



PERFORMANCE BASEBALL / SOFTBALL CONDITIONING

A NEWSLETTER DEDICATED TO IMPROVING BASEBALL AND SOFTBALL PLAYERS

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LEAN AND CLEAN: THE LONG TERM, COMPREHENSIVE APPROACH TO DEVELOPING YOUNG BASEBALL PLAYERS

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elcome to "Lean and Clean" a series of articles dedicated to educating parents and coaches on methods of conditioning young baseball players without the need to use performance-enhancing drugs. As the name implies, required is a long-

term commitment to total conditioning on the part of parents, coaches and athletes to gain the full genetic potential of each individual player. By establishing the long-term, comprehensive approach in the early formative years and continuing the process through player development, the need and temptation to take performance-enhancing shortcuts will be diminished and hopefully eliminated.

We also welcome input from members of the Professional Baseball Strength and Conditioning Coaches Society (PBSCCS), the world's leading experts in the field of conditioning baseball players. Their mission is "to maximize the athletic potential of each player while minimizing the risk of injury, which is accomplished by using the most recent scientific information and its application to the sport of baseball for each players' individual needs." We'll feature a different PBSCCS member who will reveal his insight into staying in the long-term by becoming lean and remaining clean. [Ken Kontor, Publisher, Performance Conditioning Baseball/Softball].

This issue our featured presenter is Frank Velasquez, Major League Conditioning Coordinator, Pittsburgh Pirates Baseball Club.

Meet Frank Velasquez, member of the PBSCCS.

Frank Velasquez joined the Pittsburgh Pirates major league training staff when he was named to his current position on December 14, 2002. Prior to joining the Pittsburgh organization, Velasquez spent three years as the minor league conditioning and medical coordinator for the Texas Rangers. He also served the Texas organization as trainer at Charlotte (1997-1999) and at Class-A Charleston, SC (1996).

A 1993 graduate of the University of Michigan, Frank served as a student athletic trainer from 1989 to 1993 while earning a Bachelor's degree in movement science. He also worked as an Athletic Trainer, certified at a rehabilitation center in Bay City, MI. [Ed.]



Frank Velasquez

Core Control: Where it all Begins

For young athletes to establish sound conditioning practices for the long term it's important to understand some basic concepts that are practiced at the professional level.

One of the basic principles of conditioning is that in a power sport such as baseball, force is generated from the ground up. As a result, training starts with the legs and core then to the extremities. As a conditioning

coach for baseball, our areas of focus are sound nutrition and hydration practices plus a good base of flexibility. Other things we emphasize as well are safety and creating a safe environment in which to train.

Conditioning at the professional level means we often have athletes coming in from different organizations that have different training practices. As a result, we analyze each new player's program and the exercises they do and modify based on a risk-to-benefit ratio. Are the risks of doing an exercise a certain way going to benefit that player more than the risks that the exercise might present? If the risk is greater then we have to work with that player and see what modifications can be made.

Within the Pirate organization one of the things we try to create at all levels is uniformity. As the players move up the ladder, we don't have to spend time teaching them exercises because they have learned the routine in A or AA ball. Our number one priority is to have players available for the managers to use.

At the professional level we work with four groups of players—everyday position players, starting pitchers, relief pitchers and utility players. We work more hands-on with the starting pitchers and utility players because they don't play everyday. We work with them with a little more intensity to keep them sharp so when they do play, they'll be ready. Starting pitchers usually play once every fifth day and utility players could be once a week. Relievers are different; they could pitch four days in a row while the position players will play seven to 10 days in a row. For the latter two groups we put more emphasis on recovery and strength maintenance. Working with these four groups creates a unique challenge to the professional baseball strength and conditioning coach.

Downloading Professional Baseball Conditioning Principles to Young Players

For young baseball players conditioning becomes a matter of priorities. As the saying goes, “you can’t build an engine on a cracked block.” For us, the block is the area between the thighs and ribs. Anatomically, this is the transversus abdominis, multifidus or the core and inner muscles of the core. Most people equate the core with the muscle you can see, mainly the rectus abdominis and obliques; however, it’s really the muscles you can’t see—the ones that attach to the lumbar spine and hips is our engine block. The block must be sound and steady before we build on top of it.

The next step in building the block is from the ground up to the block. As stated previously, power is generated from the ground up. Starting with the ankles, full Range of Motion (ROM) in all of the different motions of the ankle joint is the point at which transfer begins. Next, we check for flexion and extension at the knees. Internal and external rotation of each hip is important in transferring to the inner muscles of the lumbar spine (a.k.a. “the block”).

The training implications of this results in doing most, but not all, exercises on our feet. This is the way we play baseball. Once basic foundational exercises are in place and effective then it’s time to add functional movement exercises to train the movements that are done on the field. The priorities are: build the base, develop range of motion and strength, then add movement based on the sport of baseball.

