VIZUAL EDGE – MLB DATA ANALYSIS
14,000+ SCOUTING ENTRIES

VIZUAL EDGE
Winning is in Sight

Working with Major League Baseball teams for the last 15 years has enabled Vizual Edge to complete a detailed breakdown of various trends between the core visual system and on-field performance statistics.

- Overall Evaluations – 14,000+ evaluations have been taken in the Vizual Edge web-based system since 2011 by Major League Baseball teams
- 2019 Season Start – 117 players have taken a Vizual Edge Evaluation and began the season on a Major League Baseball roster

The primary sample of players within the database consists of high school or college players entering the amateur draft. The players represented are position players or designated hitters only, not pitchers.

By digging deeper into the sample we looked at 82 players that have at least 300 plate appearances at the Major League Baseball level.

MLB PLAYERS VS. SCOUTED PLAYERS

In a direct comparison of players who have made Major League Baseball rosters and those who are still in the minors – we see an increase in performance in the visual system.

In 117 players in the Major Leagues vs. 5,447 players that were in or are no longer in the minors we see the most significant changes in convergence, recognition and tracking scores.

	MLB	Non-MLB
# of Players	117	5447
Convergence	39 (11% better)	35
Divergence	21	21
Recognition	0.91s (14% quicker)	1.06s
Tracking	0.53s (7% quicker)	0.57s

ON BASE PERCENTAGE GREATER THAN .360

Players getting on base has been studied to have an impact on offensive success.

Digging into players that have an OBP of greater than .360 (which would qualify a player for top 50 in the league in 2019) has shown improvement in all core visual categories.

Minimum 300 career plate appearances required.

	Greater Than .360	Less Than .360
# of Players	11	71
Convergence	41 (11% better)	37
Divergence	24 (14% better)	21
Recognition	0.90s (5% quicker)	0.95s
Tracking	0.50s (7% quicker)	0.54s

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BASE ON BALL% (BB/PA)

When evaluating base on ball % - players were bucketed into two categories – greater than 9% and less than or equal to 9%.

Initial analysis highlights the biggest gains in convergence and recognition by those players drawing the most walks.

The league average thus far for the 2019 season was 9%.

Minimum 300 career plate appearances required.

	Greater Than 9%	Less Than 9%
# of Players	29	53
Convergence	41 (17% better)	35
Divergence	21	21
Recognition	0.88s (10% quicker)	0.98s
Tracking	0.52s (4% quicker)	0.54s

Home Run % Greater than 5% - (HR/AB)

Digging deeper into the visual system of hitters displaying elite power aggregates players who hit home runs in more than 5% of their at bats.

Initial analysis highlights the biggest gains in convergence and recognition by those with power numbers. There was a drastic decrease in divergence among that sample.

The league average thus far for the 2019 season was 3.8%.

Minimum 300 career plate appearances required.

	Greater Than 5%	Less Than 5%
# of Players	14	68
Convergence	43 (19% better)	36
Divergence	19	22
Recognition	0.80s (18% quicker)	0.97s
Tracking	0.50s (7% quicker)	0.54s

VIZUAL EDGE – BB/K RATIO ANALYSIS
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WALK-TO-STRIKEOUT RATIO (BB/K)

Players who are able to draw a higher number of walks compared to strikeouts set their teams up for a greater chance of success.

Digging into players that have a career BB/K ratio greater than or equal to 0.50 (which would qualify a player for Top 50 in the league in 2019) has shown better scores across all core visual categories.

The higher the convergence score, the better the player's ability to focus on incoming pitches. Players with ratios above 0.50 have 14% stronger convergence scores compared to those below 0.50. Having a better ability to follow and focus on incoming pitches can help a batter identify balls or strikes. Similarly, having a higher divergence score, which is the ability to locate the ball out of the pitcher's hand, can help a player locate the ball earlier.

Recognition is important for a player's ability to identify a pitch type and respond approximately. Here we see that players with BB/K ratios above 0.50 have 8% quicker recognition response times (0.88s), compared to players below 0.50 (0.96s). Players who draw more walks and thus get on base more frequently, are more likely to have an impact for a team's offensive success.

MLB avg at time: 0.39
Minimum 300 career plate appearances required

	Above 0.50	Below 0.50
# of Players	18	63
Edge Score	80.9 (1.5% better)	79.7
Convergence	41 (14% better)	36
Divergence	23 (9.5% better)	21
Recognition	0.88s (8% quicker)	0.96s
Tracking	0.52s (4% quicker)	0.54s

VIZUAL EDGE – PLATE DISCIPLINE (ADV)
14,000+ SCOUTING ENTRIES

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PLATE DISCIPLINE – RECOGNITION BREAKDOWN

Taking a look at some of the advanced metrics when it comes to plate discipline for MLB players with 300+ career PA, we can see some clear differences in scores when looking at players above and below certain recognition response times from their Vizual Edge evaluation.

