout duration and intensity is

reaching its peak, you cannot ignore this crucial aspect of athletic performance. Adopt the mantra, “When the workout is done, it’s not really done...not until I’ve put some fuel back in my body.” Before you get out of sweaty clothes, take a shower, and stretch, be sure you first “refill the tank.” This is the key to getting the full value out of every minute you put into your workouts, and it will result in greater fitness and health.

Four benefits to ASAP post-workout refueling

Resupply the body with high-quality carbohydrates and

protein within the first 30 minutes after your workout (the sooner, the better) and here’s what will happen:

1. Your muscle cells will be restocked with fuel and you will be better prepared for tomorrow’s workout. In fact, the more consistently you train *and* resupply the body with fuel, the more your body will store an increasing amount of fuel in the muscles. That means you’ll have more readily available fuel when you toe the line for your big event, and that’s a definite advantage!





Recover Right With **RECOVERITE®**



“CAN’T GO WITHOUT IT!”

“Recoverite is the best tasting recovery drink, which leaves you feeling replenished even after the hardest ride. Will not race with out it!” - Online Reviewer

- Restores glycogen
- Reduces soreness
- Reduces fatigue

2. Your muscle tissue will have the raw materials it needs to become stronger, which will allow you to increase your training volume and intensity.

3. The amount of soreness that you experience between now and the next workout will be greatly diminished. So instead of worrying about whether or not you’ll even be able to get out of bed, you’ll be getting ready for the next day’s training session.

4. Your immune system will get stronger. When you finish a workout, your immune system is still “on the fence.” Resupplying your body with fuel ASAP after training will tip the scales in favor of immunity, helping you to avoid missing important training sessions—or worse—due to sickness.

Hammer Nutrition’s Recoverite® products make it easy!

When you take recovery seriously, you know you can’t just eat whatever you want. Unfortunately, some athletes consume whatever’s convenient and assume anything will work, “Calories are calories, right?” Wrong! You cannot make improvements in your athletic performance or support optimal health if you put garbage in the gas tank.

Continued on page 58

(left) Steven Perezluha makes sure his cyclists recover right with Recoverite during his Heartland of Florida Cycling Camp sponsored by Hammer. Photo: MomenTaker Photography



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Coffee Tied to Lower Heart Failure Risk

by STEVE BORN

Higher coffee consumption is associated with a lower risk of heart failure, according to a machine learning-based algorithm that analyzed data from three large observational trials.

“Coffee consumption actually was predictive on top of known risk factors originally identified from those three trials.”

“The study is significant because it underscores the potential of big data for individualizing patient management,” lead investigator David Kao MD of the University of Colorado at Denver, Aurora said in an interview. “We in fact adjusted for the scores that are commonly used to predict heart disease, and coffee consumption remained a predictor even on top of that.”

The study used supervised machine learning to analyze data on diet and other variables from three well-known observational studies: Framingham Heart Study (FHS), Cardiovascular Heart Study (CHS), and Atherosclerosis Risk in Communities (ARIC). The goal of the study,

published online on February 9th, 2021, was to identify potential novel risk factors for incident coronary heart disease, stroke, and heart failure.

“The main difference of the relationship between coffee and heart disease, compared with prior analyses, is that we’re able to find it in these well-known and well-accepted studies that have helped us find risk factors before,” Kao said.

The study included 2,732 FHS participants aged 30–62 years, 3,704 CHS patients aged 65 and older, and 14,925 ARIC subjects aged 45–64, all of whom had no history of cardiovascular disease events when they enrolled. Primary outcomes for the machine-learning study were times to incident coronary heart disease, heart failure, and stroke.

MATHEMATICS, NOT HYPOTHESES

To compensate for variations in methodologies between the three observational trials, the study used 204 data measurements collected at the first FHS exam, including 16 dietary variables and for which similar data were collected for the other two studies.

The machine-learning model used what’s known as a random forest analysis to identify

the leading potential risk factors from among the 204 variables. To confirm findings between studies, the authors used a technique called “data harmonization” to smooth variations in the methodologies of the trials, not only with participant age, duration, and date of the trials, but also in how data on coffee consumption were gathered. For example, FHS collected that data as cups per day, whereas CHS and ARIC collected that as monthly, weekly, and daily consumption. The study converted the coffee consumption data from CHS and ARIC to cups per day to conform to FHS data.

Random forest analysis is a type of machine learning that randomly creates a cluster of decision trees—the “forest”—to determine which variables, such as dietary factors, are important in predicting a result. The analysis uses mathematics, not hypotheses, to identify important variables.

HEART FAILURE AND RISK REDUCED

In this study, the analysis determined that each cup of caffeinated coffee daily was linked with a 5% reduction in the risk of heart failure (hazard ratio (HR), 0.95; probability (P) = .02) and 6% reduction in stroke risk (HR, 0.94; P = .02), but had no significant impact on risk for coronary heart disease or cardiovascular disease. When the data were adjusted for the FHS CVD risk score, increasing coffee consumption remained significantly associated with an identical lower risk of heart failure (P = .03) but not stroke (P = .33).

“While the study supports an association between coffee consumption and heart failure risk, it doesn’t establish causation,” noted Alice H. Lichtenstein, DSc, director and senior scientist at the Cardiovascular Nutrition Laboratory at Tufts University, Boston. “The authors could not rule out the possibility that caffeinated coffee intake was a proxy for other heart-healthy lifestyle behaviors,” Lichtenstein said. “Perhaps the best message from the study is that there appears to be no adverse effects of drinking moderate amounts of caffeinated coffee, and there may be benefits.”

She added a note of caution. “This result does not suggest coffee intake should be increased, nor does it give license to increasing coffee drinks with a lot of added cream and sugar.”

