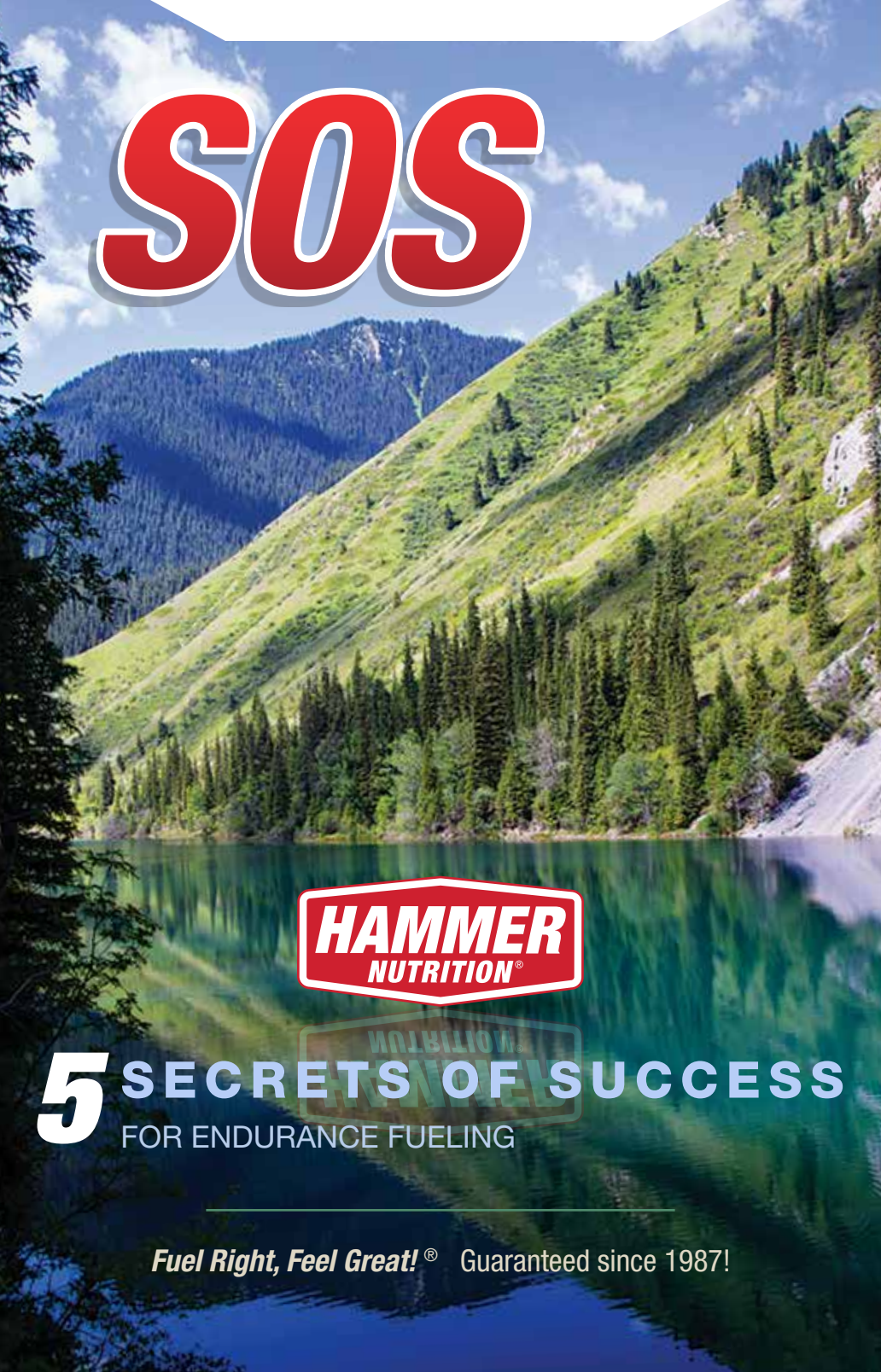
SOS
HAMMER NUTRITION®
5 SECRETS OF SUCCESS
FOR ENDURANCE FUELING
Fuel Right, Feel Great!®
Guaranteed since 1987!

SOS 5 Secrets of Success for Endurance Fueling

1

Pre-Exercise Fueling

When and how much to eat before exercise.

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Calories Count

What and how much you consume during exercise can make the difference between a PR and a DNF.

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Brian Frank hammers a climb ahead of the pack circa 2010

For 35 years, we have been THE fueling experts! Our "Less is Best" fueling protocols have helped countless athletes successfully fuel for every endurance endeavor imaginable - without cramps or GI distress! You name it, we've done it, or helped other athletes do it. By following the fueling practices revealed in this book, you'll be able to Fuel Right and Feel Great for anything you do.

Informed by rigorous science and proven in use, our methods and products are the surest path to optimal performance and health.

If you have fueling questions feel free to call to speak with one of our friendly, knowledgeable client advisors. We're here to help!

Brian Frank

Brian Frank, Owner

35 1987-2022 YEARS OF ENDURANCE HAMMER NUTRITION

FUEL TO WIN with 100% SUCCESS

Our Philosophy:

LESS IS BEST

FOR SUCCESSFUL FUELING, LESS IS BEST!

PRODUCTS • KNOWLEDGE • SERVICE
100% SATISFACTION GUARANTEED since 1987

Fueling your body: Less is Best for 100% success!

