



PERFORMANCE BASEBALL/SOFTBALL CONDITIONING

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Creating a Culture of Movement: Lessons from the Dominican Republic

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The Dominican Republic offers the conditioning professional a unique opportunity to work with young athletes who have little or no experience in conditioning. They come to their academies with a "clean physical slate," which provides an opportunity to develop a culture that will enhance their performance through conditioning, starting from the beginning. The culture as done by the Houston Astros starts with proper movement activity and then develops strength and muscle mass, with focus on the continuation of proper movement skills. This culture is not part norm in the world of baseball strength and conditioning. Is it realistic to expect culture change here, focusing on good movement skills coinciding with sport skills and enhanced by proper physical conditioning? Young athletes face inactivity from social media, video gaming, and cell phone addiction that are exacerbated by the lack of physical education. Where do you begin?

Performance Conditioning has introduced our Movement to Muscle program in an attempt to intervene with the development of the young athlete to correct and teach good movement skill for strength training programming. The M-2-M mission statement is to educate and empower the sports coach to test proper movement skills in their athletes. Based on negative test results, the coach provides a corrective exercise program to improve movement skills. After the athlete passes all movement tests, a strength program can be implemented. Movement tests can also be done to ensure the continued effectiveness of the strength program and of continuous, year-round sports play, all with the intent to prevent injury. Hopefully what is done in this culture can permeate to the youth culture in the United States. It is a tall order, but the following article offers a fresh look in changing in our culture. — Ken Kontor Publisher, Performance Conditioning Baseball Softball



**Coach Myers-at
Dynamic Warm-up**

One of the most formidable experiences in my short career thus far was at Stanford University. The staff there stood out from the others because of their high standards for both performance and movement. I had interned several places before Stanford, but no one viewed exercise as something more than just sets and repetitions as they did in Palo Alto. At times, strength coaches simply aim to implement training methods—no questions asked. But Stanford fortified their program with quality. It was a culture in which even the players would hold each other accountable for doing the exercises cor-

rectly. This experience solidified my belief in this way of coaching; it just made sense. The basic idea is to have quality with each lift. What made my time at Stanford even more interesting was that I worked with the football team. Often times I hear coaches saying, 'sure that works in other sports, but in football, you just have to get them strong!' This may be true, but it begs the question: How do you identify define strength? Is it a back squat with knees caving inward, the pelvis dumping forward and the back rounding? If your technique is bad and postural compensations are visible, you should not define it as strength because you cannot be strong in compromised positions.

Defining Strength: A New Definition

We define strength not by how much force an athlete can produce, but also, how efficiently that force is being produced. In baseball, for example, we define success in the swing by talking about variables such as exit velocity. Exit velocity tells us how much force the batter is producing but the question then becomes how well or efficiently is the swing pattern producing the force. If the movement is performed with an efficient kinematic sequence (http://www.mytpi.com/articles/biomechanics/kinematic_sequence_basics), that force can be reproduced consistently while minimizing risk for injury. The same example applies to the weight room. As strength and conditioning professionals, we often obsess over how much force players can generate during a max effort back squat. This is defined by absolute strength or a one repetition maximum lift. More importantly, we need to take a deeper look at the quality of the movement the player is using to produce that force. If the squat is not completed with proper form, that in itself is a weakness; just as we would consider improper throwing or running mechanics as weaknesses. Over time, this will lead to a common and predictable breakdown pattern that may lead to serious injury, reduced force production and reduced performance variables.



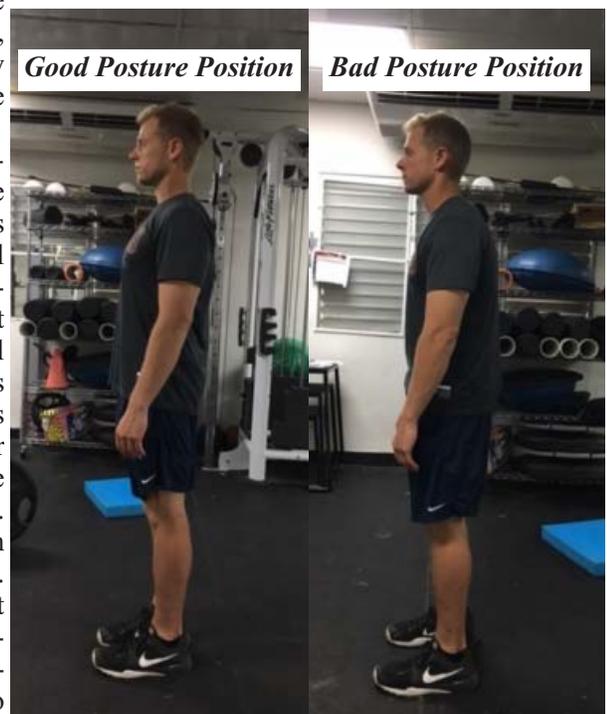
Striving for Objective Movement Testing and Creating a Movement-Based Culture

The basis for creating this culture is to hold athletes accountable to the correct way in strength training. In order to do this, the players must know what constitutes as good movement patterns and how this concept is integrated into strength training. The other important factor is having staff members on the same page. This is a task that is addressed by our Latin American Strength and Conditioning Coordinator, Rachel Balkovec. She has directed this program and staff more and more towards improving human movement over simply loading weight on the bar. Establishing the culture amongst our coaches has been a driving force in creating the culture amongst the players in the Dominican academy.

