

## Off-season Conditioning, Part 2: The Exercises

September 22, 2011

Following up on [my Part 1 Newsletter](#) describing your "Training Toolbox", now for the exercises to do with those tools:

### **Exercise #5: Push-Ups**

The best total upper body strength exercise for building chest, core, and core strength all at once. Be sure to

1. Have the hands shoulder-level AND just wider than shoulder-width
2. Contract the Glute Muscles to help keep the body level and help core contraction



Figure 1. (a, b) Proper push-up technique is demonstrated with the head held in a centered and stable position, shoulders held down away from the ears, elbows close to the body, lower back and hips in a neutral position, and the legs are aligned with the hips and held stable.

When doing push-ups, go down to a count of "2" and the raise to a count of "1".

### **Exercise #4: Basketball Wall Throws**

One of the most important positions during the throw/pitch is getting the throwing shoulder into correct position at the moment of the throw called the "late cocking phase":



You can do this by standing 6 inches from a wall with a basketball:



Figure 4. One-Handed Baseball Throw (90-90 position)

Keeping the elbow shoulder high AND bent at 90 degrees while rotating around the shoulder and throwing the basketball against a wall, 25 repetitions at a time.

### **Exercise #3: Plyometric 3-Lb Med Ball Exercises**

[A 2007 study](#) found 3-lb med ball exercises (including the 4 exercises below):



for 8 weeks in this format:

**TABLE 3.** The "Ballistic Six" training progression.

Week	Training routine
1-2	3 sets of 10 repetitions
3-5	3 sets of 15 repetitions
6-8	3 sets of 20 repetitions

increased velocity by 2 mph (83 to 85 pm) compared to a 0.27 mph increase in the control group.

### **Exercise #2: Lunges / 1-Leg Lunge Extensions**

Research like [this 2011 study](#) continue to show the need for hip strength in producing consisting throwing mechanics:

Previous studies have shown that pitchers who are able to throw the fastest develop the largest ground reaction forces, suggesting that a successful pitch depends on energy generation from the legs (25). This energy must be transferred from the lower extremity through the body to the throwing hand (35), theoretically requiring optimal lumbopelvic control.

So here is a great exercise to do with a 10-lb medicine ball EXCEPT HOLD ON TO THE BALL:



Figure 8A. Single leg medicine ball chest toss



Figure 8B. Single leg medicine ball chest toss

### **Single-Leg Medicine Ball Chest Toss (Figures 8A and 8B)**

The athlete will begin with the hip flexion of the unsupported leg and slight knee flexion of the supported leg. In a powerful, coordinated effort, the athlete will flex at the trunk and extend at the hip and knee of the unsupported leg and deliver a forceful chest pass. The athlete should do no more than 4 – 6 repetitions per leg for 3 – 4 sets on each leg. Due to the ballistic nature of this exercise, rapid loading is experienced by the hamstrings. Athletes should only initiate this activity after hamstrings flexibility and eccentric training has occurred to reduce any risk of strain injury to the hamstrings.

**Exercise #1: Weighted Jumping Rope**

While a regular jump rope is crucial at a young age for maintaining eye-hand coordination, agility, and proper posture, a weighted jump rope gets your shoulder stronger.

[A 2011 study](#) found 3 minutes of weighted jumping rope (done in 3 1-minute sets per day) for 12 weeks can increase your rotator cuff external rotation strength by 55%!

**Table 5 Shoulder Isokinetic Strength During ER and IR at 90° of Abduction at 60°/s, Mean ± SD, Median (Min–Max)**

Group		PT IR, Nm/kg	PT ER, Nm/kg	TW IR, J	TW ER, J
Weighted rope	Pretraining	0.61 ± 0.14	0.21 ± 0.06	149 ± 34	45 ± 16
		0.68 (0.39–0.74)	0.21 (0.10–0.28)	136 (102–214)	40 (22–64)
	Posttraining	0.52 ± 0.11	0.30 ± 0.07	126 ± 28	70 ± 20

Why is it important to increase external rotation strength? Because [this 2010 study](#) found external rotation weakness to increase arm injury risk (click here for that newsletter).

## Have a Question About This Newsletter?

Email ([PitchingDoc@msn.com](mailto:PitchingDoc@msn.com)) or call (631-352-7654) Dr. Arnold!