

the little red book



HAMMER NUTRITION®
PRODUCT USAGE MANUAL

Product & usage suggestions to optimize your fueling and supplement program.

Save for future reference

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None of the statements in this manual should be construed as dispensing medical advice or making claims regarding the cure of diseases, nor can these products prevent heat stroke, hyponatremia, or any other results of excessive physical exhaustion. You, the athlete, must listen to your body and use common sense to avoid serious injury. None of the statements contained in this manual have been evaluated by the Food and Drug Administration. You should consult a licensed health care professional if you have any pre-existing medical conditions.

Thank you for purchasing Hammer Nutrition® fuels and supplements. We know that you'll be completely satisfied with our products because they are exactly what your body craves before, during, and after any training session or race.

Smart athletes know that the proper use of high-quality fuels, as well as the consistent use of an intelligent supplement program, are integral factors in achieving the highest quality performance in their training sessions and races. In fact, they're as important in achieving success as all of the time that you put into training and all of the money that you spend on equipment. In addition, high-quality fuels and supplements work in tandem with your exercise routine to help optimize overall health.

That's where this handy manual comes in. It supplies all of the vital information that you need regarding proper application, mixing instructions (where appropriate), suggested usage, and special notes for each Hammer Nutrition product. Please keep this manual filed in a safe place, along with your copy of *The Endurance Athlete's GUIDE to SUCCESS* and *The Hammer Nutrition Fuels & Supplements—Everything You Need To Know*, as you will want to refer to these resources many times in the future. If you do not already have one, we highly recommend that you download a free copy from our website at www.hammernutrition.com/guide.

As always, should you need assistance with your fueling or supplement program, or if you have any questions about any of the Hammer Nutrition products, we're simply a phone call or email (support@hammernutrition.com) away.

Thank you again for your purchase of our fuels and supplements, and best wishes to you for success in your chosen endeavor!

- The Hammer Nutrition Team



Ed Stout enjoys a spring training ride during Hammer Camp.
Photo : Owen Gue

Where do I start?

Hammer Nutrition guidelines on fluid, electrolytes, and calories

1. Keep fluid intake during exercise between 16-28 ounces (approx 475-830 ml) per hour.

There's probably more misinformation on the subject of hydration than any other aspect of fueling, which is really sad since overhydration presents the most serious physiological consequences of any fueling issue. Overhydration can cause your performance to decline, with cramping being but one of many undesirable outcomes. In the most severe cases, hyponatremic (low sodium)-induced coma and death can result.

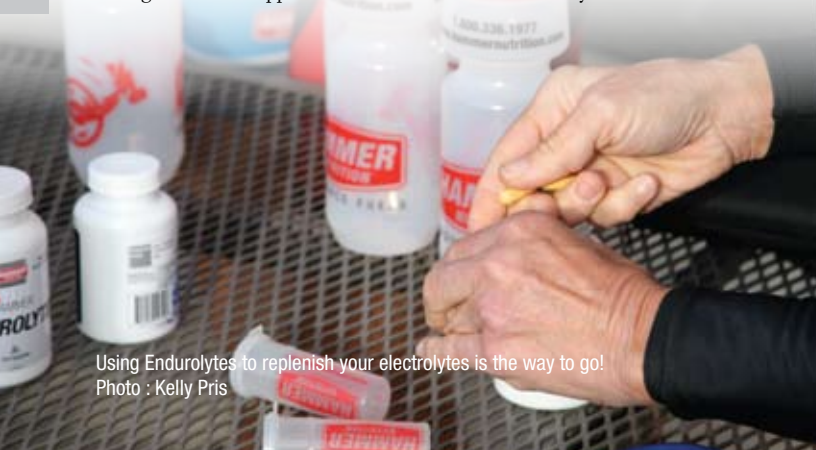
Most athletes, under most conditions, will satisfy hydration needs with a fluid intake in the range of 20-25 ounces (approx 590-740 ml) per hour, which is approximately the equivalent of a small or large water bottle. Lighter athletes and/or athletes exercising in cool weather conditions may only require an intake of 16-18 ounces (approx 475-530 ml) per hour.

Consistent fluid intake over 30 ounces per hour greatly increases the potential for dilutional hyponatremia. Unless you enjoy nausea, cramping, bloating, and DNFs, forget advice like “drink to replace” or “drink even when you're not thirsty”—it's just plain wrong.

2. It is never a good idea to attempt to “sodium load” in preparation for an especially hot event.

“Electrolyte replenishment” does not just mean “sodium or salt replenishment.” Sodium chloride (salt) is indeed an important component of electrolyte replenishment but calcium, magnesium, potassium, and the other key minerals found in the Endurolytes products must be replenished as well in proper proportions and ratios. These minerals also play key roles in the maintenance of many important body functions.

Most athletes, like the general population, consume too much salt every day, creating a reservoir of upwards of 8,000 – 10,000 mg stored in body tissues. The best thing an athlete can do to get an edge on heat stress is to maintain daily dietary sodium levels as close to 2,300 mg as possible. Lower dietary sodium intake allows for reasonable Endurolytes intake during exercise to support the maintenance of normal body functions.



Using Endurolytes to replenish your electrolytes is the way to go!

Photo : Kelly Pris

3. Take a “less is best” approach to caloric intake during exercise.

Your workout or race can go down the drain fast if you follow the “calories out, calories in” protocol that many “experts” recommend. Athletes who attempt to replace all of the calories they lose will end up with bloating, nausea, vomiting, and/or diarrhea . . . definitely unpleasant and performance-inhibiting scenarios.

If you want to achieve your best performance, replenish calories in “body cooperative” amounts, allowing your fat stores to make up the difference, which they will easily do. While 240–280 calories per hour is a theoretical hourly maximum (based on the liver converting one gram of carbohydrates—4 calories—per minute into glycogen) almost all athletes report success with a far lower hourly caloric intake.

It is for this reason that we show caloric intake ranges broken down by weight for each product. If you will be using more than one product, be sure to include the calories from each in your total hourly calculations.

In order to find your OPTIMUM HOURLY CALORIC INTAKE (the minimum amount necessary), we recommend that you follow the suggested dosage ranges for your body weight. This will give you the best performance without undesirable side effects associated with excess caloric intake.

Hammer Gel

RAPID ENERGY THAT LASTS



Application

Use as a primary source of calories during exercise/competition lasting up to two hours.

Serving Size

One serving of Hammer Gel contains 80-90 calories depending on the flavor.

Suggested Doses by Body Weight*

WEIGHT	SCOOPS	CALORIES
Up to 90 lbs (<i>Up to 41 kg</i>)	0.5-1 serving/hr	40-45 to 80-90 cal.
90-120 lbs (<i>41-54.5 kg</i>)	0.5-1.5 servings/hr	40-45 to 120-135 cal.
120-155 lbs (<i>54.5-70 kg</i>)	1-2 servings/hr	80-90 to 160-180 cal.
155-190 lbs (<i>70-86 kg</i>)	1.5-2 servings/hr	120-160 to 135-180 cal.
190+ lbs (<i>86+ kg</i>)	1.5-2.5 servings/hr	120-135 to 200-225 cal.

**These are estimated doses. Each athlete should determine in training, under a variety of conditions, their personal optimum.*

If using more than one fuel, be sure to combine all of the calories from all of the products consumed to reach a correct total hourly intake.