Hammer Nutrition has advocated a "Less is Best" approach for more than 35 years. Proper fueling is achieved by consuming the LEAST amount of calories, fluids and electrolytes necessary to perform at your best, hour after hour, without side effects like cramps and GI distress! This philosophy guides all of our fueling recommendations.

What makes us so sure we're right? Beyond a wealth of supporting scientific research, every athlete that has followed our protocols has proven it! We have a 100% success rate! Follow this approach and you too will reach your fullest athletic potential, recover well, and feel great every day. 100% guaranteed since 1987.

1 PRE-EXERCISE FUELING

WHEN AND HOW MUCH TO EAT BEFORE EXERCISE

Our Recommendations

Three hours before exercise, complete your meal of 300–500 calories of low-fiber, easy-to-digest complex carbs and a small amount of protein, and some fat.

30 minutes before, consume one serving of **Fully Charged** in 4–8 oz of water.

Want to "top up" right before you start? Consume a serving of **Hammer Gel®** 10 minutes prior to beginning your activity.

OBSERVE THE THREE-HOUR RULE!

Nail your pre-exercise meal timing, especially for high intensity, short duration events and all field sports. The goal is to start every workout/event in the optimal "ready state" - Stomach empty, muscle and liver glycogen stores full, blood sugar levels peaked. **Eating within three hours of endurance exercise is a bad idea!** It raises blood sugar and insulin levels in the body, which in turn prevents fat burning - just the opposite of what you want! It will also divert blood from your muscles to your stomach, also not what you want during exercise.

To do it right, you must complete your meal three hours before your workout or race, regardless of your event's duration. Consume only water during this three hour window (No liquid calories). Three hours is required to fully digest the meal, avoid intestinal distress and put you in an optimal "ready state" when the gun goes off. You'll feel "light on your feet" as your body devotes all blood and oxygen supplies to your physical efforts rather than digesting your meal.

NEVER SACRIFICE SLEEP FOR FOOD!

If your event has an early start that would require you to wake up too early (6-7 am start time), go to plan B - Eat nothing before you start exercising/competing. Instead, sleep in as long as you can, then start your fueling 15 minutes before start. Stored body fat and muscle glycogen are more than adequate to start with even for the most grueling events. The science is clear: **for optimal performance, abstain from**

eating for three hours prior to your start time, or not at all.

PRE-EXERCISE MEAL

Consume 300–500 calories of mostly low-fiber, easy-to-digest complex carbohydrates, a small amount of protein, and some fat.

The purpose of your pre-exercise meal is simply to top off the liver glycogen stores your body expends during sleep. Muscle glycogen, which constitutes about 80% of your total carbohydrate stores, remains intact overnight, so if you had a proper recovery meal after your last workout, your muscle glycogen will already be full.

15 Minutes before start: consume one serving of **Fully Charged**, **Hammer Gel**® and **Endurolytes**®.

IF starting at 7 AM or prior, skip breakfast and go light!

BOTTOM LINE

Consistently follow these recommendations and watch your performance soar! Properly timing your caloric intake before every activity will ensure you get the most out of your efforts and perform at your best. After 35 years offering this advice, we have yet to hear from a single person that it did not work!

HAMMER Quick Tips

SECRET #1

Don't "carbo-cram" the night before. It only fills your intestines.

For dinner, eat light and clean. That means no refined sugar, saturated fats, or alcohol. Eat until you're satisfied and call it a night.

If you start before 7:00 AM, skip breakfast altogether.

Proper fueling starts 15 minutes before the gun goes off.

EXAMPLE PROTOCOL

If your exercise starts at 9:00

6:00 PM
NIGHT BEFORE

Enjoy a light, healthy dinner with no refined sugar, saturated fats, or alcohol.

6:00 AM
3 HRS BEFORE

Enjoy a 300 to 500 calorie light, easily digestible breakfast.

