Use of shutter glasses in sports vision

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Kudos and thanks to...

- Dr. Graham Erickson
- Dr. Alan Reichow
- and other colleagues at Nike
Switching gears...

Stroboscopic training in sports vision disrupts binocularity and visual information processing -- e.g., visual attention, anticipation timing, central and peripheral processing, eye-hand/eye-foot/eye-body coordination, balance stability, and visualization -- in order to improve these functions.
Switching gears...

Such training also has been used by NASA to combat space motion sickness
Brief History of LC Shutter Glasses

Developed in 1970’s
First used in 3-D computer games in 1980’s
Strobespecs (1990’s)
Nike Vapor Strobe (2011)
Zone-switched strobe
Nike Vapor Strobe

- High-base, high-wrap design → full visual field coverage
- 8 flicker rates
- Binocular or individual monocular flicker (no alternating monocular flicker)
- Available from
  - Nike SPARQ
  - Bernell
  - Athletic Republic
Basic Stroboscopic Training

THE BASIC DRILL

There are dozens of drills already available, with virtually unlimited use for the Vapor Strobe to be integrated throughout sport training where vision is important.

1. Without the Vapor Strobe eyewear play catch with a tennis ball. 5 throws.

   ![Diagram](image1)

   Long throw.

   NO EYEWEAR

   EYES APART

2. Put on Vapor Strobe eyewear. 10-15 throws while increasing difficulty of Strobe.

   ![Diagram](image2)

   Trainer for Vapor Strobe

   EYES APART

3. Remove Vapor Strobe eyewear. 5-10 throws.

   ![Diagram](image3)

   You'll feel like the ball is moving in slow motion. This is because your brain has been tuned up to better anticipate what's coming next, forcing you to keep your "eye on the ball".

Demo videos
Schroeder J, Appelbaum LG, Cain M, Mitroff S. Examining the effects of stroboscopic vision (abstract; summary). Vision Sciences Society, May 2011:

“Those who trained with the Nike Strobes showed greater improvements than those in the control group, revealing training benefits due to the stroboscopic experiences. The Strobe eyewear offer a potentially powerful visual training tool as they can be easily incorporated into normal activities and the strobe rate can be adjusted to progressively limit more incoming visual information.”
THANK YOU!

We now return to the regularly-scheduled (3-D) programming. . .