

# MLB Pitcher Injury Tracking

Overview

Injury

Volume

Velocity

Movement

Tempo

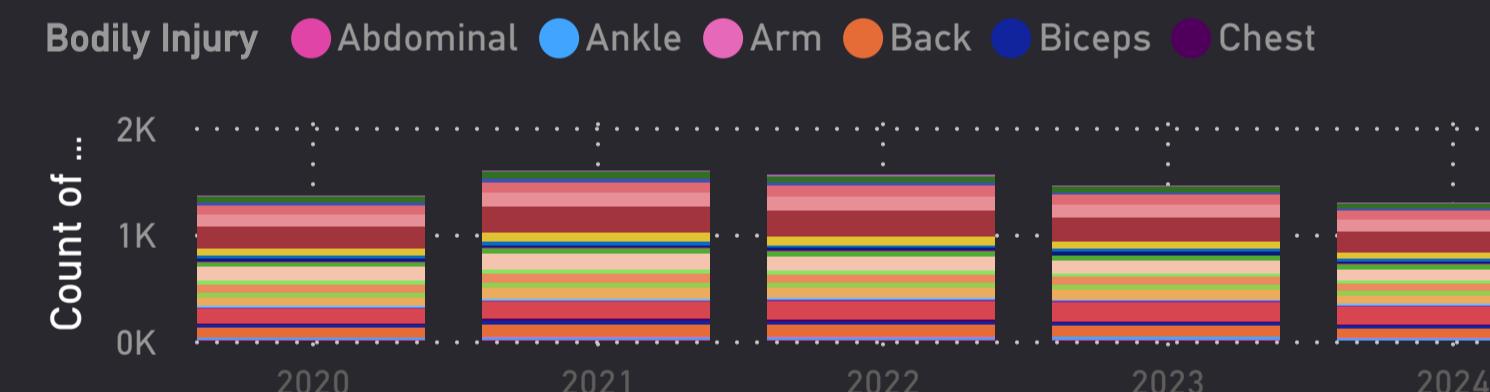
Total Players  
1640

Injured Players  
991

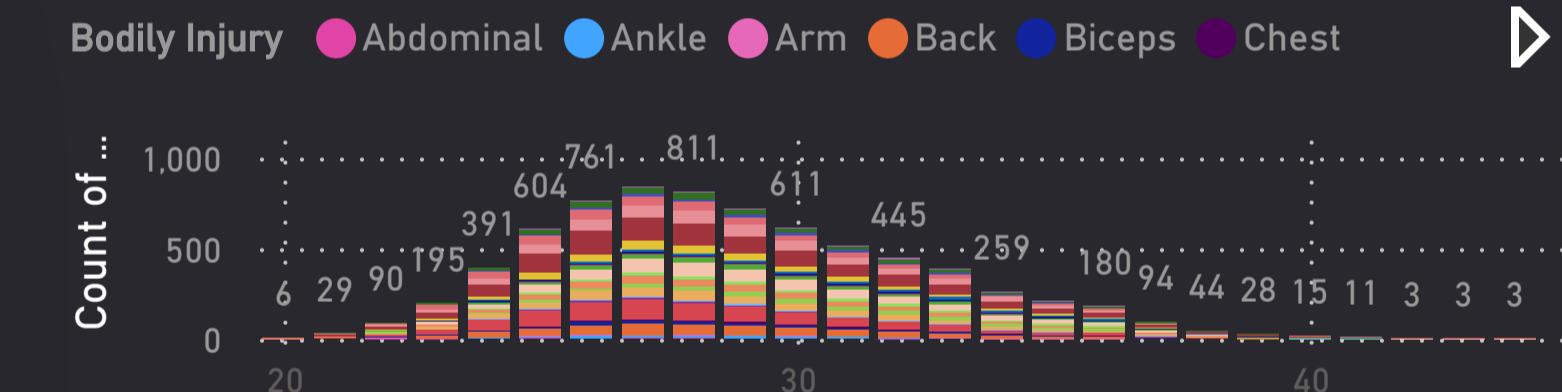
## Count of Injuries over years



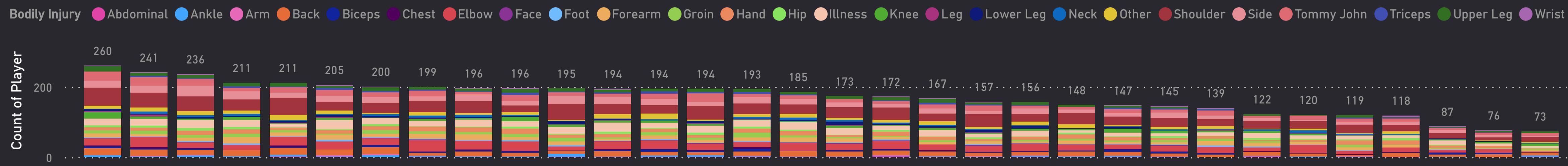
## Count of Injuries by Season



## Count of Injuries by Age



## Count of Injuries by Team



# MLB Injuries Exploration

[Overview](#)[Injury](#)[Volume](#)[Velocity](#)[Movement](#)[Tempo](#)

