

# SPORTS VISION MAGAZINE

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BASEBALL • BASKETBALL • CYCLING • FOOTBALL • GOLF • GYMNASTICS • HOCKEY • SOCCER • SKIING • TENNIS • TRACK • VOLLEYBALL

## STROBE STRENGTH

Hi-tech eyewear creates new opportunities on the field for strobe light sports vision training

by Keith Henderson

For many years, sports vision training exercises have included balance and catching drills in a strobe-lit room. A sports vision specialist would, for example, challenge the athlete's visual system and enhance their dynamic visual acuity by flashing cards or tossing a ball under strobe conditions.

Strobe training develops the sensory system and improves the athlete's ability to perceive objects seen for only a split-second. It also develops brain processing speed by reducing the availability of visual information to the brief periods when the strobe lights up the room.

Thanks to a recent product release from MJ Impulse USA (manufactured by MJ Laboratory Japan), strobe vision training is no longer restricted to dimmed locations. The firm's strobe eyewear, called the *IMPULSE*, provides the same benefits as training in a strobe-lit room, without the restrictions. The glasses contain built-in strobe LCD lenses that flash at set frequencies while an athlete trains.

### Athletic Benefits

Many sports—baseball, tennis, basketball, football, hockey, for example—require an ability to

visually concentrate and track a moving object at variable speeds, and to quickly respond or react to that moving object with an effective decision.

An athlete's quicker brain processing and reaction speed can often mean the difference between a successful and an unsuccessful completion of a skill. Furthermore, as the speed of the object increases, visually tracking the object and reacting with the required precision becomes more difficult.

In order to improve reaction time and visual concentration, sports vision specialists have traditionally used strobe light training in darkened rooms. By withdrawing varying levels of visual information that athletes can use to make decisions about when and where to react, they are forced to become more efficient with the information they are given.

Another benefit of strobe training is a perception that the speed of the object and the game have slowed down, thereby making performance easier. The shorter exposure time which results from pulsating illumination of a moving object essentially causes the moving object to appear as though it is traveling slower than its actual rate of speed. As a result, a more rapid

reaction response is required by the athlete during training.

### Traditional Strobe Training

While strobe training in a darkened room has proven effective over the years, athletes have encountered a few limitations. For example,

- The use of strobe lights requires complete darkness as any ambient light will nullify the strobe effect. Consequently, their use has typically been limited to small, dark, indoor rooms.
- Strobe lights can limit the athlete's range of motion as they may be temporarily blinded if they move to a position where they are looking directly into the light.
- Similarly, if the athlete shifts position to avoid looking into the light, there may be insufficient light levels which will nullify the strobe effect.

In light of the above limitations, traditional strobe training is subject to very specific

## MAIN FEATURES OF THE *IMPULSE*

- Fully self-contained unit with no wires
- Adjustable for frequency and duty ratio
- Rechargeable battery pack
- Sturdy, comfortable design
- Adjustable bridge
- Controls adjustable while being worn
- Display of battery charge and settings

The *IMPULSE* comes with a USB cord for charging, a 12VAC – 5VDC adapter, a lens cleaning cloth, a sturdy hard case, soft drawstring pouch, and adjustable eyeglass holder with headband.

Retail price: tba (call MJ Impulse USA)

More info: [www.mjimpulse.com](http://www.mjimpulse.com)



requirements in order to be effective. These requirements make the use of strobe lights impractical, for example, for working on a field with a baseball player, on the court with a tennis player, on the ice with a hockey player, or in connection with most other indoor and outdoor sports.

### *IMPULSE* Strobe Training

The major attraction of the *IMPULSE* eyewear is its versatility. It facilitates strobe training under conditions which more closely replicate the actual sporting environment. For example, on an indoor or outdoor playing field:

- Where background lighting can exist in accordance with any playing conditions.
- Where the player can move freely.
- Where vision is not impaired by the strobe.

**Training protocol.** Typically, strobe vision training using the *IMPULSE* eyewear is performed in three steps.

- **Step 1.** The athlete will perform a drill without the spectacles. Such drills may include balance and agility exercises; catching, kicking, or striking tasks; eye-hand coordination; reactive movements; or sport-specific exercises.
- **Step 2.** The same drills are then performed while wearing the *IMPULSE* strobe eyewear and applying increasingly challenging strobe levels.
- **Step 3.** The same drills are repeated without the eyewear.

Athletes who complete a strobe vision training program will notice an enhanced awareness of visual cues when the strobe glasses are removed. The training will also sharpen reflexes, slow the game down, and make challenging tasks seem much easier to perform. ■

## BASKETBALL FOCUS

Using strobe eyewear to improve a basketball player's visual concentration and coordination

by Keith Henderson



**B**asketball players require exceptional sensory skills—hand-eye coordination to make, receive, and intercept passes; focus and concentration for shooting; peripheral awareness and decision-making for passing. The *IMPULSE* strobe eyewear is ideal for developing these skills. For example:

**Rebounding.** To improve rebounding skills, the player first sets the pulse rate at 25 Hz to 30 Hz and puts on the glasses. The player then slowly tosses a basketball ball back and forth to another player gradually increasing the speed of the toss. Next, the player slowly reduces the pulse rate and continues playing catch until they are consistently catching the ball. The player then reduces the pulse rate further and continues playing until they achieve the desired level of proficiency.

Next, the player has a teammate shoot the ball while they try for the rebound on the missed shots. After the player successfully rebounds several missed shots, they slowly reduce the pulse rate and continue to try for the rebound on missed shots. The player reduces the pulse rate further and continues to practice retrieving missed shots on the rebound. As a result, the player will improve their hand-eye coordination.

**Passing.** To improve passing skills, the player would turn away and have their teammate pass the ball as they call out the player's name. The player would then turn and pick up the ball in flight to complete the catch.

**Defense.** To improve the ability to steal passes and block shots, the player sets the pulse rate at 25 Hz to 30 Hz once again. The player then has a teammate dribble a basketball in front of them. The player tries to steal the ball away from their teammate. As the player increases proficiency at stealing, they would reduce the pulse rate.

For additional training, the player would follow the same steps, while practicing to steal passes and to block shots.

**Offense.** Once again, the player sets the pulse rate at 25 Hz to 30 Hz and puts on the strobe glasses. They then practice shooting free throws. As proficiency increases, the player would reduce the pulse rate. This will enhance the player's focus and concentration skills.

For additional training, the player would move on to lay-up shots, again reducing the pulse rate as proficiency increases. The same steps would be followed for shots from the baseline, the wing, and 3-point range.

Finally, the player can repeat the process while having a teammate guard as they attempt to make their shots. This step will force the player to get their shots off quicker, to focus harder, and pick up the basket faster. ■