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Development of sports vision public information pamphlets

Abstract

The purpose of this project was to develop a comprehensive/ understandable pamphlet on Sports Vision targeted to the general public. Adequate information in the area of Sports Vision was not available. The project consists of two parts. An informational pamphlet addressing the pertinent areas of Sports Vision in general and sport specific inserts to accompany the pamphlet. The inserts completed are for baseball/ softball and tennis/racquet sports.

Degree Type

Thesis

Degree Name

Master of Science in Vision Science

Committee Chair

Alan W. Reichow

Subject Categories

Optometry

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DEVELOPMENT OF SPORTS VISION
PUBLIC INFORMATION PAMPHLETS

BY

PEGGY S. ACHENBACH

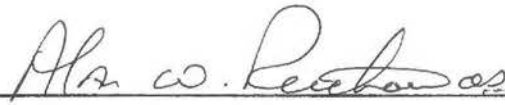
A thesis submitted to the faculty of the
College of Optometry
Pacific University
Forest Grove, Oregon
for the degree of
Doctor of Optometry
March, 1990

Advisor:

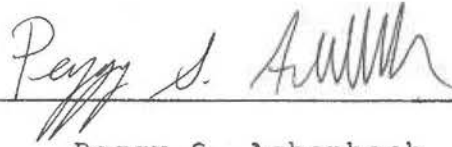
Alan W. Reichow, O.D.

DEVELOPMENT OF SPORTS VISION
PUBLIC INFORMATION PAMPHLETS

March, 1990



Alan W. Reichow, O.D., Advisor
Associate Professor of Optometry



Peggy S. Achenbach, B.S.

Class of 1990

BIOGRAPHY

EDUCATION: Pacific University College of Optometry
Expected Graduation, May, 1990
University of North Dakota, 1985-86
University of North Dakota, 1981-84
B.S. Aeronautical Studies
University of Minnesota, 1980-81

**AWARDS and
ACTIVITIES:** AOSA, Member
COVD, Member
National Academy of Sports Vision, Member
AOA Sports Vision Section, Member
OOA, Member
OOA Representative to PUCO, 1988-89
Associated Students of Pacific Univ., 1987-88
Student Faculty Representative-PUCO, 1986-87
Cum Laud Graduate, University of North
Dakota, 1984
Accepted to Early Admittance Program,
University of Minnesota, 1980

My future plans include a VA residency, pending acceptance,
and a private practice in general optometry.

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ABSTRACT

The purpose of this project was to develop a comprehensive, understandable pamphlet on Sports Vision targeted to the general public. Adequate information in the area of Sports Vision was not available.

The project consists of two parts. An informational pamphlet addressing the pertinent areas of Sports Vision in general and sport specific inserts to accompany the pamphlet. The inserts completed are for baseball/softball and tennis/racquet sports.

ACKNOWLEDGEMENTS

I would like to thank Dr. Alan W. Reichow, Dr. Bradley Coffey and Mr. Steve Fletcher for their assistance, time and patience in the development of this project.

The purpose for this project is to serve as an informational/educational tool available to the sports minded public. This pamphlet will aid the Sports Vision services of Pacific University College of Optometry, as well as individual Optometrists who choose to utilize this pamphlet, with the dissemination of accurate, comprehensive, reader-friendly Sports Vision information.

This project consists of two parts. The first part is a trifold, six sided informational pamphlet discussing Sports Vision in general (Appendix A). Sections presented include benefits of Sports Vision care, signs and symptoms of visual problems limiting performance, the scope of Sports Vision, Sports Vision eye protection, testimonials from accomplished sports figures, noted improvements resulting from Sports Vision care listing comments from coaches and trainers, how to locate Sports Vision providers, and pertinent questions to ask your optometrist. This general pamphlet is to be accompanied by a one third page insert on an individual sport(s) the reader is interested in. The target sports for development include baseball, tennis, golf, basketball and football. Inserts for baseball/softball and tennis/racquet sports have been completed to date (Appendix B).

As of March, 1990, there were three pamphlets available to the public and one being developed regarding Sports Vision. They included a new pamphlet from the Optometric Extension Program, a pamphlet produced by The Institute for Sports Vision in Ridgefield, Connecticut, and a pamphlet written by Donald Getz and William Lee and sponsored by the College of Optometrists in Vision Development. The American Optometric Association Sports Vision Section was in the final stages of developing a pamphlet and unavailable to the public (Appendix C).

After review of the available pamphlets we found that some of the information was too technical for the public. Other problems included wordiness, limitations in describing the scope of care, little appeal from a marketing standpoint, lack of recommendations for finding Sports Vision providers, absence of benefits to the athlete in their specific sport and oversimplification.

The pamphlet we have developed is designed with easily understood, comprehensive public information as the ultimate goal and addresses both the general topic of Sports Vision and the visual tasks of specific sports. This allows the reader to receive complete information on Sports Vision as related to their individual sport or sports.

