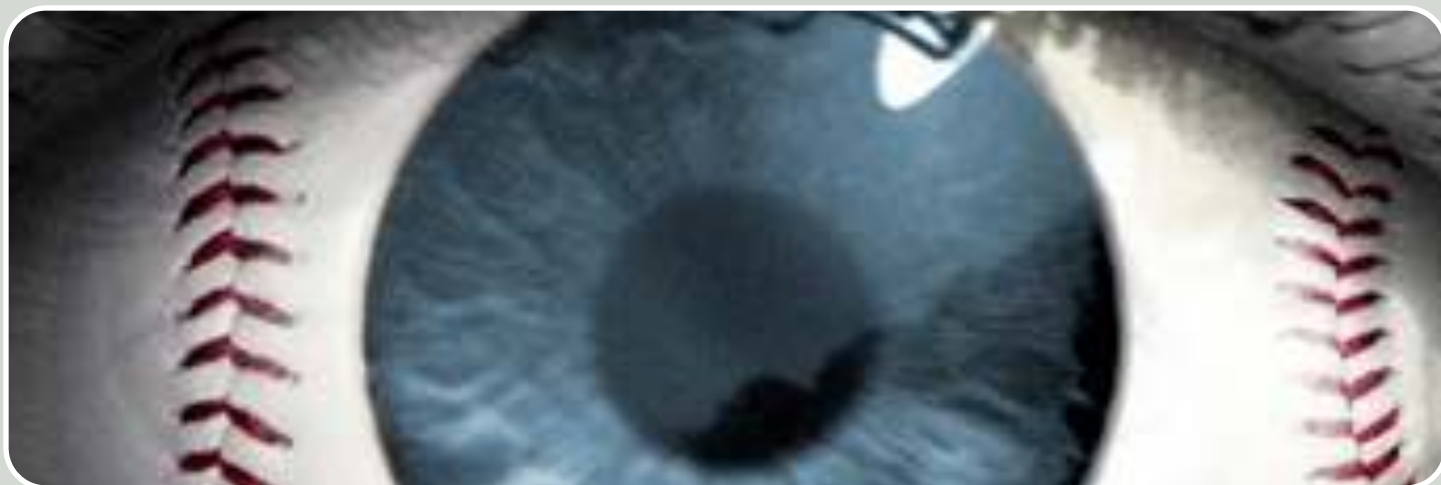


BASEBALL VISION TRAINING GUIDE

An artist is not
paid for his labor
but for his vision.

-James Whistler



AS A HITTER, WHAT IS THE QUALITY OF YOUR DEPTH PERCEPTION?

Taking for granted the visual aspects of hitting is like taking for granted the mechanical. Both need consistent reinforcement for maximum functioning.

You have developed the perfect swing. You have done the weight training and now you are big and strong. Your athletic ability is at it's height and yet, WOOSH!

Swing and a miss.

You put the best swing you could muster on the ball and you didn't even come close.

You see...the thing is...you can't hit what you can't see regardless of how sound your swing is.



WHY 20/20 VISION IS NOT AS IMPORTANT

The notion of 20/20 vision is a poor basis of the quality of a baseball player's vision.

If you think you have 20/20 eyesight, try reading a sports page article while running in place. Sure, you can do it to some degree, but not very rapidly and not without mistakes.

20/20 simply means that a person can identify the majority of black letters presented on a white background at twenty feet of the specific size of 8.75mm. in height. That height is the correct height because it relates to the eyes ability to identify a letter that has a height that subtends a 1 minute of arc in relationship to a line drawn from the bottom of the letter to the fovea in the back of the eye with a line drawn from the top of the letter to the same spot on the fovea.

-DR. Bill Harrison

Here is why having "good eye-sight" is not as necessarily important when attempting to hit a 90+ mph fast-ball or adjusting to a curve-ball coming out of the hands of a pitcher. Your depth-perception is what plays the most important role in picking up the pitch, predicting it's trajectory and deciding whether to swing the bat towards the location of where you predict the pitch will be at the point of contact.

