

# Pitching Biomechanics Checklist

| Body region                  | WIND UP                                        | EARLY COCKING                                                                                                                                                              | LATE COCKING                                                         | ACCELERATION                                                                          |
|------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>UE</b>                    |                                                | Shoulder:<br>Ab = 90°<br>Horizontal Ab = 20°<br>External rotation = 45° - 60°<br><br>Elbow:<br>Flexion = 90°                                                               | Shoulder:<br>Maximum ER<br>170 - 185°<br><br>Elbow:<br>Flexion = 90° | Shoulder IR and elbow extension<br><br>Ball release:<br>Shoulder Ab approximately 90° |
| <b>Trunk, pelvis, and LE</b> | Maximum knee height<br><br>Pitcher is balanced | Stride length 85% of height<br><br>Lead knee 45°<br><br>Pelvis approximately 35°<br><br>RHP lead foot closed to 3 <sup>rd</sup><br>LHP lead foot closed to 1 <sup>st</sup> | Pelvic rotation followed by upper trunk rotation                     | Lead knee extends to 30°                                                              |

- Diffendaffer, A. Z., Bagwell, M. S., Fleisig, G. S., Yanagita, Y., Stewart, M., Cain Jr, E. L., ... & Wilk, K. E. (2023). The clinician's guide to baseball pitching biomechanics. *Sports Health*, 15(2), 274-281.
- Fortenbaugh, D., Fleisig, G. S., & Andrews, J. R. (2009). Baseball pitching biomechanics in relation to injury risk and performance. *Sports health*, 1(4), 314-320.