6:15-8:45
30 MIN BEFORE

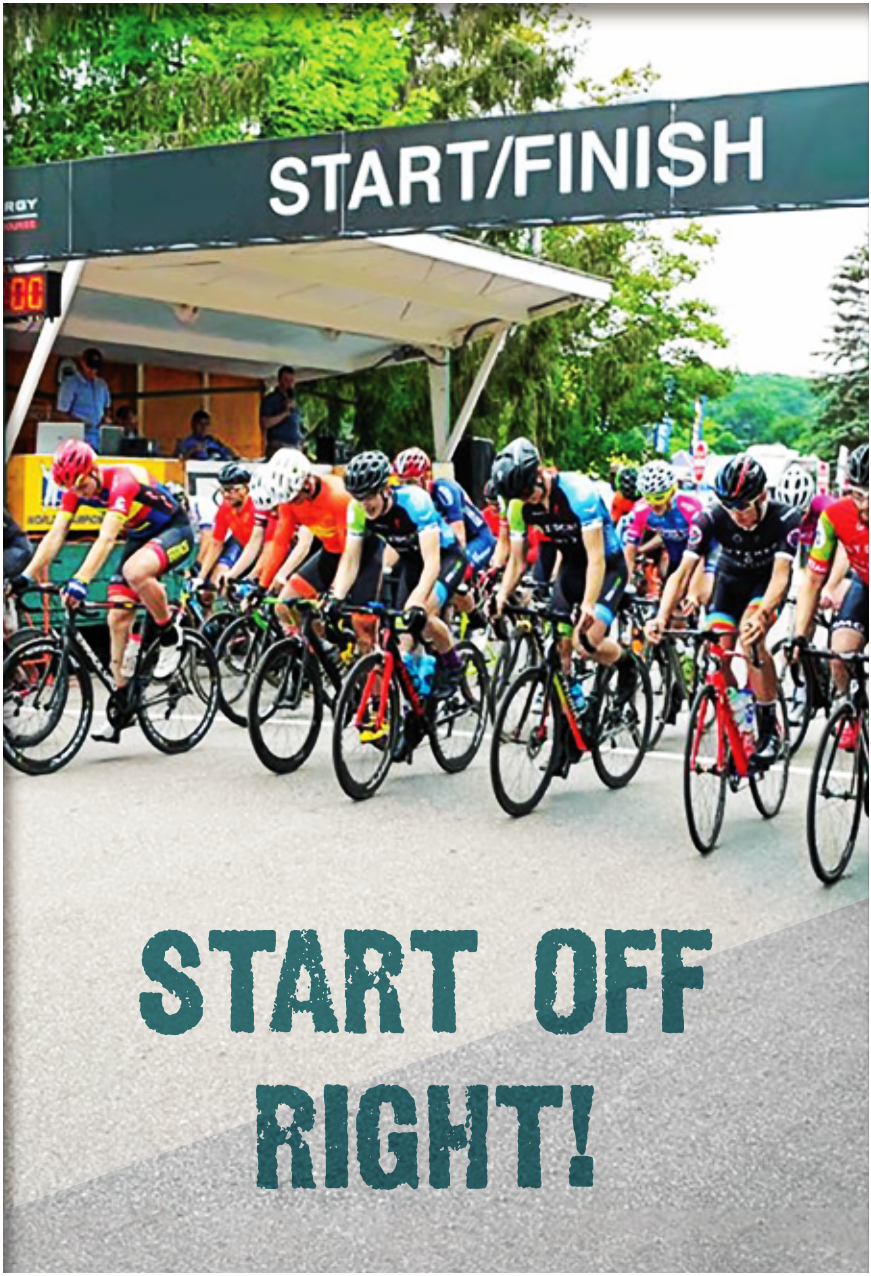
Sip ONLY water, with or without **Endurolytes Fizz**.
NO calories during this fasting window.

8:45 AM
10 MIN BEFORE

One serving of **Hammer Gel**, **Endurolytes**, and **Fully Charged** with water.

9:00 AM
HAMMER TIME!

HAMMER NUTRITION®



START OFF RIGHT!

2 CALORIES COUNT

WHAT AND HOW MUCH YOU CONSUME DURING EXERCISE CAN BE THE DIFFERENCE BETWEEN CRUSHING IT AND BEING CRUSHED

Our Recommendations

Consume 120 to 180 calories per hour of activity.

Fuel with complex carbohydrates like maltodextrin instead of simple sugars or blends. (**HEED®**, **Hammer Gel®**, **Perpetuem®**)

For exercise longer than 3 hours, your primary fuel should include protein in a ratio of about 8:1 carbs to protein. (**Perpetuem®**)

It is necessary to consume calories while exercising for more than 30-45 minutes. How many and what kind has vexed athletes for decades, with most erring on the side of consuming too many. Successful fueling means consuming the fewest amount of calories needed to get you to the finish line as fast as you are capable of going. Any more calories consumed are wasted and make more work for your body. Remember when it comes to calories consumed during exercise, **Less is Best!**

Athletes competing in events lasting less than 30 minutes, as well as those competing in team sports, motor sports should consult our sport-specific fueling guides for more detailed usage instructions.

HOW MANY? 120-180

High calorie replacement during exercise is unnecessary and only leads to stomach upset, GI distress and cramps! Ridiculous suggestions of replacing what you are burning (400-600 + calories per hour) are no longer advocated, but even the "200-300" number being promoted today is too high. The liver can theoretically convert 240 calories per hour to glycogen from carbohydrates consumed. However, most athletes do not even tolerate this level well. More importantly, we are concerned with determining the FEWEST number of calories we can consume without slowing

us down. For most athletes, that number falls somewhere between 120 and 180 calories per hour. Of course, small athletes may need even less and the very large athletes may need a bit more.

HAMMER Quick Tips

SECRET #2

Replenishing calories during exercise in amounts of 120 to 180 calories per hour supports efficient energy production. Plus, this won't interfere with your body's use of fatty acids for fuel.

During efforts of 2-3 hours or longer, it's important to include protein in your fuel supply as about 10% of calories burnt will come from protein, whether from fuel or muscles.

Use complex carbohydrates for fuel to avoid erratic blood sugar levels, extra electrolyte needs and inhibited fat burning.

Plant proteins are preferred for use during exercise because their metabolization doesn't produce ammonia like whey protein will, which is a big factor in combatting fatigue.

WHAT KIND OF CALORIES ?

CARBOHYDRATES

Athletes know "carbs are king" when it comes to fueling for endurance exercise. But you can't consume just any carbohydrate at any time. Here's what works:

Complex carbohydrates offer steady, usable energy without stomach distress.

Products containing simple sugars—sucrose, fructose, glucose, dextrose, or any other "ose" sugar—must be extremely diluted (a 6 to 8% solution in water) to avoid stomach blockage. This solution must be too weak to meet your hourly caloric needs. However, increasing the solution will cause the sugars to sit in the gut while fluids are recruited from elsewhere in the body. This "osmotic pressure" in the gut increases rates of dehydration and electrolyte depletion resulting in severe GI issues.

In contrast, complex carbohydrates (such as those found in **HEED®**, **Hammer Gel®**, and **Perpetuem®**) can be efficiently digested at solution concentrations of up to 18%. You can therefore absorb sufficient calories to fuel your exercise hour after hour, without over-consuming fluids or causing digestive distress.