## Position

RP

SP

## Injury

All

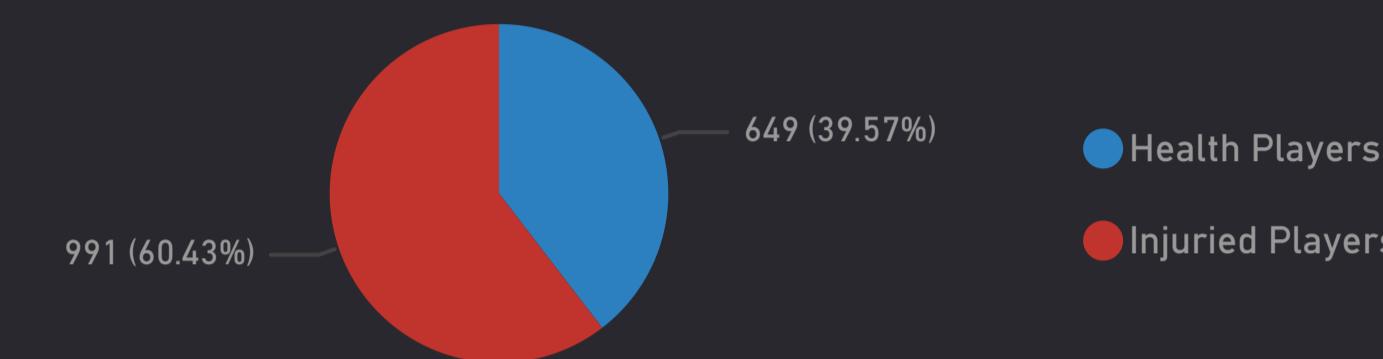
## Severity

All

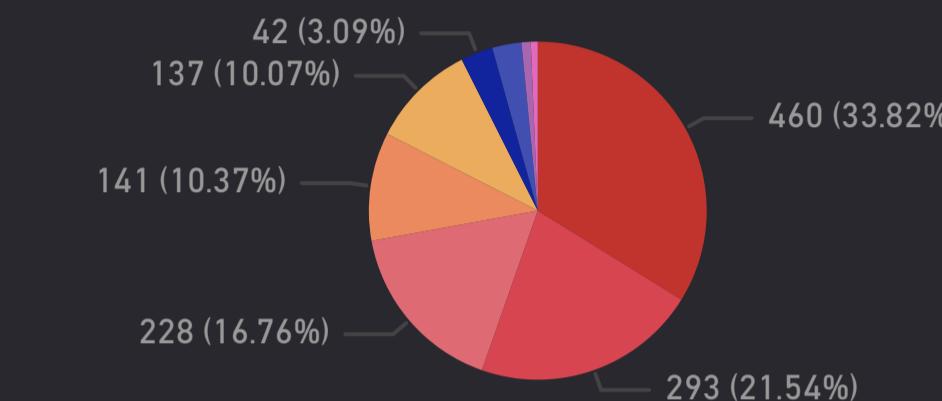
## Trends of Injuries

Over the past five years reveals that 60% of pitchers have sustained an injury. Most of these injuries are due to soreness and strains, but some have required surgery or longer recovery periods. Season-ending injuries have decreased over the past four seasons. The three most common types of injuries are shoulder injuries, elbow injuries, and Tommy John injuries. Less than 10% of pitchers have needed Tommy John surgery, with the number peaking in the 2022 season and at the beginning of 2023 before steadily declining to lower levels. Shoulder injuries have slightly decreased since