Mixing / Usage Instructions

Consume 0.5-2.5 servings per hour (see chart above), along with 16-28 ounces (approx 475-830 ml) of plain water per hour from a separate source.

Notes

Hammer Gel may be used as the sole source of calories during workouts and races up to two hours, perhaps up to three hours under certain circumstances. When training sessions or races go much longer than that, select either Perpetuem or Sustained Energy as your primary fuel source.

- Hammer Flask holds 5-6 servings.
- Espresso Hammer Gel contains 50 mg of caffeine per serving.
- Tropical Hammer Gel contains 25 mg of caffeine per serving.
- You can use Hammer Gel to flavor Sustained Energy, Hammer Soy or Hammer Whey smoothies, etc.



Yolanda Flamino sprints to a 3rd place finish at the 2011 USATF 50km Championships. Photo : Mike Polansky

HEED

A REAL, EFFECTIVE SPORTS DRINK



Application

HEED may be used as the sole fuel during exercise lasting up to two hours, fulfilling all of your calorie and fluid requirements and most-to-all of your electrolyte needs.

Serving Size

One scoop of HEED contains 100 calories.

Suggested Doses by Body Weight*

WEIGHT	SCOOPS	CALORIES
Up to 90 lbs (<i>Up to 41 kg</i>)	0.5-1 scoop/hr	50-100 calories
90-120 lbs (<i>41-54.5 kg</i>)	0.75-1.5 scoops/hr	75-150 calories
120-155 lbs (<i>54.5-70 kg</i>)	1-2 scoops/hr	100-200 calories
155-190 lbs (<i>70-86 kg</i>)	1.5-2.25 scoops/hr	150-225 calories
190+ lbs (<i>86+ kg</i>)	2-2.75 scoops/hr	200-275 calories

**These are estimated doses. Each athlete should determine in training, under a variety of conditions, their personal optimum. If using more than one fuel, be sure to combine all of the calories from all of the products consumed to reach a correct total hourly intake.*

Mixing / Usage Instructions

Mix 1-2.75 scoops (see chart above) of HEED in 16-28 ounces (approx 475-830 ml) of water. Sip continuously during exercise.

Notes

When training sessions or races go much longer than two hours, select either Perpetuem or Sustained Energy as your primary fuel source. In these instances, HEED can still be used intermittently for variety as long as your total hourly caloric intake does not exceed your training-determined maximum.

Each scoop of HEED contains the equivalent amount of electrolytes as one Endurolytes capsule, one scoop of Endurolytes Powder, or one-half tablet of Endurolytes Fizz. For many athletes, under normal conditions, one or two scoops of HEED will completely fulfill electrolyte requirements. When heat stress increases significantly, you will need to consume additional Endurolytes.



“Wadley” has a solid race in the 200 Fly during a UCLA Masters swim meet.
Photo : Susan Shore

Endurolytes Capsules, Fizz, Powder

ELECTROLYTES DONE RIGHT - THREE FORMS TO CHOOSE FROM



Application

Use prior to, during, and after workouts to satisfy the body's electrolyte requirements with maximum precision.

Use as needed, but primarily when:

1. Exercise lasts for more than two hours, regardless of temperature or humidity.
2. Exercise lasts less than two hours and:
 - a. Temperature is above 80 degrees and/or 70% humidity or
 - b. Temperature and humidity is ten degrees or more above what you are accustomed to.

Capsule Usage Instructions

- Lighter weight athletes: 1-2 capsules per hour
- Medium weight athletes: 2-3 capsules per hour
- Larger athletes: 4-6 capsules per hour

Fizz Mixing / Usage Instructions

- Lighter weight athletes: 0.5-1 tablets per hour
- Medium weight athletes: 1-1.5 tablets per hour
- Larger athletes: 2-3 tablets per hour

Add Endurolytes Fizz tablets to your water or fuel bottle(s), allow tablets to dissolve completely, and consume as needed to maintain proper hydration and electrolyte levels.

Note: Each rapidly dissolving effervescent tablet contains the equivalent dosage of approximately two Endurolytes capsules.

Endurolytes Capsules, Fizz, and Powder notes continued . . .

Powder Mixing / Usage Instructions

- Lighter weight athletes: 1-2 scoops per hour
- Medium weight athletes: 2-3 scoops per hour
- Larger athletes: 4-6 scoops per hour

Note: Taste issues may limit you to 1-3 powder servings per hour. If conditions warrant additional dosing, capsules should be used.

Notes

Endurolytes DOES NOT prevent heat stroke, hyponatremia, or any other dangerous physical condition resulting from overexertion in the heat.

Body weight, level of fitness, weather conditions, acclimatization level, and biological predisposition all greatly affect electrolyte depletion so you must do your own trials with Endurolytes dosing, under a variety of conditions, to determine individual requirements.

Endurolytes Fizz is not a source of calories.

Special Note: The amount of salt (sodium chloride) you habitually consume in your daily diet largely determines the amount of salt, and therefore Endurolytes, you will need to consume during exercise and races. The higher your dietary sodium intake, the more Endurolytes you will need to take. In extreme cases, this may be far more than the dosages indicated on previous page.

Perpetuem

THE FUEL FOR EXTREME ENDURANCE



Application

Use as a primary source of calories during exercise/competition lasting more than two hours.

Serving Size

One scoop of Perpetuem contains 135 calories.

Suggested Doses by Body Weight

WEIGHT	SCOOPS	CALORIES
Up to 120 lbs (<i>Up to 54.5 kg</i>)	Up to .75 scoop/hr	Approx 101 calories
120-155 lbs (<i>54.5-70 kg</i>)	1 scoop/hr	135 calories
155-190 lbs (<i>70-86 kg</i>)	1.25-1.5 scoops/hr	169-202.5 calories
190+ lbs (<i>86+ kg</i>)	Up to 2 scoops/hr	270 calories

Mixing / Usage Instructions

IMPORTANT NOTE: Due to potential spoilage issues, Perpetuem cannot be premixed and left for several hours in warm weather. Please read the FAQ's on pages 42-43 for more detailed information on this important topic.

You can mix and consume Perpetuem three different ways depending on individual preference and logistical concerns. Please experiment with the following options to determine which works best for you.

The One-Hour Bottle - Mix the suggested amount of Perpetuem for your body weight (see chart above) in 16-28 ounces (approx 475-830 ml) of water. Consume one bottle hourly. This method is ideal when training or racing with a support crew and vehicle. If you're without a support crew, but still want to use this option for mixing, keep in mind that it's obviously less convenient as you'll have to stop more frequently to mix your fuel. Also, because you are

Advanced Perpetuem usage instructions continued . . .

trying to fulfill both hydration and caloric requirements from one source, you have limited ability to adjust one without affecting the other; you may need to consume additional water to satisfy hydration requirements.

