

# “THE BIG SIX”



## SIX BEST VOLLEYBALL STRENGTH TRAINING EXERCISES

By Dennis Jackson, CSCS

[www.strength-and-power-for-volleyball.com](http://www.strength-and-power-for-volleyball.com)

## THE SQUAT

### What it is

The two most common squatting exercises are the back squat and the front squat.

A back squat is where you start with the barbell resting across the top of your shoulders behind you.



**Barbell Back Squat**



**Olympic Style Back Squat**

The front squat is where you place the bar on the front of your shoulders.

During the front squat, the bar is positioned closer to being in a vertical alignment with the knees, which helps place the weight over your body's center of gravity.



**Barbell Front Squat**

Front squats put less stress on the back than back squats. Not only is there less stress on the back because of the less weight, but also the position of the bar is better for controlling the movement.

Both back and front squats are great functional strength training exercises for the lower body.

However, if I had to pick one, I would prefer the front squat over the back squat because...

- You can get into more of an athletic stance.
- Movement is more over the body's center of gravity.
- You won't be putting as much stress on your spine.

## **Muscles trained**

The great thing about squats is that it uses virtually all the muscles in the lower body in one movement.

The hardest working muscles during this exercise are the quadriceps (the muscles on the front of your thighs).

These muscles are responsible for straightening your knees when they are bent.

The squat also works the big muscles around your hips.

These include your gluteal (buttocks) and hamstrings (rear thighs).

Your lower back muscles also help by keeping your torso straight while you're squatting down and straightening back up.

Many other muscles ranging from your feet on up to your abdominals and lower back help stabilize your body during the squat.

## **Relevance to Volleyball**

Everyone should have at least some variation of a squatting exercise in their strength training program.

Strength coaches know that if you want to increase your jumping ability, the squat is the most important exercise.

Increased strength in squatting movements is the first step in developing speed and increasing your vertical jump.

# THE PUSH UP

## What it is

Common pushing exercises you see athletes do in the weight room are the push-up, bench press, shoulder press, and dip.

A push-up is performed by keeping your body straight while lowering your body to the ground then pushing back up.

The bench press is where you lie on your back on a bench, lower weights to your chest, and press them back up to arm's length.

An overhead press involves pushing the weights straight up from your shoulders in a standing position.

A dip starts with your arms bent behind you and is completed by you straightening your arms as you push yourself up.

Of the four, push-up is the most important because...

- It's more similar to movement that occurs in real life
- It builds core strength and stability
- It helps prevent volleyball related shoulder injuries

## The Basic Push-up

Start with your toes on the floor with your hands below your shoulders. Lower yourself to the floor and push back to the starting position.



**Bodyweight Push Up – Top Position**



**Bodyweight Push Up – Bottom Position**

When performing a push-up, you want to stabilize your core (torso) by keeping your body tight and slightly hollow. By stabilizing (preventing yourself from arching or bending your body), you are training your body's core muscles.



**Physioball Push Up**

## **Muscles Trained**

By changing where you place your hands on the ground you can develop small muscles around your scapula that is key to preventing shoulder injuries at your rotator cuff.

By keeping your elbows closer to your sides during the exercise, you will challenge your stability even more giving you a better training benefit.

Not only are push-ups great for restoring and building mobility in the arms and shoulders, but doing push-ups on a medicine ball, physioball or using chains are great for training shoulder stability of the rotator cuff.



**Suspended Chain Push Ups**



**Weighted Push Ups**

## **Relevance to Volleyball**

The push-up is a multi-joint exercise that works large muscle areas of the upper body.

The push-up is a great exercise for developing general upper-body strength.

The push-up has the added benefit of training for core stability which is essential in developing strength and power for volleyball.

Along with building general upper-body strength and core stability, the push-up develops scapula stabilizer muscles of the shoulder. Training the muscles around the scapula is necessary for preventing common volleyball player shoulder injuries from developing.



## THE DEADLIFT

### What it is

The deadlift is where you squat down to pick up a barbell and pull it off the ground by straightening your body at the hips.