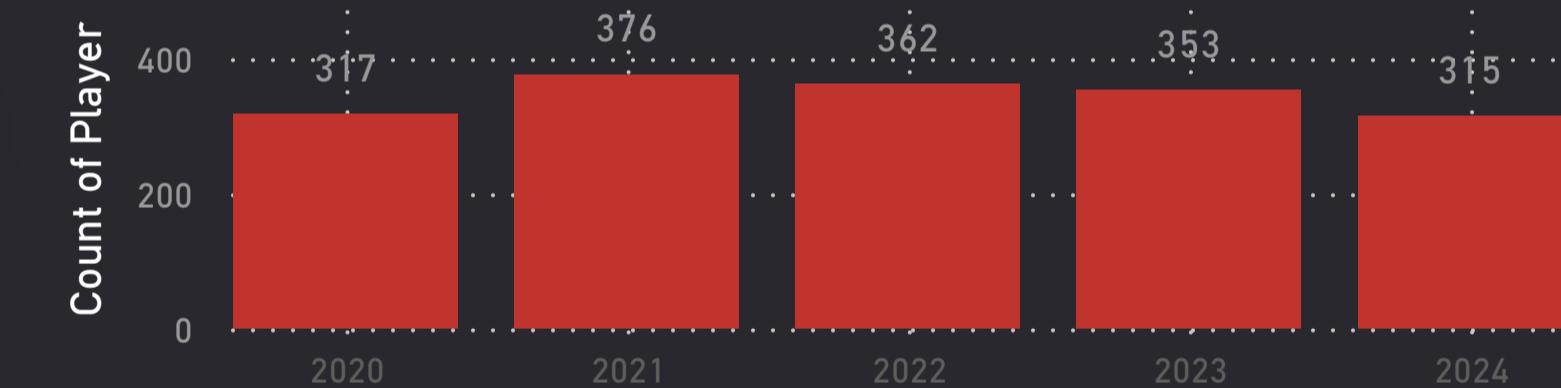
## Health of the Pitchers in the League



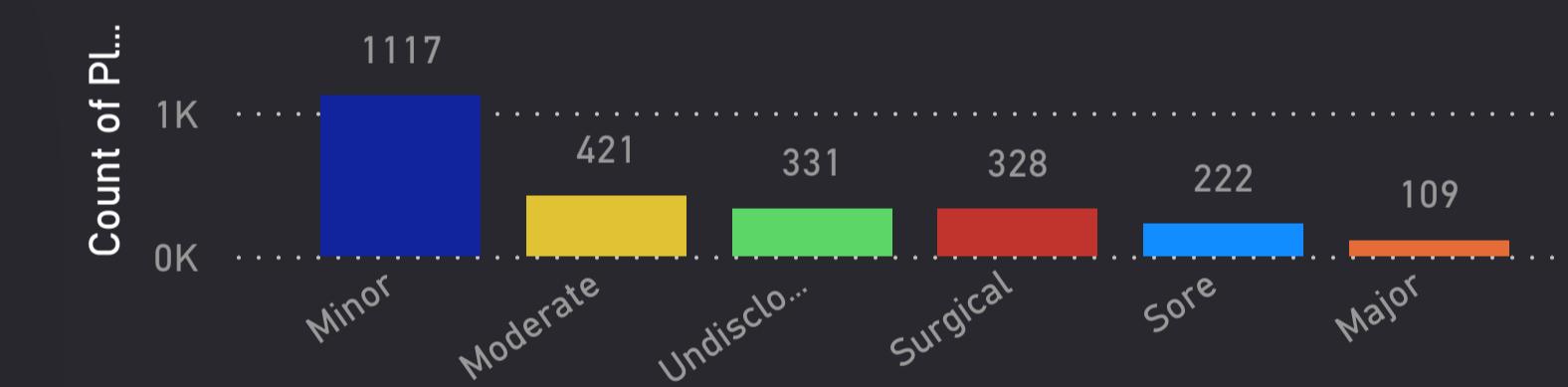
## Pitchers with Arm Injury



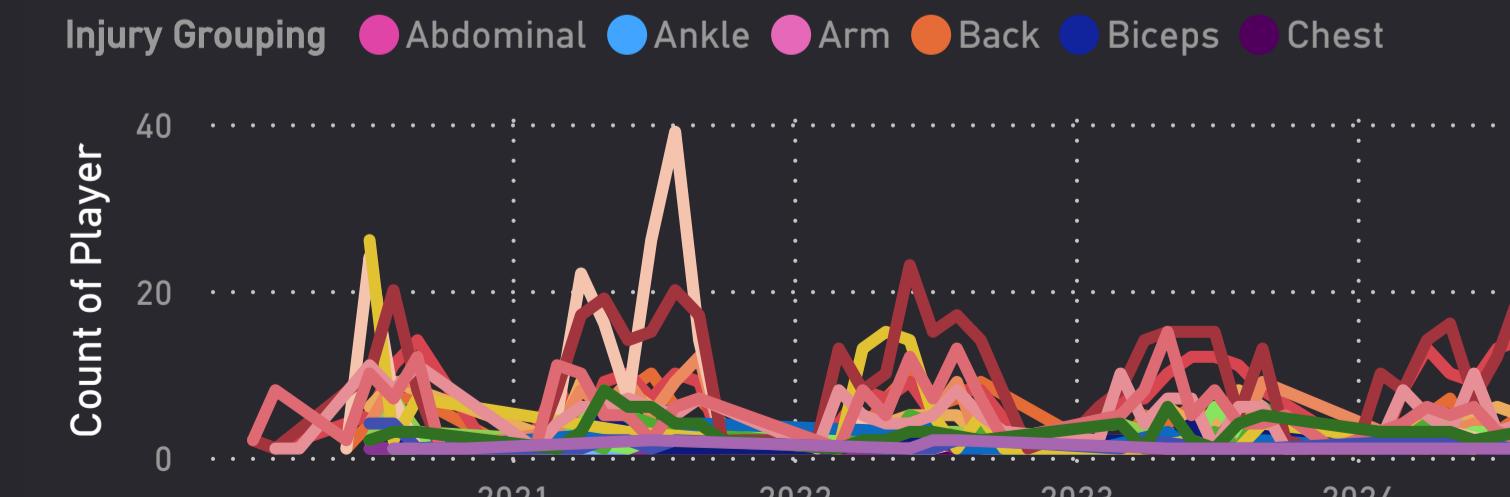
## Season Ending Injuries



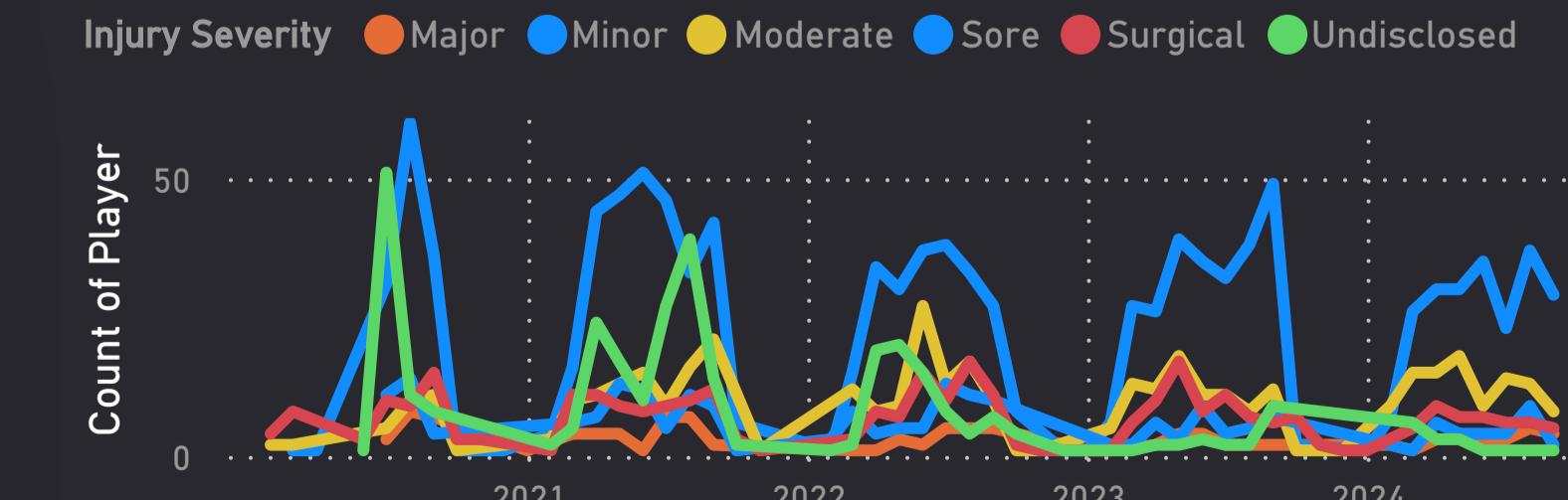
## Pitchers Injury Severity



## Bodily Injuries over the Past 5 Seasons



## Injury Severity over the Past 5 Seasons



# MLB Volume Analysis

Overview

Injury

Volume

Velocity

Movement

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## Position

RP

SP

## Injury

All

## Severity

All

## Summary of Volume

Volume and usage among pitchers over the last 5 years looking at the amount of bodily injuries inflicted. Many of the most productive and high-volume pitchers have undergone multiple Tommy John surgeries and have faced shoulder and elbow issues. For starting pitchers, the primary factor affecting injury rates is the number of innings pitched. In contrast, relief pitchers who throw the most often tend to experience a higher incidence of injuries. Teams have been closely monitoring pitching volume to reduce the number of injuries among their pitchers.