Starting at the Base

As determined by this priority of progression, the first thing young players should address is the base—this training is done first. A common mistake is to do all three progressions at the same time.

The next question becomes, when is the base developed enough to progress? Every player develops at his/her own pace and indicators of the base being achieved are different for each individual. However, as a general rule, the players need to have control of the core. This can be determined simply by performing a plank test in different positions. (See the plank test series accompanying this article for more information). The positions need to be maintained for a specific period of time; this is an objective way of measuring core control. Usually it takes anywhere from four to six weeks of training to gain core control.

To start, I would recommend that the players hold the front plank for 15 seconds using good technique. The side plank is more difficult, especially considering you are loading the throwing shoulder. Here, start with only 5 seconds to see how the athletes do. The goal is to build up to 30 seconds doing the frontal plank and 10-15 seconds with each side plank. Then you can add things like leg abduction (moving one leg up away from the plant leg on the ground for the last 5 seconds). If the athletes can do this, it means that the glutes are firing in proper sequence.

The next question is, when should coach or young players be concerned with core control and balance? These exercises aren’t appropriate for very young players just starting out in little league. The precursor for core control is trying not to have a youngster become side dominant, which is common in baseball because the players throw either with the right or left hand and hit (for the most part) from the same side as they throw. To help avoid problems in later adolescence, I feel it’s important for young ball players to swing the bat from both sides as a warm-up. You don’t feel this side dominance effect until the player gets into high school.

Throwing a ball is something that should start as soon as chil-

dren start to throw objects. By the time they reach little league the throwing movement pattern is already set. Throwing with the non-dominant arm is a lot more involved than swinging a bat in the opposite direction and therefore, is not recommended.

Core Control Strength Exercises

In baseball, like in many sports, training time is at a premium. Whenever possible, try to couple training goals together through what we call “exercise integration.” One technique that can be done with core control is by using a volleyball. We have the players place the ball between the knees, squeeze it and do basic forward crunches and twisting to each side. Another exercise is bridging with the ball squeezed between the knees. (See Core Control Strength Exercises). Adding the volleyball helps to better activate the Transverse Abdominis and Adductor muscles.

Beyond Core Control Strength

After core control, body weight exercises such as body weight squats, walking lunges and step-ups are introduced—these are for the lower body. In doing body weight squats, one of the most common errors is the athletes will bend forward at the waist. Be sure they come out of the bottom in a solid position. For the upper body, exercises such as push-ups, pull-ups and tubing resistance exercises can be done. As the young boys start to turn into young men, then more resistance can start to be added by using light dumbbells and weight training machines. Teaching proper mechanics of the lifts is very important.

Baseball Movement Exercises

The final phase of training young athletes is training baseball movements. One way this can be effectively achieved is by doing a medicine ball routine such as what we do with our players. Start with a very light ball, one to three kilos. The program consists of throwing a medicine ball from both sides using a partner or a wall to gain a plyometric effect with the muscles. A good place to start this is with high school age kids. The reason we do it from both sides is to gain balance in a side dominant sport, which we touched upon earlier. We call it “unwinding”. A balanced player is one who throws right but hits from the left. This program can be done on your own using a rebounding rubber medicine ball and a brick wall. (See the program below for more information).

By learning to control the core and developing young baseball players from the inner core outward, the road to playing clean and lean is headed on the right track. 

More Information Please!

Contact Frank at Frank.Velasquez@pirates.com

Core Control Tests

Frontal Plank (Figure 1)

1. Place both elbows and forearms on the ground and raise hips so that just the elbows and toes of feet are touching ground.
2. Body should be straight and in alignment from head to feet.
3. Hold for 30 to 60 seconds.
4. Key points: Keep back flat, especially the lower back, by contracting abdominals. On this



Figure 1

one it may help to imagine pulling the belly button toward the spine.

Side Plank (Figure 2)

1. Using the elbow to stabilize while lying on the side, hold the body in flat, straight position. Make sure the elbow is placed directly under the shoulder for proper support.
2. Emphasize a hips up, straight body position with only the feet and elbow touching the ground.
3. From this position abduct the top leg away from the plant leg whose foot is touching the ground. Leg should remain straight during the movement.
4. Keep top arm/hand on hip or side.
5. Return to side plank position.
6. Perform on each side.



Figure 2

Core Control Strength Exercises

Ball Crunches (Figure 3)

1. Lie on the floor, knees bent and feet on the floor.
2. Place a volleyball between the knees and squeeze it with the knees.
3. Crunch up, elevating the shoulders off the floor and taking the chin straight up toward the ceiling.
4. Return to the starting position, allowing the upper back to fully contact the floor. Keep the abdominals tight.



