AJ Esquivel, Age: 14
Ht: 5’8” Wt: 140lbs
Beimel Elite Athletics Biomechanics Assessment
Date of PitchAI session: 5/19/2023
Date of Assessment: 8/6/2023
Written by Ethan Wang

1. Hand Separation/Pre-Stride Phase

Trunk Stack:

In AJ’s leg lift he bends his back leg and lifts his front leg while the rest of his body stays almost completely static. This aspect of AJ’s delivery can be optimized by implementing a more pronounced trunk stack. That means getting that rectangle around his chest area to be tilted slightly further to the left during this phase. However, this must be accomplished through a tilt in the pelvic area as opposed to a shoulder lean. This will ensure his torso and hips stay in-line and strong throughout the delivery.

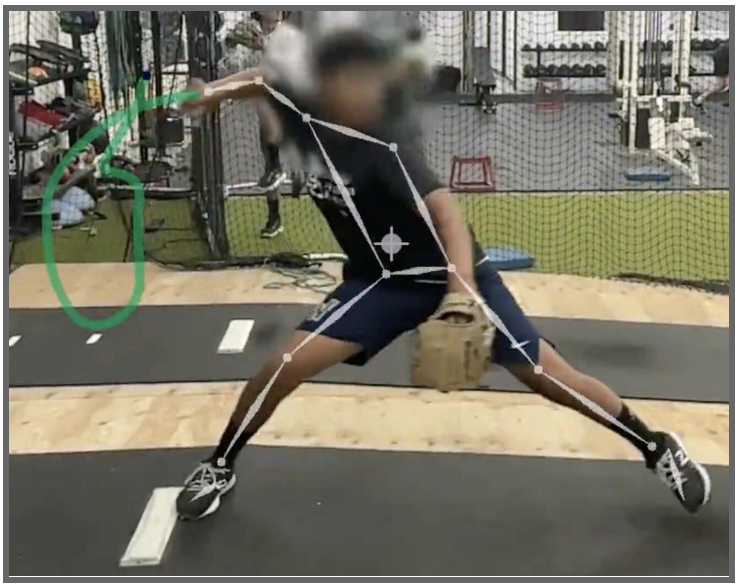
- Can be fixed through strengthening the lumbar spine as well as increasing thoracic spine mobility

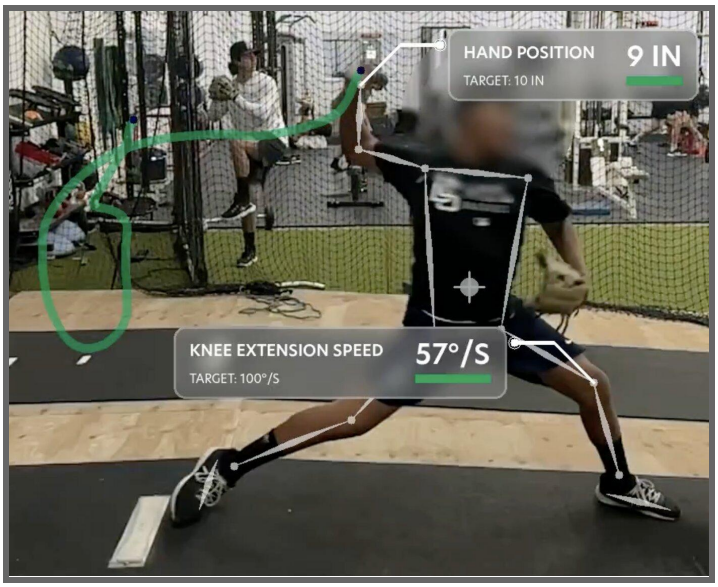
Arm Separation:

At this point of the delivery, there is a very easy fix that will help prevent arm stress and lead to a more efficient arm action. AJ reaches decently far back with his throwing arm upon hand separation meaning that his hand should be far more pronated than it is. Due to this reach back, his neutral hand position can lead to the arm traveling too far from the body in subsequent phases of the delivery and negatively alter his arm path.

