

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Isometric Strength Training for Basketball Players: A Short View

S. Senthil Kumaran

Ph.D. Research Scholar, Department of Physical Education, Bharathiar University, Coimbatore, Tamilnadu, India.

Abstract

Isometric strength training is a type of strength training that can be beneficial for basketball players. Isometric strength training involves contracting muscles against an immovable resistance, such as a wall or a heavy object, while the body remains in a static position. This type of training is often used to increase the strength of a particular muscle group and to improve muscular balance, which can help a basketball player become more dynamic on the court. This type of training is beneficial the basketball players because it helps to increase strength, power and stability while also improving muscular endurance. It is important to remember to focus on proper form during isometric exercises as improper form can lead to injury. With isometric strength training, basketball players can take their game to the next level.

Introduction

Isometric strength training is a type of exercise that has been gaining popularity among basketball players recently. Isometric exercises involve static contractions of the muscles, meaning that the muscle remains in the same position while the force is applied. These exercises are beneficial to basketball players as they help to improve strength and stability, while also reducing the risk of injury. The primary benefits of isometric strength training for basketball players include increased strength, improved balance, better stability and more efficient movement. Isometric exercises can help to strengthen the muscles surrounding the joints, which can help to reduce the risk of injuries. Additionally, these exercises can help to improve balance and stability, allowing for better control and more efficient movement.

Isometric strength training can also be used to improve an athlete's performance. By using exercises that target specific muscle groups, basketball players can develop the strength and power needed to excel on the court. These exercises can also help to improve an athlete's agility, coordination, and explosiveness. Isometric strength training is a great way to improve an athlete's overall performance and reduce the risk of injury. It is important that basketball players use proper form when performing these exercises, as improper form can increase the risk of injury. Additionally, proper warm-ups and cool-downs are essential for any exercise program.

In addition to isometric exercises, basketball players can also benefit from other types of strength training, such as free weights, weight machines, and bodyweight exercises. By incorporating a variety of exercises into a program, basketball players can maximize the benefits of their training. Isometric strength training is a great way for basketball players to improve their performance and reduce their risk of injury. By following a properly designed program, basketball players can reap the benefits of improved strength, balance, stability, and agility. Additionally, these exercises can help to build strength and power needed to excel on the court.

Benefits of Isometric Strength Training

Isometric strength training is a type of strength training that can be beneficial for basketball players. Isometric strength training involves contracting muscles against an immovable resistance, such as a wall or a heavy object, while the body remains in a static position. This type of training is often used to increase the strength of a particular muscle group and to improve muscular balance, which can help a basketball player become more dynamic on the court. The most obvious benefit of isometric strength training for basketball players is the development of muscle strength and power. Isometric strength training can help to increase the force production of muscle fibers, as well as improve the coordination of muscle actions. This can result in a basketball player being able to jump higher, move faster, and react more quickly on the court.

Isometric strength training can also help to improve a basketball player's balance and stability. By performing isometric exercises, basketball players can better control their body and improve their balance while they're performing dynamic movements. This can be especially beneficial when playing defense or making quick cuts on the court.

Finally, isometric strength training can help to reduce the risk of injury. By increasing a basketball player's strength and stability, they can better protect their joints and muscles from the stresses of the game. This can help to keep them on the court, rather than on the bench.

Overall, isometric strength training can be a valuable tool for basketball players looking to improve their performance and reduce the risk of injury. By increasing strength and stability, basketball players can become more dynamic and explosive on the court.

Types of Isometric Strength Training for Basketball Players

Isometric strength training can be a great way to supplement a basketball player's strength and conditioning program. Isometric exercises involve the contraction of a muscle without changing the length of the muscle. This type of training is beneficial the basketball players because it helps to increase strength, power and stability while also improving muscular endurance.

For basketball players, some of the best isometric exercises are wall sits, planks, bridges and push-ups. Wall sits involve the athlete holding their body in a squat position against the wall for a predetermined amount of time. This exercise forces the muscles in the lower body to contract and hold their position, while also working the core. Planks are great for building core strength, and involve the athlete holding their body in a plank position for a specified amount of time. Bridges involve the athlete lying on their back with their feet flat on the floor and their knees bent. The athlete then presses up into a bridge position, engaging the core, glutes and hamstrings. Push-ups are another great exercise for the upper body, involving the athlete pushing their body up and down against the floor.

Isometric strength training can help basketball players to improve their overall strength and power, as well as their muscular endurance and stability. By combining different isometric exercises into their strength and conditioning program, basketball players can make significant improvements in their game.

1. Wall sit

Wall sits focus on improving the strength in your thighs, specifically your quadriceps muscles.

