

# Medicine Ball Drills for Gymnastics

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While observing the sport of gymnastics, it becomes evident that the gymnast is a very powerful athlete. A study by Sands et al. (1994) concluded that strength and power are extremely important for the gymnast's performance. The authors went on to recommend that gymnasts concentrate more on peak strength and power rather than anaerobic power and capacity.

With this advice to focus on increasing power during physical training, it becomes essential to define power. Brancazio (1984) states that power is the rate of doing work; that is, it takes into account the time required to do a given amount of work. The definition of work is force times distance, hence, power is composed of three components (1) Force; (2) Distance; and (3) Time.

In the training milieu, it may be difficult for the coach and athlete to comprehend how force, distance, and time, relate to performance. So converting these terms to understandable training jargon is helpful; force is equal to strength; distance is equal to agility; and time is equal to speed. These terms are more applicable to the coach and athlete, but how they contribute to power may be confusing. A functional definition of power given by Radcliffe (1996) states that in order to be most powerful, you (a) have to possess strength enough to exert optimal amounts of force versus the effects of gravity; (b) have to do so throughout the greatest distance (agility) allowed by your body either pushing or pulling across the torso; and (c) do so in the least amount of time (speed). With this definition, the coach can now select the class of exercises which will ameliorate the ability of the gymnast to display power.

Incorporating medicine ball drills into the gymnast's training is an excellent method for increasing both general and specific power. Specific medicine ball drills are those drills which simulate the movement pattern used by the gymnast during a particular gymnastics skill. General medicine ball drills are those drills which stress posture, balance, flexibility, and stability, but may not stimulate the movement patterns used by gymnasts. These general medicine ball drills develop strength and power throughout the torso, laying the foundation for the future use of specific medicine ball drills.

This article will define general drills. Three categories of general medicine ball drills include (1) hand-offs; (2) tosses/passes; and (3) throws.

Hand-offs are defined as transfer movements of the upper torso and limbs. Tosses/passes are projecting movements of the upper torso and limbs which take place below and/or in front of the head (Radcliffe, 1996). Throws are projection movements of the upper torso and limbs which occur above and/or across the head (Radcliffe, 1996).

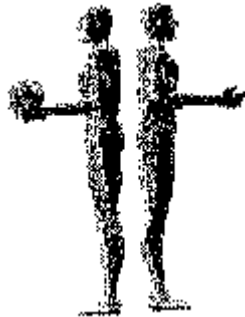
## **Hand-offs**

## **Half Twist**

Two athletes standing inches apart have their feet firmly planted on the ground and knees slightly flexed. One athlete is holding a medicine ball with the arms flexed 90 degrees at the elbow joint. The partner's arms are flexed 90 degrees ready to receive the ball (Fig. 1).

Upon command both athletes rotate their torsos 90 degrees in opposite directions and the ball is handed-off. This sequence is then repeated in the opposite direction (Fig. 2). The athletes need to keep their knees slightly flexed and their feet firmly planted to insure maximal rotation through the torso. A prescribed number of rotations are performed one direction and then reversed.

**Figure 1**



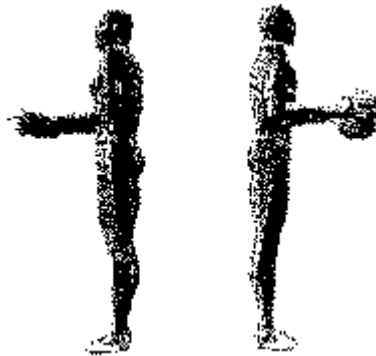
**Figure 2**



### **Full Twist**

The same start position as the half twist except the athletes are a few feet apart (Fig. 1). Both athletes rotate beyond 90 degrees in the same direction and hand the ball off. This is then repeated in the opposite direction (Fig. 2). The athletes need to keep their feet flat, knees slightly flexed, and perform the rotations quickly.

**Figure 1**

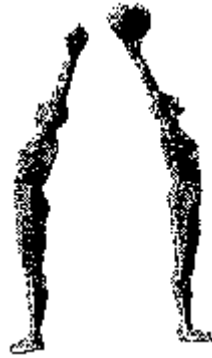


**Figure 2**



### **Over/Under**

This drill's starting position is comparable to the full twist, but the athlete with the medicine ball is holding the ball overhead (Fig. 1). Upon command both athletes perform extension of the torso handing the ball off overhead. Immediately, after hand-off, both athletes perform flexion at the torso handing the ball off between their legs (Fig. 2). This continues for a prescribed number of repetitions and then the direction is reversed. The hand-offs should be completed with flexion and extension of the torso. At the overhead position watch the elbow joint. If the joint is flexed beyond 170 degrees, it is compensating for lack of extension at the torso.

**Figure 1****Figure 2**

## Tosses/Passes

### Shovel Toss

The athlete starts on both knees with the ball placed on the ground directly in front. The arms are straight and the hands are cupped around the back of the ball. The shoulders are slightly in front of the ball, back is flat, and hips are back (Fig. 1). The athlete then thrusts the hips and extends the torso explosively, shoveling the ball with long arms (Fig. 2). The athlete should focus on the hip and torso extension and catch themselves in a push-up position.

**Figure 1****Figure 2**

### Scoop Toss

The athlete assumes a semi-squat position, placing the ball on the ground and between the legs. The hands are placed underneath and to the sides of the ball. The back is straight, shoulders slightly in front of the ball, and the arms are straight (Fig. 1). The ball is scooped off the ground by thrusting the hips forward and up. The shoulders move back and the arms remain straight (Fig. 2). Full extension of the hip, knee, and ankle occur as the athlete lifts off from the ground tossing the ball directly upward (Fig. 3).

**Figure 1****Figure 2****Figure 3**



## Throws

### Scoop Throw

This drill is performed similar to the scoop toss with the exception of the release point being over the head (Fig. 1 & 2). The athlete in this drill performs greater extension of the torso and the release point is above the head and behind the body resulting in the ball traveling backwards (Fig. 3).

**Figure 1**



**Figure 2**



**Figure 3**



## References

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This article appears in the November/December 1997 issue of *Technique*, Vol. 17, No. 10.