The Multi-Hour Bottle - This is by far the most convenient method of fueling because it allows you to be self-sufficient for many hours, requiring only additional plain water along the way. The only limitation is how many scoops you can fit into a bottle. Determine your proper hourly intake of scoops by experimenting with the numbers from the dosage chart. Let's say you've determined through testing that two scoops of Perpetuem per hour is your ideal caloric intake. For a 4-hour workout, you'll need eight scoops in a bottle, filled with water and shaken. You may need to add a few scoops at a time to get it all to mix well. You then "nurse" this bottle, taking small sips every 15-20 minutes. At this concentration, the water in the mixed bottle does not contribute much at all to your hourly fluid intake needs. To meet your fluid requirements, carry a second and possibly even a third bottle of plain water, use a hydration system, or know where you can refill along your route. Drink according to the temperature/humidity and your exertion level so that you consume in the range of 16-28 ounces (approx 475-830 ml) of plain water per hour. This way, as long as you can obtain water along the way, you're set for hours of hard training.

Gel or Paste - If you want to carry the highest volume of calories in the least amount of space, making a thick mix is your best option. Perpetuem can be made into a super-concentrated, near paste-like consistency and dispensed from a Hammer Gel Flask. Using a blender or bowl and spoon, mix scoops of powder with a small amount of water, gradually adding water as necessary to create the desired consistency. If you're using one of the flavored Perpetuems, remember that the heavier and more concentrated you mix it, the sweeter and stronger the flavor will become. You can also add Hammer Gel or HEED for flavor, if desired. Depending on how many scoops per hour you require, and how concentrated the mix is, each flask of Perpetuem can supply you with 2-4 hours of fuel. As with the multi-hour bottle, you must carry additional bottles of plain water or use a hydration system to meet your fluid requirements.

Perpetuem Solids

CHEWABLE ENDURANCE FUEL



Application

A solid source of calories designed to augment your use of Hammer Nutrition fuels, helping you reach your ideal hourly intake during exercise/competition lasting more than two hours. On occasion, Perpetuem Solids may be used as a sole source of calories if desired.

Serving Size

Three Perpetuem Solids tablets contain 100 calories.

Suggested Doses by Body Weight

WEIGHT	AMOUNT	CALORIES
Up to 120 lbs (<i>Up to 54.5 kg</i>)	1-2 tablets/hr	33-67 calories
120-155 lbs (<i>54.5-70 kg</i>)	2-3 tablets/hr	67-100 calories
155-190 lbs (<i>70-86 kg</i>)	3-4 tablets/hr	100-133 calories
190+ lbs (<i>86+ kg</i>)	4-5 tablets/hr	133-167 calories

Notes

Perpetuem Solids is ideal for all long-duration athletic endeavors, but it is especially beneficial for ultra marathon running or the running portion of half or full iron distance triathlons, where carrying premixed bottles or concentrated flasks of Sustained Energy or Perpetuem may not be practical.

Perpetuem Solids tablets are not meant to be dissolved in water.

People with dentures or delicate teeth should use caution when consuming Perpetuem Solids.



Bryan Mickiewicz on his way to a 4th place finish during the Frisco Cross.
Photo : Annette Hayden, Mountain Moon Photography

Sustained Energy

THE ORIGINAL ULTRA FUEL



Application

Use as a primary source of calories during exercise or competition lasting more than two hours.

Serving Size

One scoop of Sustained Energy contains 107 calories.

Suggested Doses by Body Weight

WEIGHT	SCOOPS	CALORIES
Up to 120 lbs (<i>Up to 54.5 kg</i>)	Up to 1 scoop/hr	107 calories
120-155 lbs (<i>54.5-70 kg</i>)	1-1.5 scoops/hr	107-160.5 calories
155-190 lbs (<i>70-86 kg</i>)	2-2.5 scoops/hr	214-267.5 calories
190+ lbs (<i>86+ kg</i>)	Up to 2.75 scoops/hr	294 calories

Mixing / Usage Instructions

IMPORTANT NOTE: Due to potential spoilage issues, Sustained Energy cannot be premixed and left for several hours in warm weather. Please read the FAQ's on pages 42-43 for more detailed information on this important topic.

You can mix and consume Sustained Energy three different ways depending on individual preference and logistical concerns. Please experiment with the following options to determine which works best for you.

The One-Hour Bottle - Mix the suggested amount of Sustained Energy for your body weight (see chart above) in 16-28 ounces (approx 475-830 ml) of water. Consume one bottle hourly. This method is ideal when

Advanced Sustained Energy usage instructions continued . . .

training or racing with a support crew and vehicle. If you're without a support crew but still want to use this option for mixing, keep in mind that it's obviously less convenient as you'll have to stop more frequently to mix your fuel drink. Also, because you are trying to fulfill both hydration and caloric requirements from one source, you have limited ability to adjust one without affecting the other; you may need to consume additional water to satisfy hydration requirements.

The Multi-Hour Bottle - This is by far the most convenient method of fueling because it allows you to be self-sufficient for many hours, requiring only additional plain water along the way. The only limitation is how many scoops you can fit into a bottle. Determine your proper hourly intake of scoops by experimenting with the numbers from the dosage chart. Let's say you've determined through testing that two scoops of Sustained Energy per hour is your ideal caloric intake. For a 4-hour workout, you'll need eight scoops in a bottle, filled with water and shaken. You may need to add a few scoops at a time to get it all to mix well. You then "nurse" this bottle, taking small sips every 15-20 minutes. At this concentration, the water in the mixed bottle does not contribute much at all to your hourly fluid intake needs. To meet your fluid requirements, carry a second and possibly even a third bottle of plain water, use a hydration system, or know where you can refill along your route. Drink according to the temperature/humidity and your exertion level so that you consume in the range of 16-28 ounces (approx 475-830 ml) of plain water per hour. This way, as long as you can obtain water along the way, you're set for hours of hard training.

Gel or Paste - If you want to carry the highest volume of calories in the least amount of space, making a thick mix is your best option. Sustained Energy can be made into a super-concentrated, near paste-like consistency and dispensed from a Hammer Gel Flask. Using a blender or bowl and spoon, mix scoops of powder with a small amount of water, gradually adding water as necessary to create the desired consistency. Depending on how many scoops per hour you require, and how concentrated the mix is, each flask of Sustained Energy can supply you with 2-4 hours of fuel. As with the multi-hour bottle, you must carry additional bottles of plain water or use a hydration system to meet your fluid requirements.

Hammer Bar

THE ULTIMATE ENERGY BAR



Application

Use as a pre-exercise meal, post workout/race recovery food, or healthy snack anytime.

Usage Instructions

Used occasionally during extended workouts and races, Hammer Bars are an ideal solid food choice, augmenting the other Hammer Nutrition fuels perfectly.

Notes

Don't confuse the Hammer Bar with other energy bars, many of which are loaded with refined sugar, saturated fats, and/or other unhealthy ingredients. A quick look at a Hammer Bar's ingredients list will let you know that you're consuming an ultra-healthy food that just happens to come in the convenience of a bar.

The Hammer Bar contains only healthy fats (no trans fatty acids) and is an excellent source of phytosterols and sterolins, all of which have multiple health benefits.

Available in a variety of utterly delicious flavors, each 50-gram, gluten-free Hammer Bar contains 182-230 calories from complex carbohydrates (none from refined sugar) and organic brown rice protein, and is fortified with healthy fats. When a solid food choice is desired, Hammer Bar satisfies your hunger with natural organic ingredients, without excess empty calories.

Kosher Certified or Kosher Dairy Certified, depending on the Hammer Bar flavor.

Hammer Recovery Bar

THE ULTIMATE RECOVERY BAR



Application

Use immediately following workouts and races to optimize recovery, or as a healthy snack.