## Total Volume Statistics

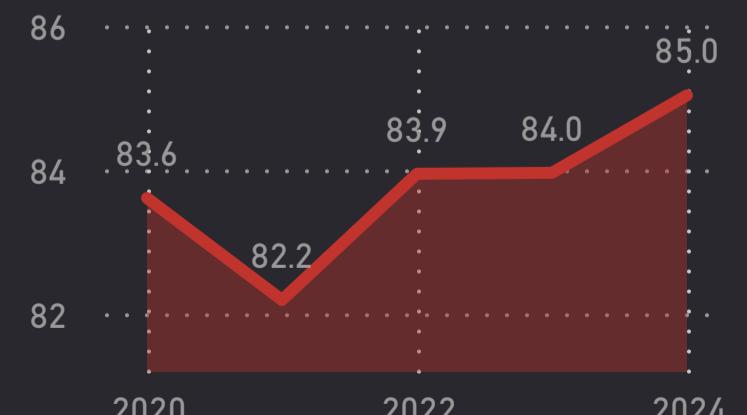
Player	Innings	Pitches	Count of Injuries
Sandy Alcantara	228.7	3248.0	2
Logan Webb	216.0	3182.0	3
Zack Wheeler	213.3	3203.0	1
Zac Gallen	210.0	3248.0	4
Gerrit Cole	209.0	3281.0	1

## Average Volume Statistics

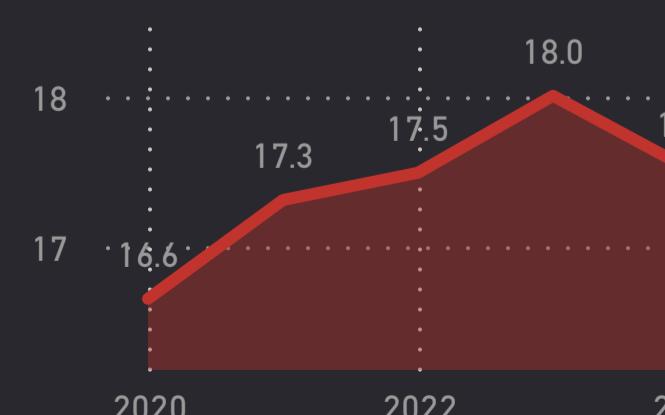
Player	Innings Per Game	Pitches Per Game	Count of Injuries
Sandy Alcantara	6.5	96.8	2
Framber Valdez	6.3	95.3	2
Zack Wheeler	6.3	97.0	1
Shane Bieber	6.2	93.9	3
Gerrit Cole	6.0	97.6	1