Equipment needed: none

Muscles worked: quadriceps, hamstrings, and glutes

- 1. Stand about 2 feet away from a sturdy wall, leaning your back against it.
- 2. Bend your knees and lower your bottom down so that your knee joints form a 90-degree angle. Your body position should resemble the same posture you have when sitting in a chair.
- 3. Hold this position for 15 seconds or longer. Be sure to keep your hips and shoulders in contact with the wall and keep your knees over your ankles.
- 4. Perform 2–3 rounds.

To maintain this position, you'll feel your thighs becoming tighter and more fatigued.

Experiment with going back and forth between driving your weight down through your toes and your heels. Driving down through your heels will target your glutes, while driving down your toes will target your quadriceps.

Just be sure not to let your knees go out past your toes, and when you put weight on your toes, don't put too much pressure on the knees.

2. High plank hold

The high plank hold is an effective way to engage many muscles in your body.

Equipment needed: none; yoga mat optional

Muscles worked: abdominals, quadriceps, glutes, muscles of the arms, chest, and shoulders

- 1. Start in a kneeling push up with your hands shoulder-distance apart.
- Push your hands into the ground and straighten your knees, pushing down into the balls of your feet to raise your body into a high plank position. Your body should look as if you're in the upward position of a pushup. Ensure your hands and shoulders are aligned, legs are straight, and your core is engaged.
- 3. Hold this position 20 to 60 seconds, or as long as you can maintain proper form. Repeat two more times.

3. Side plank

The side plank is excellent for engaging your obliques, located on the sides of your midsection.

Equipment needed: none; yoga mat optional

Muscles worked: obliques, spinal stabilizers, quadriceps, glutes, serratus anterior, shoulder stabilizers, hip abductors

- 1. Lie on your left side with your legs straight, keeping your hips, knees, and feet stacked. Bend your left elbow and place your forearm on the ground under your shoulder.
- 2. Push your left forearm into the ground to lift your torso and hips off the ground. Keep your core tight and ensure you're making a straight line from head to heel.
- 3. Lift your right arm straight into the air, or keep it by your side.
- 4. Hold this position for 10 or more seconds. Then, switch sides.

4. Low squat

Technically, you can make most exercises isometric exercises by holding your body still during the contraction. Here's what we mean, using the squat as an example.

Equipment needed: none

Muscles worked: quadriceps, glutes, hamstrings

- 1. Stand with your feet slightly more than hip-width apart. Your toes may be pointed slightly out, if it's more comfortable, with your hands on your hips or held straight out in front of you.
- 2. Slowly push your hips back into a sitting position while bending your knees. Avoid driving your knees forward.
- 3. Continue to lower yourself until your butt is slightly below knee level. If you can't go further, lower yourself until your thighs are parallel with the floor. Keep your feet planted with heels down, and your spine long without rounding forward.
- 4. Hold this position for 10–30 seconds. Then, return to the starting position.
- 5. Perform 3–5 rounds.

5. Overhead hold

Overhead holds challenge the muscular endurance of your shoulder girdle.

Equipment needed: light to medium weight required (Start with a 5 to 10-pound plate, dumbbell, or kettlebell, or even just two cans of soup. Increase the weight as needed.)

Muscles worked: upper trapezius, shoulder girdle muscles, triceps, core

- 1. Extend your arms above your head and hold the weight steady. Be sure to engage your core.
- Make sure to keep your arms fully extended and in line with your shoulders. Bending your arms will engage different muscles (your biceps and triceps).
- 3. Hold the weight over your head for 20-30 second intervals. However, stop before this if you're concerned you may drop the weight.
- 4. Perform 2–3 rounds.

6. Glute bridge

This exercise will quickly become a favourite for anyone looking to improve the strength of their backside.

Equipment needed: none; yoga mat optional

Muscles worked: hamstrings and glutes, core muscles

- 1. Lie on your back with your knees bent and your arms by your sides. Your heels should be 12–16 inches from your butt.
- 2. Press into your heels, brace your core, and push your pelvis upwards by squeezing your glutes. Ensure your ribs do not flare during this movement. Keep your tail bone slightly tucked, abdominals engaged, and your feet flat on the floor.
- 3. You will feel your glutes and hamstrings starting to fatigue. Resist the urge to let your hips sink or your back arch.
- 4. Complete 2–3 rounds of a 30-second hold.

7. V-sit

The V-sit helps you work on your core stability while also developing core strength.