Usage Instructions

Used post workouts and races, Hammer Recovery Bars are an ideal solid food choice, augmenting Recoverite perfectly to enhance recovery. As a meal replacement bar or snack, or to bolster your daily protein intake, calcium- and potassium-rich Hammer Recovery Bars are a perfect complement to a balanced diet.

Notes

Don't confuse the Hammer Recovery Bar with other recovery/protein bars, many of which are loaded with refined sugar, inferior protein sources, saturated/trans fats, and/or other unhealthy ingredients. A quick look at Hammer Recovery Bar's ingredients list will let you know that you're consuming an ultra-healthy food that just happens to come in the convenience of a bar.

Each 75-gram, gluten-free Hammer Recovery Bar contains 330 calories from 25 grams of carbohydrates (none from refined sugar), 20 grams of grass-fed/cold-processed whey protein isolate and concentrate, and 8 grams of fiber. Hammer Recovery Bar is fortified with healthy fats, vitamins, minerals, and digestive enzymes.

Made with 70% organic ingredients. Kosher Dairy Certified.

Hammer Recovery Bar should not be consumed immediately before or during exercise, due to its high protein content and added glutamine, which can potentially increase ammonia production.

Recoverite

RECOVERY MADE EASY



Application

Use immediately following workouts and races to optimize recovery - glycogen replacement, electrolyte replacement, and muscle tissue repair. Recoverite can also be used as a Meal Replacement Product (MRP).

Serving Size

One scoop of Recoverite contains 85 calories.

Suggested Doses by Body Weight

WEIGHT	SCOOPS	CALORIES
Up to 90 lbs (<i>Up to 41 kg</i>)	1 scoop	85 calories
90-120 lbs (<i>41-54.5 kg</i>)	1-2 scoops	85-170 calories
120-155 lbs (<i>54.5-70 kg</i>)	1.5-2 scoops	127.5-170 calories
155-190 lbs (<i>70-86 kg</i>)	2-3 scoops	170-255 calories
190+ lbs (<i>86+ kg</i>)	3-4 scoops	255-340 calories

Mixing / Usage Instructions

Combine the suggested amount for your body weight range in 4-8 ounces (approx 118-237 ml) of cold water (or more, if desired), and consume immediately after completion of your workout or event.

Notes

Recoverite and whole foods serve to refuel and refresh the body during the critical two-hour “window of opportunity” after exercise. Thus, a reasonable amount of your post-exercise calories can and should be consumed from whole foods. That’s why it’s ideal to sit down to a healthy meal containing both carbohydrates and protein no more than two hours after the conclusion of your exercise. If this is not possible, additional servings of Recoverite can and should be taken at a rate of one to two servings per hour until you are able to eat a complete meal.

To use as a MRP, simply consume 2-4 scoops in place of a meal. If you are using Recoverite as a MRP, you should not replace more than one or two meals per day.

Hammer Whey

POWERFUL PROTEIN



Application

97.9% lactose-free, glutamine-enhanced whey protein. Consume for recovery enhancement immediately following workouts and races or as part of a do-it-yourself Meal Replacement Product (MRP). See chart on page 13 to determine your daily protein intake requirements.

Mixing / Usage Instructions

DIY Recoverite #1	DIY Recoverite #2	HGH Booster
<ul style="list-style-type: none"> Mix 1.25 scoops of Unflavored Hammer Whey with 3 servings of Hammer Gel in 4-8 ounces (approx 118 - 237 ml) of water. This provides up to 370 calories from 22.5 grams of protein and up to 66 grams of carbohydrates (the amount based on the flavor of Hammer Gel chosen). 	<ul style="list-style-type: none"> Mix 1.5 scoops of Unflavored Hammer Whey with 3 scoops of HEED in 4-8 ounces (approx 118 - 237 ml) of water. This provides 420 calories from 27 grams of protein and 78 grams of carbohydrates. 	<ul style="list-style-type: none"> To support a strong immune system during periods of stress and/or training volume, and to safely raise levels of HGH (up to 400%!), mix 1 scoop of Hammer Whey in 4-6 ounces (approx 118-177ml) of water only (no carbohydrates) up to 30 minutes prior to bedtime.

Notes

Whey protein should not be used immediately before or during exercise due to the added glutamine, which tends to produce ammonia, a primary cause of premature muscle fatigue.

For protein supplementation before or during exercise, we recommend Hammer Soy, Perpetuem, or Sustained Energy.

Hammer Soy

PREMIUM VEGETABLE PROTEIN



Application

Add to diet to increase daily protein intake. Hammer Soy is an ideal protein component of a pre-exercise meal or as part of a do-it-yourself MRP. See chart below to determine your daily protein intake requirements.

Mixing / Usage Instructions

3:1 Soy Recovery Drink

- Mix 1 scoop of Hammer Soy with 2.5 scoops of HEED in 4-8 ounces (approx 118-237 ml) of water. This yields 67 grams of carbohydrates and 23 grams of protein, equaling 360 calories.

Notes

Hammer Soy is best used prior to and during exercise because it produces almost no ammonia, a primary cause of premature muscle fatigue.

Daily Protein Intake Chart

How much protein do endurance athletes need? Numerous studies have demonstrated that endurance athletes in heavy training need more protein than recreational athletes do. This chart gives you a good reference as to how much protein you should consider consuming daily from all sources. More information can be found in <i>The Endurance Athlete's GUIDE To SUCCESS</i> and in the Knowledge section of our website.	Weight	Off-season and/or light workouts*	In-season and/or long workouts*
	100-110 lbs (aprx. 45-50 kg)	64-70g	77-85g
	120-130 lbs (aprx. 54-59 kg)	76-83g	93-100g
	140-150 lbs (aprx. 63-68 kg)	89-95g	108-116g
	160-170 lbs (aprx. 72-77 kg)	102-108g	124-131g
	180-190 lbs (aprx. 81-86 kg)	115-121g	139-147g
	200-210 lbs (aprx. 91-95 kg)	127-134g	155-162g
	220-230 lbs (aprx. 100-104 kg)	140-146g	170-178g
	240-250 lbs (aprx. 109-113 kg)	153-159g	185-193g
*All measurements are shown in grams needed per day			

Product Application

QUICK REFERENCE CHART

This table shows Hammer Nutrition product applications. All Hammer Nutrition fuels are completely compatible with one another and can be used in combination as desired.

	Pre-exercise meal: 3 hrs. prior to start	10 min. prior to training & competition	10-15 min. into training & competition less than 2 hrs	Use continually during training & competition longer than 2 hrs	Following training & competition	Add to diet for increased daily protein intake
Hammer Bar	✓			✗	✓	✓
Hammer Gel	✗	✗	✓	✗	✗	
HEED	✗	✗	✓	✗	✗	
Perpetuem	✓	✗	✗	✓	✗	
Perpetuem Solids	✗	✗	✗	✗	✗	
Sustained Energy	✓	✗	✗	✓	✗	
Endurolytes/ Endurolytes Fizz		✗	✓	✓	✓	
Recoverite					✓	✓
Hammer Soy	✗				✗	✓
Hammer Whey					✓	✓

✓	Primary Fuel Choice
✗	Secondary/ Complementary Fuel Choice



Hammer Nutrition/CMG junior development team rider Colby Wait-Molyneux explodes off the start on his way to a 1st place finish during the Jack Frost Time Trial. Photo : Andrew Jeffers

Hammer Nutrition Supplements Product Selection & Usage Guide

We at Hammer Nutrition firmly believe that in addition to a high-quality fueling plan, an intelligent and consistently used supplement program is a key factor in not only achieving athletic success, but for overall health as well. As an athlete, you place enormous physiological demands on your body. Your nutrient requirements—just to maintain health—are much greater than the average person. But your goal isn't to just maintain health at a minimally acceptable standard; your goal is to achieve supreme health. In addition, you want to get the absolute most out of your body so that it can do what you want it to in your workouts and races, while you have more fun and achieve more success in the process.