The collection of the photographs and quotes from athletes and coaches/trainers consisted of the design of a new release form giving us permission to use the quote(s), photographs and signatures of the athletes (Appendix D). A letter describing the pamphlet (Appendix E), and a survey comment form (Appendix F), were also developed to mail to the athletes.

In an attempt to secure the desired photograph for the cover design, a time lapse photograph of an athlete in motion, the following individuals were contacted or referred to us: Image Concepts in Hillsboro, Oregon, (503)648-3311; Bruce Forester Photography in Portland, Oregon, (503)222-5222; Allstock Photo Bank in Seattle, Washington, (206)282-8116. None of the above contacts yielded the desired photograph and we were then referred to Photo Researchers in New York, New York, (212)758-3420. Photo Researchers quoted a price of \$300.00 for a 1/3 page sized photograph of this type on a maximum of 5000 pamphlets. They later informed us they did not have that type of photograph to produce. Having exhausted these referral sources we have decided to produce the time lapse photograph ourselves.

The information contained in our pamphlet was developed through review of current Sports Vision literature and discussions with Dr. Alan W. Reichow. Mr. Steve Fletcher was consulted regarding the marketability of the pamphlet.

APPENDIX A

Sports and Recreational Vision

"Every man takes the limits of his own field of vision for the limits of the world." --Arthur Schopenhauer (1788-1860)

Vision, a critical but frequently neglected factor in human performance is now recognized as a key to excellence in sports. Sports Vision is a progressive area of vision care that you can be involved in. Sports Vision encompasses performance-oriented, comprehensive vision care involving the education, evaluation, correction, protection and enhancement of the athlete or recreationist. Improved visual performance resulting in enhanced athletic performance is the ultimate goal of Sports Vision regimens.

Athletes and recreationists at all levels of competition can benefit from a comprehensive sports vision program ranging from clarity of vision through the application of contact lenses to the enhancement of eye-hand coordination through a vision training program.

SPORTS VISION CAN HELP YOU:

- Attain sharpest, clearest vision possible
- Minimize risk of eye injury
- Identify and correct deficient visual skills required in an athletic, learning or occupational environment
- Improve visual skills necessary for peak performance

- Improve self confidence
- Increase consistency of performance, enhance performance under stress
- Improve concentration, academic performance, athletic performance

SIGNS AND SYMPTOMS OF VISUAL PROBLEMS LIMITING PERFORMANCE

- Inconsistent Performance
- Performance Below Potential
- Performance Deterioration Under Stress
- Performance Deterioration Over Time

WHAT'S INVOLVED ?

Sports vision involves vision screenings, visual assessment and diagnosis, application of protective and corrective athletic eyewear and contact lenses, remedial vision therapy and vision enhancement training. All aspects of this comprehensive program are tailored to meet the specific needs of your sport. According to Alan W. Reichow, O.D., Associate Professor of Optometry at Pacific University College of Optometry, "Vision guides performance and as supportive research and clinical experience documents, even slight visual improvement may result in dramatic changes in sports and recreational performance."

The type of skills involved in any athletic participation includes interaction of various aspects of the visual system. Several of the critical factors include:

static visual acuity - ability to see a stationary target clearly

dynamic visual acuity - ability to see a moving target clearly

depth perception - speed and accuracy in judging depth and distance

spatial localization - ability to judge object location and your position in space

oculomotor ability - efficiency and accuracy of eye movement control

peripheral response speed - measurement of response time to a visual stimuli presented in different positions in space

eye-hand, eye-foot and body coordination - speed and accuracy of visually guided movements

visual attention/concentration - ability to maintain concentration and/or awareness under conditions encountered in sports

visual recognition - speed and span of visual identification

visual reaction/response time - speed and quickness

anticipation timing - sensitivity and accuracy of timing judgements

contrast sensitivity - visual sensitivity to subtle differences in black-white contrast, sensitivity to detail

peripheral vision - field of vision and awareness of visual information presented in different positions in space (vision to the side, above, below, etc.)

imagery/visualization - imaging performance through the mind's eye

accommodation - ability to focus to see clearly at various distances

convergence - ability to point(direct) and use the eyes together

The above factors must be coordinated for a sustained period and in an efficient and effective way in order to achieve optimal performance for athletics or in any other activity where vision plays a major role.

Consider the variety of visual demands in sports and recreation. In a sport such as archery, the participant does not have to track targets or maintain awareness of other opponents. A reactive sport such as baseball requires the player to have maximum dynamic visual acuity to clearly track the pitch. Ever wonder why you misjudge a ball in tennis, a critical putt in golf or perhaps a relatively simple shot in basketball? Unlike a routine vision exam, Sports Vision assessment is tailored to the specific demands of you and your sport. As part of Sports Vision, you may be tested for your dynamic visual acuity, depth perception, visual concentration or any of the skills described in this brochure. Only a specially trained doctor of Optometry (O.D.) can effectively assess these and other skills that are so closely related to your athletic performance.