- Can be fixed by taking video of hand orientation after separation and getting it into the right position

2. Beginning of Stride and Foot Plant Phase



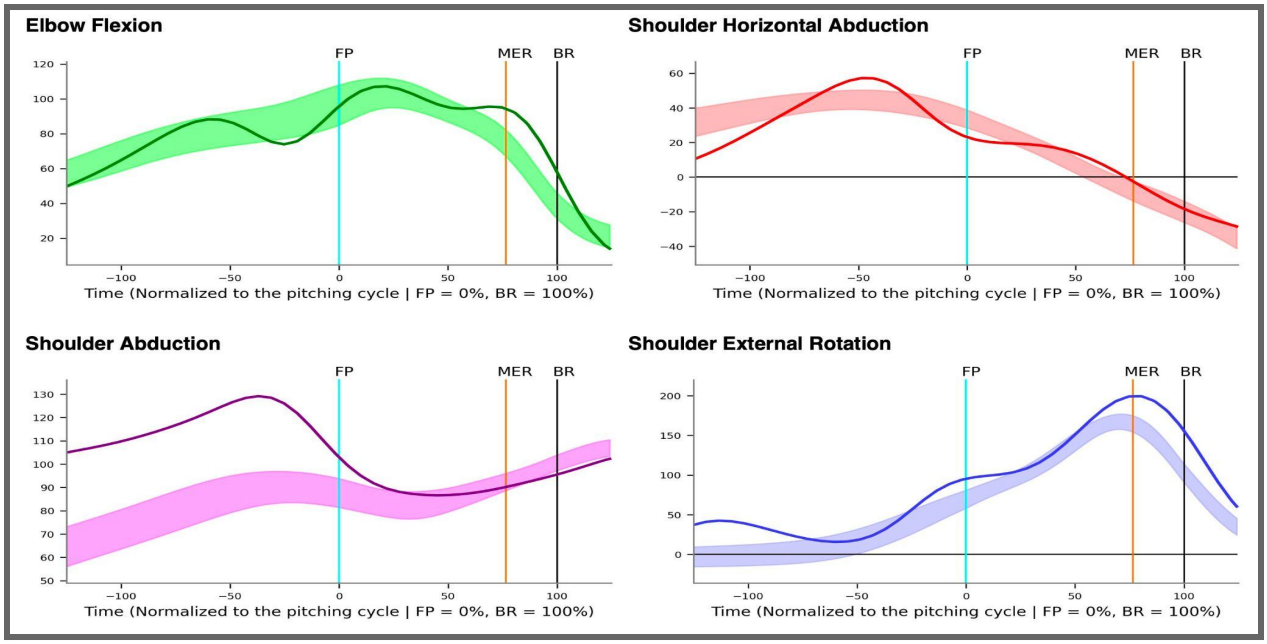


Trunk Movement:

- Hips and torso stay closed pretty well
- Lack of trunk tilt mentioned in the previous section has led to torso being out front of the body at foot plant (right picture)
- More trunk stack would allow his torso to stay over the center of the body at foot plant which would create a stronger base and center of gravity

Arm/Shoulder Movement:

- Shoulder abduction way higher than average, related to forward lean at footplant
- Throwing-arm scapula retraction really good here, the issue is that his glove-arm scap retraction never happens and that arm is just laying limp the whole stride
- Combined with the adjusted trunk stack centering his weight, retracting his glove-arm scapula on time will create that desirable “big chest” at foot plant
- A more active glove-arm creating positive disconnection from his throwing-arm will easily create necessary torque and generate velocity when rotating



3. Max External Rotation to Ball Release Phase

Trunk Movement:

- Trunk tilt at both max external rotation and ball release are good, so is trunk rotation meaning he is in a very mechanically sound position at this phase
- These numbers might become less ideal when working on the aforementioned

Arm Movement:

- Now having the whole arm path drawn out by PitchAI, it is evident that AJ has a slight pie-throwing motion (notice the upward sloping line after the dip)
- This goes back to the pronation at arm separation which is very important in creating the most efficient arm path, right now he has noticeable forearm flyout meaning his elbow flexion increases a bit too much (graph on page 2)