That's where the Hammer Nutrition supplements come in. Like our fuels, they are the highest quality products that you can use. They contain no contaminants of any kind, are completely safe and legal, and are highly effective. We guarantee your complete satisfaction with whichever of the Hammer Nutrition supplements you choose to use. Speaking of choice, because we offer so many great products, we oftentimes hear questions such as, "Where do I start? Which supplements should I take?" That's where this manual will help. In the following pages, we've divided the products into four categories:

Daily Essentials - The three primary products in the Hammer Nutrition line: Premium Insurance Caps, Race Caps Supreme, and Mito Caps. These should be the foundation of your supplement program, as they provide the widest range of benefits for enhancing both athletic performance and overall health. You should take these three products daily throughout the year. In fact, because of the tremendous benefits

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Supplement product selection and usage guide continued . . .

that they provide for general health, we even recommend them for daily use by non-athletes.

Very Important - These supplements do not replace the three Daily Essentials, but would be the next logical step, complementing the Daily Essentials products wonderfully by providing additional support and benefits. You can use these products daily or on an as needed basis.

Important - These products are not crucial in comparison to those found in the Daily Essentials or Very Important categories, but they do provide additional benefits above and beyond the nutrient support of the products in those two categories. Mostly, these are taken as needed at various times throughout the year. If you're seeking the ultimate supplement program, then you should consider using the products in this category on a regular basis.

Specific Support - Most of these products are not taken on a regular basis; however, they may actually become essential for certain athletes and/or under specific conditions.

More information about these products can be found online at www.hammernutrition.com. Also, we encourage you to read the article "Supplements - A necessity for athletes" in *The Hammer Nutrition Fuels & Supplements—Everything You Need To Know*. Of course, you can also call us at 800-336-1977 or email us (support@hammernutrition.com) and we'll be happy to help.

Premium Insurance Caps™

YOUR PERFORMANCE FOUNDATION

Application

Comprehensive nutritional foundation to maintain peak overall health and well-being through the rigors of training, competition, and everyday life.

Usage Instructions

Please read chart carefully.

	Non-workout days	Workouts under 2 hrs	Workouts over 2 hrs
Athletes younger than 20 years old OR athletes weighing less than 150 lbs	4-7 capsules daily in divided doses.	4 capsules after workout with Recoverite or food. 1-3 capsules at another time during the day with food.	4-7 capsules (depending on the duration/intensity of the training session) after workout with Recoverite or food. 3 capsules at another time during the day with food.
Athletes weighing more than 150 lbs	4-7 capsules daily in divided doses.	4 capsules after workout with Recoverite or food. 3 capsules at another time during the day with food.	7 capsules after workout with Recoverite or food. 7 capsules, divided into 2 doses at other times during the day with food.

Notes

High potency vitamins, chelated minerals, broad-spectrum antioxidants, digestive enzymes, and more, in all-vegetable capsules, replace a dozen supplements in one convenient formula. Compare our ingredients with all of the other supplements in your cabinet; you may find many of them to be unnecessary now.

Supplementation with this product is not necessary and not recommended prior to workouts unless at least a 3-hour window exists between consumption of the product and the beginning of the workout.

Race Caps Supreme®

THE MOST POTENT, LEGAL PERFORMANCE ENHANCER



Application

The most potent, legal way to enhance your training and improve your race results. Energy levels and endurance are greatly increased while recovery time after hard efforts and workouts is significantly reduced. Helps maintain a strong immune system and supports overall health and well-being.

Usage Instructions

Please read chart carefully.

	Non-work-out days	Workouts under 2 hrs	Workouts over 2 hrs
Athletes younger than 20 years old OR athletes weighing less than 150 lbs	1 capsule daily with food.	1 capsule 30-90 min. prior to workout (with or without food). 1 capsule after workout with Recoverite or food.	1 capsule 30-90 min. prior to workout (with or without food). 1 capsule per hour during workouts that exceed 2 hrs. 1 capsule after workout with Recoverite or food.
Athletes weighing more than 150 lbs	1 capsule twice daily with food.	2 capsules 30-90 min. prior to workout (with or without food). 1 capsule after workout with Recoverite or food.	2 capsules 30-90 min. prior to workout (with or without food). 1-2 capsules per hour during workouts that exceed 2 hrs. 1-2 capsules after workout with Recoverite or food.

Notes

Coenzyme Q10 and idebenone, both cornerstone nutrients in Race Caps Supreme, are highly regarded antioxidants with multiple benefits, especially in regards to cardiovascular health.

Mito Caps™

ANTI-AGING FORMULA WITH POWERFUL ATHLETIC BENEFITS



Application

Help your body's mitochondria (the thousands of energy-producing "furnaces" in the cells) work more efficiently and stay healthier. One nutritional expert states, "The longer you can stimulate the lifespan or health of the mitochondria, the longer you will live and the better you will perform in endurance events. The athlete who has the most healthy/efficient mitochondria is the athlete who performs at his or her best."

Usage Instructions

Please read chart carefully.

Non-workout days	Workouts under 2 hrs	Workouts over 2 hrs
1 capsule two to three times daily with food.	1 capsule 30-90 min. prior to workout (with or without food). 2 capsules after workout with Recoverite or food. 1 capsule may be taken with dinner.	2 capsules 30-90 min. prior to workout (with or without food). 1 capsule per hour during workouts that exceed 2 hrs. 2 capsules after workout with Recoverite or food. 2 capsules with dinner.

Notes

The two primary nutrients in the Mito Caps formula—acetyl l-carnitine and R-alpha lipoic acid—have numerous general health benefits. Therefore, every athlete or active person should take this product daily, all year round. Athletes desiring increased benefits can experiment with higher dosages.

AO Booster™

SUPERCHARGE YOUR RECOVERY, IMMUNITY, AND OVERALL HEALTH



Application

The arsenal of fat-soluble antioxidants in AO Booster—headed up by all eight members of the vitamin E “family” (the four tocopherols and four tocotrienols)—provides superior ammunition for the neutralization of fat-soluble-produced free radicals, the importance of which cannot be understated for general health and athletic performance applications.

Usage Instructions

Non-workout days: 1 capsule with food.

Workout days: 1 capsule after workout with Recoverite or food. 1 capsule at another time during the day with food.

Notes

In addition to the multiple benefits provided by the full-spectrum tocopherol/tocotrienol blend, AO Booster also contains the powerful fat-soluble antioxidants, astaxanthin and lutein. AO Booster is a perfect complement to all three of the Daily Essentials products and for superior protection against fat-soluble-produced free radicals, AO Booster should be taken daily, all year round.