SPORTS VISION EYE PROTECTION

35,000 sports related eye injuries occur each year. The National Society for the Prevention of Blindness reports that more than 90 percent of these injuries are preventable with appropriate athletic eyewear. Sports Vision incorporates the most up-to-date technology to provide the very best protective eyewear meeting strict standards set by the American Standards for Testing and Materials (ASTM). For example, polycarbonate lenses, the original bullet-proof material, is preferred in the eye protection and correction for athletes and recreationists. Sports Vision also provides specially designed eyewear to meet your individual sports needs.

WHO UTILIZES SPORTS VISION?

- Olympic
- Professional
- Collegiate
- High School
- Little League
- Recreationists/casual athletes

Pictures and quotes for this section are pending the return of the release forms and surveys that have been mailed.

NOTED IMPROVEMENTS FROM SPORTS VISION CARE

Comments from coaches and trainers, NCAA, NFL, NHL

This section also awaiting signatures on release forms for permission to use specific names and quotes.

HOW TO LOCATE SPORTS VISION PROVIDERS?

For more information about Sports Vision in your area consult your private practicing Optometrist or contact the Pacific University College of Optometry, Forest Grove, OR 97116.

QUESTIONS TO ASK YOUR OPTOMETRIST

Have you received specialized training in Sports Vision?

Do you assess the visual skills mentioned in this pamphlet?

Do you provide comprehensive vision care including education, evaluation, correction, protection and enhancement of the athlete/recreationist?

Do you attend continuing education in Sports Vision and other areas of Optometry on a regular basis?

(Time Lapse
Photo)

Sports
and
Recreational
Vision

Opening Paragraph

Sports Vision Can Help
You:

Signs and Symptoms of
Visual Problems That
Limit Performance:

(Photo of Someone
Participating in
Sports Vision
Training)

What's Involved?

Eye Protection In
Sports

Who Utilizes Sports
Vision?

(Photo of an
accomplished
sports figure)

Noted Improvements
From Sports Vision
Care

(Photo of another
accomplished
athlete)

How Do I Locate Sports
Vision Providers?

Questions to Ask Your
Vision Care Practitioner

(Area to stamp or
print practitioner
name, phone, etc.)

APPENDIX B

BASEBALL/SOFTBALL

As part of Sports Vision assessment, you will be tested in areas of visual performance that impact your abilities in baseball or softball. The major components of baseball and softball are throwing, fielding and batting. *For bold-faced, underlined terms please refer to the accompanying pamphlet.

Participation in Sports Vision may help you:

- Read and identify the pitch sooner
- Visually pick up the pitch on release
- Visually track a ball more clearly in pitching or fielding
by increasing your dynamic visual acuity
- React faster and more consistently
- Image the projected flight of the ball more accurately
through imagery/visualization
- Maintain concentration on the ball when tracking a pitch
- Enhance sensitivity and accuracy in judging arrival of the
pitch to swing zone
- React to the ball faster and more accurately
- Determine where the ball is in space with improved depth
perception
- Continue to concentrate on the ball despite
environmental conditions
- Maintain awareness of where other players are on the
field through spatial localization

- Increase sensitivity to the ball when cloudy, in a dome or with a crowd background with contrast sensitivity
- Anticipate with precision the arrival of the ball

Baseball is the number one cause of eye injury in youth. The use of appropriate protective athletic eyewear would prevent these injuries.

A Sports Vision evaluation for the baseball/softball player should assess skill such as:

static visual acuity

contrast sensitivity

dynamic visual acuity

accommodation

convergence

oculomotor ability

peripheral vision

depth perception

eye-hand, eye-foot, eye-body coordination

anticipation/reaction time

concentration

imagery/visualization

Baseball/Softball

(Text specific to this sport and a quote from a player or coach/trainer.)

Photo of baseball player.



TENNIS/RACQUET SPORTS

The assessment of your visual needs with regard to tennis or other racquet sports will include many areas that effect your game. Some of the major factors in the racquet sports include serving, returning the serve, reacting to your opponents return and determining where to place your shot.

*For bold-faced, underlined terms please refer to the accompanying pamphlet.

Participation in Sports Vision may improve your game by:

- Accurate placing of your serve
- Improved game plan through visualization and concentration
- Increasing your awareness of the lines and net on the court and where you opponent is
- Decreased reaction and response time
- Better guidance through improved eye-hand, eye-foot and eye-body coordination
- Greater anticipation of opponent's actions
- Better awareness of spatial localization
- Being able to project where the ball will be with visualization and improved oculomotor ability
- Reacting more quickly to the ball with increased peripheral response speed
- Maintaining the ability to concentrate over time

- Decreasing decision time through enhanced speed of depth perception

As the number one cause of eye injury among adults, racquet sports require the proper use of protective athletic eyewear - a critical part of your game.