FAST ENERGY, WITHOUT THE CRASH

The complex carbohydrate source in Hammer Nutrition's fuels is maltodextrin. This easily-absorbed starch elevates blood sugar rapidly for the quick energy you need during exercise. However, the body takes longer to break down the molecular structure of complex carbohydrates like maltodextrin, keeping blood sugar levels stable over time. While sugars spike insulin levels and then quickly drop them–leading to "peaks and valleys" of energy–complex carbohydrates raise blood insulin just as effectively, but without the corresponding "crash." Your energy will be stable and reliable, no matter the distance.

AVOID MULTIPLE CARBOHYDRATE SOURCES DURING EXERCISE

Some sports fuels contain a mix of simple sugars and complex carbohydrates. However, like simple sugar alone, these blends are only absorbable at either very low solutions or exceedingly low heart rates (like when taking a brisk walk). If you want steady energy while pushing the pace, steer clear of simple sugars, regardless of what they're mixed with.

FATTY ACIDS

Even the leanest athletes have vast stores of caloric reserves in the form of body fat, with larger athletes' bodies holding upwards of 100,000 calories of expendable energy. When exercise goes beyond two hours, these fatty acids should be the

body's primary fuel, providing approximately 60–65% of your energy needs. However, when you consume too many calories, your body switches gears the use the food you've eaten and your carbohydrate reserves instead. In order to support your body's natural ability to efficiently access energy stores from fat, consume just enough calories to feel your best during exercise (no more than about 180 calories per hour).

PROTEIN

For activities lasting longer than 90–120 minutes, 5%–15% of your calorie expenditure will come from protein. If your fuel doesn't supply protein, your body will scavenge it from muscle tissue, causing muscle fatigue and breakdown, post-exercise soreness, and a weakened immune system.

To avoid muscle cannibalization, your fuel should incorporate protein in a ratio of about 8:1 (by weight) of carbs to protein. **Sustained Energy**, **Perpetuem®**, and **Perpetuem Solids** meet this requirement and are your best fuel choices for long-duration exercise. For these sessions, use a fuel containing protein from the get-go.

THE GRAY AREA: EXERCISE/ EVENTS LASTING 2-3 HOURS

During "gray area" workouts and races—those over 2 hours and up to 3 hours or slightly longer—the issues involving ammonia will be very minimal because you'll have completed your workout or race before they truly become problematic. That's why you can use either a "carb + protein" fuel or a "carb only" fuel…whichever you find works best for you. The longer you go, however, the more problematic the ammonia issues will be, which is why your primary fuel should contain both carbs and protein for any exercise longer than three hours.

FUELING

120–180 cal/hr

FACT:

During athletic activity, your body can't process calories to match what it expends. If you want to achieve your best performance, **DO NOT** follow the "calories out, calories in" protocol recommended by some so-called "experts."

HEED®
Hammer Gel®
Perpetuem®

- **Rock-solid sustained energy**
- **No sugar crash**
- **Buffers lactic acid**
- **High-glycemic-index (GI) complex carbs**

These three fuels will fuel your exercise hour after hour, without overconsumption of fluids or digestive distress.

Fuel Right, Feel Great!

3 PROPER HYDRATION

WHAT YOU NEED TO KNOW TO STAY IN THE FLOW

Our Recommendations

To avoid performance and health problems associated with low blood sodium, your fluid intake during exercise should not routinely exceed 26 oz per hour, depending on weight and conditions.

Average athletes or average temps:	16-26 oz of fluids per hour (approx. 473–769 ml)
Lighter athletes or cooler temps:	16–18 oz of fluids per hour (approx. 473–532 ml)
Heavier athletes or hotter temps:	up to 28 oz of fluids per hour (approx. 828 ml)

Water is the most critical component in exercise fueling and life. It cools your body, transports nutrients, allows healthy cellular functioning and energy release, joint health and more. Unfortunately, most athletes get this wrong everyday by under-consuming water, then make matters worse by trying to "load" water in the days leading up to a hot event. We are not camels, we cannot hold water in reserve. The sudden increase in water intake only serves to confuse the body and flush out electrolytic minerals BEFORE they are needed.

Luckily, there is a much better way to go about hydrating your body, both in daily life and for exercise/competition in the heat. Mastering your daily hydration is the key!

DAILY HYDRATION GOAL:

- Minimum of 1/2(.5) ounce per pound of bodyweight. 3/4 ounce per pound being optimal.
- Days leading up to a hot weather event: NO CHANGE in daily fluid intake!
- During heat stress exercise: 16-26 ounces per hour, depending on body size.

THE SCIENCE

The fact is you can finish an activity of any length with a water weight loss of about 2% (3-4 pounds or about 1/2 gallon, for most athletes without suffering any performance declines or

negative health impacts. So forget the advice to "drink to replace."

Instead, abide by the following principle:

REPLACE ONLY AS MUCH FLUIDS AS YOUR BODY CAN EFFECTIVELY ABSORB!

The goal with hydration, like caloric consumption, is to consume an amount your body can process without causing additional side effects. Research shows that endurance athletes can efficiently absorb 16–26 fluid oz per hour. Consuming more than this does not improve performance. In fact, overconsumption can have grave consequences. When blood sodium concentrations become too low, performance immediately declines.

In severe cases, excessive fluid intake can overwhelm the body's levels of electrolytes, leading to water intoxication or dilutional hyponatremia, which can be fatal.

