

# The Art and Science of Athletic Recovery

After completing the research for this article, I now conclude that recovery should be considered as an extension of training. The reason is simple, it is during the rest phase that you make your extra gains in performance, endurance and strength.

1. **Nutrition** - within 15- 60 minutes immediately following a workout, muscles are primed to receive fuel to start the repair process. Eat or drink your recovery meal right away. Your muscles need blood to deliver nutrients to them. Consume .75 grams of carbohydrate per pound of bodyweight, and include protein in a 4:1 or 5:1 carb-to-protein ratio.

Your carbohydrates should include high-glycemic index carbs, like glucose (dates are a good way to get it), and some slower-release, even fibrous, carbohydrates as well.

And don't forget the fat - include about half as many grams of healthy fat as you do protein, flaxseed and hemp oils are my favorites.

Get out of the acid state with greens or other vegetable and fruits. Intense exercise creates an acidic environment in your body. If you don't neutralize the acid with what

you eat, your body will use the calcium from your bones and nitrogen from your muscle tissue to neutralize it. Greens, sprouted vegetables, and certain fruits like lemon

and limes have a neutralizing effect on your body. Unfortunately, heavily processed protein powders are very acid-forming. As an alternative, I use minimally-processed hemp protein powder in smoothies.

2. **Rehydrate** - To stay hydrated, drink about 20 ounces of fluid in the hour or so before training, take four to six gulps of fluid (6 ounces) every 15 minutes, and then drink about 20 ounces of fluid for every pound lost during activity.

Remember, that there are factors that can increase the amount of fluids lost. They include exercising at high altitude, working out in hot weather, clothing choice, the amount of sweating and the nature of your exercise. Athletes who are training in endurance and high-intensity sports may lose more sweat and need to drink more to offset the loss of fluids.

Everyday needs are often overlooked - but very important. Many athletes enter training sessions dehydrated. Being hydrated will help to improve overall performance. Everyday, the goal should be to drink .5 to 1 ounce of fluid for each pound that one weighs. If you weigh 150 pounds, you should be consuming 75 to 100 ounces of fluid per day. (33 ounces = 1 liter). The number one choice should be alkaline water. Some fruit juices, in moderation (6 ounces = 1 serving). Watery foods (watermelons, grapes, vitamins, potassium).

**Fun Fact:** Eating or drinking watermelon juice before exercise could relieve muscle soreness as published in the Journal of Agricultural and Food Chemistry. The researchers explained that, the amino acid L-citrulline in watermelon can cut an athlete's recovery time and boost their performance. The chemical speeds up the process of lactic acid removal from the muscles which reduces soreness.

Replace lost electrolytes. When you sweat, you lose electrolytes (minerals such as potassium and sodium), these are conductors that transmit electrical impulses throughout your body. So you need to replace them; some good sources of electrolytes are orange juice, bananas, raisins, pineapple juice, dulse flakes, a few pinches of sea salt, and Nuun tablets.

**Coconut Water** - let's just share with you the bottom-line, coconut water packs fifteen times more potassium than any other sports beverage on the market, with 470 mg of potassium in a typical 8-ounce serving, coconut water is chock full of the key elements in boosting bodily rehydration. Potassium works with sodium, magnesium and calcium, also found in higher amounts in coconut water, to maintain proper fluid balance in the body, and in helping to avoid cramps during a strenuous workout. In addition to potassium, coconut water is full of magnesium and calcium, thus assisting to regulate and maintain hydration equilibrium during and after the

workout. If you have not already, switch today!

Now, we need to nourish your adrenal glands. Under the stress of intense workout, your adrenal glands work hard to release hormones to help you perform. To help them recover, add a teaspoon of ground maca, a Peruvian root that packs the added benefit of better sleep and increased libido!

3. **Cyrotherapy**- This technique refers to ice massage. Put some baby oil on your muscle (to prevent shock) and put ice in the middle of your muscle. Start to gently massage the muscle in a circular motion with the ice. Gradually increase the diameter of the circles. Perform this action for five to ten minutes. This is very effective at decreasing pain and excessive inflammation and can thus help prevent overuse injuries. Come try our WBC (whole body cyrotherapy), amazing results, first time!
4. **Contrast Baths and Showers** - alternate 30 seconds of cold water and two minutes of hot water. Perform this cycle three or four times. This is very effective at increasing peripheral blood flow, hence facilitating recovery.
5. **Epsom Salt Baths** - A recent study conducted at the University of Birmingham found that bathing in a warm Epsom salt bath can significantly increase blood magnesium levels. (the average improvement consisting of attaining 140,98 ppm/ml from an initial value of 104.68 ppm/ml in a seven day period). This is because magnesium can be absorbed by the skin. We know that magnesium is an important mineral for athletes, and one that we're often deficient in. Among other things, it helps with muscle relaxation and testosterone production.

Epsom salt baths increase perspiration, helping to get rid of toxins and impurities. Magnesium sulphate also stimulates vasodilation, facilitating blood flow to the muscles and helping reduce inflammation. As a result, these baths can greatly increase the rate of recovery after a hard training session and, as a bonus, they reduce muscle and joint pains associated with an excessive inflammatory response. The Birmingham study found that up to 600

grams of Epsom salt diluted in a normal size bath can be used effectively and without risk. This technique should be used two to three times per week for 10 to 20 minutes after particularly challenging workouts.