A Sports Vision evaluation for the racquet sports should assess skills such as:

static visual acuity

contrast sensitivity

dynamic visual acuity

accommodation

convergence

oculomotor ability

peripheral vision

depth perception

eye-hand, eye-foot, eye-body coordination

anticipation/reaction time

concentration

imagery/visualization

Tennis/Racquet Sports
(Text specific to this
sport and a quote
from a player or
coach/trainer.)

(Photo of a tennis
player)

APPENDIX C

- In one study, it was found that a group of professional basketball players improved their free throw average by 23 percent after a consistent 20-day visualization program.
- Well-known NBA player Kiki Vandeweghe suffered with an eye-coordination problem from childhood. After treatment with visual training and prescription lenses, he averaged 26.9 points per game in the 1986-87 season to become one of the top shooters in the league.
- Several members of the U.S. Olympic volleyball team were given visual training. Players Steve Salmons and Rich Duwelius experienced a subsequent 25-30 percent increase in their hitting averages.



Professional athletes and their coaches have found that vision can play such an important part in sports performance, it may be the one thing that keeps a good athlete from being an exceptional one. And, conversely, it can be the all-important factor that pushes a good athlete into a category of excellence.

Symptoms of Visual Problems

Following are a few of the symptoms you or your family may experience if you have a vision problem that affects your sports performance:

- Headaches
- Performance not up to potential
- Wearing prescription lenses, but leaving them off during sports
- Poor eye-hand coordination
- Performance worsens under high stress situations
- Little or no improvement with practice
- Making unusual errors
- Inconsistent performance
- Better performance on one side, or in one direction, than the other
- Avoiding sports or getting frustrated when participating in sports
- Early fatigue

For more information

Not all optometrists practice behavioral optometry or can offer you a sports vision program. If you do not now visit a behavioral optometrist, call or write the OEP Foundation for a referral list of behavioral optometrist in your area.



**Optometric Extension Program
Foundation, Inc.**
2912 South Daimler Street
Santa Ana, CA 92705
(714) 250-8070

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Devoted to research and education in vision
10/89 - #B-129



SPORTS VISION

Giving You
The Visual Advantage!



SPORTS VISION-- Giving You The Visual Advantage

Think of your favorite sport; chances are your vision plays an important part in that activity. Coordination, concentration, balance and accuracy are just a few of the visually-related abilities you use during a sports event. Vision affects your batting average, racquetball score, pass completion and free throw percentages. The term "vision" and the growing field of "sports vision" apply to more than 20/20 eyesight, glasses or contact lenses. Vision involves many subtle and sophisticated links between your brain, muscles and eyes.

When you train for your sports activities, you probably work on your aerobic capacity, endurance, strength, muscle tone and/or flexibility. But optometrists, coaches and trainers now say you should train your vision as well. The stamina, flexibility and fine-tuning of your visual system can sometimes provide you with the split-second timing you need to truly excel at your chosen sport.

The Important Role of Vision in Sports Performance

Even if you already wear prescription lenses or contact lenses, the visual skills you need for optimum sports performance probably need improvement. If you do not require a vision prescription, your visual skills may still be enhanced. These skills are developed from birth and learned as you grow; they can also be taught, enhanced and improved at almost any time during your life under the direction of a behavioral optometrist who understands how your visual system works.

If certain skills are not up to par, you may unconsciously compensate and weak spots might develop in your game. These weak spots become obvious to your opponent who, depending on the level of competition, may play on them. Compensating behavior can include slowness or inconsistencies in one or more areas of performance.



The Visual Skills of Peak Performers

The skills you need for peak performance in your favorite sports are:

Dynamic visual acuity - which allows you to see objects clearly while in motion.

Eye tracking -- the ability to "keep your eyes on the ball," no matter how fast it may be travelling.

Eye focusing -- changing focus quickly and accurately from one distance to another

Peripheral vision -- seeing people and objects "out of the corner of your eye" while concentrating on a fixed point.

Fusion flexibility and stamina -- the ability to keep both eyes working together even under high speed, physically stressful situations.

Depth perception -- quickly and accurately judging the distance and speed of objects.
Visualization -- picturing events with your "mind's eye" or imagination. Studies show that when you visualize yourself performing a particular activity, your brain doesn't know the difference between performing the activity or visualizing. Visualization can boost your confidence and aid in greater focus on your athletic goals.

Athletes' Vision In Training

Many studies show that professional athletes have much better visual skills than non-athletes. Tests conducted on athletes reveal they often have greater depth perception or better eye-hand coordination, as well as many other excellent visual skills. They often have a finely-tuned visual system which helps them learn to anticipate and respond more quickly to complex visual conditions.



