

5 Exercises To Increase Your Vertical

World-class high jumper Mike Caza will have you jumping higher while reducing your injury risk.

By Mike Caza



Lake High School (Millbury, Ohio) senior and Duquesne University recruit Brittany Poling helped Mike demonstrate these jumping exercises.

PHOTOS BY DAVE KYLE

Volleyball is a dynamic, fast-paced sport that requires explosive jumping ability to support the player's ability to spike harder and block better.

Two important aspects of helping volleyball players jump higher is to teach them how to jump properly and how to land properly for improved performance. Many common volleyball injuries such as ACL tears and lower back problems are non-contact injuries that can be caused by faulty landing and jumping technique. The good news is many of these injuries can be prevented with proper training.

Just before a volleyball player plants their feet into the ground, the muscles are in a lengthened contraction. When the feet plant and the athlete pushes off and jumps, the muscles quickly go into a shortened contraction. This is called the stretch-shortening cycle.

A good analogy would be if you took an elastic band, pulled it back then let it go, the band quickly propels through the air. The rate at which the muscles go from a lengthened state to a shortened state is similar to the way the elastic band does. This is a key ingredient that enables the athlete to jump higher. This is how the athlete's muscles work when planting and jumping in volleyball.

If the muscles lengthen and shorten quickly, the athlete has greater potential to jump higher. Athletes can improve the rate of the stretch-shortening cycle with proper plyometric training done with good landing positions and jumping mechanics.

Included are five examples of volleyball-specific exercises that require proper landing and jumping mechanics to maximize explosive power.

1. Squat Jump To Stick

Objective: Increase vertical leap/improve landing position

- Start in a tall, upright posture with feet shoulder width apart
- Begin by pushing the hips down and back while keeping the chest upright
- Once the thighs are at 45 degrees, quickly push through the ground and fully extend the hips, knees and ankles as you propel into the air.
- "Stick the landing" by finishing flat-footed in a stable, controlled position with the thighs at 45 degrees and the front knees behind the toes.



2. Squat Jump to Single Leg Stick

Objective: Increase vertical leap and improve landing position

- Start in a tall, upright posture with feet shoulder width apart
- Begin by pushing the hips down and back while keeping the chest upright
- Once the thighs are at 45 degrees, quickly push through the ground and fully extend the hips, knees and ankles as you propel into the air.
- "Stick the landing" on one leg by finishing flat-footed in a stable, controlled position with the thigh at 45 degrees and the front knee behind the toes.

