5 VERTICAL JUMP SECRETS

By

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When was the last time you increased your vertical jump? How much did you increase it by? 1 inch? 2 inches? How long did it take? How many hours of squatting, leg presses, leg extensions and leg curls did it take? At APECS athletes ask each other not if they increased their vertical jumps, but by how many inches. The numbers 3, 4, 5, and sometimes 6 can be heard. That is inches. In how much time one might ask. 3 months, 6 months, this past year. Sometimes athletes are even able to jump 1-2.5 inches higher in just 10 minutes. These are the results of the science of exercise. If you train smart, work hard, and let the body recover and regenerate, you will see results. 4 sets of 10 on the leg extension machine, or hundreds of submaximal repetitions of ankle hops are not going to do the trick. Athletes and coaches consult with APECS all the time and ask what are some of the best ways to increase their vertical jumps. This article answers this question with 5 vertical jump methods (in no particular order) used by APECS. Enjoy, Work, and……….. Succeed.

1. **Overhead Goal Training:**
   Studies have shown as much as 5” gains in vertical leap through the use of an overhead goal in vertical jump training. 5 inches in vertical could mean the difference between 29” and 34”. The overhead goal training method is based on the powerful tool of immediate knowledge of results. By tapping into the cognitive reward system, and athlete will push back the release of certain inhibitory neurotransmitters, which decrease the neural activation of the muscles required for jumping. As an athlete increases his/her “activation”, that same athlete would then be able to increase their performance accordingly. At APECS we have seen 4” gains in 3 months through the use of overhead goal training, specifically the SuperUPZ Jumpball. We feel this is quite possibly the single most effective stand-alone vertical jump training tool available for increasing an athlete’s vertical jump. Check it out on [www.superupz.com](http://www.superupz.com).

2. **POMS (Power Output Measurement System):**
   Through immediate knowledge of results an athlete can increase his or her motivation to succeed. If the feedback is positive, this reinforces what the athlete is already doing, and the athlete will be motivated not to let the results drop. If the feedback is negative, the athlete will be motivated to work harder to achieve the desired goal. The ultimate expression of total body power is the vertical jump. Therefore an athlete
needs to increase total body power. When an athlete can see their power output right before their eyes for each repetition, the motivation to beat the previous repetition is high. The athlete will also be motivated not to allow this performance to drop off from repetition to repetition or set to set. An athlete can also monitor their power output increase from week to week to ensure increases in performance.

3. **Depth Drops and Depth Jumps:**
   During the Eastern Bloc days of Olympic dominance, the Soviet and German teams were using “top secret” methods training to create world and Olympic champions. Some U.S. coaches were invited to the Soviet Union in the 70’s to observe these secret training methods. What they saw were athletes jumping onto and off of platforms, pushing against walls on swing like devices with springs attached against them, throwing weights into the air from many different positions, jumping up and grabbing targets suspended from the ceiling, and many other “secret” training methods. Igor Verkoshansky termed what these coaches were witnessing “Plyometrics”, or “shock training”. Depth Drop and Depth Jumps were the two primary forms of maximal “shock training” used by these athletes. The ability to absorb impact, and the ability to absorb impact and immediately generate force in the opposite motion are the foundation for this training method.

   To Perform a Depth Drop, stand on a box (the height to be determined by training experience/lower extremity strength/ or actual vertical jump height) with your hands in front of you with elbows bent. Step forward and fall off box. You should fall out the distance equal to the height of the box. (If you are standing on a 24” box you should land 24” away from the box). Land with a soft landing, minimize knee bend, torso flexion, and do not allow the weight to shift to the heels upon impact. Stick this landing for 3-5 seconds. Take a minimum of 1-minute rest between each jump.

   To perform a Depth Jump, stand on a box (the height to be determined by training experience/lower extremity strength/ or actual vertical jump height) with your hands behind you in the propulsive phase position of jumping. Step forward and fall off box. You should fall out the distance equal to the height of the box. (If you are standing on a 24” box you should land 24” away from the box). Think about jumping before you land. (The ground is a hot stove so you will burn your feet if you are on the ground for too long.) The time on the ground should take a maximum of .3 - .5 seconds. As soon as you land with a soft landing, minimize knee bend, torso flexion, and do not let the heels touch the ground. Immediately jump up, swinging the arms upward while extending at the hips, knees, ankles, torso, and neck.

4. **Trigger Point Therapy, SMFR, and Static Hip Flexor Stretching**
   Reciprocal inhibition states that a muscle that is the opposite of a tight/shortened muscle will have decreased neural activation. When it comes to the hip flexors, the opposite muscle of the hip flexors are the
hip extensors, or gluteus muscles, specifically gluteus maximus. That’s right, with tight hip flexors your glutes are inhibited, or have decreased activation. Your glutes play a major role in the vertical jump. They are some of the strongest muscles in the body, and yet, if the hip flexors are tight and short, they can become slightly “deactivated”. If the glutes are not firing maximally, other muscles need to take over, such as the lower back extensors, hamstrings, and quads, placing excess stress on these and other small synergistic muscles. Through the use of Trigger Point Therapy and Self-myofascial release techniques, as well as static hip flexor stretching, we have seen athletes increase their vertical leap up to 2 inches in 10 minutes, while minimizing the risk of injury. Prior to any Plyometric, ballistic, or lower extremity posterior chain training, we typically incorporate these techniques up to 5 minutes prior, and sometimes between sets.

5. **Vertical Jump Technique**

The height of a vertical jump is determined by the vertical acceleration at the moment of takeoff. The faster you drop into the countermovement, the higher you will jump. It is Newton’s Third Law of motion which states “for every action, there is an equal and opposite reaction”. Picture a tennis ball bouncing on the floor. If you drop the ball it may bounce 2 to 3 feet in the air. The reaction (bounce height) is equal to the action (dropping/pull of gravity). Whereas, if you throw the ball down with great force (action) the ball will bounce 10+ feet in the air (reaction). The body works in this same manner. Begin by positioning your feet 5-10” apart, with knees and toes pointing straight ahead, and shoulders and hips squared. Swing arms directly overhead reaching as high as possible, coming on up onto your toes, with full extension in ankles, knees, spine, shoulders, and neck. Once you have reached this stretch position, swing your extended arms down as powerfully as possible, initiating the movement from the abdomen. Keeping your head up as you swing your arms, simultaneously bend at the hips, while bending at the knees and ankles. **Make sure you have more bend at your hips than you do in your knees.** At the bottom position of this countermovement your feet and knees should be pointing straight ahead, your hips should have more bend than your knees or ankles, your head should be looking upward/straight ahead, and your hands should be at your sides even with your hips with arms extended, and minimal ground contact at the heels. From this position, swing the arms upward while extending at the hips/low back, knees, ankles, and neck driving the body upward into the air with arms reaching as high as possible and head looking straight up. Try to touch your feet together immediately after leaving the ground to create more vertical force. Once you have reached maximum for your jump, begin to prepare the body for the landing. Make sure to dissipate the landing forces by flexing at the ankles, knees, and hips to create an eccentric load in the muscles, rather than in the joints. **Balanced quiet and controlled landings are very important in vertical jump training.**
REFERENCES

5. Siff, M. Supertraining. Denver, Co 2004