In addition, many athletes actually train their vision. For example:

- Professional golfer Val Skinner visited her doctor of optometry complaining of "perceptual problems." After an intensive program with visual training and lenses she had several successful seasons and went on to be regarded as one of the top golfers on the LPGA tour. ➤



THE INSTITUTE FOR SPORTS VISION

125 DANBURY ROAD
RIDGEFIELD, CT 06877



DR. DONALD S. TEIG Director

DR. ALAN M. BERMAN Assistant Director

SHAUN RATCHFORD Sports Vision Therapist

“KEEP YOUR EYES ON THE BALL”

PROVIDED IN THE PUBLIC INTEREST BY:
THE INSTITUTE FOR SPORTS VISION
125 Danbury Road
Ridgefield, CT 06877
Telephone: 203-438-5855

1. **Visual Acuity**
 - a) Static Acuity - the ability to clearly sight on a stationary object.
 - b) Dynamic Acuity - the ability to clearly sight on an object while it is in motion.
2. **Depth Perception**

Accurate judgment of an object's position in space.
3. **Eye-Body Coordination**

The integration of your body's performance with what your eyes see.
4. **Visual Concentration**

Maintaining your focus on the athletic challenge without peripheral distraction.
5. **Night Vision and Glare Sensitivity**

When playing conditions are restricted by poor illumination or glare, the athlete must utilize his eyesight beyond normal levels to succeed.
6. **Peripheral Awareness**

Seeing out of the corners of the eyes. Outstanding athletes are highly tuned in to the movement around them.
7. **Eye Teaming Ability**

This is the body's range finder that tells you how accurately you can align an object.
8. **Ocular Motilities**

The tracking movement of the eyes.
9. **Accommodation or Focusing**

How well do you tune in a moving object on the near-far plane.
10. **Visual Reaction Time**

The speed at which your eyes react in a game situation.

HOW CAN A SPORTS VISION SPECIALIST HELP YOU?

1. **Sports Vision Training**

The utilization of specialized equipment specifically designed, in a therapy program, to enhance the athlete's performance.
2. **Contact Lens Therapy**

The customization of gas permeable and soft lens materials to meet the demanding acuity and comfort requirements of the athlete.
3. **First Aid**

An instructional program for the athlete, trainer, or coach to learn how to treat sports related eye injuries.
4. **Protective Eyewear**

The application of the latest technology in the design of impact resistant goggles, frames and lenses.
5. **Visualization and Positive Imagery**

A high level mental technique to prepare your mind's eye in advance, so that when you play, you're not thinking, you're automatically doing.

"KEEP YOUR EYES ON THE BALL"



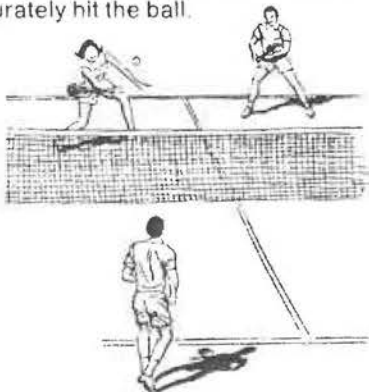
Keep Your Eye On the Ball

(The Visual Game of Tennis)



Donald J. Getz, O.D., &
William C. Lee, O.D.

As you ready yourself to receive your opponent's serve in tennis — you think to yourself — "I've got to keep my eye on the ball." Most players are unaware that while they are thinking this, they already have taken their eyes off of the ball. Most people believe that looking right at the tennis ball insures that they are concentrating on the tennis ball. They are sure that they are getting the information necessary to accurately hit the ball.



What is the information one must see in order to make good contact with the ball? There are only two primary pieces of information necessary. Where is the ball going to be and when is it going to be there? Without that information, the player is only going to hit the ball by luck or by chance. The ability to make these judgments correctly is a learned skill and, like any other learned skill, can be improved upon. The accuracy with which vision acquires and reacts to this information determines the effectiveness with which the player will hit the ball. If this information is **not** accurate, there is little one can do to compensate and no consistent tennis play can develop. Many tennis players simply feel that their "timing" is off, but discover that no amount of practice significantly improves this timing. The fault may lie in an undetected vision problem that, if discovered, can be corrected with the proper vision therapy.

It is surprising to find so many tennis players who think that all that is required of the eyes is to see the ball clearly. They will proudly tell you that they have 20/20 sight and that their eyes are "perfect." What is

meant by the 20/20 rating? All that is meant by 20/20 is that a person can see clearly at a distance of 20 feet. Unfortunately, how well a person sees at twenty feet bears no relationship to the visual skills that he must possess to achieve on the tennis court. This antiquated concept of 20/20 vision has been difficult to overcome.