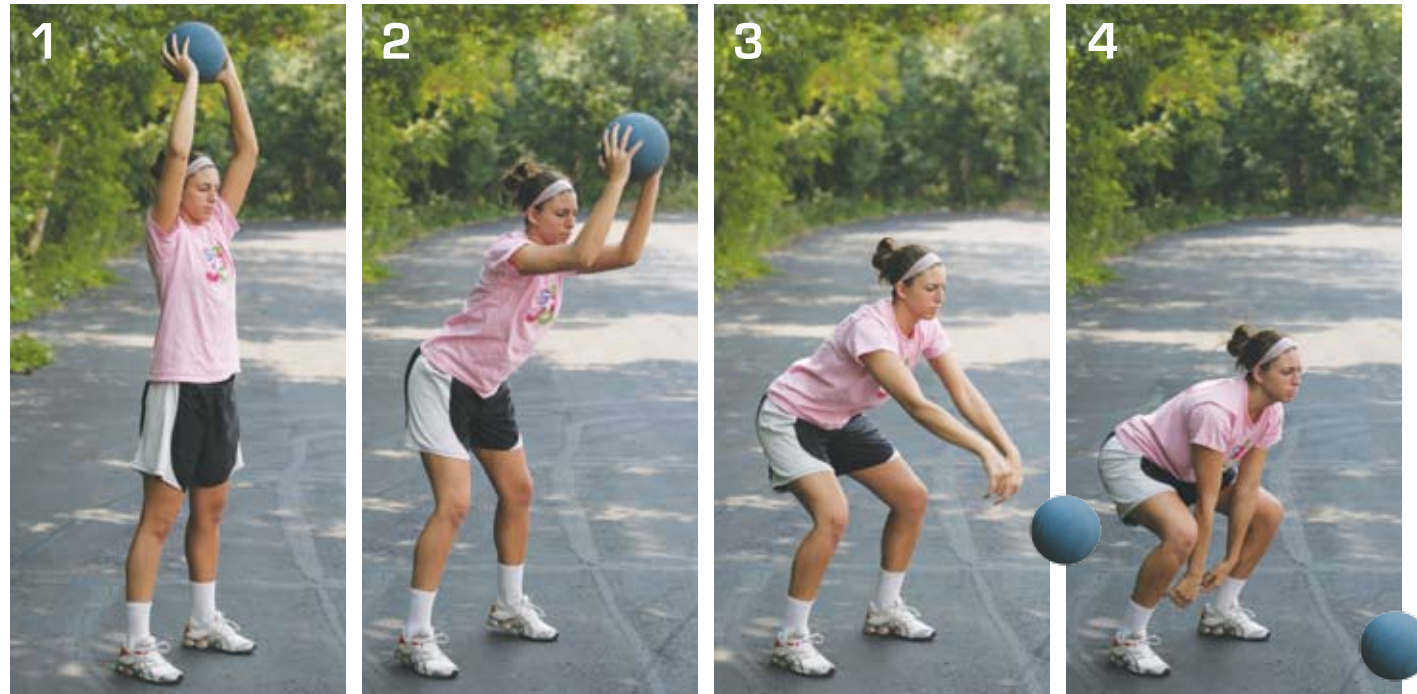


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3. Medicine Ball Throw Down

Objective: Improve hitting power and ability to decelerate

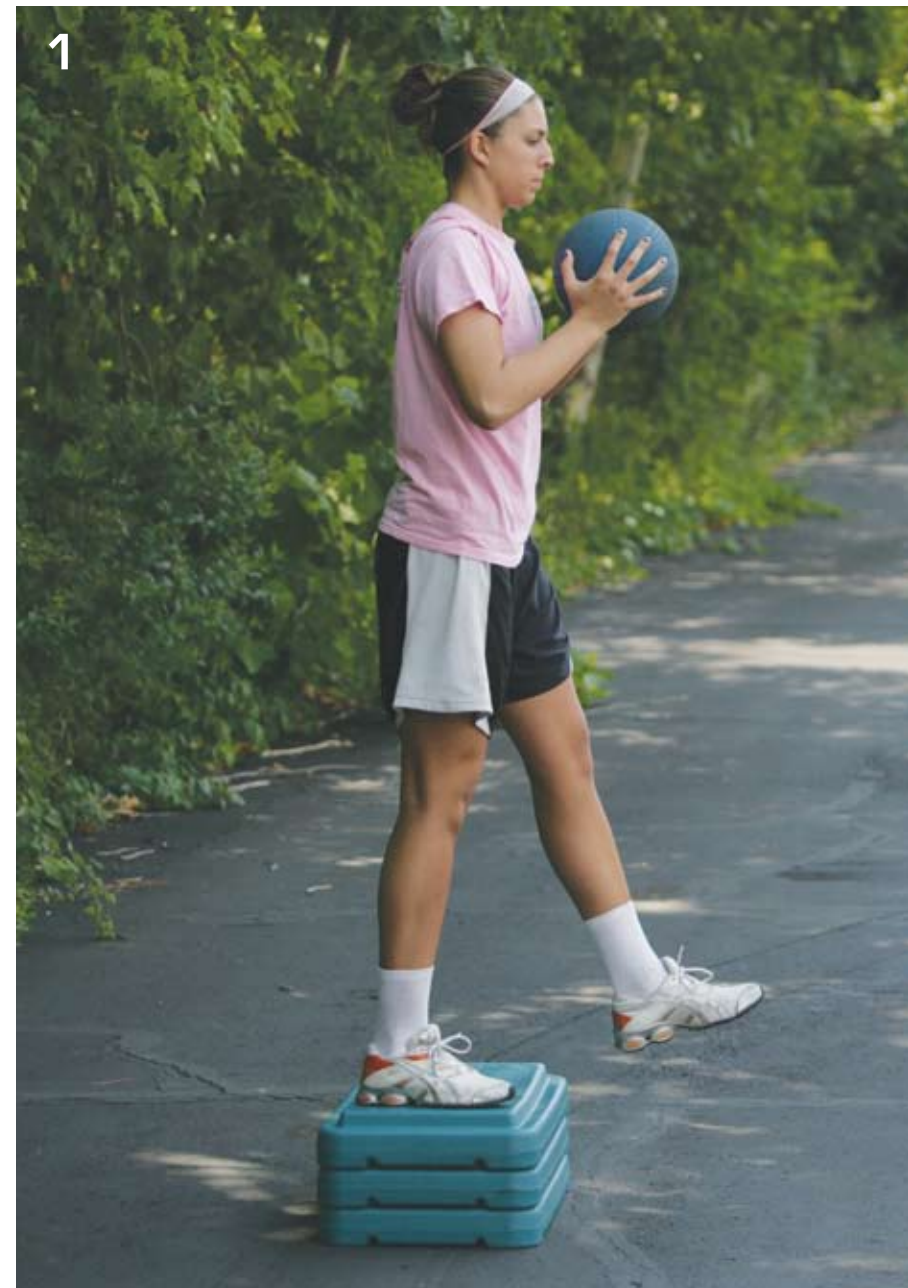
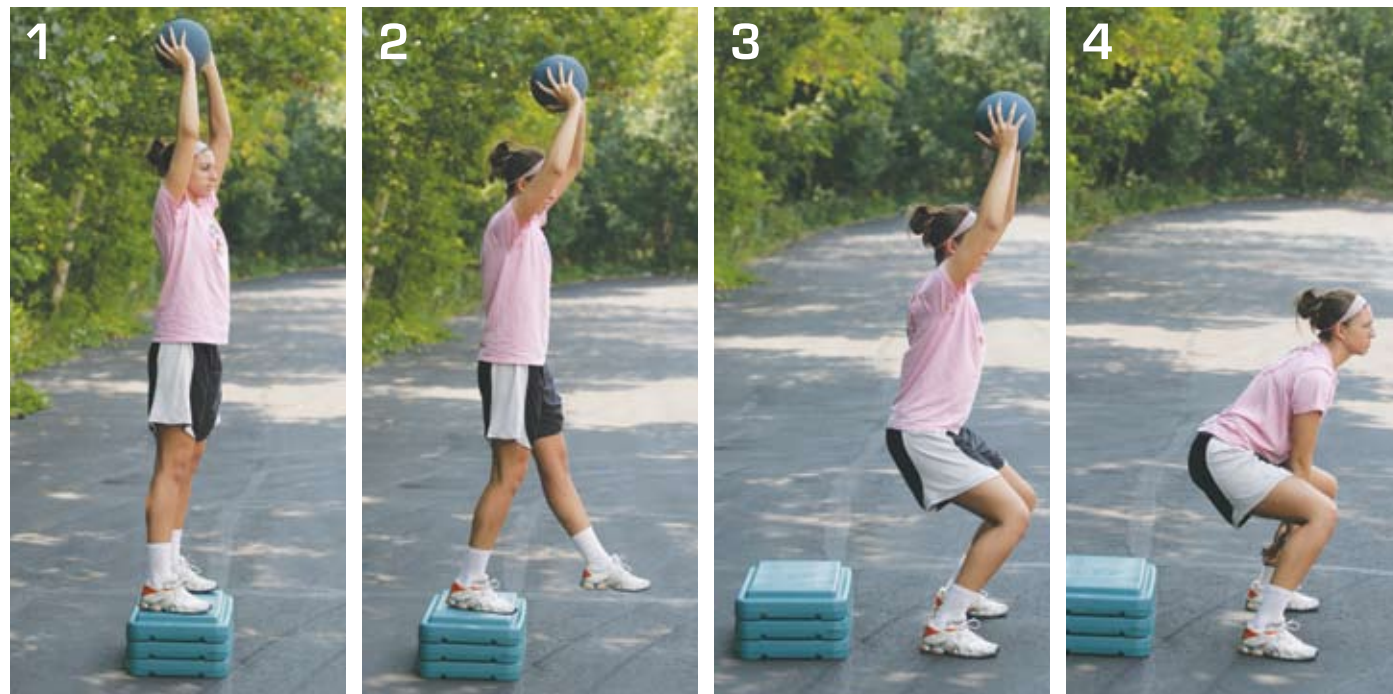
- Start by holding the medicine ball overhead in a tall, upright position with the arms straight overhead.
- Keep slight tension in the abdominal muscles and initiate an explosive downward motion by throwing the ball straight down into the ground while pushing the hips back at the same time.
- Focus on using the abdominals and hips to decelerate the movement after the throw.