HAMMER Quick Tips

SECRET #3

- Hydrate effectively all day, every day.
- During exercise, practice measured fluid consumption, adjusting intake to match temperature and sweat rate.
- Do not attempt to replace the fluids you lose in 1:1 equal amounts. It always leads to failure and can be dangerous.
- Don't try to super-hydrate prior to exercise.

Traditional "Blogs" are yesterday's news.

Discover a wealth of free information and education, specially authored and curated with your peak endurance performance in mind.

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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hammernutrition.com

Keep Hammering!

HAMMER NUTRITION

The Original NonAcidic Sports Drink!

NO ADDED SUGARS

Single Serving **$1.95**
32 Servings **$34.95**

★★★★★

"Huge difference maker for my cycling, running, tennis, hiking and any hot, sweaty activity. Tastes Great, Works Great, and is so much better than commercial sports drinks!" - Kenneth H.

★★★★★

"Heed has been a staple of long rides, trail runs and Nordic skis when drinking carbs / calories is important. Outstanding product I can't live without!" - Brendan T.

★★★★★

"Great tasting clean drink. My personal favorite especially on a rough training day. Mixes up easily and flavors are great!" - Brent Z.

- **Sustained energy with no crash**
- **Reduces muscle cramping**
- **Buffers lactic acid**

SHOP NOW

PRODUCTS • KNOWLEDGE • SERVICE
100% SATISFACTION GUARANTEED since 1987

4 ELECTROLYTE REPLENISHMENT

RESUPPLY THESE VITAL MINERALS TO FINISH STRONG

Our Recommendations

To keep your body functioning smoothly through a long workout or race, replenish the full spectrum of electrolytes consistently and completely.

Low sodium eaters: Consume 100-300 mg sodium per hour of exercise depending on heat stress levels.

High sodium eaters: Consume 300-900 mg sodium per hour

Note: Extreme conditions may warrant higher levels of electrolyte replenishment. Athletes consuming high sodium diet and or attempting to sodium-load before an event may require even more than this. Do what you have to do to get through your event, then put the salt shaker down before your next event!

The most misunderstood component of fueling your body! Electrolytes are like the motor oil in your car: they don't make the engine run, but they're absolutely necessary to keep everything operating smoothly. Just as you wouldn't wait for your engine to seize before you top off the oil, don't wait to cramp up before you replenish electrolytes. Long before you cramp, your output will suffer from mineral depletion.

ELECTROLYTES 101

The goal of electrolyte replenishment is smooth, uninterrupted, uncompromised performance. Without the proper levels of electrolytes, your body can't carry out critical body functions such as muscle contractions, normal heart rhythms, and nerve impulses, all of which are critical for performance and health.

SALT TABLETS ARE NOT THE ANSWER

Salt tablets are an unacceptable choice for electrolyte replenishment for two important reasons:

They can oversupply sodium, overwhelming your body's ability to regulate electrolyte and fluid balance.

They provide only two electrolytes, sodium and chloride, when your body requires many types of electrolytes.

Your body has very effective mechanisms for monitoring and conserving its stores of sodium. Consuming excessive amounts of sodium interferes with this natural process. If your body detects a drastic increase in sodium from outside sources (salty food or electrolyte products too high in sodium), your body will stop filtering and recirculating sodium and instead begin purging the excess. The immediate results of this are swelling and elevated blood pressure, with extreme cases resulting in lethargy, muscle weakness, seizures, and even death.

SKIP THE SALTY FOODS

A similar process occurs if your diet routinely includes high levels of sodium. Consistently consuming excess sodium encourages the body to routinely dump sodium. If you're consuming more than 2,300 milligrams per day, sodium loss during activity will be increased, increasing your risk of cramping and the need for electrolyte supplementation.

By building your diet around natural, unprocessed foods, you will consume sufficient sodium without interrupting your body's natural regulatory processes. The average person stores 8,000 milligrams of dietary sodium in body tissues.

HAMMER Quick Tips

SECRET #4

Electrolyte replenishment is essential, before and after short, high intensity efforts and every 15-20 minutes during prolonged endurance exercise.

Eat a low sodium diet! The body only needs 2000 - 3000 milligrams of sodium a day, an amount easily supplied with natural, unprocessed foods. High sodium levels of sodium leads to increased sodium loss during exercise, which leads to more required sodium later on.

Adding **Endurolytes®**, **Fizz**, or **HEED®** to your water bottle is an easy way to help replenish electrolytes consistently throughout your workout or race.

Reducing sodium in your diet and replenishing sodium levels during exercise with the minimum amount necessary will enable your system to make the best use of your stores. Attempting to "sodium load" prior to activity triggers your body to rapidly dump it during exercise, perpetuating a cycle of high-sodium consumption and expenditure.

FULL-SPECTRUM ELECTROLYTE REPLENISHMENT

Proper electrolyte replenishment requires a consistent approach that properly balances all the necessary minerals—not just "salt."

Endurolytes® are designed to meet your body's complete electrolyte requirements, which include sodium, chloride, potassium, magnesium, calcium, and manganese. These minerals help counter the effects of overheating, optimize bodily functions, and enhance performance, especially for activities that last longer than two hours.

We don't formulate Endurolytes to reflect the amount of electrolytes lost through exercise. As sweat loss varies greatly from person to person and depends on dietary habits and climate, there is no "one size fits all" approach to replenishment. It is essential that you correlate your dosing to dietary habits, the climate, and active temperatures.