Visual acuity is important, however, and if a player sees more clearly with glasses, he or she should wear those glasses. Many players are bothered by glare from their spectacle lenses when they play at night. This glare is caused by light reflections from the surfaces of the lenses and can be eliminated by having an anti-reflection coating applied to the lens surfaces. It is important to see as clearly as possible. Don't handicap yourself by trying to hit a blurred ball. The speed that the ball travels will cause enough blur all by itself. It is not possible to see too clearly. But, as stated before, visual acuity is only one aid in determining the necessary visual information to play well.



How do we analyze where the ball is going to be and when it is going to be there? The "**where**" is a matter of determining the direction the ball has to travel and "**when**", or time factor, is determined by the distance the ball has to travel and the speed at which the ball is traveling. The quicker the player can develop this information, the faster he can reach the correct spot and correctly stroke the ball. Some players localize the ball at a different place in space than where it actually is. If the player localizes the ball as closer than it actually is, he will tend to swing too early and, thus, hit the ball off to his left if he is a right handed player. Conversely, if he localizes the ball as being further away than it actually is, he will tend to swing the racket too late, and consequently, hit the ball off to the right of the intended line of flight. If a player consistently hits the ball inaccurately, he should consult an optometrist experienced

attempt to make a physical adjustment to compensate for a lack of visual skill will prevent a player from reaching his full tennis potential. The natural athlete has good visual skills. However, someone with good visual skills can be taught to have superior visual skills just as a good pianist can be taught to be a virtuoso. The better the visual skills, the better will be the tennis performance.



In everyday life, we constantly practice taking our eyes off of the ball. Almost reflexly, our eyes move ahead of our performance. For example we glance at a glass of water, but as we reach for the glass, our eyes shift to the next task **before** we pick up the glass. In the process of reading, a good reader's eyes will move ahead of the word being read so that good comprehension can ensue. Thus, in everyday life, it is essential for the eyes to be a little ahead of the task for smooth, efficient performance. However, this is very poor practice for playing tennis and this habit must be suspended while on the tennis court. Every tennis player has taken his eyes off the ball to look at the spot where he is trying to hit the ball or to look at his opponent. This is most evident on those easy shots where you have so much time to do so many things incorrectly. The result is a missed shot. It is not easy to keep your eye on the ball all of the time when in everyday life you practice just the opposite.

Practice trying to see the fuzz on the ball, actively looking at the ball for information which will help you to keep your eye on the ball. Make sure that you can see the fuzz on the ball, even the seam, or even attempt to see the lettering on the ball.

Many people tend to suspend the use of their eyes while engaged in the act of thinking. Observe people and you will

requires thinking such as "What did you do last Tuesday?" or "How much is fourteen multiplied by seven?", they will reflexly move their eyes. Some people will move their eyes to the right and some will move them to the left and some will turn them in an upwards direction. If they don't move their eyes, they develop a kind of vacant stare. This is because they turn off their eyes in order to think. Consequently, if you think that you're trying to watch the ball, you will likely turn off your eyes and you will **not** be able to determine the speed of the ball or where the ball is going during the time that you are actually thinking. Oddly enough, it is not difficult to stop thinking while keeping your eye on the ball. If you really look at the ball, it is very difficult to do anything else. It is almost impossible to do nothing. All one can do is something else. If you look hard enough at the ball it will be difficult to do anything else, including thinking.

All thinking in tennis is best done in advance, before you have to keep your eyes on the ball. Once the ball comes off your opponent's racket and starts coming at you, it is essential to keep your eyes centered on the ball. There is a time to think and there is a time to act. You cannot do both efficiently in tennis at the same time.



Vision is also involved in body balance. During off balance shots, the eyes often switch to help out with maintaining balance. When that happens, even though it might appear that the eyes are centered on the ball, the eyes are not centered on the ball! The eyes, at that moment, are seeking visual information which will help in regaining balance. It is essential for anyone serious about improving his tennis or for anyone involved in the teaching of tennis to develop better balance. When good balance is developed the eyes can then be freed to center on the task of watching the ball. A simple illustration is to have a person stand on one leg and follow the movement

directions. Notice how much more difficult it is for the person to maintain balance while the eyes are in motion. Balance is involved in all performance on the tennis court and the visual system operates in conjunction with the balance system in maintaining balance.



Many players turn their head to follow the ball rather than turning their eyes. In other words, they use their head and neck muscles to direct their eyes. This is not only inefficient, but greatly increases the stress on the balance system and on the nervous system. The head weighs approximately 14 pounds and everytime it is moved the entire balance system of the body has to adjust. The weight of the eye is measured in ounces rather than pounds and, consequently, there is much greater economy in moving the eye rather than moving the head. Practice keeping your eyes on the ball without moving your head. Free your eyes so that they can move independently of your head so that they can maintain centering on the ball without upsetting the body balance system and with the minimum effort possible.