## Average Pitches per Game by Year

### Starting Pitchers per Game

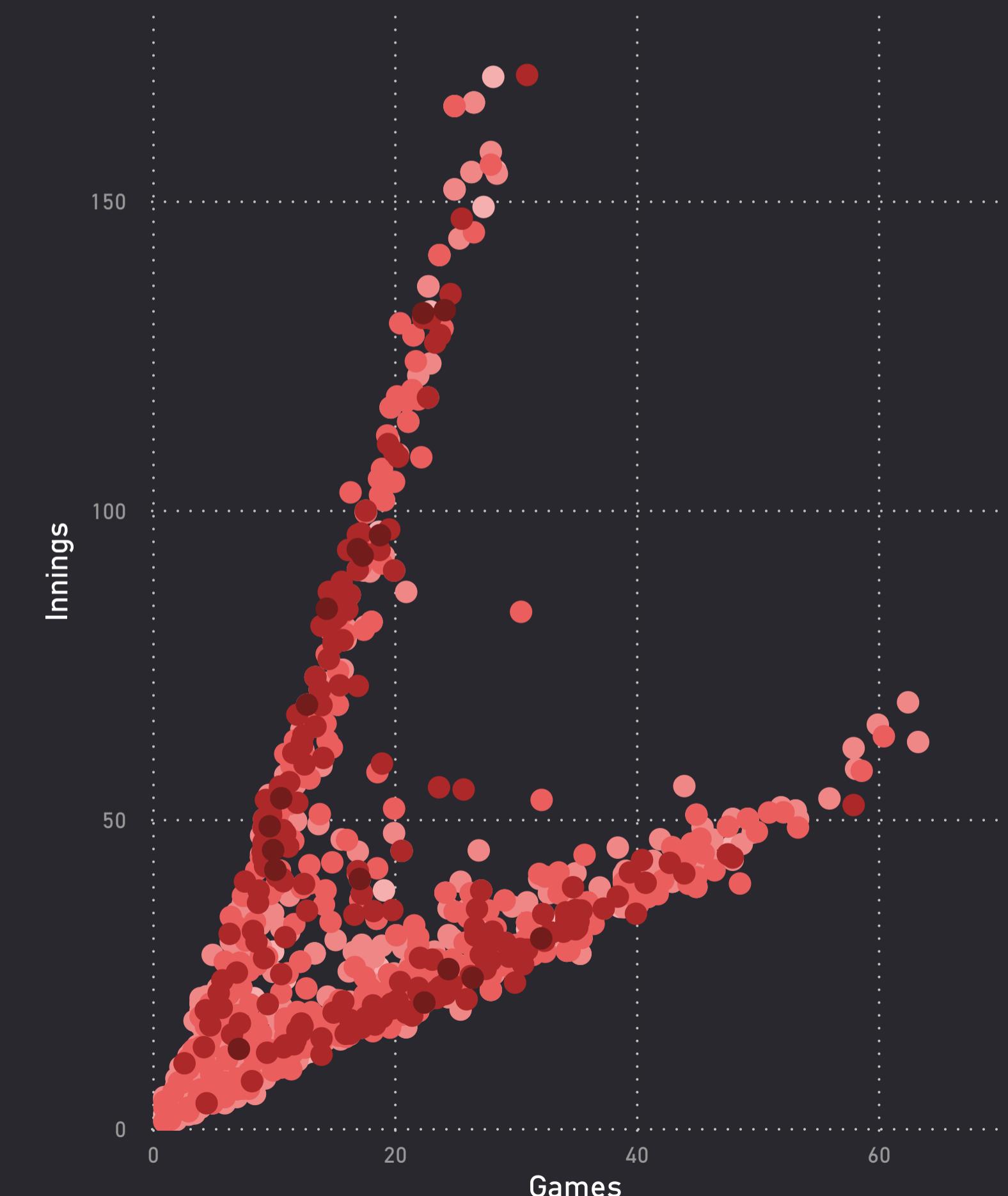


### Relief Pitchers per Game



## Pitchers Games over Innings Pitch by Amount of Injury

Injury Count ● (Blank) ● 1 ● 2 ● 3 ● 4 ● 5 ● 6 ● 7 ● 8 ● 9 ● 10 ● 11



# MLB Velocity Trends

Overview

Injury

Volume

Velocity

Movement

Tempo

## Position

RP

SP

## Bodily Injury

All

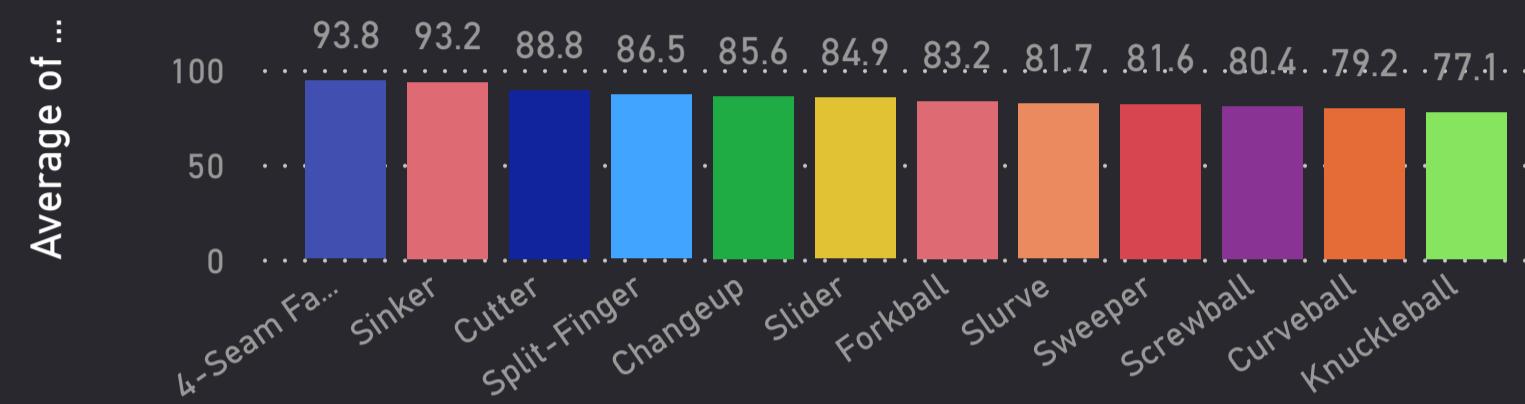
## Injury Severity

All

## Velocity Analysis

Pitchers in the league have been focusing on improving their performance by increasing their velocity among their arsenal. On average, there has been a rise of pitch speed by 1 mph. Notably, the incidence of injuries among starting and relief pitchers with the highest fastball rates has slightly declined from earliest dates to the present. However, pitchers with highest velocity of off-speed and breaking pitches have experienced a greater number of injuries. Tommy John surgeries and shoulder issues have been directly linked to this trend. Overall, the increase in velocity across the league has been significant.