I am not denying the importance of having clear vision as something that is essential to being successful at the plate. Like any other activity that requires the ability to interoperate visual information-clear vision is very important in baseball.

But very similar to a silver nickel, healthy vision is only one side of a two sided coin.

DEPTH PERCEPTION EXPLAINED

The key element in a hitter's ability to interoperate a pitch being released out of the pitcher's hand while following a particular plane is the hitter's depth perception. If a hitter has any sort of inability to utilize his depth perception capabilities he may struggle at the plate.

More often than not, the visual issues get over-looked as well as over-shadowed by bad mechanics, a lack of mental toughness, underdeveloped skills, poor preparation, or a list of other reasons why the player didn't execute effectively during an at-bat.

It truly is a mystery to me why a hitters' depth perception capabilities are never in question, especially when even the slightest miscalculation can cause a hitter to miss the ball by as much as two feet. Given that baseball is considered a game of inches-2 feet may as well be two miles.

I don't know about you, but I never "just missed hitting a line drive up the middle by two feet".

It truly saddens me to see a hitter who is reprimanded for not practicing enough, not being mentality tough enough, or is overlooked skill-wise simply because he is not seeing the ball as effectively as he would be able to if he had the proper knowledge.

I truly believe that there needs to be a shift in how struggles at the plate are handled. It seems silly to assume a hitter lacks talent or fortitude without even investigating what areas of opportunities are being missed in regards to eye-sight.

WHY YOUR EYESIGHT GOES BAD DURING A GAME

There are certain factors both external and internal that force visual performance to fluctuate in levels of performance that you should be very much aware about.

If you're a player or coach; stress, rapid eye-movement, fatigue and or loss of concentration are all symptoms of a lack of visual responsiveness that can be attributed to the challenges that a baseball game offers.

I would suggest all of the symptoms be made aware of to make sure nothing is over-looked.

IT'S A GAME OF INCHES!



It's a problem!

It truly saddens me to see a hitter who is reprimanded for not practicing enough, not being mentality tough enough, or is overlooked skill-wise simply because he is not seeing the ball clearly.

EXAMS EX-SHAMS!



Yea, even you!

Everyone has some degree of one-eyed depth perception, but two-eyed depth perception is a unique skill.

WHY DOCTORS EXAMS ARE NOT ENOUGH FOR BASEBALL PLAYERS

An eye doctor is primarily responsible and concerned about ruling out significant visual problems related to high contrast testing and a wide variety of eye diseases. They will typically do a great job for their patients in that regards.

In some offices, staff members do the vision related tests. Many offices do not even have tests that evaluate distance depth perception, contrast sensitivity or the quality of eye muscle coordination that relates to tracking a pitch, and many doctors do not see the need for full correction of vision to achieve the best possible visual acuity.

Upon making an appointment for an eye examination **you should ask the appointment secretary if those tests can be made for you.** If the appointment secretary does not confirm their availability, another office or doctor should be selected.

WHY YOU MAY BE STRUGGLING EVEN WITH GOOD EYESIGHT

Even perfect eyesight in each eye does not assure you that you have the quality of depth perception needed to accurately see the initial velocity and then the changing velocity of a pitch.

This is important because, if a hitter misjudges the velocity of a pitch by 5 mph, their bat position could be off by as much as 2 feet.

Everyone has some degree of one-eyed depth perception, but two-eyed depth perception is a unique skill. Most importantly, it is a key skill required to accurately time the speed of high velocity objects such as a ball moving directly at a person.

DEPTH PERCEPTION SPECIFICS

So we know that depth perception is the ability for the brain to use and put together the slight differences in information that reaches the two eyes.

That difference is created because each eye is looking at all objects from a slightly different angle due to their physical separation on a face.

Seeing objects clearly has little to do with depth perception, because you can see clearly with just one eye.

However, you require the information from both eyes in order to perceive depth.