We have briefly investigated some of the visual skills involved in keeping your eyes on the ball. However important, this is not the full extent of how we use our eyes in tennis. Where is my opponent? Where is the base line? Where are the other lines? How high is the net? Where am I relative to other spots on the court? Where am I relative to my opponent? How close am I to the net? How far am I from the baseline? All of these orientations are obtained through the visual system. In serving, where do you find the spot you wish to serve visually? We locate ourselves in space by **how** we see, not by what we see: for this is environmental and subject to immediate and constant change. The **how** we see goes with us and is part of us and the **how** we see can be improved by vision therapy and the result is better spatial

One can easily understand that much of the information necessary to play the game of tennis is visual. Much work has been done on the mechanical or physical aspects of the game. These aspects are very important, but there are many books and articles that have been written on the subject. However, there has been very little written on the subject of how one effectively obtains the visual information necessary for the adequate performance of the mechanical aspects.



As your eyes are involved in everything you do on the tennis court, it is obvious that by increasing the efficiency of the visual processing of information, you can bring about a direct increase in your playing skill. Visual skills are similar to other skills in that they are subject to change. Just because they are good now does not mean that they will be good in six months from now. The smart tennis player will check out his visual skills regularly to insure that they remain adequate. If your game goes sour, check out that system that provides you with the information that you need to play well. Often the problem is in eye control. Poor eye control leads to poor concentration which leads to poor tennis. No change in the physical mechanics of your game is necessary in most cases. When the visual system, the balance system, and the motor system are operating efficiently, the elusive "getting it all together" is accomplished. In the game of tennis, the visual system plays the major role in our overall efficiency.

There are many individual visual skills such as depth perception, focusing, eye pointing and teaming that are prerequisite

skills for efficient tennis performance. If these skills are inadequate, there is little that the tennis player can do himself to improve his game. The correction of those poorly developed skills would require specific vision therapy.

This approach to the improvement of tennis skills is relatively new. In working with many tennis players, it is refreshing to hear them say that, for the first time, they have found something new which has helped their game. It is amazing how often that players go through years and pick up little of value from coaching and from those that they play with. They generally get information of a mechanical nature only, such as how to hold the racket and how to swing a forehand. These players are often enthusiastic about how the application of these visual concepts has improved their tennis performance.

There has been considerable material written in recent years about the importance of making your mind a blank and getting it out of the way of your body so that your body can perform properly. The best way to accomplish this is to "keep your eye on the ball" for when your eyes stay "on the ball" your mind will be a blank. This will result in better concentration and produce that situation where your body will be allowed to perform to the maximum potential.

There are many visual problems which make it difficult for the tennis player to keep his or her eye on the ball. These can be detected by a complete visual analysis and the elimination of these problems by proper vision therapy will result in better tennis performance.

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How to Join... the Team

Sports Vision Section Membership Application

Name _____ Date _____

Title _____ AOA I.D. Number _____ Telephone _____

Address _____

City _____ State _____ Zip _____

Please add my name to the roster of AOA Sports Vision Section Members. Member \$75 Student \$5

Send application and check to:
Sports Vision Section
American Optometric Association
243 North Lindbergh Blvd.
St. Louis, Missouri 63141
(314) 991-4100

SVS MEMBERSHIP...

- ... Identifies you as an optometrist who is interested*
- ... Expands the scope of services provided by your practice*

JOIN THE SVS TEAM NOW AND BECOME AN ACTIVE MEMBER ON ONE OF OUR MANY COMMITTEES SO YOUR IDEAS MAY BE IMPLEMENTED.



American Optometric Association
Draft

Sports Vision Section
of the



What is Sports Vision?

← The scope of comprehensive Sports Vision care includes the education, evaluation, correction, protection, and enhancement of athletes toward the goal of improved sports performance. Athletes encompass people of all ages *and levels of involvement in the wide array of sports and recreational activities.*

Sports Vision is Growing Because...

- Population is more aware and interested in maintaining physical fitness, of which visual fitness is an important part.
- People have more leisure time to participate in sports.
- Parents are interested in having their children benefit from the experiences of organized sports.
- Most people are competitive and are interested in getting the additional edge that Sports Vision can provide to improve performance.
- More collegiate and professional sports teams are utilizing the services of optometrists.
- Coaches are becoming more interested in improving performance by improving skills (including visual skills) on or off the court.
- Cooperation with the U.S. Olympic Committee in providing Sports Vision care to many athletes for more than a decade has led to the establishment of the Sports Vision Testing and Performance Lab in Colorado Springs.

and playing skill

What is the Purpose of the AOA Sports Vision Section?

