

Drinking coffee with a fork

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Nate Troskey, Milwaukee Brewers scout and baseball expert, stated hitting a fastball is like "Drinking coffee with a fork". After breaking down the time needed for a hitter to "Read, recognize, and react", and looking at the vision studies where the ball actually becomes "invisible" for the last 10' of flight, I may be better suited to get that cup of coffee.

The question is to determine just how much time does a hitter have to decide to swing or not to swing.

The Response time is fixed for release point of 37 feet, but can vary depending on the stride of the pitcher. This is an average stride or release point, and is the time from pitchers release until the ball is in the contact zone.

Reaction time: is the time it takes for your brain to, locate the ball, make calculations, and make a decision. The "locate and calculate" are "FIXED" times. The "decision" part of reaction time is the variable.

Movement time: is the time it takes for the hitter to begin to initiate there swing (hands moving forward) until contact of the ball is made, which is also a fixed variable.

To determine "Decision" time, simply subtract the known variables from the actual "Response time".

Softball: 70mph pitch-37 ft away release point

All fixed points except the decision time

.35 seconds response time from release point to contact point (Approximately 37 ft away)

.1 second for brain to locate ball: Ball traveled 10 feet (27 feet away now from hitter)

.07 for brain to calculate speed, spin, and trajectory: Ball traveled 7 feet (now 20' away)

.17 for movement time (start of swing to contact point): Swing must start when ball is 17.34 feet away from hitter to be "On Time".

Leaves only .025 seconds for the hitter to make decision to swing or not swing, or less than 3 feet of ball travel.

At 60mph the hitter has over "three times as much time" to decide

.42 second Response time (approximately 37 ft away)

.1 second for brain to locate ball: Ball traveled 8.8' (28 feet away)

.07 to calculate speed, spin, and trajectory: Ball traveled 6.16 feet (23 feet away)

.17 for swing: Swing must start when ball is 15 feet away

.08 for decision time, or 8 feet of ball travel

(It should be noted that the decision time can be increased by decreasing the "movement time" or swing of the hitter, as other than the pitcher's stride, this is the only "Physical" aspect that can be controlled. The other time factor that we could not necessarily decrease, but rather "Catalog" is pitch recognition early, say at release or the first 1/3 of the pitch, starting at the release of the ball.

The challenge then for hitting instructors is 2 fold:

1. To ensure that the proper hitting technique is used to decrease movement time from .17,

2. To decrease the amount of time it actually takes to make a decision during the 6 feet of ball travel during the "Speed, spin, trajectory" assessment phase by specifically working on pitch recognition drills as Fadde demonstrated in his research abstract.

Below are short video clips that ESPN Sports Science did on "The Speed of Softball" and

The screenshot shows the ESPN Video website interface. At the top, there's a navigation bar with 'ESPN Video' and various sports categories like NFL, MLB, NBA, etc. The main content area features a video player for 'Sport Science: The Speed of Softball', published on May 16, 2013. Below the video player, there's a 'Comments' section with a sign-in prompt. To the right, there are 'THE LATEST' video thumbnails and a 'FEATURED VIDEOS' section with a search filter for 'NFL'. The page also includes a 'T.RowePrice' advertisement and a footer with copyright information.

<http://espn.go.com/video/clip?id=9282901>

Conversion table: <http://www.metric-conversions.org/speed/miles-per-hour-to-feet-per-second-table.htm>

BASEBALL:

Baseball has similar times, however, I would argue that they have a slightly higher advantage:

The question is to determine just how much time does a hitter have to decide to swing or not to swing.

The Response time is fixed for release point of 55 feet, but can vary depending on the stride of the pitcher. This is an average stride or release point, and is the time from pitchers release until the ball is in the contact zone.

Reaction time: is the time it takes for your brain to, locate the ball, make calculations, and make a decision. The "locate and calculate" are "FIXED" times. The "decision" part of reaction time is the variable.

Movement time: is the time it takes for the hitter to begin to initiate there swing (hands moving forward) until contact of the ball is made, which is also a fixed variable.

To determine "Decision" time, simply subtract the known variables from the actual "Response time".

90MPH pitch, 55 feet away (average stride is 5')

.44 seconds of response time (Hand to plate)

.1 second for brain to locate the ball, 12' of travel, 43' away

.07 to calculate speed, spin, and trajectory, 10' of travel, 33' away

.17 for movement time (swing), swing must start when ball is 22' away

.09 decision time, 11' of ball travel

@100 mph pitch, the response time is reduced to .38 seconds and the decision time is reduced by 50% to .04 second.

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Sport Science: MLB Vision

Publish Date: Jun 21, 2010, 01:27 PM ET | Duration: 03:40

This video is not encoded to playback on this device.

Is it possible for a batter to see a 90 mph fastball? Rating: ★★☆☆ (99 Votes)

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