Continued on page 58

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Kunal Patel runs through Valley Forge National Park. Photo: Priva Patel

ENDURANCE NEWS WEEKLY

Since 1993, *Endurance News* has been a leading source of vital information for endurance athletes. Every issue is rich with insightful articles to help you be healthier, fitter, and faster. Between issues, we offer great new articles online every week to keep your knowledge growing!

Meet the Authors

Brian Frank



Brian's uncompromising commitment to providing superlative customer service, unlimited free educational resources, and the highest quality, all-natural products specifically engineered for endurance athletes has allowed him to achieve his goal: helping serious endurance athletes reach their highest level of performance and health, safely and naturally, since 1987.

Steve Born



Steve has over 20 years of independent research in nutritional fueling and supplementation, which has given him unmatched familiarity with the myriad of product choices available to athletes—and the knowledge of what actually works.

Dean Karnazes

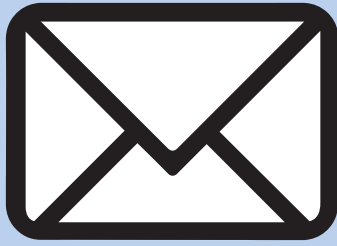


Also known as the Ultramarathon Man, Dean Karnazes is a supremely accomplished runner, author, and speaker. His passion for helping athletes achieve their personal best in sport and life aligns with Hammer's fueling- and education- based philosophy. Dean's legendary accomplishments have been Hammer-fueled since 2008.

Dr. Bayne French MD DC



Dr. Bayne French M.D. D.C. is Hammer Nutrition's medical advisor. Along with an MD from the University of Washington, Dr. French brings over 20 years of health experience, with a focus on wellness, to the Hammer team. Dr. French currently works at Glacier Medical Associates and is double board certified in Family Medicine and Obesity Medicine.



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Every week we bring you news you can use, including ground-breaking nutritional research from around the world, further professional insight regarding the many uses of our various products, and success stories from our athletes.

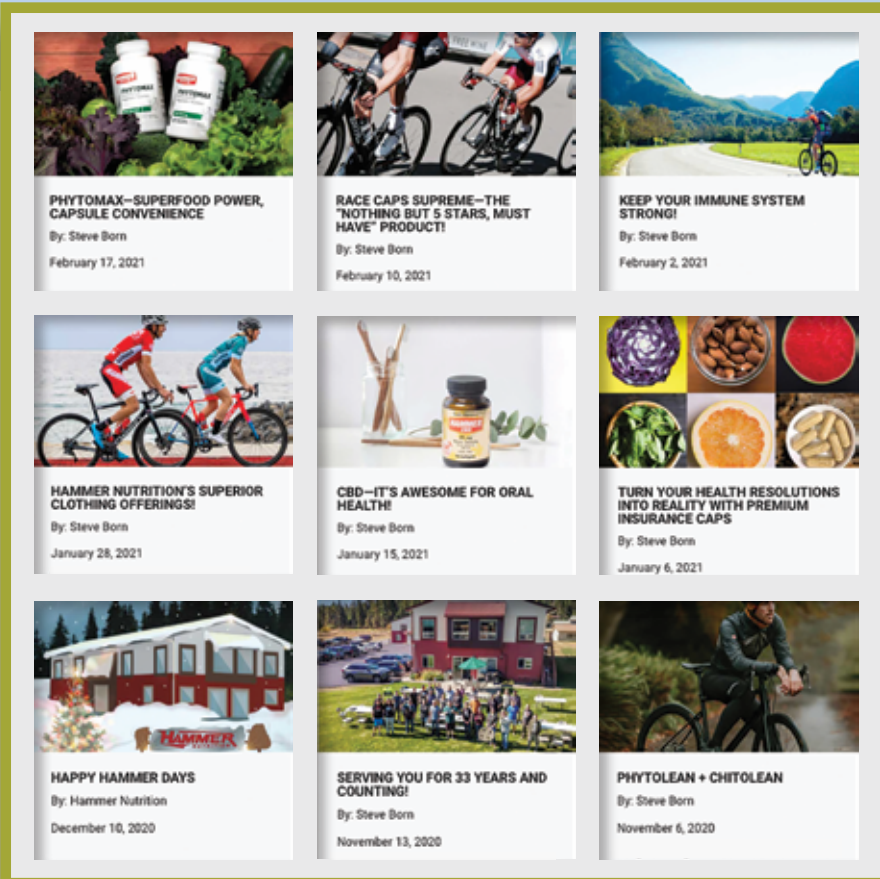
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ENDURANCE NEWS WEEKLY

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Seared Steak with Coffee Rub

INGREDIENTS

1/4 cup finely ground dark roast coffee
1/4 cup ancho chili powder
1/3 cup coconut sugar
2 Tbsp smoked paprika
2 Tbsp garlic powder
2 Tbsp kosher salt
1 Tbsp ground cumin

PREPARATION

In a small bowl or food processor, mix all ingredients thoroughly. Rub selected steak or chicken with blended mixture, using your fingers so it adheres. Allow protein to sit and absorb rub flavors. Grill according to preference and serve.

Organic Corn Salsa

INGREDIENTS

1 1/2 cups organic raw corn, cut off the cob
1 cup tomatoes, diced
1 cup cilantro (or coriander), chopped
1/2 cup red onion, chopped
3 tsp chopped jalapeño pepper
2 Tbsp lemon juice

PREPARATION

Combine all ingredients and season to taste.

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GOLD STANDARD HAMMER CBD WORLDWIDE!

We're very proud to announce that so many athletes had rave reviews about their performance and enhanced recovery properties with Hammer's CBD, they've told friends all over the globe! In the first half of 2021 we've seen an uptick in both popularity and recognition of Hammer's own Gold Standard CBD tinctures, soft gels, and topicals in the outdoor and endurance community.

The debut of this newest product line and the development and understanding of the regulatory environment around it, have finally allowed us to bring CBD into the recovery arsenal of many more athletes.