- 1 • Promote, advance, and enhance the identity of optometry as the profession providing Sports Vision care;
- 2 • Provide and promote education, research, and screening programs in the area of Sports Vision;
- 3 • Enhance the vision care of the public served by optometric practices providing Sports Vision services;
- 4 • Provide a source for information on the subject of Sports Vision to the profession and to the public;
- 5 • Promote visual fitness as an essential part of physical fitness in sports medicine; and
- 6 • Provide a forum for members of the AOA having an interest in the Sports Vision area of optometry.

Section Activities and Member Benefits are...

- Identifies you as an optometrist who is interested in the exciting and expanding field of Sports Vision to your colleagues and your community.

- Expands the scope of services provided by your practice.
- Informs and educates how to initiate Sports Vision program in your community.
- INTERACTION with colleagues and sharing of ideas.
- SVS NEWS and VIEWS newsletter to keep you informed of new developments in Sports Vision care, as well as your colleagues' experiences, and national and state activities.
- SEMI-ANNUAL SYMPOSIA with internationally-recognized presenters to provide information for the novice, as well as the seasoned practitioner, in Sports Vision.
- RESEARCH to further refine and validate the most effective way to provide Sports Vision care.
- SPORTS VISION GUIDEBOOK Series.
- AUDIOVISUALS (videotapes and slides) for personal education as well as presentation to local, civic, and sports-related groups.
- ANNUAL MEMBERSHIP DIRECTORY to facilitate referrals to and from your office.
- MEMBERSHIP CERTIFICATE suitable for framing.
- SERVICE to national inter- and intraprofessional groups.
- VOICE in National Affairs.
- ASSOCIATION REPRESENTATION.
- COOPERATION WITH THE UNITED STATES OLYMPIC COMMITTEE to provide complete Sports Vision care to many of our Olympic athletes.

APPENDIX D

PACIFIC UNIVERSITY PHOTO/STATEMENT/SIGNATURE RELEASE FORM

I _____ give my permission for Pacific University College of Optometry to use the photo(s)/statement(s)/signature returned with this signed release form for use in University publications and community newspapers/publications. Pacific University hereby reserves all rights associated with publication of this/these photo(s)/statement(s)/signature.

Date: _____

Signature: _____

APPENDIX E

(Typed on Pacific University letterhead.)

Dear J. Doe Athlete:

The Sports Vision Program at Pacific University's College of Optometry was initiated in 1980. Since that time, the program has continued to expand and now provides services to athletes at all levels of participation including professional, Olympic, amateur and recreational in a wide variety of sports. This research-based, performance-oriented program has and will continue to benefit the public, optometry students and vision care practitioners through it's research efforts, education programs and vision care services.

Because of your involvement with Sports Vision, Alan W. Reichow, O.D., Bradley Coffey, O.D., and/or the Pacific University Sports Vision Service, we would appreciate comments you may have regarding the value of these services and the impact that the program may have had on your own performance. We are compiling information to be used in a pamphlet to educate and inform the public regarding specialized vision care services for athletes. We are contacting accomplished individuals in other sports who, similar to yourself, have received vision care services. Due to the recognition and level of excellence you have

attained in your sport, we are requesting any quotes and/or photos you feel appropriate regarding your involvement in Sports Vision. Enclosed is a release form granting us permission to utilize your statement, photos, name or signature.

Upon publication, complementary copies of the pamphlet will be sent to you. The pamphlets will be made available to the public, free of charge, and are intended to benefit athletes and recreationists at all levels of participation.

We thank you for your time and consideration.

Sincerely,

Alan W. Reichow, O.D.
Associate Professor of Optometry

Bradley M. Coffey, O.D.
Assistant Professor of Optometry

Peggy S. Achenbach, B.S.
Class of 1990

APPENDIX F

Survey and Comments

How important do you feel vision is to your sport?

What aspects of vision care have you been involved in?

Contact Lenses Vision Enhancement Training Imagery

Athletic Eyewear

Other _____

Do you feel that Sports Vision (vision care services) has impacted your performance? Yes No

What are some of the key benefits of Sports Vision to you individually? _____

Would you recommend Sports Vision Services to other athletes and recreationists? Yes No

Additional comments you have regarding Sports Vision:

Signature: _____

Noted Improvements
From Sports Vision
Care

(Photo of another
accomplished
athlete)

How Do I Locate Sports
Vision Providers?

Questions to Ask Your
Vision Care Practitioner

(Area to stamp or
print practitioner
name, phone, etc.)

(Time Lapse
Photo)

Sports
and
Recreational
Vision

Opening Paragraph

Sports Vision Can Help
You:

Signs and Symptoms of
Visual Problems That
Limit Performance:

(Photo of Someone
Participating in
Sports Vision
Training)

What's Involved?

Eye Protection In
Sports

Who Utilizes Sports
Vision?

(Photo of an
accomplished
sports figure)