Looking at O-Swing %, which is the percentage of pitches a batter swings at outside of the zone, we start to see some differences in players with recognition response times above and below 0.92s. Players below 0.92s on average had o-swing % below the MLB average (31.4%), while players above 0.92s were above the MLB average, suggesting they swing more frequently at pitches outside the zone.

	Recognition Below 0.92s	Recognition Above 0.92s
# of Players	49	33
O-Swing %	29.9% (6% better)	31.7%
Z-Swing %	67.8% (1% better)	67.2%
Swing %	46.4% (2% better)	47.2%
Convergence	41 (32% better)	31
Divergence	22 (16% better)	19
Tracking	0.51s (9% quicker)	0.56s

Additional statistics that help shape a player's overall plate discipline is their swing %, which is the overall percentage of pitches a batter swings at. Players with recognition scores below 0.92s had swing % below the MLB average (47.0%), suggesting better plate discipline compared to those with slower recognition response times (scores above 0.92s).

When identifying players that have better plate discipline, aside from recognition scores below 0.92s, we see the average convergence score is 41, which is 32% higher than players with recognition scores above 0.92s. The higher the convergence score of a batter, the better the ability to focus on incoming pitches.

MLB averages through 8-8-2019
- O-Swing %: 31.4%
- Z-Swing %: 68.5%
- Swing %: 47.0%

Minimum 300 career plate appearances required.

VIZUAL EDGE – PLATE DISCIPLINE (ADV)
14,000+ SCOUTING ENTRIES

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SWING %

Swing % is measured by the overall percentage of pitches a batter swings at. Having a lower swing % is typically a good indicator for a player's overall plate discipline.

Looking at players with swing % above and below 45%, which is 2% below the MLB average (47%), we start to see some differences in scores. These differences help to better understand the make up of players with good plate discipline.

The biggest difference between the two groups is related to their convergence scores. Players with swing % below 45% have 17% better convergence scores, which is key for their ability to focus on a pitch as it approaches the plate.

Additionally, we see better divergence sores and quicker response times in both recognition and tracking scores.

As a result of having better individual visual scores, players with swing % below 45% also have better overall Edge Scores, compared to those above 45%.

2019 MLB Avg (through 8-8-19): 47%
Minimum 300 career plate appearances required.

	Below 45%	Above 45%
# of Players	26	56
Edge Score	81.1 (2% better)	79.3
Convergence	41 (17% better)	35
Divergence	23 (15% better)	20
Recognition	0.88s (9% quicker)	0.97s
Tracking	0.52s (4% quicker)	0.54s

O-SWING %

Digging a little deeper into the visual scores behind better o-swing %, we can see some clear differences between players with o-swing % above and below 30%.

Similar to the differences above with overall swing %, players with o-swing % below 30% had better scores all around.

Players with o-swing below 30% had 21% stronger divergence scores, which is key for their ability to locate the ball out of the pitcher's hand.

Having lower o-swing % helps contribute to a hitter's overall plate discipline.

2019 MLB Avg (through 8-8-19): 31.4%
Minimum 300 career plate appearances required.

	Below 30%	Above 30%
# of Players	35	47
Edge Score	81.2 (3% better)	78.9
Convergence	41 (21% better)	34
Divergence	23 (21% better)	19
Recognition	0.89s (10% quicker)	0.99s
Tracking	0.51s (7% quicker)	0.55s

VIZUAL EDGE – BABIP
14,000+ SCOUTING ENTRIES

When truly judging a batter's hitting ability (excluding homeruns), a great indicator is their BABIP, which is their batting average on balls in play. Looking at players with BABIP above and below 0.320, which is 21 points higher than the MLB average (0.299), we see clear differences in a few key visual skills. Though the average convergence scores between the two groups are relatively the same, the biggest difference is in the player's divergence and recognition scores.

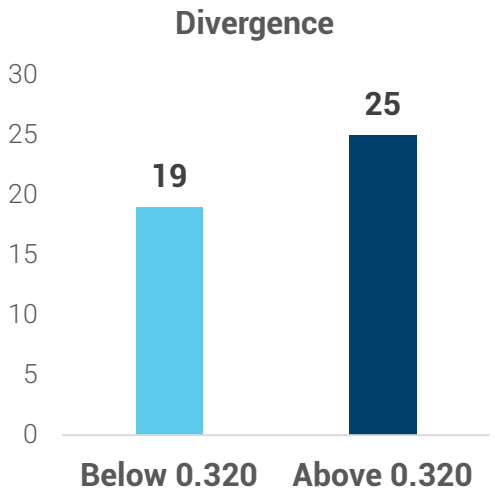
Divergence is key for a hitter's ability to locate the ball out of the pitcher's hand. As shown below, players with BABIP above 0.320 have divergence scores that are 32% better than players below 0.320. Having a significantly higher divergence score helps the batter locate the ball out of the pitcher's hand *earlier* and thus is more likely prepared for the incoming pitch.