That has been accomplished by our valued international distributors in the UK, Austria, Hungary, The Netherlands, Spain, Italy, France, Switzerland, Costa Rica, Chile, Ecuador, and Venezuela (and Mexico will be added to that list later this year), who have all brought Hammer's Gold Standard CBD into their lineup. With their investment, we're able to bring this highly sought-after product onto the shelves of more shops and into the hands of more clients.

COMING SOON!





The Hammer Nutrition brand is known as a reputable and trusted source for all things fueling and recovery, and it's clear that for CBD especially there is a need for both a high quality product and the knowledge to use it effectively.

So, whether it's in orally dosed softgels, an oil-based tincture, a water-soluble Hydro, or our topically applied balm, we absolutely guarantee that ultra-pure, 0.0% THC Hammer CBD products will make a massively positive difference in your workouts, your races, and your life. That's how beneficial CBD supplementation is! **EN**



BROCK WALASKA

19:00:19 - Yeti 100 Challenge

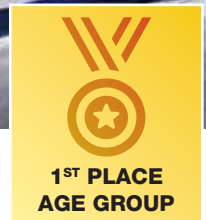


“As an ultra-runner, Hammer Nutrition keeps me going for the long haul. After months of training and a series of canceled races I decided to do my own 100 mile run around the city. This solo and self-supported effort would not have been possible without Hammer Nutrition. I depend on **HEED®** and **Perpetuem® Solids** to deliver reliable, consistent energy mile after mile. I appreciate how fast and easy it is to mix HEED on to go and the convenience of carrying Perpetuem Solids. With only four stops at my home aid station to replenish my running vest, I was able to finish the run in just under 21 hours. My legs took a beating with the entire course run on pavement but **Organic Vegan Recoverite®** and **Vegan Tissue Rejuvenator** optimized my recovery and ensured my body was ready to resume training quickly. Thank you to Hammer Nutrition for providing a wide selection of quality fuel and supplements and sharing your knowledge base to maximize results. When racing resumes, I'll be ready.” - Brock



RUSSELL DEBARBIERIS

1st AG - The Wire Donkey



“Last year I bought a gravel bike for riding the caliche roads in west Texas but when I saw the posting for The Wire Donkey gravel race in New Ulm, TX I was all in! This was my first gravel race and my first race since the pandemic so although I'm a Cat 1 off road I was a bit nervous about starting in a mass start with over 200 racers of varying abilities. What a blast!

I treated this like a short road race and a long mountain bike race combined. I used my morning regimen of **1 Endurolytes® Extreme**, **2 Race Caps Supreme**, **2 Anti-Fatigue Caps**, and **2 Endurance BCAA+**. I repeat this dosage around the halfway point of the race. In each of my water bottles I had 1 scoop of **HEED**, 1/3 scoop of **Perpetuem**, and a liberal squirt of **Hammer Gel®**.

Following a working ritual is very important but it starts long before the start of your event. It's sticking to using all the Hammer Nutrition products day in and day out. They work! I finished 12th overall on the 38-mile course and 1st in the 65+ age group!” - Russell

Russell powering up in Sa Calobra on the island of Mallorca, Spain.
Photo: Mallorca Photos



LIZ KARCZ

1st Place Women - AMA District 38 Season Opener

“The race course was roughly 20-mile loops, and I completed four. They ran us through a mix of sand washes, whoops, and some wide-open desert. The lingering dust made for poor visibility, but I felt strong and hammered down when I could! An **Orange Vanilla Perpetuem** shake a few hours before the race, along with a handful of key supplements right before the start (**Endurance BCAA+**, **Mito Caps**, **Endurolytes Extreme**, and **Super Antioxidant**), were key to feeling charged for a few hours/80+ miles, along with proper hydration with water throughout the morning.” - Liz

Photo: Judd Neves | Nothing But Dirt Racing Photography



STEVEN TERRY

2nd AG - Mesquite Canyon 30K

“Mesquite Canyon was the last in a series of races for my 2021 winter season and I dropped from the 50K to the 30K after a knee injury in a fastpacking trip and an 18K race the weekend prior...fatigue was becoming an issue with 4 races and a 91 mile/20K vert fastpack trip. I prepped for the race as usual with **Fully Charged** 30 minutes before the start and ½ **Hammer Gel** 15 minutes prior.

There was a major climb of some 4 miles and 1,500+ ft of climbing that came at about 6 miles in. Given my sub-optimal state, I knew I had to attack there and see what happened. I was in 5th at the start, took a dose of **Energy Surge** for the climb, and moved into 4th as my climbing was stronger than others. I crested the climb and felt great—until disaster.

There was a ton of annoying two-way traffic on the course and the technical singletrack made this pretty unsafe at times...I dodged an oncoming human, but clipped a rock, went downhill off trail on my chest, rolled, bounced back up still heading off trail and crushed a cholla cactus at about a 7 min/mile pace and ended up with no less than 80 cactus spines in my legs...back to 5th place. I looked everything over and decided I could do nothing good by stopping trailside...put my best game face on and knew I had 7 miles of rocky downhill to get to the medical tent to get my money's worth and have them pull those spines out of my legs.

The adrenaline and Energy Surge wore off and the trail acupuncture of the spines hurt pretty bad until they went a bit numb. I finished as strong as I could and ended up 8th OA and 2nd AG. Ready for **Recoverite** and some down time.” - Steven

Photo: Let's Wander Photography

ATYPICAL ATHLETES

Here are some of the less conventional ways Hammer Nutrition fuels help people. From firefighters to farmers, Hammer clients use our products far and wide to produce amazing results. Hammer's atypical athletes show how smart fueling benefits others beyond cycling and running.



Brian Tyrrell

Competitive J-Class Sailing

“Earlier this year I was introduced to Hammer Endurolytes down in Miami while racing in the J-24 Midwinter Championships. With 8 hours travel to the event in the airplane I felt dehydrated and fatigued. Add to that, the heat and humidity of Miami coming from my much cooler home in Washington state, really took a toll on my body. After taking **Endurolytes**® mid day, the fatigue went away and I could focus on the race without cramping. I used those capsules for the rest of the weekend.

