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## **Increased Sports Performance and Chiropractic**

By Mark Studin, William Owens, and Allison Bonk | June 2010

Strength training is a critical component of fitness for every athlete. Although coaches used to believe resistance exercises only added unnecessary bulk to the athlete, hindering their ability to execute skill, that notion has been proven false. The basic concepts behind this training is to promote a steady and specific increase in strength and other abilities by customizing the routine to the needs of the sport and to the physical capacity of the individual. The rules and principles work hand in hand in order to try to obtain superior programs of strength.

The benefits of strength training to an athlete's performance are numerous. It is a vital conditioning component for power athletes and can also be a source for improvement in pure endurance events. However, much sport-specific resistance training requires a more cultivated approach than basic weight-lifting. Explosive power, muscular endurance, maximal strength or some combination of all three are often required in order for a sports participant to be superior. The focus is rarely on pure muscle bulk and even when it is, that does not eliminate the need for strength training.

Over the past few years, the sport and fitness market has been inundated with products claiming to greatly improve athletic performance. However, an understanding of biomechanics and exercise physiology reveals that few of these products actually do what they claim to, such as improve strength, speed and power. In fact, many inhibit them. Rarely do these devices address the issues of anatomical and neuromuscular adaptation, key components for performance improvement.

### **SPORTS SPECIFIC**

Regardless of an athlete's sport of choice, strength training is included in the development of one's abilities. Strength training programs can be geared towards overall muscle strength, but many sports trainers focus on specific muscles needed to thrive in a particular area. Therefore, a golf strength training program will differ from that for baseball or tennis; any athlete's strength training will focus on the muscles used in their preferred sport. For example, the muscles used in golf need to be trained to work together as one unit. In order to hit the ball, the muscles must twist and turn during the swing and work together to provide a hit stronger hit. In other words, in the case of golf strength training, the focus is on the muscles as a group, rather than individually.

In the case of football players, the benefit of strength and strength training is strongly supported by research. For example, De Proft and colleagues had one group of Belgian players engage in extra

weight training during the season. When compared to a control group of colleagues who did no extra training, it was found that the players improved their kicking power and leg strength. In addition, British researcher Thomas Reilly demonstrated that stronger players outlasted weaker players in regards to a regular place in the team. They also had reduced injury risks. His recommendation is to develop leg strength in particular, especially in the quadriceps and hamstrings, in order to help stabilize the knee joint. That joint is the most frequently injured joint in these types of professionals.

Peter Apor, a Hungarian researcher who has been involved in long-term studies of Hungarian professionals, supports this idea, as he has found that the knee-extension torque has been associated with success in the game and that strong hamstring muscles in relation to quadriceps are crucial to knee injury prevention. Another common football injury is hernia. Developing strong abdominal muscles is the best prevention for this type of injury.

## **RESEARCH**

**In 2006, a research study was performed to assess whether chiropractic adjustments increased muscle strength in leg muscles and the results were conclusive and imperative for any athlete, either professional or recreational.** The implications go well beyond sports, as this also affects the workplace and manual labor of any kind.

Simply put, the brain has to communicate or talk to muscles in order to fully function or recruit all motor units (individual parts of the muscle) during a maximal voluntary contraction. The adjustment activates mechanoreceptors (parts of the nerve responsible for firing the muscle and causing contractions).

The study showed a significant (10%) increase in quadricept (leg muscle) strength in the treatment group after the chiropractic adjustment, while prior to the adjustment there was no statistical difference between treatment groups. **This clearly indicates that chiropractic care increases muscle strength in any individual and has far reaching affects in every type of athlete as well as every other activity of daily living.**