4. Depth Drop To Medicine Ball Throw Down

Objective: Improve hitting power and ability to decelerate

- Start by standing on top of a small box holding the medicine ball overhead in a tall, upright position.
- In one motion, drop off the box landing flat-footed while explosively throwing the ball down to the ground by pushing the hips down and back.
- Focus on using the abdominals and hips to decelerate the movement after the throw.



5. Depth Drop To Medicine Ball Throw

Objective: Improve ability to decelerate and then explode vertically

- Start by standing on top of a small box holding a 4-8 pound medicine ball at chest level.
- Drop off the box and land flat-footed for a split second by flexing the hips down and back so the thighs are at 45 degrees.
- Rapidly explode vertically by fully extending the hips, knees and ankles while throwing the medicine ball straight up in the air.
- The key is to generate power from the legs by pushing through the ground and getting the body fully extended on the throw. This enables the athlete to maximize the transfer of vertical energy up through the body.



Mike Caza is the owner and director of **Performance at Premier Sport Conditioning** in Twinsburg, Ohio. Mike is the creator of **Breakthrough Vertical Jump Training**, a complete 12-week program designed to help coaches, athletes and trainers enhance vertical jumping ability in a variety of sports, including volleyball. Mike was a world-class high jumper and a member of the **Canadian National Track and Field Team**. Mike once high-jumped 7'5", which measures 18 inches over his standing height of 5'11". For more information on Mike's jumping program, visit www.mikecaza.com.