Last weekend, I was in Charleston racing J-105s. Again, I took a red-eye flight cross country, landed at 9 a.m. and was on the water for practice at noon. With no sleep and little to eat as we had to weigh in for competition, I took Endurolytes. For this particular regatta I did not have Fizz and knew I would not have time to grab anything but a bottle of fluids once in a while so I broke the tablet up put them in 12 oz bottles to drink throughout the weekend. Four days on the water, 8 tablets, and never once did I cramp up or feel fatigued. Our boat, Final Final, won the regatta going undefeated in nine races and I truly believe feeling fresh helped the cause, thanks in part to Hammer Endurolytes.”

- Brian



Matt Gibbs

Competitive J-Class Sailing

“Ever since I have started using Hammer products my sailing performance has noticeably improved. Most people don't realize how physically and mentally demanding competitive sailing can be. Long days on the water with wind, waves, and sun combined with very little time for breaks to hydrate and re-fuel can be extremely tiring.

With Hammer I am able to pop some **Fizz** in a few water bottles, eat a **Hammer Gel**® or two, and I feel great all day. Not only has Hammer been terrific for my physical stamina it also helps tremendously with my mental focus—especially in those difficult strategic and tactical situations where I can't afford to lose focus.

When I hit dock at the end of the day, I take some **Xobaline**, **Endurolytes**, and **Tissue Rejuvenator** and I am ready to hit the water the next day and do it all again!” - Matt Photo: Dan Earle



Keith Richardson

Competitive Tennis Player

On the tennis courts, there are only a few short breaks between matches and shade is often quite the luxury. When playing one-on-one, every second counts, especially as matches can extend to 90 minutes or more.

Enter Keith Richardson, a competitive tennis player since he was 13 years old. After playing varsity tennis at North Carolina's Appalachian State University and compiling a record of 109–11, he turned pro and toured internationally. Keith played in the US Open twice and rose through the ranks in other marquee events such as the Madrid Tennis Grand Prix in 1979. After his retirement from professional tennis, Keith was named US Professional Tennis Association's "North Carolina Professional of the Year."

Tennis has always been an obsession of Keith's, and as a true lifelong player and perfectionist on the court, he's always trying to enhance his game and minimize crucial mistakes that could cost him a game. These days, Keith is a member and active participant of the National Senior Men's Tennis Association (NSMTA). He told Brian Frank that he could hardly count the number of times that strong, competitive players have forfeited their last couple of matches of the day when they succumbed to cramping and dehydration issues.

When preparation is key, Hammer is there with our "Pre-Exercise Fueling" from *SOS: 5 Secrets of Success*. That's how Keith started to revolutionize his match-day routine, moving faster on the court, and recovering better for the next round. Once he incorporated Hammer fuels and supplements, especially **Fizz**, **Fully Charged**, and **Endurolytes**, he found a new edge, "In case you guys have not noticed, when I believe in something I surround it with a passion to share it with my friends! I already have three of my workout buddies on the plan and they are *hammering* it. Kudos to Brian for his time and for Steve Born for answering my questions about fueling for more than one match a day." - Keith



The Myth of the All-in-One Convenience

by BRIAN FRANK



Photo: Kristina Parmalee

When it comes to deciding on the best way to consume fluids, calories, and electrolytes during extended exercise (2+ hours), perhaps you are one of the athletes who thinks, “I just want everything in one bottle” because it sounds convenient and means that you don’t have to think about fueling while you’re riding or running. Not surprisingly, this apparently logical approach has been heavily encouraged by companies selling “all-in-one” fueling products. They constantly tout the “convenience” of their all-in-one fuel product—“just drink this and you’ll be all set” they say.

My approach to fueling is 180 degrees opposite. I personally believe that the most effective way to fuel is by taking fluid (water), calories, and electrolytes separately and independent of each other. After you read my reasoning, I think you will agree that fueling using three separate “buckets,” as opposed to tossing everything in one “bucket,” is actually the most logical approach and guarantees the best possible outcome across the entire spectrum of conditions and applications you will encounter during 3, 6, 12, or more hours of continuous exercise.

The problem with combining your fluid, calories, and electrolytes into one container is that it will only meet your body’s needs in a very narrow set of temperature, duration, and intensity situations. I’ll illustrate my point by using an analogy of a single-speed bike vs. a 22-speed road bike. The single-speed bike represents the all-in-one fueling approach. This analogy excludes those of you who ride single-speed bikes for the added challenge—we’re only talking efficiency and maximum speed/minimum time from point A to point B here.



“The problem with combining your fluid, calories, and electrolytes into one container is that it will only meet your body’s needs in a very narrow set of temperature, duration, and intensity situations.”



That single-speed bike will work great for you on relatively flat surfaces and at a speed that has you spinning between 70 and 100 rpm. But what happens when you encounter steep climbs or long descents? Now you are walking your bike up hill and coasting down due to your single gear option. The same is true with an all-in-one fuel. Single-speed bikes are cool, but for most of us, they have a pretty limited appeal and certainly would not be our choice if we were limited to owning only one bike. Same goes for the “all-in-one” fuel bottle—limited appeal and certainly not what I’d want my entire race to be dependent upon.

So, unless you always exercise in the exact same temperature and humidity (plus or minus five degrees and 5%, respectively) from start to finish, for no more than 2-3 hours, the all-in-one formula will leave you hanging every time. Now consider the 22-speed bike. You can change gears to accommodate anything that comes your way—from short, steep climbs to long, grinding climbs, or long gradual descents—and still maintain maximum efficiency and pace. Thus, you have the same ability when you manage your fluid, calories,

and electrolytes independently of each other and are able to make adjustments as conditions change. The flexibility afforded by separating the fueling components during extended hours of exercise is crucial since the temperature, humidity, terrain, and pace will undoubtedly change significantly between the time you start and when you finish.