**Barbell Deadlift**



Deadlifts keep your hips and back strong. When performing deadlifts, focus is on using your upper back, butt, and back thigh muscles to extend your hips forward.

Deadlifts use all major muscle groups, particularly the body's posterior chain (large muscle groups on the back side of the body). Unfortunately, many athletes don't know the importance of training the posterior chain. For this reason, adding deadlifts to your workouts is probably the quickest way to increase athletic performance.



**Trapbar Deadlift**

## **Muscles Trained**

Like the squat, the deadlift uses about all your lower body muscles while emphasizing your gluteal and hamstring muscles that powerfully extend your hips.

Your lower back has an important role in stabilizing while bending and straightening, along with your deep abdominals.

Your trapezius, the big diamond shaped muscle that runs from your neck to your shoulder blades to your middle back, also has a big role in this exercise.

Your trapezius is really active when you pull your shoulder blades together at the end of the deadlift.

Also, your gripping muscles are worked pretty hard. Without a strong grip, the barbell is going to slip through your hands.

## **Relevance to Volleyball**

Two reasons the deadlift is important...

- Most non-contact injuries in sports (both knee and hip) occur because lack of strength of the gluteals and hamstrings.
- A by-product of getting stronger from deadlifting may be an increase in squat strength and vertical jump.

How deadlifting may increase your vertical jump...

During the squat, the hamstrings are antagonists.

The hamstrings are used to slow down the movement so the quadriceps can extend the leg.

The hamstrings act as antagonists to keep the joint from being straightened faster than it can be carefully stopped.

This is why doing a lot of squats in your training without having another exercise that specifically trains the hamstrings may negatively affect your speed of movement and vertical jump.

Deadlifts effectively strengthen your gluteals and hamstrings which becomes an important factor in vertical jump performance.

Not only is the deadlift a great exercise for training these areas, but the hip extension during the exercise is highly specific to jumping.

## THE PULL UP

### What it is

For a pull-up, grasp a pull-up bar overhead.

Pull your body up to the bar in a controlled manner until your chin is above the bar.



Chin Up



Weighted Chin Up

Common technique errors include...

- Raising the legs to help start the pulling motion
- Failing to get the chin above the bar
- Failing to completely extend elbows at the end of repetitions

## **Muscles Trained**

The two major upper-back muscles used during pull-ups are the latissimus dorsi (lats) and the trapezius (traps).

The lats are the shoulder joint muscles that pull your body up to the bar.

The traps are shoulder blade muscles that pull your shoulder blades together and down during the pull-up.

The grip width can be varied to change the training effect.

With a wider grip, the shoulders emphasize the outside portion of the lats and the top portion of the upper-back.

A narrow grip emphasizes the center of the upper-back.

## **Relevance to Volleyball**

Pull-ups are often left out of training because they're hard and not a whole lot of fun.

Pull-ups are a great test of general upper-body strength and it's usually a good idea to have them as part of your strength training.

Volleyball players who can't do pull-ups aren't functionally strong and are more likely to get injured, especially at the rotator cuff of the shoulder.

# THE LUNGE

## What it is

Bodyweight lunges are a great way to stimulate your nervous system before a strength training workout or volleyball practice.

The movement consists of taking a long step forward until your back knee nearly touches the ground, then push off with your front foot and step back to the starting position.

Lunges can be done with dumbbells at your sides or by holding a barbell across your shoulders.



Reverse Barbell Lunge

Common technique errors include...

- Step forward too short, results in knee going out passed the toes
- Step forward too long, results in knee not making it to the heel
- Failing to keep feet hip width, making it difficult to stay balanced

## **Muscles Trained**

The muscles used during the lunge are basically the same as the front squat and deadlift except they are used in a very different way.

The hip flexors (which lift your thighs up to your torso) and the hip extensors (gluteals and hamstrings that straighten your torso when it's bent forward) are stretched and then contracted quickly when lunging.

Many athletes have tight hip flexors, mainly because of lifestyle (sitting for a long period of time) and the lack of dynamic stretching in their workouts.

