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Full Swing – Understanding the Metrics - Hitting

The Full Swing Baseball Kit provides advanced swing and ball-flight data to help players, coaches, and families better understand performance and development. Below is a breakdown of the key metrics we track, what they mean, and why they matter.

Smash Factor:

Definition:
Smash Factor measures how efficiently energy is transferred from the bat to the ball at contact.

Formula:
Smash Factor = Exit Velocity ÷ Bat Speed

Why It Matters:

- Indicates quality of contact
- Higher smash factor = more efficient energy transfer
- Shows how well a hitter is squaring up the baseball

Coaching Insight:
If bat speed is high but smash factor is low, the player likely needs to improve contact quality and barrel accuracy.

Average Bat Speed:

Definition:
The average speed of the bat at contact across multiple swings.

Why It Matters:

- Directly influences potential exit velocity
- Higher bat speed increases offensive ceiling
- Indicates strength, sequencing, and swing efficiency

Coaching Insight:
Improving bat speed increases power potential, but it must be paired with consistent contact.

Peak Bat Speed

Definition:

The fastest bat speed recorded during a session.

Why It Matters:

- Shows a player's maximum capability
- Helps identify physical potential
- Useful for tracking strength and development gains

Coaching Insight:

If peak bat speed is much higher than average bat speed, consistency should become the primary focus.

Average Exit Velocity

Definition:

The average speed of the baseball off the bat across multiple swings.

Why It Matters:

- Strong indicator of overall hitting performance
- Correlates with hard contact and extra-base potential
- Commonly used in player evaluations

Coaching Insight:

Consistently high average exit velocity shows repeatable hard contact, not just occasional power.

Peak Exit Velocity

Definition:

The highest recorded exit velocity during a session.

Why It Matters:

- Reflects top-end power
- Shows raw offensive potential
- Serves as a measurable benchmark

Coaching Insight:

Peak exit velocity is important, but average exit velocity better reflects game performance consistency.

Average Distance:

Definition:

The average projected distance the ball travels across multiple swings.

Why It Matters:

- Indicates overall power production
- Reflects the combination of exit velocity and launch angle
- Useful for tracking long-term development

Coaching Insight:

Distance improves when strong exit velocity pairs with optimal launch angle.

Peak Distance:

Definition:

The furthest projected ball distance recorded during a session.

Why It Matters:

- Measures maximum power output
- Demonstrates highest performance capability

Coaching Insight:

If peak distance is strong but average distance is inconsistent, the focus should shift to repeatability.

Squared Up:

Definition:

The percentage of swings that produce optimal barrel contact.

Why It Matters:

- Higher percentage = better barrel accuracy
- Strong indicator of timing and swing path
- Closely tied to smash factor and exit velocity

Coaching Insight:

This is one of the most important development metrics. Players who consistently square up the ball perform better in games.

How These Metrics Work Together

No single metric tells the full story. The most complete hitters typically show:

- Strong Bat Speed

- High Smash Factor
- Consistent Average Exit Velocity
- High Squared Up Percentage
- Repeatable Distance Numbers

Development should focus on:

1. Building bat speed safely and efficiently
2. Improving barrel accuracy
3. Increasing consistency across swings

Key Takeaway for Players and Families

The Full Swing Baseball Kit provides objective data that helps eliminate guesswork. These metrics allow us to:

- Track improvement over time
- Set measurable goals
- Identify strengths and weaknesses

The goal is not just higher numbers — it is consistent, game-ready performance.