To bring the concept home, let’s consider a typical iron distance triathlon, double century, 100-mile MTB, 50-mile trail race, or the like—basically 6–24 hours of continuous exercise. These events start in the early morning hours when it’s nice and cool and continue on through the hottest part of the day, and sometimes back down to cooling temperatures. 20–30 degree variances are typical, and you may encounter as much as 50-degree temperature differences.

During the first few hours when it’s still cool, your caloric intake should be at your optimal level (for me, that’s 130–150 calories

per hour), while fluid intake will be well below your max and the need for electrolytes is minimal. However, as the heat intensifies and the body becomes increasingly depleted, you’ll need to reduce your hourly caloric intake (the body can process more calories in cool temps than in hot temps) while simultaneously increasing your fluid and electrolyte intake. These diverging needs can easily be met when you fuel separately. On the other hand, you cannot manage these changing requirements with an all-in-one fuel bottle. **EN**



“Unless you always exercise in the exact same temperature and humidity from start to finish, the all-in-one formula will leave you hanging every time.”

HOT DANG!

We're Racing Again!

Just in the nick of time, when many of us were going to go stir crazy (or worse) from the word “virtual,” it’s racing time once again for many of us. That’s right! Live, in-person racing! After a substantial, and far-too-lengthy pause, we at Hammer Nutrition are super excited to once again be able to support the hundreds of live events that are happening on an ever-increasing basis. And while some live events are still under restrictions, we’re still supporting them.

One thing we’re noticing is the tremendous number of gravel rides (AKA gravel grinders) that are emerging all over the country, and trust us, we are fully into supporting this awesome sport. We’ve got over 40 gravel grinders on our events calendar so far, with that number sure to grow by the time this issue of *Endurance News* reaches you.

WE SUPPORT YOUR SPORT

Whatever your sport, you’ll find plenty of challenging events to choose from sponsored by Hammer Nutrition. There are many events on our calendar for the upcoming months, covering practically everything associated with endurance, and more requests for sponsorship support are pouring in daily. **EN**



UPCOMING EVENTS

Spring Creek Gravel Challenge

6.19.2021 • Sigel, PA
bikethewilds.org

Running with the Devil

6.19.2021 • Las Vegas, NV
calicoracing.com

Blankets Creek 3 & 6 Hour MTB Race

6.19.2021 • Canton, GA
mountaingoatadventures.com

Solstice Gravel Grinder

6.19.2021 • Beatrice, NE
solsticegravel.com

CMMX Rounds 4 & 5

6.19.2021 • Helena, MT
cm-mx.com

The Geargo Six Sigma 8hr MTB Endurance Race

6.25.2021 • Lower Lake, CA
northlanderevents.com

Lake Mills Triathlon

6.26.2021 • Lake Mills, WI
lakemillstri.com

Mountain Magic Trail Runs

6.26.2021 • Mead, WA
mountainmagicrun.com

Pleasant Prairie Triathlon

6.27.2021 • Pleasant Prairie, WI
pleasantprairietri.com

Bitterroot Runoff Trail Runs

7.10.2021 • Lolo, MT
runnersedgmt.com

Deschutes Dash

7.10.2021 • Bend, OR
deschutesdash.com

“Happy just to get back on the start grid and get dirty.” **Mitch DeYoung** placed 3rd in his age group at the Hammer-sponsored Fast Fitty Gravel Race. Photo: Jack Kunnen Photography



Buckeye Trail 50K

7.10.2021 • Brecksville, OH
westernreserveracing.com

Florida Polytechnic Time Trial Series

7.11.2021 • Lakeland, FL
stevenperezluha.com

Stoney Lonesome MC Round 3

7.11.2021 • Columbus, IN
stoneylonesomemc.com

Delta Lake Triathlon

7.15.2021 • Cassadaga, NY
coachmarkwilson.com

Iowa Gravel Series/Albia Rock Road

7.17.2021 • Albia, IA
iowagravelseries.com

Tomlinson Run MTB Race

7.17.2021 • New Manchester, WV
bikethewilds.org

Shannock Valley Gravel Race

7.24.2021 • Rural Valley, PA
bikethewilds.org

Colorado Park 2 Park Challenge

7.24.2021 • Denver, CO
copark2park.wordpress.com

Whidbey Island Triathlon

7.31.2021 • Langley, WA
swparks.org

Spudman Triathlon

7.31.2021 • Burley, ID
spudman.org

Black Bear 40K MTB

8.1.2021 • Charleston, WV
wvmba.com

Pierre's Hole MTB Race

8.7.2021 • Alta, WY
grandtarghee.com

Dairyland Dare

8.7.2021 • Dodgeville, WI
dairylanddare.com

Rollin' Coal Gravel Grinder

8.7.2021 • Shinnston, WV

Covered Bridge Classic

8.15.2021 • Lancaster, PA
coveredbridgeclassic.com

Harriman 25K/50K

8.21.2021 • Island Park, ID
buffalorunadventures.com

Marquette Trail 50

8.21.2021 • Marquette, MI
marquettettrail50.com

Padden Triathlon

8.21.2021 • Bellingham, WA
cob.org/events

CONTINUED ARTICLES

Lean Out With PHOOD

by BRIAN FRANK

Continued from page 6

Hyper metabolic/Ectomorph athlete's uses for PHOOD

There is a great application for those of you who are on the other side of the spectrum. If you don't eat constantly, you lose weight! For you, intermittent fasting is not necessary, eating three square meals a day is a must and some solid snacks in between your meals are a must. This is where PHOOD comes in. The rich, high protein/fat formula provides satiety for hours and gives your furnace an excellent slow burning fuel. As a mid morning or mid afternoon snack, PHOOD can be an effective tool for you to protect against muscle cannibalization an ever-present concern for aging Ectomorphs. **EN**

Disclaimer—This article is intended for information purposes only. Before beginning any diet modification, calorie restricting or intermittent fasting program, you should consult a qualified healthcare professional.