The full-spectrum tocopherol/tocotrienol blend, plus the lutein and astaxanthin in AO Booster provides eye and skin health benefits. Plus, you'll notice reduced muscle soreness and inflammation with the use of AO Booster.

Super Antioxidant™

THE KING OF RECOVERY AND FREE RADICAL PROTECTION



Application

Get the upper hand on free radicals with this ultra potent, non-vitamin antioxidant formula. Enhances recovery by reducing soreness and fatigue, improving circulation, and helping to maintain optimal immune system functioning.

Usage Instructions

For enhanced recovery, take 1 or 2 capsules with food after workouts (use the higher dose after workouts over 2-3 hours and after races). For supporting enhanced performance (via free radical neutralization) during ultra distance workouts and races, Super Antioxidant may be used at a suggested intake of 1 capsule every 2-3 hours.

Notes

For supporting enhanced cognitive function (via the ginkgo biloba and vinpocetine components), Super Antioxidant may be taken on a daily basis throughout the year. Suggested dose is 1 capsule in the morning with food.

Any athlete subjected to excess free radical production—especially those living in a polluted environment or those under very high stress levels (physical, mental, environmental, emotional)—should take this product every day, all year round.

Phytomax™

LIVE GREEN SUPERFOOD FOR PEAK ENERGY



Application

Phytomax is a live green superfood containing ample amounts of easily assimilated organic minerals, as well as thousands of enzymes and phytochemicals. These are nutrients that your body must have for proper health that it can't always obtain even from the best of diets.

Usage Instructions

3 capsules per day with meals.

Notes

3 capsules daily is sufficient for an athlete who consistently eats 5-7 servings a day of fresh, organic leafy green and cruciferous vegetables. If you eat non-organic, store bought vegetables, higher doses may be necessary. If you honestly do not consume anywhere near 5-7 servings a day, or just don't like vegetables at all, a 6-capsule daily dosage is recommended.

Of the numerous benefits that Phytomax provides, many athletes report that consistent use helps with improved moods and mental clarity and a higher quality of sleep.

Xobaline™

INCREASE YOUR AEROBIC CAPACITY



Application

Use after workouts to optimize production of red blood cells, reduce fatigue and related symptoms, and enhance muscle repair and regeneration. Ideal for athletes concerned about anemia.

Usage Instructions

1 tablet dissolved underneath the tongue after workouts or with a meal. Take one tablet on days off.

Notes

If Premium Insurance Caps (which contains both folic acid and vitamin B12, the same nutrients that are in Xobaline) is not being used regularly, then a second Xobaline tablet may be taken daily (at a separate time) for enhancing recovery and for general health benefits.

Both vitamin B12 and folic acid play key roles in lowering dangerously elevated levels of homocysteine, considered a primary culprit in cardiovascular disease, so daily use of Xobaline is suggested.

REM Caps™

BETTER SLEEP = BETTER PERFORMANCE



Application

Better sleep = higher hGH levels = better recovery. Fall asleep faster, accrue more quality REM time, and wake up in the morning feeling refreshed.

Usage Instructions

1-3 capsules one hour before bedtime.

Notes

Start by taking 1 capsule for the first week. If desired results are not achieved, increase to 2 capsules nightly. If desired results are still not achieved after the second week, increase to 3 capsules nightly.

REM Caps contain melatonin, which is not only a superb sleep-enhancing nutrient, but a powerful antioxidant as well. As such, REM Caps may be used on a regular basis, if desired.

The strong odor you may notice in REM Caps occurs naturally from the valerian root extract component in the product.

Do not operate machinery or drive a motor vehicle after consumption.

Do not take with alcohol.

If you are taking anti-anxiety and/or antidepressant medications, consult with your physician prior to using REM Caps.

Tissue Rejuvenator™

JOINT HEALTH SECOND TO NONE



Application

Protect and maintain healthy joints and connective tissue with this ultra potent formula. Four different active ingredients and a multi-nutrient, anti-inflammatory pain relieving component make this supplement ideal for recovering from joint injuries as well.

Usage Instructions

4 capsules once or twice daily during periods of injury.

1-2 capsules once or twice daily may be used for prevention/maintenance purposes.

Notes

1 capsule every 2-3 hours has been successfully used during ultra marathon races as an alternative to NSAIDS, common over-the-counter pain relievers.

The effects/benefits of Tissue Rejuvenator are cumulative so consistent use is vital to achieve the best results.

If you have a shellfish allergy, consult your physician prior to using Tissue Rejuvenator.

Chromemate™

THE TRACE MINERAL WITH BIG BENEFITS



Application

The potent trace mineral chromium regulates insulin function, insulin being one of the most powerful anabolic hormones in the body. Normal food sources no longer contain measurable amounts of chromium. Daily use of Chromemate, the most bio-available form of chromium, ensures proper insulin function, healthy cholesterol levels, enhanced recovery, curbed sugar cravings, and reduced low blood sugar tendencies. This product is a must for anyone with hypoglycemia.

Usage Instructions

1-3 capsules daily with food, with one of those doses taken after workouts with post-workout recovery fuel.

Notes

Current research indicates that higher amounts of chromium—up to 1,000 mcg daily—may provide optimal benefits. Therefore, taking additional Chromemate capsules with food at key times during the day—augmenting the 200 mcg contained in 7 capsules of Premium Insurance Caps—is a wise strategy.

Digest Caps™

OPTIMIZE DIGESTION WITH PROBIOTICS



Application

Use daily to maintain proper levels of healthy bacteria in the digestive system. This helps improve intestinal health, immune and digestive system function, and nutrient absorption.

Usage Instructions

1-2 capsules daily with or without food.

Notes

Healthy intestinal flora balance helps prevent the liberation of high levels of ammonia caused by digestion of protein-containing foods. This may help alleviate or even prevent ammonia-produced fatigue.

Each capsule contains two billion cells comprised of “the friendly three”—*L. acidophilus*, *B. bifidum*, and *B. longum*—and the patented *L. plantarum* OM strain, a potent combination for promoting intestinal health.

For severe cases (such as after a course of antibiotics, diagnosis of candida, or illness), we recommend two weeks of iFlora as the first line of support, then Digest Caps daily for maintenance.

For more information about iFlora, and the benefits that it offers, please visit www.hammernutrition.com.

Boron™

MAINTAIN OPTIMAL HORMONE LEVELS



Application

Safely and naturally restores normal hormone levels, which are depressed as a result of endurance training. Normalizing your hormone levels dramatically enhances recovery, workload tolerance, and libido. This supplement is an absolute must for anyone over 40.

Usage Instructions

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

Notes

Desirable dosage ranges for athletes over 40 are 5-10 mg of boron per day. Premium Insurance Caps contain 2.5 mg per 7 capsules. If you typically take this amount of PIC's daily, one additional capsule of Boron will be highly beneficial.

Boron is a key mineral for bone health, it aids in the prevention/reduction of hypertension and arthritis, it plays a role in preserving cognitive function, and is a valuable ally in the prevention of kidney stones.

Anti-Fatigue Caps™

REDUCE AMMONIA, REDUCE FATIGUE



Application

Helps remove excess fatigue-causing, performance-robbing ammonia from cell pathways. Especially effective in reducing fatigue in extended endurance events while also providing electrolytic mineral support. Additionally, many of the nutrients in Anti-Fatigue Caps are excellent at helping to counteract everyday fatigue, even chronic fatigue.