A one-eyed hitter can see the seams rotating and can see the trajectory of a pitch. But, a one-eyed hitter cannot see,

read, or measure the velocity of the ball accurately.

Although a normal eye examination may indicate that a player has clear eyesight, good depth perception and no apparent problem with suppression, these are static tests in the eye doctor's office.

A baseball player requires dynamic vision. Judging the quality of a player's vision must take into consideration what occurs with rapid movement, fatigue, stress and/or a loss of concentration.

I believe that most players face the challenge of reduced dynamic depth perception unless they have a perfect



**Your depth is in
your sight!**

situation—limited or no movement, fatigue or stress. My belief is that the better they develop their dynamic depth perception, the less likely they will experience a loss of the use of this skill in these potentially trying situations.

Anyone can see the ball clearly in the batting cage when there is no pressure. The ball always looks different at game speed.

Let's change that.

HOW BAD VISION MAKES HITTING FAST-BALLS DIFFICULT

If you see a player who is consistently late on pitches, consider that he might have nearsightedness, astigmatism or a combination of the two. If a player can't wait on pitches, but is a good fastball hitter, consider that he may have farsightedness.

If the player has poor and inconsistent timing, consider that he probably has a depth perception problem. If he tends to consistently swing above or below the ball, consider that he may have astigmatism as well.

SHOULD A PLAYER HAVE AN ANNUAL EYE EXAMINATION?

There are various considerations on answering that question, including how important the player's baseball career is to him and his family and how important his baseball career is to himself.

If a player chooses to have an annual eye examination ideally it should be done one to three months prior to the baseball season. Until around age twenty-five, eyes can change within six months. A player may have a problem in February even though his eyes tested fine in August. If he does need a vision correction he should have a month to get use to the correction, particularly if it involves "toric" soft contact lenses.

HOW VISION MAKES HITTING OFF-SPEED DIFFICULT

A player can also have 20/20 uncorrected eyesight if he is hyperopic, or far-sighted. It is possible for the player to have a rather large amount of uncorrected hyperopia and pass every eye-test provided by a school nurse or staff of the team physician or trainer. This is not necessarily a problem for a baseball player.

However, it is common that players who have uncorrected hyperopia also have the tendency for their eyes to want to turn in. The next effect of that tendency is for everything to look closer than it really is. ***It will make balls appear faster than they actually are.*** Players with this tendency cannot wait on pitches. They tend to be very good with high-speed fastballs, but simply can't wait for any type of off speed pitch. Correction of their vision doesn't make their eyesight clearer, but can slow the ball down, give them more time and improve their ability to wait on the on-coming pitch.

IMPORTANT TOOLS FOR THE EYES

Furthermore, the player should tell the doctor in advance if there is even the slightest of eye-sight problems that he would prefer to be fit with soft contact lenses.

Due to advances in one day “single-use” soft contact lenses the player will be comfortable and free of distraction even on the first day of wear.

If the player chooses to wear glasses, they must have lenses that are made of Polycarbonate or Trivex materials. These materials will not break upon impact. Unfortunately, there is not a frame that meets the ideal needs for the player. The eyewear frames that are safe are usually so thick that they are in my opinion, distractive. The eyewear frames that are thin are not as safe.

Contact lenses are clearly a better choice.

WHAT YOU CAN DO

I recommend that as a baseball player, parent or coach, your best consideration is to make certain that the depth perception is at its highest possible level. Utilizing specific equipment, training depth perception requires a daily concentrated 5-10 minute minimum of total focus. It usually develops to a high level within a 21-day period.

These 3 1/2 hours will payoff with better ability to see slight changes of speed of the same pitch, and, therefore, the hitter will acquire better timing. The improvement in timing usually results in greater confidence and concentration. Improved timing, confidence and concentration are valuable assets for the hitter to carry to the plate. In fact, I'll as far as to say confidence is EVERYTHING. If seeing the ball better will help you become a more confident hitter, there is no reason why a few exercises should be avoided.

In summary, having a player's vision tested is wise. Encouraging that each player train his depth perception and the eye muscles involved in tracking the ball is even wiser.