SOS #3: Proper Hydration

by STEVE BORN

Continued from page 22

A better approach is to maintain constant daily hydration (half of your body weight in fluid ounces) up to and through race day, regardless of temperatures.

A three-day load with **Liquid Endurance** will safely and effectively maximize your intercellular water levels, so they can be called upon as

needed during your training session or race.

EN LIQUID ENDURANCE

Read more about this superb hot-weather product on page 30.

Beat the race-day heat

In addition to proper hydration, adaptation, and appropriate electrolyte consumption, the following can help effectively relieve heat stress if the temperatures soar on race day.

- If you're running, take a one-minute walk, douse yourself with water, and take a good drink. If you're cycling, coast or easy spin for a minute. The break from heavy exertion allows some internal heat to dissipate. Highly competitive athletes might scoff at walking or coasting, but when it comes to core temperature, nature gives you two choices: cool down or DNF.
- Wear the lightest, most evaporation-friendly clothing you can afford. (Cotton isn't on the list!) Many fibers today provide superior wicking and evaporation that allow your sweat to do the work nature intended. Light-colored clothing is preferable.
- Use cold fluids as much as possible as your body absorbs them more rapidly than warm fluids. Use frozen and insulated water bottles and hydration packs.

Know the symptoms of both over-hydration and dehydration. Stop immediately if you feel lightheaded or queasy, or get dry chills. No race or training is worth compromising your health. **EN**

Recovery

by STEVE BORN

Continued from page 40

To replenish your body with the high-quality fuel it's begging for after a workout, reach for Recoverite—either the original whey protein isolate-containing formula, or our newer formulation, Organic Vegan Recoverite.

The original Recoverite contains complex carbs (maltodextrin) and whey protein isolate in a 3:1 ratio. It also contains 3 grams of glutamine, a full-spectrum electrolyte profile, and key nutrients. Ever since its introduction 15+ years ago, thousands of satisfied athletes have proven that there isn't a more potent or effective recovery drink than Recoverite.

Organic Vegan Recoverite contains the same ingredients in the same amounts as the original Recoverite formula but replaces the whey protein isolate with organic pea protein. While not as bioavailable as whey protein isolate (nothing is), organic pea protein is an easily digested, gluten-free protein with an excellent amino acid profile. It also contains excellent levels of BCAAs (leucine, isoleucine, and valine), three key recovery-enhancing amino acids.

Either Recoverite will provide your body with the nutrition it needs so that it can recover thoroughly between workouts. It's easy! As soon as your workout is complete, mix a couple scoops into 4–8 oz of cold water, drink, and you're done. You've now put the best possible "finishing touches" on your workout and started your recovery process in earnest.

SUMMARY

Training is definitely important, but if we neglect proper recovery we will never get the full value from the time and energy we spend on it. Remember, training gains occur during recovery and only in the presence of adequate rest and optimal nutritional support. If we don't attend to that, we not only miss out on the benefits of our workouts—we also increase the odds of getting sick or injured.

In all my years at Hammer Nutrition working with thousands of athletes, I remain convinced that if they recovered properly between their workouts and their races—starting with “refilling the tank” with quality fuel ASAP—they would:

- Be able to increase their training volume and intensity without compromising their muscular and immune systems
- Experience a lot fewer sick days
- Enjoy more personal bests in races

Peak training season is here! Now is the time! Don't wait any longer to enjoy the MASSIVE benefits that Recoverite and Organic Vegan Recoverite are ready to provide you! EN

Coffee Tied to Lower Heart Failure Risk

by STEVE BORN

Continued from page 42

MACHINE LEARNING MINES OBSERVATIONAL TRIALS

Kao explained the rationale for applying a machine-learning algorithm to the three observational trials. "When these trials were designed in

general, they had an idea of what they were looking for in terms of what might be a risk factor," said Kao. "What we were interested in doing was to look for risk factors that nobody really thought about ahead of time and let the data show us what might be a predictor without any bias of what we imagined to be true."

He described the role of machine learning in extracting and "filtering" data from the trials. "Machine learning allows us to look at a very large number of factors or variables and identify the most important ones in predicting a specific outcome," he said. This study evaluated the 204 variables and focused on dietary factors because they're modifiable.

"We looked at them in these different studies where we could, and coffee was the one that was reproducible in all of them," he said. "Machine learning helped filter down these very large numbers of variables in ways you can't do with traditional statistics. It's useful in studies like this because they gather thousands and thousands of variables that generally nobody uses, but these methods allow you to actually do something with them—to determine which ones are most important."

He added: "These methods I think will take us toward personalized medicine where you're really individualizing a plan for keeping a patient healthy. We still have a lot of work to do, but there's a lot of promise for really helping each of us to figure out the ways we can become the healthiest that we can be." EN

References available upon request

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Stay Informed.**

ENW
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HAMMER GEL

by BRIAN FRANK

Go green, use a flask!

Despite the fact that most of our clients have an earnest desire to be “green” and less wasteful, we are seeing an ever-increasing number of athletes using disposable single-serving gel packets in the name of convenience. Meanwhile, jug (and therefore flask) usage has remained flat or declined during the same period. Having originated the refillable flask and jug concept in 1995 as a highly favorable alternative to single-use, mylar foil pouches, I find this to be more than a little troubling. Finding discarded gel pouches on the side of the road everywhere I go is the most bothersome of all. Getting phone calls and emails from irate people complaining about it being our fault that someone dropped an empty pouch on the trail is no fun either.

