



125 ms
Decision to swing

0 ms
Light from ball
reaches eye

50 ms
Brain "sees"
the ball

150 ms
Muscle activated
in spinal cord

200 ms
Arm begins
to move

300 ms
Bat crosses
the plate

What is Vision Training?

How to Improve Your Athletes
Sports Vision

- Vision training has little to do with improving eyesight
- It is a form of perceptual learning intended to improve the ability to process what is seen.
- By repeatedly activating the visual sensory neurons, they increase their ability to send electrical signals from one cell to another across connecting synapses.
- With sensory neurons, just like muscles, it's use it or lose it. The more they are used the better they perform.

- *“Eyesight is simply the ability to see something clearly, the so-called 20/20 eyesight (as measured in a standard eye examination with a Snellen chart). Vision goes beyond eyesight and can best be defined as the understanding of what is seen. Vision involves the ability to take incoming visual information, process that information and obtain meaning from it.”*
- *- Dr. Donald Getz, OD*

- As the eyes are responsible for gathering over 2/3rd's of all information fed to the muscular skeletal system, the athlete who focuses on physical conditioning only is neglecting a key component...VISION! The visual system determines where and when to hit, throw and catch a ball, and enables the body to move precisely through three dimensional space.

Why Vision Training?

- “Vision, like other sensory systems, can be improved with practice,” said Dr. [Bernhard Sabel](#), a neuroscientist at Otto von Guericke University in Magdeburg, Germany, who studies plasticity in the brain. “The improvements occur not in the optics of the eye, but in the central processing centers of the brain.”
- The individual who can process more visual information in a shorter period and make the proper response will have an advantage in competition.
- As athletes tap out their potential in other aspects of their performance, like speed, power or strength, what will they turn to next to increase their performance?

- **The trend seems to be that they will turn to vision training.**

Why Vision Training?

- Vision is learned. This makes vision a trainable skill. Almost anyone can be taught the necessary visual skills necessary to excel in sports and life. Plus, it stands to reason that since 75-90% of all learning comes through the visual pathway first, **any interference in the visual system can interfere with reaching your player's ability to reach their maximum potential.**

Does Vision Training Work?

To support the claims made by these training programs we actually need to demonstrate 3 different things:

First, we need to show that the visual abilities that are being trained (whether its acuity or peripheral vision) improve after training in people with already normal vision or above normal vision.

Does Vision Training Work?

- Second, we need to show that sports performance is improved in some way after the training is done.
- Third, and most importantly, we need to demonstrate transfer of training. In other words, we need to show that the reason people got better at sports by the end of the vision training program was because their vision got better (and not due to some other confounding reason). This will require one or more control conditions.