Equipment needed: none; yoga mat optional

Muscles worked: abdominals and hip flexors

- 1. Sit on your bottom with your knees bent and feet flat on the floor.
- 2. While engaging your core, straighten your legs to take your feet off the floor, creating a "V" shape with your body and legs. You can keep your arms by your side to make the exercise easier, or reach them straight overhead to make it harder. Keep your back straight, and avoid rounding your shoulders. Continue breathing throughout the exercise.
- 3. If maintaining a straight-leg position makes it hard to keep your spine long or makes your hip flexors work overtime, bend your knees slightly in order to lengthen your back and engage the abdominals more.
- 4. Hold this position for 15 seconds, or as long as you can while maintaining proper form.
- 5. Perform 2–3 rounds.

8. Calf raise and hold

The calves are commonly forgotten, but are important to keep strong. Instead of doing normal calf raises, moving up and down, in this exercise you'll hold the top position of the calf raise.

Equipment needed: none, a wall for support optional

Muscles worked: calves (gastrocnemius, soleus)

- 1. Stand with your feet hip-distance apart. You may wish to stand about 2 feet from a wall for support.
- 2. With your hands on your hips (or resting lightly against a wall for support), push into the balls of your feet and lift your heels off the ground.
- 3. Hold this position for 20–30 seconds.
- 4. Perform 2–3 rounds.

Conclusion

Isometric strength training is a great way for basketball players to improve their strength and performance on the court. It can help to increase maximum strength, power, and speed, as well as improve balance and coordination. It can also help to increase muscle size and mass, and improve joint stability. Isometric strength training is also a great way to reduce the risk of injury. Overall, isometric strength training provides a great option for basketball players to improve their performance and reduce the risk of injury. It can help to improve muscle size, strength, power, and coordination, as well as reduce the risk of injury. It is important to remember to focus on proper form during isometric exercises as improper form can lead to injury. With isometric strength training, basketball players can take their game to the next level.

References

- 1. Lum, D., Comfort, P., Barbosa, T. M., & Balasekaran, G. (2022). Comparing the effects of plyometric and isometric strength training on dynamic and isometric force-time characteristics. Biology of Sport, 39(1), 189-197.
- Lum, D., Joseph, R., Ong, K. Y., Tang, J. M., & Suchomel, T. J. (2022). Comparing the Effects of Long-Term vs. Periodic Inclusion of Isometric Strength Training on Strength and Dynamic Performances. The Journal of Strength & Conditioning Research, 10-1519.
- Baiget, E., Colomar, J., & Corbi, F. (2022). Six-Week Joint-Specific Isometric Strength Training Improves Serve Velocity in Young Tennis Players. International Journal of Sports Physiology and Performance, 1(aop), 1-9.
- 4. Lum, D., Barbosa, T. M., Joseph, R., & Balasekaran, G. (2021). Effects of two isometric strength training methods on jump and sprint performances: A randomized controlled trial. Journal of Science in Sport and Exercise, 3(2), 115-124.
- Carr, J. C., Ye, X., Stock, M. S., Bemben, M. G., & DeFreitas, J. M. (2019). The time course of cross-education during short-term isometric strength training. European Journal of Applied Physiology, 119(6), 1395-1407.
- Lum, D., & Barbosa, T. M. (2019). Brief review: effects of isometric strength training on strength and dynamic performance. International journal of sports medicine, 40(06), 363-375.
- McKenna, V. S., Zhang, B., Haines, M. B., & Kelchner, L. N. (2017). A systematic review of isometric lingual strength-training programs in adults with and without dysphagia. American Journal of Speech-Language Pathology, 26(2), 524-539.
- 8. Hrysomallis, C. (2016). Neck muscular strength, training, performance and sport injury risk: a review. Sports Medicine, 46(8), 1111-1124.

- 9. Noorkõiv, M., Nosaka, K., & Blazevich, A. J. (2015). Effects of isometric quadriceps strength training at different muscle lengths on dynamic torque production. Journal of sports sciences, 33(18), 1952-1961.
- 10. Bazyler, C. D., Bailey, C. A., Chiang, C. Y., Sato, K., & Stone, M. H. (2014). The effects of strength training on isometric force production symmetry in recreationally trained males. Journal of Trainology, 3(1), 6-10.
- 11. Krüger, K., Gessner, D. K., Seimetz, M., Banisch, J., Ringseis, R., Eder, K., & Mooren, F. C. (2013). Functional and muscular adaptations in an experimental model for isometric strength training in mice. PloS one, 8(11), e79069.
- 12. Zoladz, J. A., Szkutnik, Z., Majerczak, J., Grandys, M., Duda, K., & Grassi, B. (2012). Isometric strength training lowers the O2 cost of cycling during moderate-intensity exercise. European journal of applied physiology, 112(12), 4151-4161.