

## In-Season Shoulder Conditioning: Helping Preventing Arm Injury

April 13, 2010

There are 2 moments when the arm undergoes enormous stress during pitching:

1) At Maximum External Rotation where elbow stress is **equal to hanging a 40-lb. weight off of your wrist.**



2) After Ball Release where this [2001 study](#) shows **the force pulling on your shoulder = your body weight.**



nal rotation, **shoulder distraction** reached a mean value of  $63\% \pm 22\%$  body weight. Just before ball release, the force began to increase steadily to a mean value of  $96\% \pm 19\%$  body weight at the instant of ball release. On average, a

As a result, all of **the shoulder muscles must contract at the same time to prevent injury:**

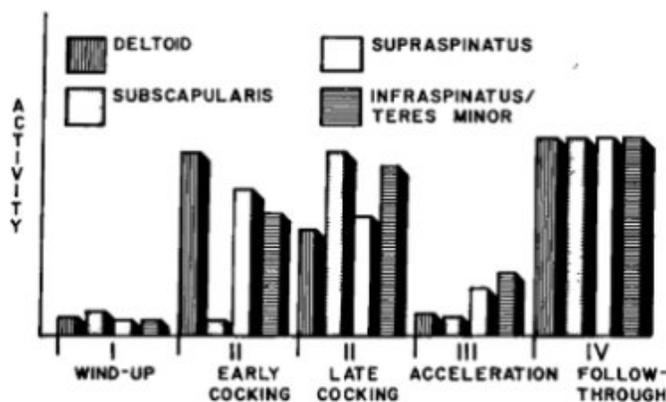


Figure 2. A summary of the muscle activity during the stages of a throw or pitch.

accelerating forward in space. **Follow-through** (Stage IV) was the **most active stage with all the muscles firing intensely.** The muscle patterns observed during

## Medicine Ball Training: Helping Prevent Arm Injury In-Season

While [JUMPING ROPE is my #1 recommendation](#) for injury prevention AND in-season conditioning, [this 2006 study](#):

### **EFFECTS OF HIGH VOLUME UPPER EXTREMITY PLYOMETRIC TRAINING ON THROWING VELOCITY AND FUNCTIONAL STRENGTH RATIOS OF THE SHOULDER ROTATORS IN COLLEGIATE BASEBALL PLAYERS**

found significant increases in velocity with med ball exercises, 2 of which are here (email me if you'd like the entire study):



## Have A Question About This Newsletter?

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