

Why standardized vision testing, training crucial for sports officials

Barry L. Seiller, MD, MBA

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Take-home

Research has been scant on the correlation between officiating and visual performance. A new study by the Sports Science Department at Texas A&M Corpus Christi provides clear direction on this topic.

Dr. SeillerBy Barry L. Seiller, MD, MBA, Special to *Ophthalmology Times*



Vernon Hills, IL—The sight of a referee with his head under an instant-replay hood has become an accepted part of American football culture.

The proliferation of instant replay in other sports, including Major League Baseball's recent expansion of television replay use to confirm—or reverse—umpire rulings, reinforces the notion that officiating is crucial to the integrity of sport.

Research has been scant on the correlation between officiating and visual performance. A recent study¹ by the Sports Science Department at Texas A&M Corpus Christi provides clear direction on this topic.

Most calls by officials require correct quality of visual information. A critical call might be the difference between winning and losing for a team. Other visually based studies performed on athletes—including tennis, volleyball, and baseball—have shown that superior athletes possess superior skills. Research has shown that these visual skills, besides eyesight, can be measured and trained.

Officials have similar visual demands as athletes. Therefore, officials should have visual skills comparable to athletes. An official needs not only to be physically fit but also visually fit.

There are many examples of officiating calls that require superb visual perception:

- Both feet or one foot inbounds?
- Ball on one side of the goalpost or through the center?
- Spike hit the line?

- A 130-mph serve in or out?
- Player offside?
- Baseball hit the yellow wall line or not?

Reasons for visual errors

Visual errors can be made for many reasons. The duration of the event might be too short to be observed accurately. The vantage point might be inadequate to make a correct judgment. The eyes could be focused on a different position than the key event. Perhaps the timing was not ideal and the official's eyes were "turned off" due to an eye movement or blink.

As founder of the Visual Fitness Institute of Vernon Hills, IL, I recently presented this study¹ at the National Association of Sports Officials (NASO) convention, which included officiating executives from the NHL, NFL, NBA, MLB, USTA and NCAA. With a specialty in vision performance training, I have adopted my computerized testing and training program for athletes—the Vizual Edge program (VEPT)—to include similar services for sports officials, including umpires, referees, and linespeople. It is called the Vizual Official.

The study examined the ability of individuals to make correct line calls with less than normal vision acuity. The subjects' visual acuity was artificially reduced by wearing corrective glasses that allowed them to have 20/50 vision using a LogMar-based distance chart. The 20/50 vision standard allows for the possession of a daytime driver's license in some states.

Visual acuity degradation

The results of this study indicate that visual acuity degradation of sport officials to a level of 20/50—compared with their natural vision—significantly reduces the ability to make correct line calls. The average subject experienced 34% more incorrect line calls with visual degradation.

This is important to note, because it is not uncommon for sport officials to work sport contests with acuity levels as low as 20/50 or more.

I previously surveyed the major sports organizations regarding the presence or absence of visual acuity standards to qualify for the position as an official. Some organizations required no standards at all, while others required 20/20 vision.

Given our recent lifeguard vision study (and studies by others over the years) that finds not everyone has 20/20 vision, it is possible that this is too strict a standard. All the organizations with standards did not know the history of the basis of their standards.

This is not unlike what goes on in the public safety field, where vision standards are variable. Previously, at the request of lifeguard certifying bodies, I assisted in developing a vision standard and an online vision testing program called GuardVision.

Based on the results of this new Texas A&M Corpus Christi study, it is recommended that all sport officials be administered standard visual acuity testing.

It is also suggested that sport official governing bodies consider visual skills testing in addition to visual acuity testing for all sport officials. Suggestions for further research include testing the visual judgment of sport officials while they are in a dynamic state of motion, such as in basketball, soccer, and ice hockey.

Reference

1. Gomez I, Spaniol F, Dawes J. Effect of visual acuity degradation on visual judgment of sports officials. Department of Kinesiology, Texas A&M University, Corpus Christi, TX. May 7, 2013. <http://vizualedge.com/sports-vision-training/article/56/the-effect-of-visual-acuity-degradation-on-the-visual-judgement-of-sport-officials>

Barry L. Seiller, MD, MBA

Dr. Seiller is the developer and owner of the Vizual Edge Performance Trainer and lead consultant of visual performance research in the newly opened Sport Performance Research Lab at Texas A&M University Corpus Christi.

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