When selecting your dosage, it is important to remember that the human body can assimilate only about 1/3 of the electrolytes it loses during exercise. Trying to replace more than this could

cause gastric distress, edema, muscle spasms, cramping, and a host of other performance-wrecking symptoms.

Hammer's Endurolytes products help your body maintain proper electrolyte levels regardless of conditions or duration of exercise. They allow your body to perform better, especially in heat, by providing a full range of minerals in a proper balance that helps the body's normal control systems perform.

BOTTOM LINE

Salty Foods and salt tablets won't cut it when it comes to electrolyte replenishment. Instead, adopt a low-sodium approach in your daily diet with mineral-rich whole foods. During exercise, provide your body with comprehensive electrolyte support without compromising internal regulation.

"Adopt a low-sodium approach in your daily diet with mineral-rich whole foods, and comprehensive eloctrolyte support during exercise."

COMPLETE
Electrolyte Support

Salt tablets provide only two of the electrolytes your body requires. **Endurolytes®** provide the full spectrum, with complementary micronutrients. Precisely formulated without excess salt, refined sugars, or artificial ingredients, our full-spectrum electrolyte products support peak performance in the toughest conditions.

Calcium: Necessary for normal heart rhythm, healthy nerve transmission, and strong muscle contractions. During exercise, calcium-dependent enzymes produce energy from fatty acid and amino acid conversion.

Chloride: Critical for maintaining a proper balance and consistency of body fluids and electrolytes.

Manganese: Trace amounts help convert fatty acids and protein into energy.

Sodium: The average athlete already has a vast store of available sodium, so consuming excess amounts can cause serious problems. Endurolytes contain moderate amounts of sodium for proper replenishment.

Magnesium: Required for many of the enzymatic reactions for converting fuel to muscle energy.

Potassium: Needed for optimal concentrations of sodium.

ORIGINAL ENDUROLYTES® CAPSULES

Ideal for athletes consuming a low-sodium diet. Introduced in 1996, this full-spectrum, proportionally balanced electrolyte supplement provides 100 milligrams of sodium chloride. Depending on heat stress levels, 1 to 6 capsules per hour are recommended.

ENDUROLYTES® FIZZ

Equal to approximately two capsules of Endurolytes, this product is for athletes who are unable to consume capsules while exercising and/or those who prefer flavor in their water.

ENDUROLYTES® EXTREME CAPSULES

Triple the sodium, chloride, and potassium compared to original Hammer Nutrition Endurolytes, Endurolytes Extreme allows for a 3:1 reduction in the number of capsules consumed. For athletes who tend to consume a high-sodium diet (evidenced by salt stains on clothing and skin).

ENDUROLYTES® EXTREME POWDER

All the benefits of our best-selling Endurolytes Extreme capsules in an easy-to-mix powder. This formula dissolves quickly and completely, with a subtle, natural watermelon flavor. With three times the sodium chloride and potassium, and a softer flavor profile than Fizz, this is the perfect solution for multi-hour bottles of fuel, those who dislike consuming capsules, and those whose electrolyte needs are high.

HEED®

Hammer Nutrition's complex carbohydrate-powdered sports drink contains the same full-spectrum electrolyte profile as Endurolytes. Some athletes find that a scoop or two of HEED in their water bottle will keep them going strong for an hour or more. Others satisfy their complete electrolyte needs by consuming both HEED (an excellent base) and Endurolytes products.

5 RECOVERY DONE RIGHT

RECOVER RIGHT TODAY, HAMMER TOMORROW!

Our Recommendations

Within 30 minutes after your finish, consume:

- 16 to 26 oz of water
- 30 to 60 grams of high-glycemic carbohydrates
- 10 to 20 grams of protein (preferably whey isolate)
- Complementary amino acids, micronutrients, and broad- or full-spectrum CBD

At the conclusion of every exercise period, you have a 3 hour "window of opportunity" where your body is most receptive to receiving fluids and nutrients to repair and rebuild the body for the next effort. But, it decreases with every minute that passes, so get serious about taking care of your recovery immediately post workout/event.

Proper recovery requires the introduction of:

- **FLUIDS - WATER**
- **CALORIES-COMPLEX CARBOHYDRATES, PROTEIN, FAT**
- **ELECTROLYTIC MINERALS AND OTHER KEY NUTRIENTS**

within minutes of finishing.

REHYDRATION

Rehydrate immediately following your exercise session and continue throughout the day. Consume at least 16 oz of water immediately following exercise and continue based on temperature, sweat rate, and thirst. You should consume at least 16 oz of water per pound of body weight lost during a strenuous session.

CALORIE REQUIREMENTS

The recovery process relies on two essential macronutrients: carbohydrates and protein. Consuming carbohydrates after exercise will replenish glycogen (carbs stored in muscles) and help your body assimilate protein.

You can minimized time needed and maximize your glycogen storage capacity through timely recovery practices. To maximize glycogen storage and usage, always consume complex carbohydrates immediately post exercise.

CHOOSE HIGH-GLYCEMIC COMPLEX CARBOHYDRATES

A high-glycemic complex carbohydrate is ideal because it raises levels of insulin in the blood. This is desirable after exercise as insulin drives the storage of glycogen, stimulates protein synthesis for repairing and rebuilding muscles, and decreases muscle breakdown. Though simple sugars will also spike insulin levels, those levels rapidly drop again, leading to decreased energy for the rest of the day. Given simple sugar's inflammatory nature and propensity to cause stomach distress, it is a poor choice for recovery. Instead, choose high-quality complex carbs such as those found in **Recoverite®**.

