

PERFORMANCE VOLLEYBALL CONDITIONING

A NEWSLETTER DEDICATED TO IMPROVING VOLLEYBALL PLAYERS

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Hip Socket (Acetabular) Ball (Femoral) Internal Rotation- AFIR

Lisa Bartels, DPT, Postural Restoration Institute, Lincoln, NE

Lisa was a member of the University of Nebraska volleyball team from 1995-1997. She was introduced to the science of Postural Restoration as a patient under the care of Ron Hruska. She had suffered from long-standing injuries sustained during her collegiate volleyball career and found success with the treatment techniques she learned at the Hruska Clinic and later received from the Postural Restoration Institute. Lisa returned to practice physical therapy at the Hruska Clinic Restorative Physical Therapy Services in Lincoln, Nebraska after completing her Doctorate of Physical Therapy from the University of Nebraska Medical Center in Omaha. Lisa is a member of the American Physical Therapy Association.



Lisa Bartels

rolling over the ball of the femur as the weight of the body is transferred to the supporting lower extremity (heel strike to mid stance).

It should never be assumed that hip shifting ability is symmetrical on the left and right hips. Athletes positioned in a Left AIC pattern are remaining in a shifted state on the right hip. They never shift into the left hip despite transferring weight to the left lower extremity. How do athletes accomplish this? They are compensating with excessive ball (femur) rotation which often results in extreme overuse of the hip flexors and lateral quadriceps. The left glutes and left inner thighs, the primary hip shifting muscles, adaptively become very weak because they are used less and less as the athlete continues to compensate around their right leg dominance. As left hip shifting (AF IR) ability is lost, the compensating muscles can pull the ball away from the socket until they are no longer congruently aligned. With hip stability compromised, the athlete is predisposed to abnormal joint forces and pain through the feet, knees, hips, and back.

The importance of left AF IR should be addressed in volleyball because during the follow through phase of a right handed pitcher, the left lower extremity should rotate into a position of shift or AF IR. If a thrower lacks the ability to shift into the left hip during follow through, rotation is only occurring above the pelvis. This can lead to excessive torque via the shoulder and trunk. There are many dynamic activities the Postural Restoration Institute™ uses with volleyball athletes to facilitate left AF IR. Some of these can easily be implemented during practices or training. Figure 1 and 2 demonstrate a position of left AF IR. Although the athlete is sidelying in Figure 1, the motion can be performed in seated and standing positions. Figure 2 can easily be modified from the stairs to a left single leg balance activity on flat ground. If the zipper or midline of the shorts is vertically aligned with the left knee and left foot while the left hip is shifted back, the athlete is in a state of left AF IR. Correct glute, inner thigh, and quadriceps activity is occurring if an athlete can maintain this position in left single leg balance.

More Information Please! To contact Lisa or learn more about Postural Restoration by go to www.posturalrestoration.com or www.hruskaclinic.com.

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Rotation ability of the hip is often assumed in volleyball athletes, and is not often considered when pain or injury occurs. Acetabular (socket) femoral (ball) internal rotation (AF IR) is a term the Postural Restoration Institute™ has coined as an individual's ability to shift into their hip. The introductory article preceding this discussion presented a predominant biomechanical strategy called the Left AIC pattern, that many competitive athletes unknowingly utilize, which can greatly compromise core stability. The purpose of this discussion is to describe why volleyball players in a Left AIC pattern often lose effective proprioceptive awareness of the left hip socket and thus the ability to shift into the left hip, and how simple training strategies or practice drills can prevent instability.

The hip is a ball and socket joint that must remain congruently aligned for optimal pain free mechanics to occur around the ankles, knees, hips, and spine. The ball of the hip is the top part of the femur or thigh bone. The sockets of the hip are part of the pelvis. A hip that is congruently aligned means the ball is maximally covered or surrounded by the socket. During reciprocal motion of the legs and trunk, whether an athlete is running or riding a bike, both the femur and pelvis rotate on each other simultaneously. For simplicity sake shifting into a hip can be described as the socket

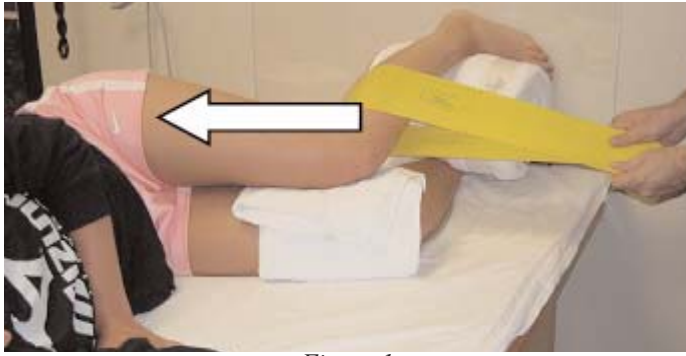


Figure 1



Figure 2