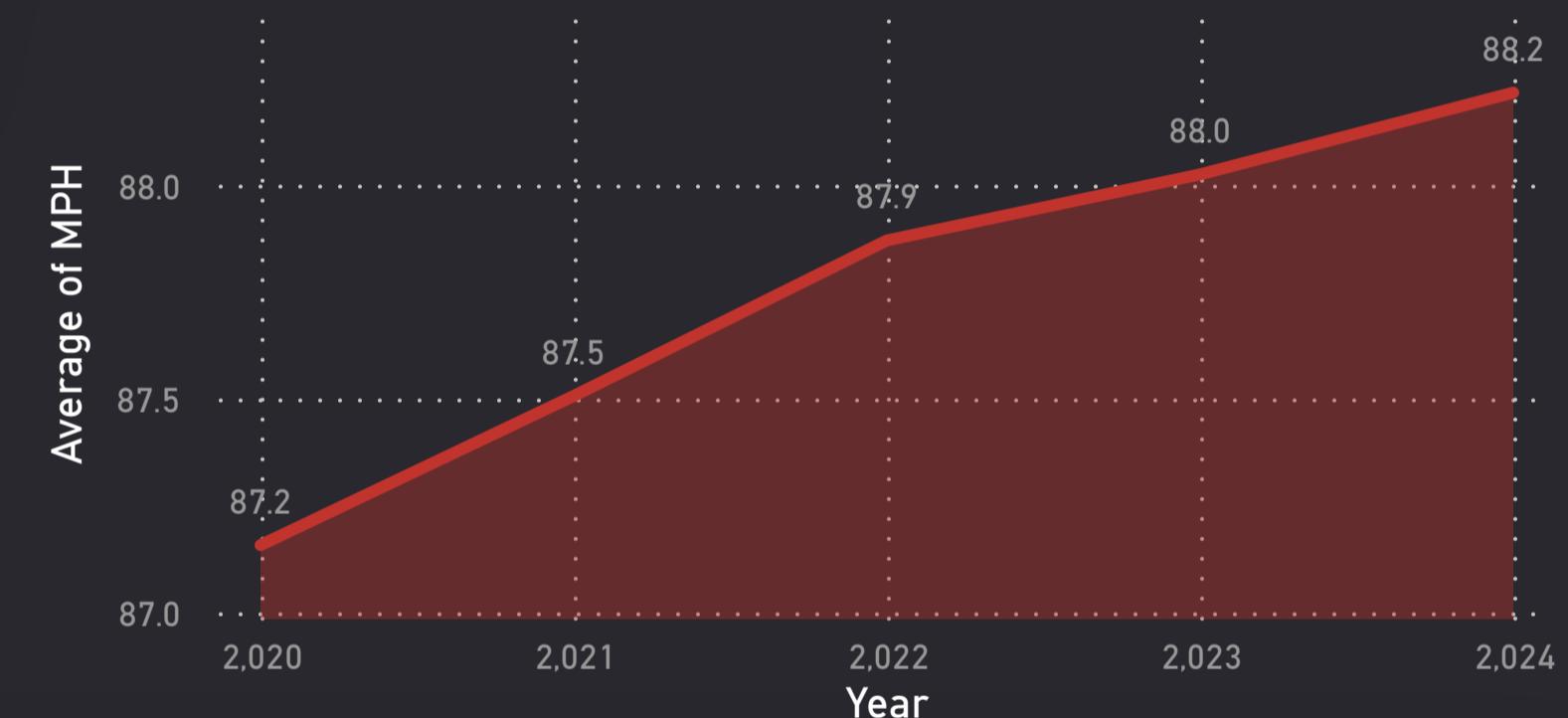
## Average of Speed of Pitch



## Pitch

All

## Average of MPH by Year

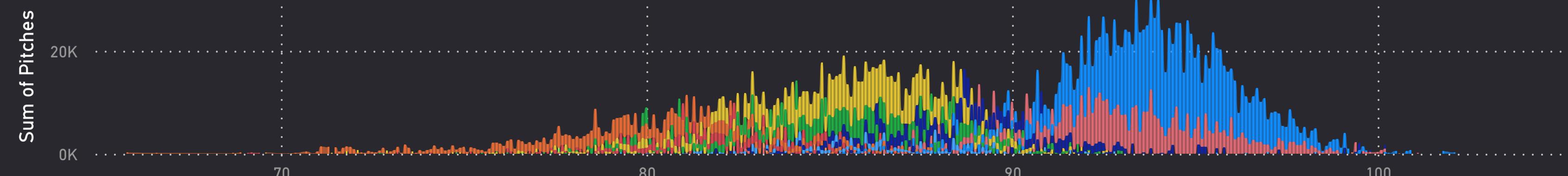


## Top Four Pitches and Number of Injuries

Player	4-Seam Fastball	Sinker	Changeup	Slider	Count of Injuries
Jhoan Duran	101.3			89.7	1
Ben Joyce	100.9			87.6	2
Abner Uribe	100.7	99.4		89.4	
Justin Martinez	100.6	100.7		89.6	

## Rate of Pitchers Pitch Speed

Pitch ● 4-Seam Fastball ● Changeup ● Curveball ● Cutter ● Forkball ● Knuckleball ● Screwball ● Sinker ● Slider ● Slurve ● Split-Finger ● Sweeper



# MLB Movement Analysis

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## Player

 A.J. Cole

## Pitch

 All

## Year

 2,020.00  2,024.00

## Movement Tendencies

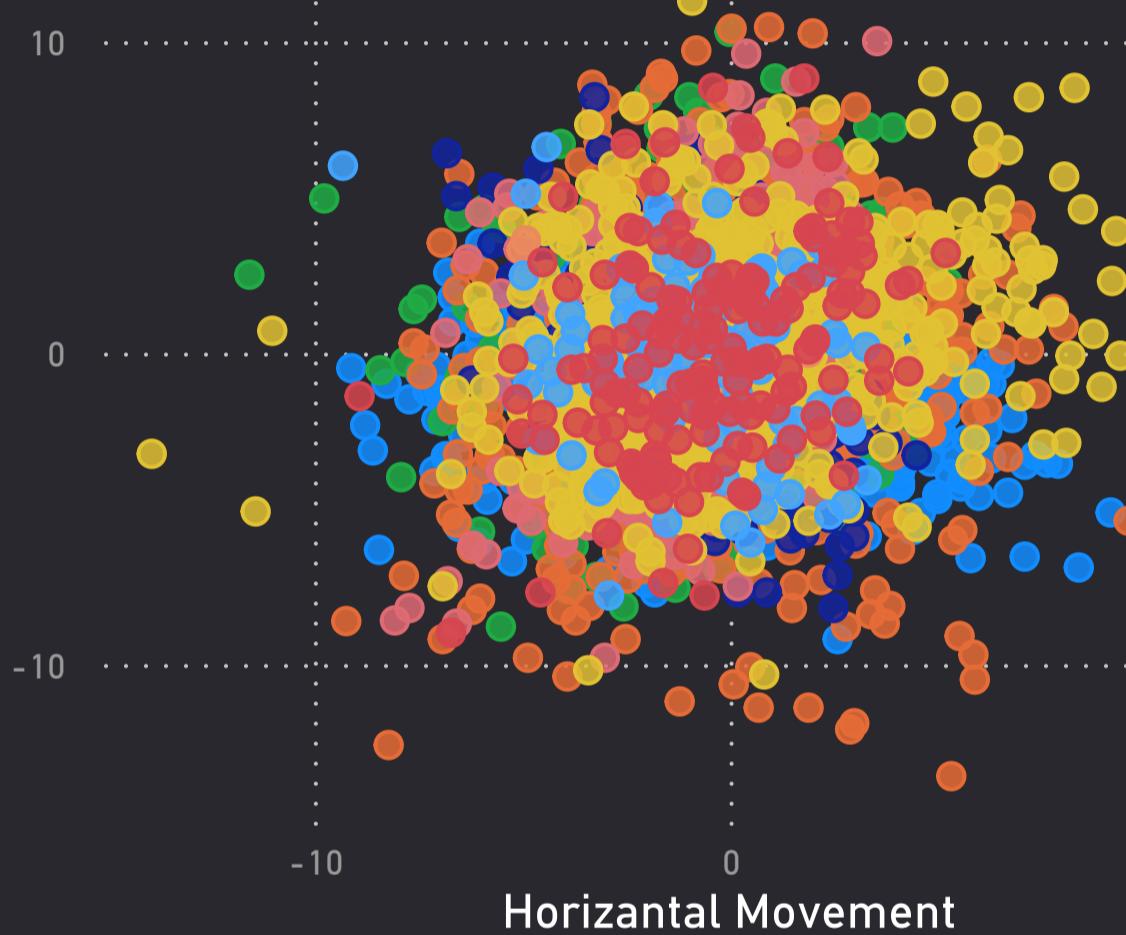
The impact of arm injuries on a pitcher's ability to maintain the same level of velocity, control, and movement is significant. Injuries such as those requiring Tommy John surgery or shoulder and elbow issues can reduce a pitcher's arm speed, leading to less horizontal or vertical break on breaking balls and less sharp movement overall. Therefore, monitoring pitch movement is an important tool for identifying underlying injuries or fatigue before they develop into more serious problems.