PROTEIN

Protein provides the raw materials your body needs to rebuild stressed muscles, enhance glycogen storage, and support the immune system. **Hammer Whey Protein** isolate is the best protein choice for recovery.

HAMMER Quick Tips

SECRET #5

Use **Hammer Whey Protein** isolate (not concentrate), it's virtually free of lactose and fat and is the best protein for recovery.

Using a 3:1 carbohydrate-to-protein ratio (such as found in **Recoverite®**) decreases muscle soreness.

A full-spectrum supplement like **Premium Insurance Caps** replenishes vitamins and minerals lost during exercise.

For those with muscle/joint discomfort post exercise add **Tissue Rejuvenator**, see below.

TISSUE REJUVENATOR

This has been one of our most popular products for decades. Supports joint health and reduces muscle and joint discomfort that can result from exercise. Containing four active ingredients and a complete array of herbal anti-inflammatories, it's no wonder athletes love this product.

Whey protein isolate, the purest form of whey protein, has the highest BV of any known source at 154. Many other recovery products use less-absorbative whey protein concentrates which include production by-products, fat, and lactose. **Hammer Whey Protein®** and **Recoverite®** use the purest whey protein isolate on the market. It is 90 to 97% protein, derived from US-raised grass-fed cattle, and virtually free of fat and lactose.

SUPERIOR MUSCLE REPAIR

Compared to other sources, whey protein isolate is a superior source of branched-chain amino acids, including those most crucial to the muscle tissue repair process: leucine, isoleucine, and valine.

IMMUNE SYSTEM SUPPORT

Whey protein contains excellent levels of the amino acids associated with immune system health. Poor protein status and chronic muscle breakdown lead to a decline in immune system health and eventually to many of the sicknesses and ailments associated with over-training.

MICRO-ESSENTIALS

Research has revealed recovery benefits from the consumption of other key antioxidants and amino acids. While many nutrients will enhance recovery, we consider the following to be truly essential:

L-GLUTAMINE

Preserves and rebuilds lean tissue, boosts the body's natural immune defenses, and aids gastrointestinal health.

L-CARNOSINE

Offers antioxidant support. This nutrient neutralizes all forms of free radicals, thus helping to remove the "waste products" left behind after your workout. It also serves to protect body proteins.

CHROMIUM POLYNICOTINATE

Boosts glycogen synthesis, thus improving your use of post-workout carbohydrates. Studies suggest that athletes who consume chromium along with ample carbohydrates can experience a 300% increase in glycogen synthesis.

MAKE RECOVERITE®

PART OF YOUR POST-WORKOUT ROUTINE

THE PERFECT RECOVERY TOOL

Recoverite supplies everything your body needs to jump-start the recovery process. It offers easily-assimilated complex carbohydrates from maltodextrin, and premium protein from whey protein isolate in the 3:1 ratio scientifically proven to speed recovery times. With all the essential nutrients as well as a full-spectrum blend of electrolytes, Recoverite is truly the perfect tool for the job.

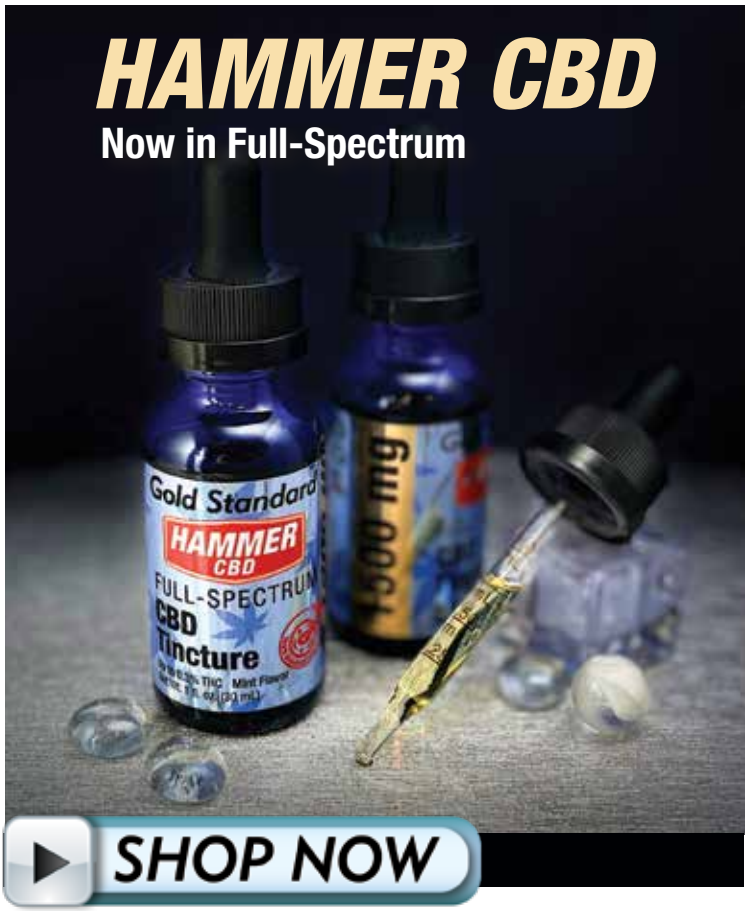
If you want to feel your best, maximize your gains, and make the most of your time, recovery must be a priority in your training. Putting an emphasis on properly refueling when your body is at its most receptive — immediately following exercise— will help restore your body's premium fuel (glycogen), rebuild muscle, and strengthen your immune system.