Accountability: The Importance of Assessments

If we want a true change to occur, we have to shape an environment in which athletes will change. The process we use is: objectively testing for movement, retesting frequently throughout the season, and creating corrective groups in order to improve faulty movement patterns. The objectivity keeps us accountable as coaches. We need a system that clearly and undisputedly shows us if an athlete is getting better, worse or staying the same. That lets us know if our corrective exercises are really working. If there is no improvement, we are missing something and we take that to heart.

For example, in one of our assessments we use a variation of the overhead squat. We have developed a system in which our coaches can see precise changes in the squat positions well beyond simply screening the athletes. This system goes beyond a one, two, or three grading scale popularized by several mainstream movement screens. It is based on joint angles and center of mass displacement that can be seen using video. This serves a two-fold purpose. Not only can the coaches see if the program is working, but it also provides visual proof for the athlete that the effort that they are devoting to make the change is time well spent. Whatever movement assessment screen a department chooses to use, they should make an attempt to establish their own protocol that fits their time, equipment and athlete needs. For example, in baseball we have a large amount of athletes and they are all over head throwing and rotational athletes. Our norms will be different than other sports and the time constraints placed on assessments will be much different than an NBA team that only has 15 athletes. Education, frequent assessments and feedback are extremely important in what we do with this process. In the first stages of the process, we explain to the athletes why they are in the corrective groups by showing them video of the examples of great movement quality in comparison to movement quality that needs to



be improved. We teach them how these movements relate to injuries. The final step is exercise prescription.

Movement Correction: Start at the core. Literally.

Weight lifting challenges posture. When completing a repetition for a back squat or dead lift, you must have a strong spine. If the shoulders are rounded or the pelvis is anteriorly rotated, you are not in a strong position to effectively complete the exercise. Bad posture leads to potential injury, especially under increased loads. In the dead lift, one of our biggest problems with our sixteen- to eighteen-year-olds is with rounding the spine. If the back is rounded at the bottom position of a deadlift, the spine is not strong. If the shoulders are slouched and the head is down, the spine is not strong. Not surprisingly, we often see our players standing and sitting during the day with a rounded spine. If our players cannot control their spines while standing without and load at all, how can we expect them to flip a switch and suddenly do it properly while pulling 300 pounds from the floor?

You can effectively get the desired hypertrophy as the result of stronger muscles or more resilient muscles, but it should coincide with proper movement. “True” or “Athletic” Hypertrophy can be achieved using proper exercise/movement techniques along with proper load and volume.

In order to do this, we attack the spine first. For the lower half, for example, we try to go after correcting the lumbo-thoracic junction before we look to ankle or knee joint correctives. For the upper half of the body, we look closely at correcting the thoracic and cervical spine before trying to increase ‘shoulder joint’ range of motion. We view these areas as the foundations for corrective exercise and implement these concepts in every aspect of our physical preparation; not only in the corrective exercise sessions, but also in movement preparation (stretch), in the weight room and in daily activities as mentioned previously.

Staff Considerations: Coaching Buy-In Leads to Athlete Buy-In

It is important to work for an organization with which your values align. Thankfully, I have very similar values and even experiences with my superiors. For example, Rachel and I both had injuries in our collegiate careers in softball and baseball respectively and have both turned our experiences into valuable lessons in our professional careers. Chronic pain is often caused by movement impairment unless there is a history of an acute injury that lead to structural and soft tissue damage. Some medical professionals are in tune with the structural aspect, but not with the chronic movement compensation issues. Their training and background does not address this because the education of movement is often omitted from traditional exercise science and medical curriculum. The same consideration holds true for baseball-skill coaches. Some on field coaches either do not understand it or do not see the value. This is a missed opportunity to develop durability and on field performance for a player. It is important that strength and conditioning coaches align themselves with skill coaches as much as possible because we are all trying to achieve the same thing: Movement efficiency. In baseball, we are learning that a higher level of movement efficiency can lead to not only injury prevention, but increased velocity and control as well.

