

## **Improve Athletic Performance**

### **Testimonial & Medical Information**

Glutathione gives athletes an edge!

**Studies show that increased GSH levels improve athletic performance** Exercise physiology research has proven that raised glutathione (GSH) levels increase immune function, help resist infection, decrease muscle damage, reduce recovery time, increase strength and endurance and shift metabolism from fat production to muscular development. Whatever the desired result, many athletes seek to raise their GSH levels to gain an “edge” over their competitors. As Dr. Jimmy Gutman, MD FACEP describes it, “Glutathione is a peptide (very small protein) that occurs naturally within the body where it is assembled by individual cells from its three components-the amino-acids glycine, glutamate (glutamic acid) and the all important cysteine. Because it contains three amino acids it is referred to as a tripeptide.” Glutathione has three main functions which can be summarized as; antioxidant, detoxifier and immune system enhancer. (SEE NEXT PAGE FOR DETAILS ON GSH FUNCTIONS).

### **Muscle Performance ‘double blind’ Study: “THE EFFECT OF SUPPLEMENTATION WITH A CYSTEINE DONOR ON MUSCULAR PERFORMANCE”**

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**By LC Lands, MD PhD, VL Grey, PhD,**

**AA Smountas, BSc.**

**Division of Respiratory Medicine,**

**Department of Pediatrics,**

**Department of Biochemistry,**

**McGill University Health Centre-**

**Montreal Children’s Hospital,**

**Montreal, Quebec, Canada**

This study was conducted in healthy adults for 1 month using the **highest standard of scientific design (peerreviewed, double- blind, randomized, prospective and placebo-controlled study)** to ensure validity of the results. Statistical calculations were performed to analyze the results.

**NOTE: The Journal of Applied Physiology** in the United States, is used by most doctors of Respiratory Medicine. (doctors who monitor lung issues in health) It is a highly regarded medical journal.

### **Muscle Performance study for Immunocal/HMS-90 cont’d**

**Why is this important to athletes?** Exercise increases production of free radicals and oxidative stress which in turn, contributes to muscular fatigue. To combat muscle fatigue, athletes need to raise their glutathione levels whose biosynthesis is dependant on cysteine availability. Immunocal/HMS-90 is rich in “cysteine” making this protein highly bioactive!

A Canadian study, performed by Dr. Larry Lands from the Montreal General Hospital, shows that supplementation with a bonded cysteine product can increase muscular performance, improve body composition and antioxidant status.

Dr. Lands’ double-blind study hypothesized that supplementation with a bonded cysteine donor (Immunocal/HMS 90) designed to augment intracellular GSH would enhance performance. Twenty healthy young adults (ten men and ten women) were studied before supplementation and three months after supplementation with either Immunocal/HMS 90 or a casein placebo.

**Muscular performance was assessed by whole leg isokinetic cycle testing, measuring peak power and thirtysecond work capacity.** Lymphocyte GSH was used as a marker of tissue GSH.

Follow-up data showed that supplementation with **Immunocal/HMS 90 increased the subjects' peak power, thirtysecond work capacity and lymphocyte GSH.** Subjects in the placebo group (the other protein, Casein) saw no change.

**In addition,** the subjects supplemented with Immunocal/HMS 90 had a decrease in their percentage of body fat while maintaining their weight (muscle mass). Muscle performance was increased by 13% in leg muscle, while GSH levels were increased by 35.5 %. One would assume that young healthy athletes would have high levels of GSH or glutathione in their blood but they did not.

GSH helps our body stay healthy this way:

**A: GSH** is the body's own naturally occurring antioxidant and a free radical scavenger. **GSH** acts as an extremely powerful antioxidant, protecting each cell from being damaged by neutralizing unstable forms of oxygen. (dangerous free radicals). **GSH** acts as a regulator of other antioxidant such as vitamin C & E.

**I: "Glutathione"** promotes increases in the levels of T & B cells! These cells are our front line producers of antibodies which help fight attacking diseases, bacteria and viruses! (increased immune response)

**D: GSH** acts as a detoxifying agent in the liver. **GSH** is an essential player in helping the body detoxify drugs, foreign chemicals, pollutants and carcinogens. 60% of pesticides are removed from the human body by "**Glutathione!**" (**GSH**)

Immunocal/HMS-90 is a safe and effective way of elevating GSH in every cell of your body. The athlete gets more muscle performance, reduces delayed onset muscle soreness and can help him/her avoid illnesses like the flu, common cold and even more serious diseases! Immunocal/HMS-90 is rich in BCAA's better known as Branch Chain Amino Acids as well.

#### **Improve Athletic Performance Testimonial & Medical Information # 51:**

**Work Outs (for fast recovery)** Dear Dr. Petrosino: I have been regularly using HMS 90 Immunocal **after all my workouts (for fast recovery)** which is truly amazing! I currently am an elite tri-athlete who will be competing in a variety of triathlons for the 2003 season leading up to the famous Ironman Penticton and Escape from Alcatraz. Since I started using HMS-90 mixed with my favorite grape juice after a workout, I have noticed my **recovery time has improved and my energy levels are amazing!** I used to take a whey protein I bought from a local vitamin store; however, I never noticed the difference.... whether I was taking it or not. When a co-worker (Patty Wickson) introduced me to HMS-90: I was very impressed! I religiously use HMS after all workouts and races! I basically workout 1 to 2 times a day; however, I only use HMS-90 after more intense or longer/endurance workouts: 7 packets/week. I have a race resume that I would love to send you, if you would be interested. Thanks for your time and I look forward to hearing from you soon. Sincerely, **Yvonne Timewell**

Thursday, October 31, 2002