Usage Instructions

2-4 capsules one hour prior to workout or race.

During extended endurance sessions, an additional 1-2 capsules each hour—beginning at the two-hour mark and every hour thereafter—is suggested.

Notes

2-4 capsules one hour prior to training provides an initial dose of 500-1,000 mg magnesium/potassium aspartate, 200-400 mg l-citrulline, and 280-560 mg OKG. This is an excellent dose at the onset of an endurance workout or race as well as during ultra distance events.

You don't need to take Anti-Fatigue Caps daily, though many Hammer Nutrition staff members—as well as a number of athletes—do take them on a regular basis, especially after lunch, to help provide energy without any unwanted Central Nervous System stimulation.

Endurance Amino™

AMINO AMMUNITION FOR YOUR MUSCLES



Application

Developed for use prior to, during, and after exercise, Endurance Amino—via its branched chain amino acid (BCAA) component—helps delay exercise-induced or central nervous system-induced fatigue, enhances endurance performance, and helps minimize muscle tissue breakdown, which enhances recovery. The l-alanine component in Endurance Amino provides an alternate fuel source as the liver can convert l-alanine into glucose as needed, which the bloodstream transports to the muscles for energy. Lastly, the glutathione component provides superb antioxidant support to boost immune system function.

Usage Instructions

2-4 capsules prior to and after exercise. During prolonged workouts or races, 1-2 capsules every hour is suggested.

Notes

Used in tandem, Endurance Amino and Anti-Fatigue Caps provide a potent, endurance-enhancing combination during prolonged workouts and races.

Race Day Boost™

BOOST PERFORMANCE UP TO 10%



Application

Enhances the functions and performance of your body's three energy production pathways and effectively buffers lactic acid. Use for four days prior to a major event (after first testing in training) and enjoy up to a 10% improvement in performance time.

Mixing / Usage Instructions

Race Day Boost Powder: Take 2 level teaspoons of Race Day Boost Powder four times per day, for four days prior to competition. We suggest mixing each 2 teaspoon serving in 3-4 ounces (approx 89-118 ml) of warm/hot water. After the powder dissolves, consume immediately. 2-4 ounces of fruit juice can be added, if desired. Do not take Race Day Boost Powder the day of the event.

Race Day Boost Capsules: Take 2 capsules of Race Day Boost with water 4 times per day (total of 8 capsules daily) for four days prior to competition.

If doing a multi-day event, this protocol may be used:

- Follow the same four-day loading protocol as described above.
- Take 2 teaspoons OR 2 capsules of Race Day Boost with Recoverite as soon as possible after the race, with another 2-teaspoons serving OR 2-capsule dose of Race Day Boost with food later in the day/evening.
- Follow this twice daily “maintenance dose” protocol after each stage.

Notes

Because this product has a “tolerance factor” or biofeedback mechanism, it should not be used for every race. Ideally, it should be used 4-6 times per year, preferably with a minimum of 14-21 days between loading cycles.

Energy Surge™

PURE ENERGY ON DEMAND



Application

Use on an “as needed” basis for a quick energy boost during interval or speed workouts, just prior to increased efforts during training or competition (such as a big climb or an attack), or all day long during ultra distance events.

Usage Instructions

For high intensity, short duration events (less than one hour), take 1-3 tablets 5-30 minutes before the start. For longer duration events, 1-3 tablets can be taken as needed, preferably every hour, to counter extreme fatigue.

Notes

Because this is a sublingual (under the tongue) tablet, absorption can only occur if the tablet is held in the mouth, preferably under the tongue, until it dissolves.

For faster absorption, chew tablets into a paste, then dissolve under the tongue.

Appestat™

JITTER-FREE WEIGHT LOSS



Application

The sensible, healthy approach to weight loss. Use to control cravings and support your weight loss program.

Usage Instructions

1-2 capsules one hour before lunch and dinner. Use in a cycle of three weeks ON with one week OFF before starting another three-week cycle.

For best results, adhere to the recommendations outlined in “17 Characteristics of an Effective Weight Loss Plan,” found in the Usage Information link on the Appestat page at www.hammernutrition.com.

Notes

It has been clinically demonstrated that weight loss exceeding 2-5 pounds (approx 1-2¹/₃ kg) per month results in losing more lean muscle mass than body fat. In order to lose the most body fat and the least muscle mass, we strongly encourage you to lose the weight slowly, limiting your weight loss to 5 pounds (approx 2¹/₃ kg) per month.

For more information regarding sensible weight loss, read the article “What 24 ‘Helpful Hints’ increase lean muscle mass and lose extra body weight?” on the Appestat page at www.hammernutrition.com.

Appestat contains kelp-derived iodine, which is contraindicated with thyroid medications. Therefore, if you have a thyroid condition, and/or are on thyroid medication(s), consult with your physician prior to using Appestat.

PSA Caps™

PREMIUM PROSTATE PROTECTION



Application

Effective, non-prescription nutrient support for prostate health. For males in their 30's, this product is recommended to help prevent prostate-related problems from occurring (note that 5-10% of men in their 30's already experience enlarged prostate). For males 40 and older, this is an essential, daily-use product.

Usage Instructions

1 capsule in the morning and 1 capsule at night, 60+ minutes apart from meals.

Notes

This is an important product for all men, especially those age 40 and older, as well as male athletes who engage in cycling events. Cycling may increase the risk of nerve damage, impotence, impaired urinary flow, and disorders of the male genital organs, especially the prostate gland.



Todd Hine races with confidence to a 3rd place age group finish at the 2011 Sand Hollow Marathon. Photo : Debbie Hine

Important Information & FAQs Regarding Perpetuem & Sustained Energy



By design, neither Perpetuem nor Sustained Energy contain any artificial preservatives. Preservatives provide absolutely no benefits for athletic performance or general health—we consider them health hazards, in fact—which is why we do not include them in either of these products or any of the Hammer Nutrition fuels.

As a result, however, once mixed in solution, the protein component in both Perpetuem and Sustained Energy is affected in the following ways:

1. At some point in time it will eventually sour and no longer be acceptable for consumption.

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Perpetuem & Sustained Energy FAQs continued . . .

2. It tends to separate after awhile and may settle on the bottom of a bottle or hydration pack bladder.

We believe that not having artificial preservatives in the products is far more important than these two inconveniences; however, they are things that you need to remember when using Perpetuem or Sustained Energy. With that in mind, here are some questions that we frequently receive, along with the answers:

Q: How soon after I make Perpetuem or Sustained Energy do I have to drink it?

A: Ideally, it should be within 3-5 hours, with up to perhaps 6-8 hours (depending on the temperature) being the longest that we recommend. Dr. Bill Misner explains:

Energy drink powders (such as Perpetuem and Sustained Energy) contain no preservatives and are predisposed to change when in solution. Time, temperature, humidity, environmental airborne or endogenous microbes, and oxidation factors may cause fatty acids to turn rancid or proteins to “sour” in the presence of long chain or short chain carbohydrates. A prime example is found in pasteurized milk. Milk typically sours in stages as one type of bacteria is replaced by another. Bacilli convert protein into ammonia products and the pH rises. The odor or taste of spoiled milk is apparent once this has happened. We have observed this phenomenon in our soy-based products, Perpetuem and Sustained Energy, if the product is mixed prior to an event then not kept cold or consumed within 3-5 hours.

