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# NEEDLES, CHI, AND OPTIMIZING YOUR ENDURANCE SPORTS PERFORMANCE

by Rob Kelly DO, Stephan Esser MD



“Needles... seriously... you’re kidding me, right?” That was our initial response, too. As avid athletes and conventionally trained medical doctors, the idea of getting poked with a bunch of needles was not very high on the “to do” list.

We’re talking about *Acupuncture*, of course- that centuries-old therapy in which thin needles are inserted through the skin into specific tissues for a therapeutic goal. Once only the practice of Oriental Medicine doctors, acupuncture is now on the cutting edge of western neuro-functional science, and may just be the therapeutic edge you need to optimize your endurance sports performance.

## The Original Endurance Athlete

His name was Otzi and he lived about 5300 years ago. He was discovered in the Italian Alps and was preserved and mummified in ice. He was 45 years old and hiked hundreds of miles in high altitudes scavenging the extreme elements in the Alps for food and shelter. Scientific analysis of his preserved corpse revealed he was in excellent cardiovascular shape. On his body, more than 50 tattoos were discovered in regions of the spine and knees that correlate with acupuncture points that would be used today in the treatment of certain ailments, such as arthritis of the

knee, which Otzi was known to have. It is speculated that he used these points and acupuncture to optimize his endurance and alleviate pain.

## The Ying, the Yang and the Chi

In traditional Oriental medicine, acupuncture was believed to normalize or enhance the flow of “Chi” in the body. This “Chi”, commonly (but imperfectly) translated as “energy” or “life,” was believed to influence every bodily function. Although there is no scientific evidence that chi exists, a growing body of medical studies do show that acupuncture has powerful therapeutic effects from head to toe. This awareness has led many recreational and professional athletes to try it and the clinical results we have seen and heard about are impressive. But how does it work, and should you give it a try?

## The Master System

To understand how acupuncture works, you need to have a basic awareness of the body. Your body is a collection of muscles, tendons, ligaments, bones, organs and nerves. Each has a unique task and helps the body function efficiently as a whole. Every structure counts, but if “push comes to shove,” your nerves are arguably the most influential structures in the body. They make up your nervous system, which is

comprised of the brain, spinal cord, and peripheral nerves. The nervous system controls everything – and we mean everything. It controls your temperature and blood pressure, it allows you to think, speak, and do the fun stuff like biking, running, and swimming. Your nervous system is also how and where you experience pain, pleasure, happiness, and despair.

The science behind acupuncture shows that it works by influencing your nervous system in powerful ways. The therapeutic influence of acupuncture may help maximize your athletic performance, accelerate injury healing, and promote generalized wellness.

#### How Does it Work?

When an acupuncture needle is inserted through the skin it causes immediate vasodilation of the tissue. This means the blood vessels open up and the increased blood flow carries more oxygen and nutrients in and carries products like lactic acid out. Muscles, joints, ligaments, and tendons thrive off of good blood flow and can bounce back from hard training or accelerate injury healing when they get a healthy blood supply. If you chronically overuse or misuse a joint or a muscle, it can develop impaired blood flow and eventually chronic dysfunction and injury. Acupuncture, along with the appropriate training techniques and rehabilitation, may help correct some of these maladaptive patterns.

Acupuncture also causes the release of B-endorphin, Met-enkephalins, and other pain-reducing molecules called neurotransmitters. These substances are your body's own "narcotics." They help reduce pain and anxiety, and in both acute and chronic pain, they can make all the difference.

Finally, acupuncture and electro-acupuncture in-particular, sends "normalizing" signals to the brain which reduce swelling, chronic pain signaling, and reset balance in the nervous system. This correlates to a microscopic study of acupuncture points that revealed an increased number of nerve endings at these points when compared to non-acupuncture points found elsewhere in the body. Recent acupuncture research has also demonstrated that a chemical found in our bodies called adenosine is released during acupuncture treatments. Adenosine is a molecule that reduces inflammation, promotes sleep, and also acts as a natural painkiller.

There are many other ways that acupuncture works and modern science continues to unravel the mystery of this ancient treatment.

#### Risky Business or No Worries

Before we try something to enhance performance or help with an injury, we want to know a few things. Is it safe, does it have side effects, and is it worth the sticker price? When it comes to acupuncture, the studies show it is incredibly safe when done by a trained practitioner. Single use, sterilized needles are the norm, so there should be no risk of contracting unwanted infections. The needles are incredibly thin and rarely cause significant bleeding. The insertion is relatively painless and the side effects largely positive. In fact, many of our patients describe improved mood, enhanced sleep, less stress and other positive effects even when we were just treating their sports-related complaints. The cost depends on the experience and location of the practitioner. We encourage patients to give it at least 4-6 treatments before deciding if it is working and whether the cost is worth the benefit.

#### To Do, or Not To Do

So that brings us to the real question: "Am I a good candidate for contemporary acupuncture?" If you are deathly afraid of needles or have a genetic bleeding disorder, this may not be for you. But if you are an endurance athlete and want to explore ways to promote optimal performance, reduce inflammation and pain, and restore balance in the nervous system, then we suggest that you take a closer look at incorporating acupuncture into your training and lifestyle.

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