With certainty, this trend is not good for the environment. However, the preference for pouches is formidable. When pressed for a reason why they use the single-serving packets rather than the more economical, reusable flask, gel users cite a variety of reasons: They say that they don’t want to

waste gel by filling the flask and only using a portion of it during their workout. Only putting one or two servings in the flask is a problem too, because the gel does not come out easily. Then there are the logistical reasons: “I have nowhere to put the flask,” “I don’t want to carry it while running,” etc.

But the reasons don’t hold up to critical analysis. I’ll posit that flasks are actually more convenient, if given some serious thought. If you are exercising for less than one hour, there’s not much need to bring calories with you; just take a good serving of gel before you leave and then drink water, maybe with an Endurolytes® Fizz or two. For exercise over one hour, the flask is actually easier to use than having to retrieve, open, dispose of the tab, consume, replace the spent gel pouch somewhere, etc.

When purchased in a 26 serving jug, Hammer Gel is only 77 cents per serving! The reality is that using a jug and flask is more economical, better for the environment, and ultimately even simpler than single-serve pouches.

If you must use single-servings PLEASE dispose of your empty pouch properly. Hammer trash is not our idea of good advertising. All one has to do is pour in the desired number of servings for the next workout. A one-hour workout would require one or a bit more servings, topped off with water, shake a couple of times, and then consume the entire contents during that hour workout. The same goes for two-hour or three-hour workouts as well. **EN**



Smooth sustained energy
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More Gel,
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“GET SOME!”

“As a long distance cyclist and runner, **Hammer Gel** has been my go-to on and off since my start 12 years ago. It offers sustainable energy with no crashes during long events.” - Rob B.

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ODE TO MARATHON

It will challenge you. It will crush you. It will change you.

by DEAN KARNAZES

Despite its growing popularity, there's nothing easy about finishing a marathon. Regardless if you're an elite front-runner or an anxious first-timer, the undertaking is fearsome. And that's because the marathon is not about running; it's about salvation. You see, we spend so much of our lives doubting ourselves, thinking that we're not good enough, not strong enough, not made of the right stuff. The marathon offers an opportunity for redemption. Opportunity, I say, because the outcome is uncertain.

Opportunity, I say, because it is up to you, and only you, to make it happen. There is no luck involved in finishing a marathon. The ingredients are simple: commitment, sacrifice, grit, and raw determination. Nothing complicated here, though nothing easy, either.

So you set about your training to prepare your body for the rigors of running 26.2 miles. You refuse to compromise, dedicating yourself wholeheartedly to the contest at hand, pouring everything you've got into it. But you know the marathon will ask for more. In the dark recesses of your mind, a gloomy voice is saying, You can't do this, not you. You do your best to ignore the internal cynic, but that nagging voice of self-doubt won't go away.

The marathon shakes you to the core. It deconstructs your very essence, stripping away all of your protective barriers and exposing your inner soul. At a time when you are most vulnerable, the marathon shows no pity. The marathon tells you that it will hurt you, that it will leave you demoralized



and defeated, crushed and lifeless in a heap alongside the roadside. The marathon tells you it can't be conquered, not by you. "HA!" it taunts you, "In your dreams..."

You fight back, however, and stand courageously at that starting line, nervously awaiting the gun to go off. When it does, you put your head down and charge into the abyss, knowing honestly in your heart's heart that you either paid your dues or that you skimmed along the way. You see, there's no lying to oneself here. The marathon sees right through excuses, shortcuts, and self-transgressions. You can't fake your way through a marathon.

All goes well for the first half. But slowly, step-by-step, the pain mounts as the intensity of the endeavor amplifies. You remain steadfast, knowing that you did not skimp in your training, that you did not take shortcuts, that every footstep has been earned through months and years of rigorous preparation and hard work. Still, with each draining thrust forward, a little nagging whisper of self-doubt grows progressively louder.

Without war a man does not know if he is a hero or a coward. The marathon gives us that war. At the 20-mile mark your bravery is in doubt; that looming voice of uncertainty is now all you can hear. It hurts so bad you want to stop. It hurts so bad you must stop. But you don't stop. This time, you ignore that voice, you tune out the naysayers who've told you that you're not good enough, not strong enough, not made of the right stuff, and you listen only to the passion within your heart. That burning

desire tells you to keep moving forward, to continue putting one foot in front of the other no matter the strain. Courage comes in many forms, and running a marathon demands the courage to keep trying and not to give up regardless of how dire things become. And dire things do become. At the 26-mile mark you can barely define the course any longer, your vision faltering as you teeter perilously on the edge of consciousness.

"Without war a man does not know if he is a hero or a coward. The marathon gives us that war."

And then, suddenly, before you looms the finish line. Tears stream down your cheeks as you realize that you may finish, you may actually finish a marathon. Finally, after years of torment and toil you can answer back to that nagging voice of uncertainty in your head with a resounding, "Oh yes I can!"

You burst across that finish line and are forever liberated from the prison of self-doubt and limitations that has held you captive. You have learned more about yourself in the past 26.2 miles than you have known in your entire existence. You have freed yourself everlastingly from those chains that bind and hold you back. Even if you can't walk for days, even if you are confined to your bed, never have you been so free.

As they carry you off from the finish line, wrapped in a flimsy Mylar blanket, barely able to

keep your head upright, you are at peace. That daunting adversary that has haunted you an entire lifetime is now your liberator, your fondest ally. You have done what few will ever do—you have done what you thought you could never do—and it is the most glorious, unforgettable awakening ever.

You are, above all, a marathoner, and you will wear this distinction not only on the medal they place around your neck, but also deep within your heart, for the rest of your God-given years. Nothing can ever take that away from you. As with Pheidippides, the original Greek marathoner, you are part of a sacred fraternal order of the few and the courageous. You have kindred spirits across borders and across time. Others may admire you, congratulate you, and tell you they are proud of you, but only those who have crossed that finish line know the true feeling. A marathoner is not just something you are, but someone you've become. **EN**



Also known as the Ultramarathon Man, Dean Karnazes is a supremely accomplished runner, author, and speaker. His passion for helping athletes achieve their personal best in sport and life aligns with Hammer's fueling- and education- based philosophy. Dean's legendary accomplishments have been Hammer fueled since 2008.

