



## *Strength Training Philosophies for Athletes*

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Every athlete's strength training program should closely follow basic guidelines, coaching philosophies and scientific principles. Here is a quote from two of the top sports scientists (from their book *Periodization – Theory and Methodology of Training*) regarding sports specific training: “The concept of movement pattern specificity reveals that the type of muscle action, kinematic characteristics (ie. forces, rate of force development, power output), muscle groups activated, and acceleration or velocity characteristics of the movement all contribute to the exercise's ability to transfer to the sporting activity.”

In this handout, I have included the training philosophies and methodologies that I adhere to when designing a routine for athletes. My goal is always to improve on-court or on-field performance through a balanced training program.

### **Ground based training**

Sports movements (with the exception of rowing or swimming) take place upright on your feet. Whether you are running, jumping, hitting, throwing, shooting, or doing any other sports movement, the muscles in your legs and core are working to control your body. Strength training exercises should take place in different standing positions to increase the rate of transfer to your sport. Example: incorporate the standing shoulder press using the legs (push press) instead of doing a seated shoulder press.

### **Multi-joint training**

It is important to train movement patterns and not individual muscles in the weight room. The body is an integrated machine that uses multiple muscles in all planes of motion to produce sports movements. The body needs to learn how to work as a cohesive unit to produce smooth, natural and powerful movement patterns. Example: squats are a better exercise selection than leg extensions and leg curls.

## **Training in multiple planes**

The body has to react, control and overcome forces in all planes of motion. Sports movements take place in all three planes of motion; therefore, training should take place in the various planes of motion to enhance athletic performance. Example: instead of only doing forward lunges try lateral and backward angle lunges. Also, try incorporating rotational movements such as chops or twists into your workout to target the transverse plane.

## **Train at different speeds**

It is important to train with heavier weights to build strength and muscle mass. During heavy resistance training, it is important to attempt to move the weight fast. This will help to maximize motor unit recruitment and improve power output. It is equally important to train at high speeds with relatively lighter weights. There should be an emphasis on speed of movement because you need to train at high speeds to play at fast/quick speeds on the field or court. Example: during a training routine it is appropriate to include heavy squats, squat jumps (lighter weight), and body weight plyometrics.

## **Unilateral Training**

Many athletic movements take place using one limb at a time such as a running (during the support phase – one foot is in contact with the ground), throwing, and kicking. Unilateral training can help correct deficiencies between both sides of the body, challenge the stability within those joints/muscles that are performing the exercise, and help enhance the neuromuscular system involving single limb movements. Example: incorporate single leg squats and single arm rows into your routine.

## **Functional Training**

Functional training does not imply that you need to incorporate balance boards, Bosu balls, physio balls, and other pieces of equipment that claim to be “functional”. The goal is to incorporate strength-training exercises that will transfer to your sport and help to improve your overall athletic performance. Example: standing barbell squats is a much better selection than a seated leg press machine, the push press is a better selection than front and lateral raises, and doing pull ups is a better selection than the seated lat pull.

Athletes and coaches should reevaluate their strength-training programs and make sure it follows scientifically based training philosophies. Most of all the program should be functional and help to improve overall athletic performance.