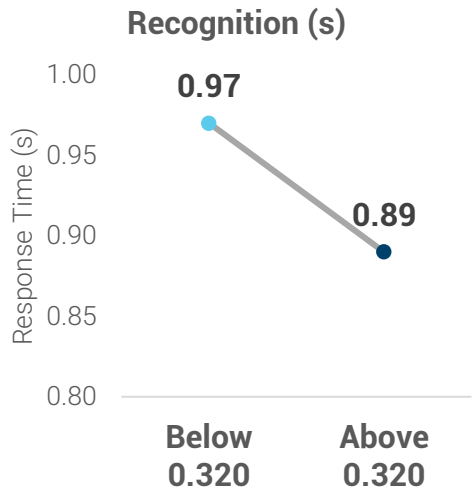
	Above 0.320	Below 0.320
# of Players	26	56
Edge Score	81.0 (2% better)	79.4
Convergence	36	37
Divergence	25 (32% better)	19
Recognition	0.89s (8% quicker)	0.97s
Tracking	0.53s	0.53s

Recognition is important for a player's ability to identify a pitch type and respond appropriately. Here we see that players with BABIP above 0.320 have 8% quicker recognition response times (0.89s), compared to players below 0.320 (0.97s)

Players getting hits and on base more frequently are more likely to have an impact for a team's offensive success.

2019 MLB Avg (through 8-8-19): 0.299
Minimum 300 career plate appearances required.





VIZUAL EDGE – MLB BATTED BALLS
14,000+ SCOUTING ENTRIES

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GROUNDBALL (GB) %

Groundball percentage (GB %) is the percentage of a batter's balls in play that are ground balls, which is calculated as GB/BIP. Typically, players who have lower GB % are less likely to groundout or ground into a double play.

Digging into players that have a GB % below 40%, we can see better scores for majority of skills. Two skills that stand out are convergence and recognition, in which players who were below 40% for GB % had 11% higher convergence scores, and 17% quicker recognition response times.

These numbers suggest that the players who have stronger convergence scores and quicker response times are able to see incoming pitches better, and can adjust appropriately to ensure a groundball is not hit.

2019 MLB Avg (through 8-8-19): 42.9%
Minimum 300 career plate appearances required.

	Below 40%	Above 40%
# of Players	22	60
Edge Score	80.6 (1.3% better)	79.6
Convergence	40 (11% better)	36
Divergence	20	21
Recognition	0.82s (17% quicker)	0.99s
Tracking	0.52s (4% quicker)	0.54s

LINE DRIVE (LD) %

Line drive percentage (LD %) is the percentage of a batter's balls in play that are line drives, calculated by LD/BIP. Typically, line drives are more likely to produce runs compared to fly balls or groundballs.

As we take a look at the table on the right, we see that players who are hit line drives more than 23% of the time, have on average better divergence and recognition scores. Players above 23% have 25% better divergence scores and 9% quicker recognition response times.

Having a higher divergence score helps with the batter's ability to locate the ball out of the pitcher's hand and combined with recognition ability, identify the incoming pitch type.

2019 MLB Avg (through 8-8-19): 21.4%
Minimum 300 career plate appearances required.

	Above 23%	Below 23%
# of Players	19	63
Edge Score	81.6 (3% better)	79.4
Convergence	37	37
Divergence	25 (25% better)	20
Recognition	0.88s (9% quicker)	0.97s
Tracking	0.52s (4% quicker)	0.54s

VIZUAL EDGE – MLB CONTACT QUALITY
14,000+ SCOUTING ENTRIES

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HARD BALL %

Hard ball percentage (hard %) is the percentage of a batter's hard-hit batted balls.

Typically, the higher the hard %, the better the barrel contact.

Here we can see that players that had hard % above the 2019 MLB average (38%), have better scores across the board. Most notably, we can see that players who hit more hard balls had on average 20% better convergence scores, and 9% quicker recognition response times.

Having a higher convergence score helps the batter see incoming pitches better. Combined with stronger convergence scores, a quicker recognition response time can help the batter identify the incoming pitch and adjust at the plate to ensure solid contact is made.

2019 MLB Avg (through 8-8-19): 38%
Minimum 300 career plate appearances required.

	Above 38%	Below 38%
# of Players	23	59
Edge Score	81.6 (3% better)	79.2
Convergence	42 (20% better)	35
Divergence	22 (5% better)	21
Recognition	0.88s (9% quicker)	0.97s
Tracking	0.51s (6% quicker)	0.54s

SOFT BALL %

Soft ball percentage (soft %) is the percentage of a batter's soft-hit batted balls.

Typically the higher the soft %, the weaker the barrel contact. Therefore, players with a lower soft % tend to make poor contact *less* frequently.

The table on the right shows that the players who had soft % below 15% had on average 5% better convergence scores. In addition, we also see 15% better divergence scores, and 4% quicker recognition response times.

2019 MLB Avg (through 8-8-19): 17%
Minimum 300 career plate appearances required.

	Below 15%	Above 15%
# of Players	16	66
Edge Score	81.2 (2% better)	79.6
Convergence	39 (5% better)	37
Divergence	23 (15% better)	20
Recognition	0.91s (4% quicker)	0.95s
Tracking	0.53s	0.53s