CHROMIUM

The “Master Nutrient” for Controlling Blood Sugar (and more)

An enormous body of research confirms that the trace mineral chromium plays a crucial role in glucose and fat metabolism, with many nutritional scientists referring to it as the “master nutrient” for that purpose. Chromium normalizes blood sugar and cholesterol levels, provides a powerful assist for efficient energy production, helps promote healthy body weight, and is the key for insulin sensitivity (how responsive your cells are to insulin).

In fact, without adequate chromium—nearly impossible to obtain via the diet—insulin essentially becomes ineffective. This is because chromium acts as an essential “go-between” that allows insulin to deliver blood glucose to the cells. Without sufficient chromium, glucose ends up piling up in the blood stream and the pancreas release more and more insulin, but without the normal beneficial outcome; the cell membranes cannot open, and are thus incapable of receiving that glucose. Insulin resistance syndrome then occurs, which leads to a number of health issues such as obesity, high blood pressure, high cholesterol, and type 2 diabetes.

Needless to say, as chromium is deficient in the diet—Richard Anderson of the USDA states,



“Chromium may be a trace mineral, but its positive effects on human health are anything but trace!”

“90 percent of Americans are deficient in chromium.”—supplementation with the highly bioavailable form of chromium, polynicotinate (ChromeMate™), is essential.

Perhaps the most impressive research on ChromeMate was presented at the 46th Annual Meeting of the American College of Nutrition, 2005. Rats prone to aging were fed diets containing ChromeMate, which increased their average life span by +22% compared to rats fed the same diet without ChromeMate.

Rats fed ChromeMate also experienced:

- Lower systolic blood pressure
- Lower circulating glucose levels
- Lower normalized hemoglobin levels, a long-term indicator of blood sugar status
- No abnormalities in blood chemistry, kidney, or liver function

“We’ve long known that niacin-bound chromium provides significant health benefits relative to metabolic syndrome,”

stated lead researcher, Harry G. Preuss, M.D. “These new results open the possibility that ChromeMate niacin-bound chromium may prolong human life as well.”¹

Chromium may be a trace mineral, but its positive effects on human health—perhaps even prolonging life—are anything but trace! Hammer Nutrition fuels—HEED®, Sustained Energy, Perpetuem®, Perpetuem Solids, Recoverite®, and Organic Vegan Recoverite—all contain varying amounts of ChromeMate. Taking an additional capsule of **Chromemate** with your main meals is a wise strategy to protect your health and enjoy all the benefits this trace mineral provides. EN

References available upon request

Read more about the many benefits of Chromemate on *Endurance News Weekly*. →



CHROMEMATE and ESSENTIAL Mg

A powerful pair against insulin resistance

The numbers are sobering. According to the Center for Disease Control and Prevention (CDC), As of 2020, more than 34 million Americans have diabetes (about 1 in 10), and approximately 90–95% of them have type 2 diabetes. 88 million American adults—approximately 1 in 3—have prediabetes.¹

As the previous article discusses, chromium is the key nutrient to help insulin function properly so cells will receive blood glucose. More recent research shows that a combination of the minerals magnesium and chromium works in tandem to improve a number of indicators of insulin resistance. In fact, the title of this hallmark paper states: “Combined chromium and magnesium decreases insulin resistance more effectively than either alone.”²

While there are many lifestyle changes that can greatly assist in our efforts to avoid insulin resistance—greatly reduce sugar consumption in your diet, lose weight, exercise more consistently, address chronic stress, quit smoking, and more—Hammer Nutrition’s **Chromemate** and **Essential Mg** provide a potent research-supported combination. Together, this pair helps ensure that your insulin is working properly to keep blood glucose levels stable. This is vitally important to avoid insulin resistance and the possibility of pre-diabetes and diabetes. EN

References available upon request

Micronutrient with massive benefits

CHROMEMATE



“CHROMEMATE KEEPS ME STEADY!”

“Chromemate daily with meals has stabilized my blood sugar levels so that I no longer have that mid-afternoon crash. My energy levels remain constant before and after my training runs as well. I’m a fan!” - Online Reviewer



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- Reduces sugar cravings

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CANYONLANDS

The Renaissance Cyclist crew pedaled the White Rim Trail in Canyonlands National Park over the course of four days, with plenty of time to stop and smell the desert roses. This was an introduction into bikepacking for a number of folks in the party, and there isn't a better place for indoctrination. Every bend on the White Rim offers another unique breathtaking vista with no dull moments for 100 miles.

Photo: @renaissance.cyclist

✓ THE BEST QUALITY

✓ THE BEST PRICES

✓ GUARANTEED

If you are buying CBD somewhere else,
you are probably paying too much.

And you may be getting an inferior product.



Hammer Nutrition, the leader in endurance nutrition for 34 years, is now the leader in CBD. After studying this amazing new product and using it for years, in 2018 we partnered with the largest vertically integrated producer, manufacturer, and distributor of hemp-derived phytocannabinoids (CBD) in North America. We have the research, education, and trained support staff to be your “go-to” for all things CBD.

Friends don't let friends overpay for CBD!

Start referring your family and friends today. Our generous Referral Reward program is ideal for introducing all of your friends and family to the amazing benefits of CBD and getting some nice Hammer Bucks in your account. They get 15% off their first order, and you get a 25% credit to your account.

CBD SOFTGELS

10 mg 4 ct	\$0.17 per mg
10 mg 30 ct	\$0.13 per mg
10 mg 90 ct	\$0.10 per mg
25 mg 4 ct	\$0.13 per mg
25 mg 30 ct	\$0.09 per mg
25 mg 90 ct	\$0.08 per mg

CBD TINCTURES

Hydro 250 mg	\$0.10 per mg
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