Athletes should be encouraged to keep pre-mixed, protein-enhanced or lipid-containing carbohydrate drinks under 59° F (15° C) or, ideally at a cooler 40-45° F (approx 4.5 – 7.25° C), in order to keep

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Perpetuem & Sustained Energy FAQs continued . . .

fermentation of environmental bacteria from proliferating in the drink mixture. Freezing the drink the night before an event may result in keeping the macronutrient contents intact and inhibit bacterial growth potential. Once the drink is soured to taste or has become noxious to olfactory sensed odor, then it is advised that the drink not be consumed.

Q: If I mix Perpetuem or Sustained Energy and keep it in the refrigerator for a day or two, will it break down any of the desired properties due to sitting for awhile and not being used right away?

A: The effectual benefits (“desired properties”) are not lost, but the l-carnitine in both products may deteriorate somewhat, forming crystals within the mix since it is very hygroscopic (has an affinity for water). The deterioration, if any, is minimal in 48 hours post-mix, refrigerated. However, for best results, we recommend using Sustained Energy or Perpetuem as soon as possible after mixing.

Q: Can I use Perpetuem or Sustained Energy in a hydration pack?

A: You could, but we don't recommend this practice. First, neither Perpetuem nor Sustained Energy contain any preservatives, and as a result, the protein component tends to separate after awhile and may settle on the bottom if the mixture is not agitated on occasion. Keeping a carbohydrate/protein fuel thoroughly mixed can be difficult to do when using a hydration pack. Also, when you mix the product in a water bottle, you're better able to see exactly how much you're consuming. Lastly, cleaning the bladder of any hydration pack is substantially easier when you use it for drinking water only. Our recommendation is to use water bottles to mix Sustained Energy and Perpetuem and hydration packs for water only.

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Q: I'm doing a full iron-distance triathlon and the weather is going to be hot. I want to use Perpetuem for the bike portion. How do you suggest I mix it so that it doesn't get warm and unpalatable?

A: Let's say that the bike portion will take you six hours. You can make all six hours of fuel in two bottles. For example, if you have found (through testing in training) that two scoops of Perpetuem will provide an hour's fuel, put six scoops in and make a 3-hour bottle, fulfilling your hydration requirements with plain water (approx 16-28 fluid ounces/475-830 milliliters per hour) from another bottle or hydration system. Make two 6-scoop bottles and you've got your six hours worth of fuel taken care of.

Mix the bottles the night before the race and freeze them. That will keep them cold and palatable as they thaw during the bike portion of the race. If, however, the weather on race day is going to be very hot, or you don't have a way to keep the bottles cold until the bike leg, then try this method: mix and freeze one bottle as above, but in the other put only the six scoops of Perpetuem, and add no water. When you finish your first 3-hour bottle, you will need to stop and take a few moments to add cold water to the second one. It just takes a few seconds, but now you have a fresh, cold bottle of fuel for the second half of the bike ride. Using insulated bottles also helps, if you don't mind the slight extra weight.

One athlete who completed a hot-weather Ironman Australia used this method and wrote us saying, "I did as you recommended – had the second bottle of dry Perpetuem powder in my bike Special Needs bag, and just added cool water. It only took 30 seconds or so and I was underway with a bidon [bottle] of cold Perpetuem for the second half of the bike. Great suggestion, it worked like a charm!"



Jamie Donaldson kicks off the 2011 season with a win at the Delano Park 12 Hour in Decatur, AL. Photo : Eliza Schotz

ALLERGEN INFORMATION

Milk

- Hammer Whey - Derived from milk
- Recoverite - Derived from milk

Soybeans

- Hammer Soy - Derived from soy
- Perpetuem - Contains soy processed from soybeans
- Sustained Energy - Contains soy processed from soybeans
- Premium Insurance Caps - Vitamin E (as d-alpha tocopherol succinate) derived from soy
- Race Caps Supreme - Vitamin E (as d-alpha tocopherol succinate) derived from soy
- Mito Caps - Vitamin E (as d-alpha tocopherol succinate) derived from soy
- PSA Caps - Beta-Sitosterol from soy
- AO Booster - Tocopherols derived from soy

Wheat - none

Egg - none

Crustacean Shellfish

- Tissue Rejuvenator - Contains glucosamine sulfate from crustacean shellfish source

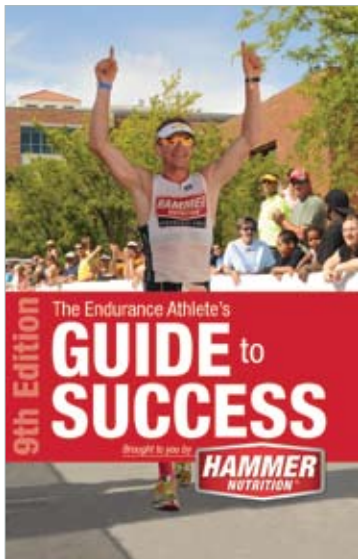
Tree Nuts

- Hammer Bar - Contains almond or cashew butter. May contain pieces of date pits, stems, nut shells, or seeds

Peanuts - none

SPECIAL NOTE: Xylitol, which is a sweetener used in small amounts in HEED and Recoverite, has no known toxicity, but may cause stomach distress and/or have a laxative effect when consumed in high doses. It is believed that xylitol is unsafe for consumption by dogs; therefore, we do not recommend feeding your dog any xylitol-containing products, including HEED and Recoverite, nor any products that are made for human consumption.

KNOWLEDGE RESOURCES



The book that *every* endurance athlete should read

SKU	PRICE
BFH	\$7.95

The Endurance Athlete's GUIDE to SUCCESS

For years, endurance athletes have been bombarded with—and probably confused by—the plethora of concepts regarding the proper fueling of their bodies prior to, during, and after exercise. To the rescue comes *The Endurance Athlete's GUIDE to SUCCESS*, which cuts through all of the hoopla and provides a primer regarding these important issues. With over 550,000 copies in circulation, it's a trusted source of legitimate information.

Download your free copy of the 9th edition at:
www.hammernutrition.com/guide



Getting your fuel and supplement program dialed in just got easier!

The Hammer Nutrition Fuels & Supplements—Everything You Need To Know contains three articles that will “arm” you with all of the information you need on each and every Hammer Nutrition fuel and supplement. We have no doubt that this book will be invaluable in helping you enjoy more productive workouts and better race results, so you’ll want to refer to it often!

SKU PRICE
HNFS \$4.95



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Our free magazine, published every 60 days, features insightful articles on diet, nutrition, training, and other topics of interest to endurance athletes. More than 84 full-color pages of helpful information. Published continuously since 1992.

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The Athlete Education Series is a printed weekly resource that provides the science and rationale behind specific Hammer Nutrition fuels and supplements, along with other helpful tips.

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Hammer Nutrition Website

Not only is our website a great and easy place to buy our fuels, supplements, and clothing, it's also the premier site for endurance knowledge. From PDF downloads of all of our printed materials to discussion groups, www.hammernutrition.com is the leader in free knowledge resources.

Jessica Shambora kick-starts her 2011 racing season with a Hammer Camp training ride. Photo : Madeline Frank



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& SUPPLEMENTS

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