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Multi-Joint System CLINICAL TIP



How to use the Biodes System 4 for Shoulder PreHabilitation

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Matt Long, Assistant Athletic Trainer and Head Baseball Trainer for the Tigers, focuses on the shoulder and uses the Biodes System 4 more for “prehab.” It’s a key part of the shoulder maintenance program that his pitchers follow in the athletic training room.

Long focuses on two shoulder patterns; IR/ER in 90-deg of abduction and IR/ER in modified neutral. Long enjoys modifying the standard setups to fit his players’ needs. For IR/ER 90 abduction pattern, he has the athlete sit on a stool to the side of the dynamometer, rather than having him sit in the chair. For IR/ER in modified neutral, he has the athlete stand to the side of the dynamometer.

According to Long, he modifies the setup for this particular workout in the interest of time and user friendliness. Using a stool and standing saves a lot of time. Long has a few favorite protocols. “The protocol I use for the starting pitchers is my favorite. It’s a lot of reps at higher speeds. I use that to build up endurance in the rotator cuff.”



For IR/ER 90 Abduction pattern, Long has the athlete sit on a stool to the side of the dynamometer.



For IR/ER in modified neutral, Long has the athlete stand to the side of the dynamometer.

The workout consists of 75 reps for both patterns as follows:

- 1 set of 8 reps @ 180 deg/sec
- 1 set of 10 reps @ 270 deg/sec
- 1 set of 12 reps @ 360 deg/sec
- 1 set of 15 reps @ 450 deg/sec
- 1 set of 12 reps @ 360 deg/sec
- 1 set of 10 reps @ 270 deg/sec
- 1 set of 8 reps @ 180 deg/sec

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We asked Matt what he looks for in the data, “In what I have observed, I do not believe there is any correlation between high numbers on the Biodex and pitching velocity. However, I am examining the ratios between internal rotation and external rotation. I like to have my players in a range where internal rotation is about 50-70% stronger than external rotation. This is because the shoulder is naturally going to be stronger in internal rotation than external rotation. However, if the external rotators are too weak, there will be too great of an imbalance, and the pitcher could have arm pain or dysfunction as a result. I have had great success with numerous pitchers who have experienced common pitching ailments such as “dead arm.” The Biodex System 4 activates the muscles of the rotator cuff more effectively than any other exercise we do in the athletic training room. As a result, pitchers recover faster. Although these strengthening exercises may not help increase velocity, they will help a pitcher with overall command and control, especially with off-speed pitches. Using the Biodex dynamometer results in less rotator cuff fatigue and better motor control.”

Matt Long’s “Tips from the Field”

“The timing of when I put my guys through this routine is important. When we are in season, our starting pitchers throw once a week. Because this protocol can be so taxing, I put my starting pitchers through it the day after they pitch, so they have the maximum amount of time to recover before their next outing. During the season, I do not have my relief pitchers do the workout because they are available to pitch in games multiple times a week. Our pitchers never do this workout before we make sure their arm is warmed up first. If they are able to come into the athletic training room right after practice, we will do it then, so they are warmed up and don’t have anything afterwards. However, if they need to come in at another time, I will make sure they take some time to warm up their arm before putting them through the workout.”

“Any time you are going to have your patient/athlete perform a new protocol, try it first. The Biodex Multi-Joint System has a different feel than other forms of rehabilitation exercises. Having a better understanding of what you are asking your patient to do will help you to write more effective protocols and use the Biodex in a more efficient manner.”

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