ACTION STEPS

EXERCISE #1 CARD FOCUS

Place two identical photos, letters, postcards or other objects on a wall, with a space no wider than one-half inch between them. Stand about 10 to 15 feet away and point your finger in the middle of the space between the pictures and then, while focusing on both images, try to envision a third image of the same thing between the two photos in that space, suggests optometrist Bill Harrison. This helps the eyes develop excellent depth perception.

DOMINANT REST

Retraining a weaker eye is beneficial for overall eyesight. When one eye is stronger than the other, eyestrain on the weaker eye is inevitable. According to MedlinePlus, a 2010 study showed that covering the dominant eye for several minutes allows the weaker eye to take on full vision responsibilities.

In turn, eye-sight improved as well as depth perception within ten days of beginning the study. As test subjects' vision balanced through this exercise, sensory eye dominance was greatly reduced. Does this mean you should whip out your pirate eye-patch from last year's Halloween? Maybe;)

HOW YOU DEVELOP YOUR DYNAMIC DEPTH PERCEPTION

EXERCISE #2 PENCIL PUSH THERAPY

Commonly recommended by ophthalmologists, ***push pencil therapy*** involves holding a pencil -- or pen -- directly in front of your eyes. Hold the pencil and arms-length away from your body. Slowly move the pencil inward to your nose while following the exact movement of the pencil.

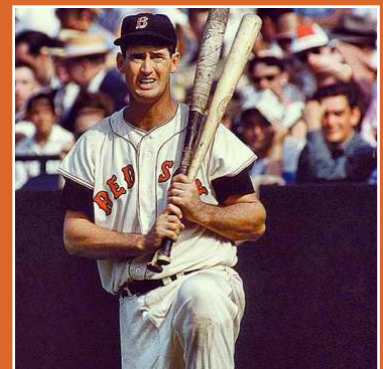
Take your eyes through their full range of vision. Sit with your head straight and your eyes opened. Look up, down, to the left and to the right without moving your head.

EXERCISE #3 PENCIL-PUSH II THERAPY

Take two pencils and separate them with each hand. Have one pencil held as far away from your body, extended with your arm and the other pencil held 2-3 inches from your face. Exercise your eye muscles by focusing your eyes back and forth from the farther pencil to the closer one.

You will feel eye fatigue with this exercise which is a good thing--unlike the eye fatigue you feel from being in front of a computer for too long.

EYE SEE YOU WORKING!



What's your therapy?

Study showed that covering the dominant eye for several minutes allows the weaker eye to take on full vision responsibilities.

EXERCISE #4 EYE PRESSES

With the advent of technology, lap-tops and smart phones are being used in making our lives more simple. Yet at what cost? Is it hurting our eyes? Yes and no. But there is a certain level of hindering strain that occurs. Strain that causes fatigue. Our eyes need to be rested as much as possible come game time.

Sit in a chair with your elbows pressed firmly on the table.

Begin this exercise by putting the palms of your hands together and rubbing them semi-vigorously to build enough friction to create a comfortable level of warmth. This usually takes about 15 seconds.

Place the palm of your hands firmly on your closed eye-lids and cup your eye-lids as you begin to press in while you breath in from your center of gravity for 10 seconds.

Release your hands and with your eyes still closed, begin rubbing your hands together again until you cultivate the same level of warmth.

Press your hands onto your eyes once more for another 10 seconds as you take another deep breath.

The purpose of this drill is to relieve built of strain within the muscles surrounding the eyes as well as promote healthy blood flow within this area.

As you open your eyes you may notice that colors seem brighter, details sharper. This is my favorite eye exercise. Be sure to see the video demonstration below.

ARE YOU READY?

Learning to see the ball effectively is a great gift. Many players fail to make the adjustment to advanced pitching based on this obstacle alone.

Remember...velocity is completely relative. When you learn how to use your eyes, a 95 mph fast-ball won't be intimidating any longer. You have the tools. Now it's up to you.