## Movement of Pitches

Pitch ● 4-Seam Fastball ● Changeup ● Curveball ● Cutter ● Forkball



Vertical Movement



Horizontal Movement

## Pitch Movement of Selected Players

### Vertical Drop of Pitchers with Tommy John Surgery

Pitch ● 4-Seam Fastball

### Horizontal Break of Pitchers with Tommy John Surgery

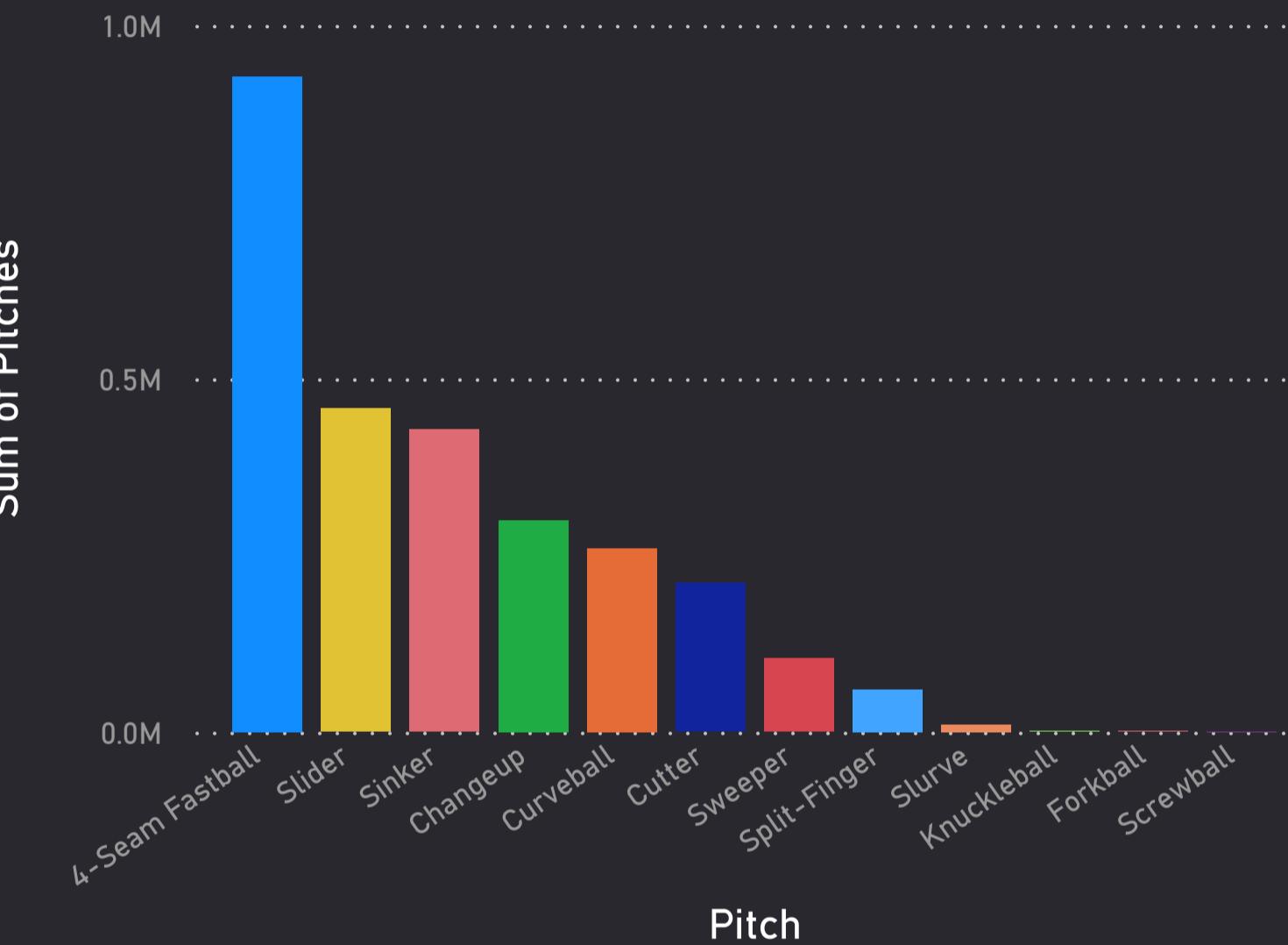
Pitch ● 4-Seam Fastball

## Most Popular Pitches

Pitch ● 4-Seam Fas... ● Slider ● Sinker ● Changeup ● Curveball ● Cutter



Sum of Pitches



Pitch

## Pitch Movement Index

Players who had Tommy John Surgery

Player	Pitch	Pitches	Vert Drop	Horz Break
Antonio Senzatela	4-Seam Fastball	2774	-4.97	-2.60
Antonio Senzatela	Changeup	379	-1.70	-5.93
Antonio Senzatela	Curveball	340	-4.67	-1.40
Antonio Senzatela	Slider	1460	-0.40	0.70
Carlos Rodón	4-Seam Fastball	5343	0.90	0.75
Carlos Rodón	Changeup	675	0.40	-0.50