Make Recoverite part of your post-workout routine. To further maximize recovery, consider Hammer Nutrition's line of supplements. **Premium Insurance Caps**, **Race Caps Supreme**, and our other high-potency nutritional supplements are 100% guaranteed to improve your health, recovery, and performance.

Research continues to reveal bountiful benefits from the wide range of cannabinoids and terpenes found in the hemp plant. Topically applied **Hammer CBD Balm** will be especially beneficial for those achy muscles and joints. **Hammer CBD softgels** or **Tinctures** will also help alleviate soreness and aches, and protect the muscle cells so that they can repair and grow without interference or delay. The broad-spectrum cannabinoids and terpenes found in Hammer CBD products also help muscles relax, which relieves tension and minimizes delayed onset muscle soreness (DOMS). Perhaps the greatest benefit that regular use of Hammer CBD products provides is to enhance sleep quality and duration, both vital for maximizing recovery and overall health–repairing damaged proteins, removing cellular debris, stimulating muscle fiber and tissue growth, and optimizing immune system function.

BOTTOM LINE

Get the most out of your training by giving as much attention to recovery as you do to workouts. **Start recovering as soon as you finish exercising!** Be sure to consume adequate amounts of fluids, complex carbohydrates, whey protein isolate, electrolytic minerals, antioxidants and other nutrients.



- **Deepens sleep quality**
- **Provides superior mood support**
- **Heightens overall tranquility**

Oil Tinctures starting at **$59.95**
Softgels starting at **$69.95**

★★★★★

*"Ever since I tried **Hammer Full Spectrum CBD**, I sleep perfectly sound all night long. I immediately signed up for AutoShip, because we can't Ever be without it!" - Johnny V.*

SOS 5 SECRETS OF SUCCESS FOR ENDURANCE FUELING

Our Philosophy:

LESS IS BEST

FOR SUCCESSFUL FUELING, LESS IS BEST!

1 Pre-Exercise Fueling

Consume a 300 - 500 calorie meal 3 hours before exercise, then take one Fully Charged serving 30 minutes before, and "top off" with a Hammer Gel 10 minutes before you start.

2 Calories Count

Consume 120 - 180 calories per hour of activity, using complex carbohydrates like maltodextrin instead of simple sugars.

3 Proper Hydration

Hydrate properly by taking in 20 - 25 oz of water per hour. Practice measuring fluid consumption during exercise.

4 Electrolyte Replenishment

Avoid salt tablets and use Endurolytes to replenish your body with the full spectrum of electrolytes.

5 Recovery Done Right

Within 30 minutes of finishing your workout or event, consume water, high-glycemic carbohydrates, whey protein isolate, and antioxidants.

FUELING CHECKLIST

Use the 5 secrets and put your plan into action.

Fill this in, tear it out, and be prepared for amazing results!

PRE-EXERCISE:

- ❑ 3 hours prior: eat 300 - 500 easily digestible calories
- ❑ 30 minutes prior: Water with or without **Fizz**
- ❑ other supplements as needed _____
- ❑ 10 minutes prior: 1 serving **Gel®**, **Endurolytes®**, **Fuly Charged**

DURING:

Endurolytes®: electrolyte dosage varies by individual needs

- ❑ **Endurolytes®** _____ capsules/hour
- ❑ **Endurolytes® Extreme** _____ capsules/hour
- ❑ **Endurolytes® Extreme Powder** ___ grams/hour (2 grams per scoop)
- ❑ **Endurolytes® Fizz** _____ tablets/hour

Caloric Fulfillment: 120 - 180 calories/hour

- ❑ **Hammer Gel®** _____ servings/hour (90 calories per serving)
- ❑ **HEED®** _____ scoops/hour (110 calories per scoop)
- ❑ **Perpetuem®** _____ scoops/hour (135 calories per scoop)
- ❑ **Perpetuem® Solids** _____ solids/hour (100 calories per 3 tablets)
- ❑ **Sustained Energy** _____ scoops/hour (107 calories per scoop)
- ❑ **Hammer Bars®** _____ bars/hour (170 - 250 calories per bar)

RECOVERY:

- ❑ **Tissue Rejuvenator**
- ❑ **Recoverite®**: 2 scoops in 4 - 8 oz water within 30 minutes of exercise
- ❑ **Endurolytes®**
- ❑ **Premium Insurance Caps**
- ❑ **Hammer CBD**

Notes: _____

For a complete guide to fueling, refer to Hammer's product usage manual, *How to Hammer* at **hammernutrition.com/how-to-hammer** or talk to an expert at **800.336.1977.**

THE SECRETS TO YOUR SUCCESS

This handy guide distills the knowledge we've gained through nearly three decades of rigorous research and field testing. Put these principles to work, and you will succeed—we guarantee it!

- **Powerful recommendations for fueling and recovery**
- **Practical, time-tested advice**
- **Clear, concise information for peak performance**

1. **Pre-Exercise Fueling**
2. **Calories Count**
3. **Proper Hydration**
4. **Electrolyte Replenishment**
5. **Recovery Done Right**

"Following these guidelines will give you every opportunity to race to your potential."

*"Great source of information! This is the perfect guide for how and when to use the full array of Hammer Nutrition's endurance fuels. As an IRONMAN athlete, having a proper fueling strategy can mean the difference between getting a Kona slot and getting a DNF. Use the **Fueling Checklist** before every race and you don't have to worry about getting it right." - Online Reviewer*

HAMMER NUTRITION®

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