

The "Eyes" Have It

Sports science By Barry L Seiller, MD; Kathleen Puchalski, RN; and Bryan Shelton, USPTA
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Most tennis coaches recognize the significant role that vision and visual skills have on their players' performance. Many coaches and trainers have searched for a method to improve players' visual skills and abilities, knowing that "if you can't see the ball you can't hit it." Just how important are your eyes in playing sports, and how can you improve your visual skills? Let's take a look.

The following characteristics separate a *good* athlete from a *great* one:

- Physical abilities (strength and size)
- Psychological makeup and motivation
- Mechanics
- Conditioning
- Visual skills, abilities and confidence

Most athletes are fairly similar in size, speed and conditioning, and all have learned the basic techniques and mental toughness

strategies. What frequently set athletes apart is their visual skills, abilities and confidence.

Visual Skills, Abilities and Confidence

Chances are that every athlete can improve in one or more visual skill areas, which include visual acuity, visual recognition skills, depth perception, tracking or focusing abilities and vision (or eyesight) itself. These skills are interrelated, and when lumped together, refine hand-eye-body coordination and help players truly "see the court."

Clearly, the quality of athletes' visual skills has a significant impact on their performance. The Visual Fitness Institute in Vernon Hills, Illinois, has demonstrated that visual skills, like all physical skills, can be taught, trained, practiced and perfected. This doesn't mean just 20/20 vision, which is essential, but also how athletes use the information received from the eyes. Remember: The eyes lead the body.

The following skills are the visual abilities that tennis demands:

- Tracking of the ball and quick reaction to the direction it's traveling
- Processing visual information, which influences on-court decisions
- Discerning the speed and direction of the ball, particularly when playing volleys, baseline drives, returns of serve and overheads

Now, here are some interrelated visual skills and abilities that are important in tennis:

- *Visual acuity*—good vision is the cornerstone of all the visual abilities and the easiest to correct with contact lenses, or now, laser surgery. If visual acuity is reduced, all the other visual skills and abilities will be weakened.
- *Eye alignment*—for accurate fixation on the ball.
- *Eye flexibility*—in order to shift where you are looking from far to near when returning a serve or ground stroke.
- *Court awareness*—your position in relation to sidelines, baseline, service line and to opponents/partner/court.
- *Visual recognition*—the speed at which you can process visual information, recognize angles, pace of the ball and your opponent's position.
- *Depth perception*—required in order to accurately determine where the ball is in free space; it also influences judgment of the ball's position.
- *Eye hand coordination and reaction time*
- *Concentration*

A complete tennis training program should include the following components, the last of which this article focuses on.

- Nutrition
- Weight training
- Aerobic training
- Sports psychology
- Actual skills practice
- Vision training



Vision Training

Vision training is an exercise program designed to improve accuracy and efficiency of the eye movements utilized by athletes. Visual Fitness Institute has one of the few programs available for training athletes' eyes.

VFI's testing protocol measures and records an athlete's visual motor skills. If appropriate, VFI then designs a personalized vision training program for the individual. VFI has developed programs for the Cleveland Indians, Milwaukee Brewers and Chicago Black Hawks to assist the teams in scouting talent and improving the skills of their minor league players.

The Homer Rice Center for Sports Performance on the campus of Georgia Tech also incorporates a vision performance center developed by the VFI. Student athletes of all sports are encouraged by their coaches to undergo an evaluation and participate in the training program. Both the men and women's tennis teams have been using this technology to improve their play. Coach Bryan Shelton has found that devoting time to evaluating and training his athletes' visual skills has proved to be beneficial in helping them achieve their highest potential. "Now we have the ability to measure, train and improve the visual component of their game. As coaches, we all have certain athletes with physical talent, mechanics, and motivation, yet some aspect of their game is lacking," said Shelton.

VFI has spawned a new company, The Vizual Edge, LLC. In turn, this business has developed the Vizual Edge Performance Trainer™ — software that enables athletes to evaluate and train their visual skills. VEPT is available on CD-ROM and offers an economical method to implement a visual training program similar to that used by Olympic and professional athletes.

In addition, Vizual Edge and the Libertyville Tennis & Fitness Center in Illinois have created a visual performance pilot program, in which elite junior players will undergo visual skills analysis and subsequently follow a vision performance training program for several weeks. Since baseball and hockey athletes have utilized vision training programs to improve their performance, it's expected that

tennis players also will benefit from such training.

Athletes who are seeking an edge, failing to reach their potential or playing inconsistently should add vision training to their fitness regimen, since it has been determined that those athletes who possess superior visual skills have the potential to be superior athletes. And with vision training, it just may get a whole lot easier to keep your eye on the ball.

More information about vision training can be found at www.vizualedge.com.

Dr. Barry L. Seiller is an ophthalmologist and the founder/director of VFI. In 1992 he was chosen as only one of three eye doctors that staffed the first Olympic Vision Center in Albertville, France. He is the Director of Visual Performance for the U.S. Ski and Snowboard Team, and holds a similar position with the U.S. Luge, Bobsled and Skeleton teams.

Kathleen Puchalski, RN, is the Visual Performance Specialist at VFI and for 15 years has provided visual performance services to enhance athletic performance for elite high school, collegiate, Olympic and professional athletes in various sports.

Bryan Shelton, currently the Head Women's Tennis Coach at Georgia Tech, played on the ATP Tour for nine years and reached a career-high No. 55 in the world in singles. He won two ATP singles titles at the Hall of Fame Championships and two ATP doubles titles with Farancisco Montana and Patrick Rafter. He also was a USTA National Coach for Player Development.