# MLB Pitch Tempo Trends

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Player

Search

A.J. Cole

Position

RP     SP

Bodily Injury

All

## Implementation of Pitch-Clock

Pre-Pitch Clock  
2020-2022

18.43 21.83 15.38 18.75

Bases Empty Runners On Bases Empty Runners On

397

Amount of Arm Injuries

Post-Pitch Clock  
2023-2024

15.38 18.75

Bases Empty Runners On

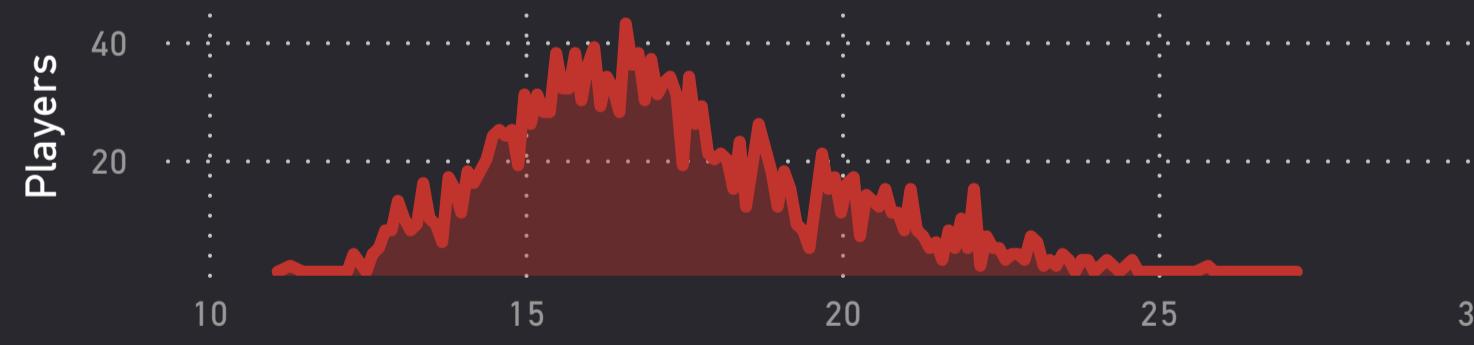
236

Amount of Arm Injuries

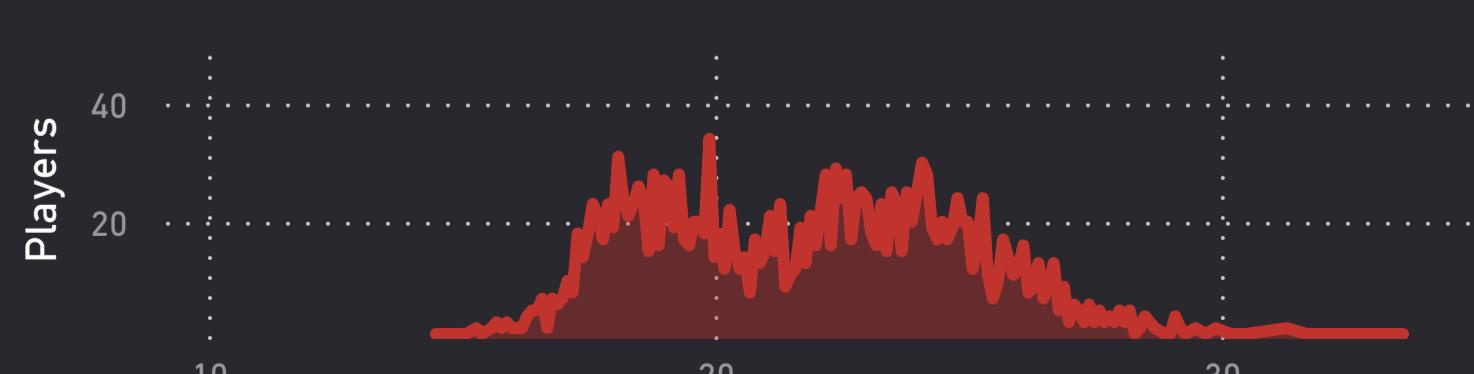
## Summary of Pitch Tempo

The league's rule change of implementing a pitch-clock in 2022 season shows an increase in tempo between pitches by 3 seconds, which could put more pressure on pitchers. However, when comparing the occurrence of injuries to pitchers during the years before and after the implementation of the pitch clock, there has not been a notable increase in injuries. Specifically, instances of Tommy John surgeries have decreased since the pitch clock was introduced. Other injuries, such as shoulder and elbow injuries, have either lessened or remained stable. Overall, the

## Player with Bases Empty

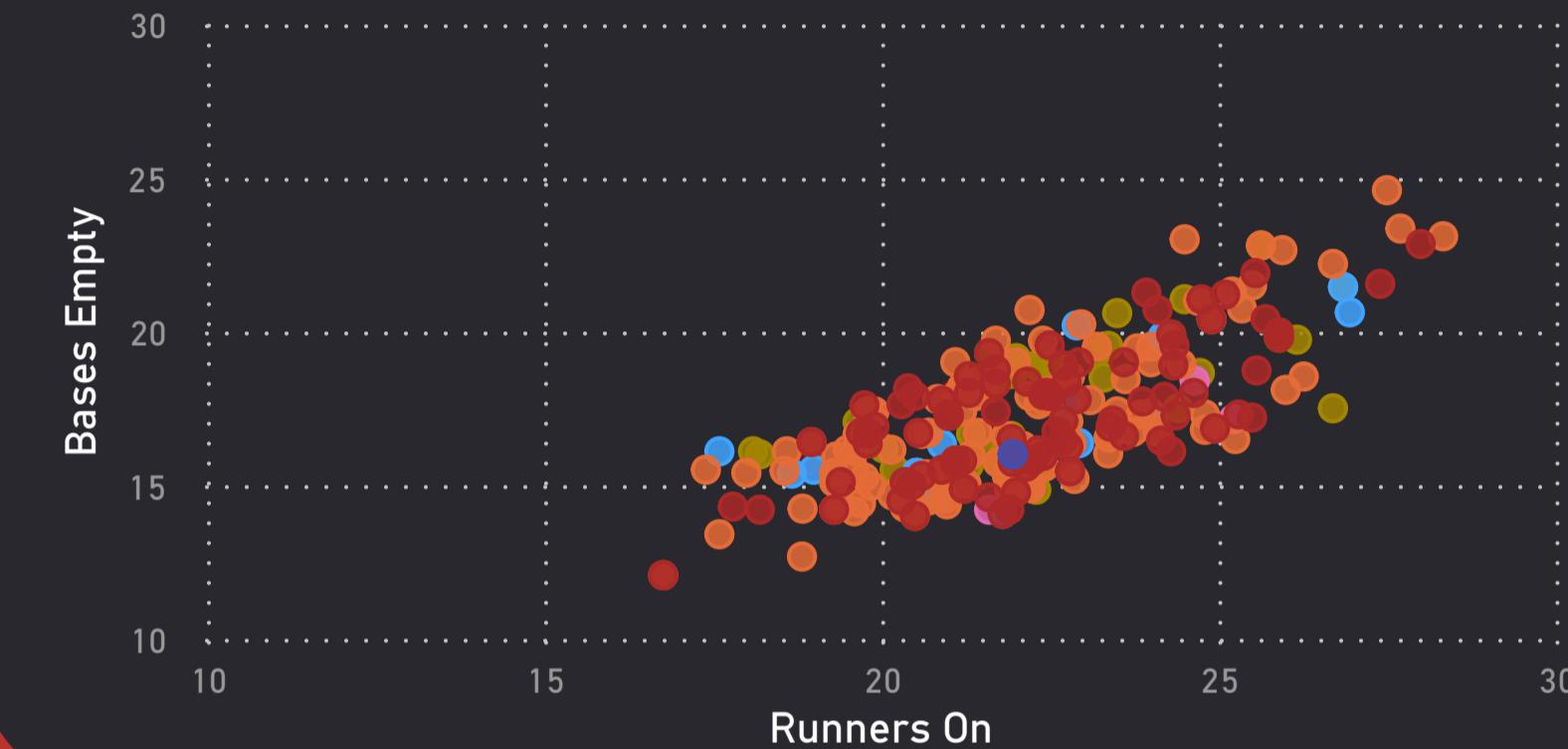


## Players with Runners On



## Post-Pitch Clock Pitch Tempo

Injury: Arm (Red), Elbow (Yellow), Forearm (Pink), Hand (Blue), Shoulder (Orange), Tommy John (Red), Wrist (Blue)



## Post-Pitch Clock Pitch Tempo

Injury: Arm (Red), Elbow (Yellow), Forearm (Pink), Hand (Blue), Shoulder (Orange), Tommy John (Red), Wrist (Blue)