6. **Technology** -EMS Electrical Magnetic Stimulation for active recovery. EMS utilized in a low-intensity pulsating manner can act much like a sports massage. It can stimulate blood flow to the muscles by creating a pumping effect. It can also induce a state of relaxation in the muscles and help breakdown adhesions between muscle fibers.

A discharge frequency of 1 to 9Hz is recommended for this purpose and the treatment should be 15 to 20 minutes. Intensity (current amperage) should be kept low.

Another benefit of EMS is the analgesic effect or a diminution of pain. This is best accomplished at a frequency of 5Hz. Three personal units are MarcPro and Compex, and my favorite Alpha Stim.

Of course, if you want the big gun, come see us and try our Pulsed Magnetic Power. A single treatment has been likened to having your entire body acupuncture, and the results are dramatic.

Leg Pump - a compact battery-operated, peristaltic pump that generates a wave-form motion. When worn firmly on the calf, the device produces upward volumetric displacement, which translates to an increase in blood flow. This pump increases circulation and draws a higher level of oxygen to exhausted or injured muscles, promoting faster healing. This therapy prevents blood clotting. One device available to athletics is called The Venowave, VW5.

*Zyto - computer sensitivity scan that can be utilized for both sports performance and sports recovery. ?*

7. **Massage** increases lymph circulation and can reduce inflammation, especially with deep tissue. Actually, Active

Release Technique (ART), a form of deep tissue massage, is probably the most effective non-pharmaceutical treatment for inflammation injuries such as tendonitis. Massage can also increase the elasticity of the ligaments and muscles. Localized massage can be performed as a self-massage, except for the back muscles!

*Massage has a significant impact on the nervous system via an activation of reflexive mechanisms (Mierzejewski, 1988). Depending on the type of massage, you can either lower excessive CNS excitation or increase it. Massage of the neck/trapezius area has a calming effect: slowing down heart rate and metabolism and increasing vasodilation. Massaging the lower back area will have the opposite effect (Kurz, 2001).*

**8. Yoga and Breathe** - The aim of yoga is the alignment of the physical, mental and spiritual. A yoga workout can lower stress and improve physical and mental health. It improves memory and concentration power. As we all know, vigorous sport activities generate lactic acid in muscle tissue. If lactic acid is not removed properly, it can adversely affect performance in future training or events. Yoga exercises can help in the removal of lactic acid by gently circulating lactic acid out of muscle tissue and into the blood stream where it will make its way to the liver for processing. Yoga has shown to improve sleep patterns. Proper rest and ample sleep are critical periods for an athlete's recovery process.

*Breathing, as explained by Alexander Lowen, author of The Voice of the Body. " The importance of breathing need hardly be stressed. It provides the oxygen for the metabolic processes; literally it support the fires of life. But breathe as "pneuma" is also the spirit or soul. We live in an ocean of air like fish in a body of water. By our*

*breathing we are attuned to our atmosphere. If we inhibit our breathing we isolate ourselves from the medium in which we exist. In all Orient and mystic philosophies, the breath holds the secret to the highest bliss. That is why breathing is the dominant factor in the practice of Yoga". ??? Enjoy your breath, enjoy your life! (jannae')*

**9.Meditation** - Stress is the number one killer. Today, there is a renewed interest in the ancient practice of meditation. Thousands of scientific studies have proven that meditation can be used as a treatment protocol to help in healing an array of illnesses and diseases. Increasingly, doctors and other health practitioners supplement and even replace traditional treatments with meditation due to meditation's ability to relax the brain and stimulate the body's healing mechanism. Research has proven that meditation improves a patient's emotional state. **If you are happy, you are healing.** The various methods of meditation are too numerous for me to list.

**10. Sleep and Imagery** - Now for fun! Monitor your sleep, especially the quality of your deep sleep. Recently, while experimenting with imagery exercises, I came across an amazing example in Eric Franklin's book, *Dynamic Alignment Through Imagery*. As many suffer from lower back and knees issues, I thought someone reading might benefit from this exercise and experience the power of active imagery.

from page 295 on iPad..... "One day as I practiced imagining my legs hanging over a clothes hanger and watching my back spread on the floor, I suddenly experienced an incredible release of muscle tension. It was a tremendous relief and brought tears to my eyes. From then on, I practiced imagery with increased motivation, and my back tension and knee problems receded. It had taken a year to bring about this release, but the experience taught me several valuable lessons in the use of imagery."

Further on he adds.. " I discovered that a postural change initiated as an image creates and reflects a psychological change. Being centered is not just a biomechanical event. Improving my posture eliminated my emotional pressure, reducing my mental stress".

Changing alignment in a dynamic way, not just altering your external shape, changes your relationship with the whole world and the people in it.

In conclusion, it is as a happy, healthy non competitive athletic, I share these findings. My personal belief is to know oneself, honoring your gift of being. To thy own self be true. If you simply honor this truth, your body will tell you what it truly needs to restore. If you honor your body, your body will reward you greatly.

***Remember: Refuel, Rebuild, Rehydrate & Listen to your Body!***

*Recommended Reading*

**Becoming a Supple Leopard** by Dr. Kelly Starret,  
released April 23, 2013

**Somatics, Reawakening The Mind's Control of Movement** by  
Thomas Hanna,

**Dynamic Alignment Through Imagery** by Eric Franklin released  
January 31, 2012

**The Melt Method** by Sue Hitzmann, released January 29,2013