This is why it is important for the strength coach and the sport coaches to work together in this way. If we attack it from all angles, the movement will improve faster and be applied in more repetitions on the field and in the weight room. For example, with the Astros, we have several phrases we use in the weight room that we have learned from the sport coaches. This way, we have consistency in the verbiage and the message that we are conveying. Strength and conditioning professionals should strive to understand on field mechanics and skill coaches should strive to understand strength and conditioning principles.

On a more personal note I would like to comment on our performance staff in the Dominican Republic. In total we have three coaches on our staff that work to implement this message. Geremias Guzman and Miguel Cabrera are vital in helping the organization develop its youngest players. Geremias Guzman acts as our Dominican Strength and Coordinator and has 14 years with the Astros organization. Personally, Guzman has helped make my first year in the Dominican Republic absolutely incredible. He brings a wealth of wisdom to the staff and has an exceptional understanding of how the human body works. I can’t thank him enough for his mentorship.



Education: Setting the Standard and Expectations

The first thing to consider is the Latin American culture in which we work. Most of the players that are at the academy in Boca Chica are signed at the age of 16 or 17 and are hailing from third world countries. They have limited training backgrounds and sometimes limited educational backgrounds. We start at square one, with counting the weight on the bar, proper progression throughout a cycle and covering the technique of the major lifts before each session. We view every day as an educational experience in the weight room and we use our time as such. The start of every day is a planned curriculum in which we are teaching form, progression and even anatomy. Most of the players will be without us during the off season, so information retention is of utmost importance. We may repeat ourselves 10 times in a day so that we know that they are owning the information and not just hearing it and remembering it for the hour that they are in the weight room that day.

Setting the standards upfront is the most important thing you can do for an athlete. If we let players lift extremely heavy weight at first and praise them for doing so, then it will be very hard to convince them later to take the weight down and focus on form if need be. If we teach them progression, technique and physical education upfront and praise them for improvements in their form, then we will create a culture that we want.

Expanding this Culture

We relate movement not only to the weight room, but to every-day activities. Posture is a discussion that takes place in the weight room, during the dynamic warm-up, during lunch, etc. You have probably heard about pushing to pulling ratios. It is generally accepted in baseball that we should have more pulls than we do pushes in order to strengthen the posterior chain. Pushing to pulling ratios essentially aim to adequately balance the human body. Realistically, we have two hours a week to train our players. That leaves us roughly two hours out of a week containing 168 hours to attack the posterior chain during lifts. I believe that the only way to balance the human body is to practice balance in every waking moment of our lives. We can have a great lift where we have the desired 1 push to 3 pulls but then have players report directly to lunch where they spend 30 minutes eating lunch in a position where their shoulders are slumped over thus returning to the dreaded anterior dominant posture. Their body is out of balance. What we do two hours a week in the weight room is negated with more time allocated to poor posture. We try to bridge that gap. We want them to be in a stronger position every moment of every day. A spine that is not compressed is going to be healthier and more able to produce force. Whenever I see poor posture, I make a point to tell the athlete. This simply creates awareness. Now the athletes even correct me when I am sitting with poor posture! They yell, "You look like a shrimp!" when I slouch. It becomes a conscious way of thinking. As annoying as it may be to have the athletes give me a dose of my own medicine, it is an indicator to me that the culture is starting to shift. They are owning it and even keeping me accountable.

How to Deliver This Information in the Most Effective Way

Be the change! Share this information with passion and intensity. Accountability is a major component. Actively improve your own faulty movement patterns as a coach so that players can see you attacking your own problems.

Be energetic, because it takes energy to make changes. How do we make it come alive? When you lift heavy weights, it's good to grunt. You can do the same thing and add grunts to movement activity. Why not? You add value to it when you put emphasis on it. This can be done by creating competition to do the movements correctly. Sometimes I will walk around the complex with a hunchback for fun and reinforce good movement. They laugh and say, "You are loco!" We have fun.

The Results Thus Far

Here's a list of results we have experienced:

- Assessments show that movement patterns are changing for the better. This is done through culture, not just corrective exercises.
- Players walking around the complex yell at me about my anterior head posture and hold me accountable to fix it on the spot. They also talk to other people, especially younger players entering our system. They coach each other. They are immediately exposed to correct posture and movement, which makes our job easier.
- As a result of us praising movement and form, they are frequently asking for coaches to look at their form during lifts, not just seeking approval for adding more weight. They ask us to look for quality.
- Players ask to see their assessment videos along with feedback.



Meet the Staff (left to right) - Miguel Cabrera, Geremias Guzman, Mike Myers

- Players compete with each other on who has the better squat, not just the weight!
- Players are able to lift heavier weights true to form.

Physical education helps focus on movement. Young kids are getting cell phones earlier, and that results in an anterior posture at a younger age. Learn to live healthy. Decide to implement this culture that values movement, just as we value strength. 🏋️

More Information Please! Contact Mike at mdmyers@astros.com