Figure 3

Ball Crunches with a Twist (Figure 4)

1. Lie on the floor with knees bent and feet on the floor.
2. Place a volleyball between the knees and squeeze it with the knees.
3. Crunch up, elevating the shoulders off the floor, taking the chin straight up toward the ceiling and rotating the shoulders and trunk to one side.
4. Return to the starting position allowing the upper back to fully contact the floor. Keep the abdominals tight.
5. Repeat, twisting in the opposite direction.



Figure 4

Bridge (Figure 5)

1. Start in a crunch position with back flat on the floor.
2. Place a volleyball between the knees and squeeze it with the knees.
3. With shoulders, feet and upper back on the ground, lift the hips up while squeezing the ball with the knees.
4. Return to starting position.



Figure 5

One-Legged Bridge (Figure 6)

This exercise is a progression of the bridge and should be attempted only after the athletes have demonstrated hip stability by doing the bridge without hip wobbling.

1. Start in a crunch position with back flat on the floor.
2. Place a volleyball between the knees and squeeze it with the knees.
3. With shoulders, feet and upper back on the ground, lift the hips up while squeezing the ball with the knees. Hold for 1-2 seconds.
4. Extend one leg out straight and hold the bridge position.
5. Return to starting position and repeat extending the opposite leg.



Figure 6

Baseball Movement Medicine Ball Program Chest Pass (Figure 7)

1. Use both hands to hold a medicine ball against the chest.
2. Snap the ball off the chest.
3. Back of the hands should come together when releasing the ball.
4. Catch the ball off the wall (both knees in a slightly bent position).
5. 10 to 15 reps.

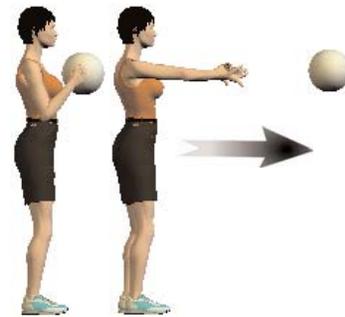


Figure 7

Toss Side-to-Side (Figure 8)

1. Hold the ball in front. Imagine the arms as sides of a triangle with the belly button at the top of the triangle.
2. Knees are slightly bent and rotated toward the side of intended turn.
3. Back is straight and abdominals are tight and engaged.
4. Quickly rotate at the trunk to one side and toss the ball forward against the wall as the centerline of the body is moved.
5. Catch the ball off the wall and repeat to the other side.
6. 6 to 10 reps each side.

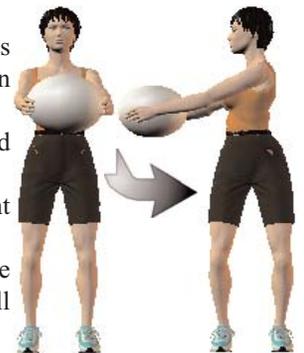


Figure 8

Toss Side-to-Side from Behind (allows for greater rotation) (figure 9)

1. Stand with back to the wall. Hold the ball in front and rotate to one side.
2. Knees are slightly bent and rotated toward the side of intended turn.
3. Back is straight and abdominals are tight and engaged.
4. Quickly rotate at the trunk to the opposite side tossing the ball forward against the wall as the rotation is completed.
5. Catch the ball off the wall and repeat to the other side.
6. Be sure to stop after each rep to avoid getting dizzy.
7. 5 to 6 reps each side.

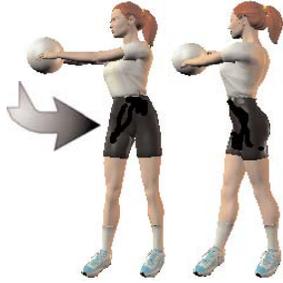


Figure 9

Soccer Toss (figure 10)

1. Stand and hold the ball slightly behind the head with elbows bent and narrow.
2. Throw the ball over the head while stepping forward into the motion.
3. Catch the ball off the wall.
4. Avoid bending forward at the trunk (keep abdominals engaged).
5. Objective is to work shoulder and triceps strength.
6. 20 reps



Figure 10

Hitter's Throw (figure 11)

1. Stand in a hitter's stance with hips 8 to 10 feet from a wall, with one hand behind the medicine ball (shot put grip).
2. Stepping toward the wall, the ball is pushed with the hand behind the ball from a chest level position (similar to a hitter's swing of the bat).
3. Ball is released at the end of the "swing" and will one-bounce back to you.
4. Repeat to the other side to maintain an overall body balance.
5. 6 to 8 reps each side.



Figure 12

Ball Slams (more pitching specific) (figure 12)

1. Place med ball overhead and to the side holding it with both hands.
2. Start upright with good follow through technique.
3. Throw the med ball as hard as possible onto the floor about one to two feet in front of and to the side of the opposite foot.
4. Follow through with the body.
5. Do the other side.
6. 5 reps each side.



Figure 11