Good functioning hip flexors are important because the tighter your hip flexors, the harder it is to jump high (extending the hips). Tight hip flexors also make it harder to take long steps forward or diagonally.

## **Lunge Variations**

One alternative to the lunge is the Bulgarian split squat. With the Bulgarian split squat, you start with one leg already out in front and the back foot elevated.



**Bulgarian Split Squat**

Another variation of the lunge is the step-up. This is where you step forward up on to a box or platform.



**Step Up**



## **Relevance to Volleyball**

If weights aren't available, bodyweight lunges should be used in training.

Lunges are great for strengthening your legs dynamically, that is, strengthening muscles through greater ranges of motion while you move.

Lunges provide the strength and flexibility you need when getting in position to pass and make plays on the volleyball court.

## **THE INVERTED ROW**

### **What it is**

The inverted row or horizontal pull up is the reverse of the bench press and primarily works the muscles around your scapula.

Place your feet up on a bench and grip the bar as if you were to perform a bench press.



**Inverted Row with feet on a physioball**

While keeping your body straight, pull your chest up to the bar.



**Inverted Row with feet on the ground**

## **Muscles Trained**

The inverted row works primarily the latissimus dorsi (lats), the trapezius (traps), and the rhomboid major.

The traps and rhomboids pull your shoulder blades together at the end of the exercise.

You can vary the width of your grip along with changing the angle of your torso to work your back from a variety of angles.

## **Relevance to Volleyball**

The bench press is the most common and often overused exercise in many athletes programs. Also, many programs leave out back exercises such as rows.

Because of these mistakes, many athletes develop muscular imbalances due to too much bench pressing without enough back development.

Inverted rows can help correct and prevent these common muscular imbalances.

Muscle weaknesses at the rotator cuff can develop due to repetitive overhead motions such as hitting a volleyball.

Performing inverted rows strengthen areas at the scapula that may help prevent rotator cuff problems from ever occurring.

## Volleyball Resources:

### Workout for Volleyball

Developing strength is essential to being successful in any sport. A workout for volleyball must involve training for...

<http://www.strength-and-power-for-volleyball.com/workout-for-volleyball.html>

### Basics of Weight Training for Volleyball

Weight training for volleyball should focus on ground-based, multi-plane, multi-joint movements that match the biomechanical needs of volleyball players...

<http://www.strength-and-power-for-volleyball.com/weight-training-for-volleyball.html>

### Volleyball Training with Low Reps at a High Intensity

Reps for volleyball weight training should be lower when training...

<http://www.strength-and-power-for-volleyball.com/volleyball-weight-training-reps.html>

### Developing Flexibility for Volleyball

A volleyball player's quality of movement is affected by flexibility. When a player has command of their flexibility...

<http://www.strength-and-power-for-volleyball.com/volleyball-flexibility.html>

### Core Training for Volleyball

Volleyball weight training should include volleyball exercises for strengthening the core. Core exercises such as ab curls, reverse hypers, planks...

<http://www.strength-and-power-for-volleyball.com/volleyball-exercises-core.html>

### Multi-joint Exercises for Volleyball

Volleyball workouts consist of different types of strength training. Resistance training exercises such as back squats, push ups, pull up...

<http://www.strength-and-power-for-volleyball.com/volleyball-workouts-multi-joint-exercises.html>

### Total Body Exercises for Volleyball

Weight training for volleyball should include total body exercises such as deadlifts and power exercises such as power cleans...

<http://www.strength-and-power-for-volleyball.com/volleyball-workout-total-body-exercises.html>

### Maintaining Healthy Volleyball Shoulders

Weaknesses and imbalances of rotator cuff muscles can often lead to shoulder problems for the volleyball attacker. Strength...

<http://www.strength-and-power-for-volleyball.com/volleyball-player-healthy-shoulders.html>

### Testing Strength for Optimal Volleyball Program Design

Testing Strength is necessary for designing volleyball weight training programs. Volleyball players need...

<http://www.strength-and-power-for-volleyball.com/volleyball-weight-training.html>