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# THE A.D.R. SYSTEM

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WIN with Acceleration, Deceleration and Re-Acceleration!

**BY DAVE "COACH BRIX" BRIXIUS**

# - Chapter 1 - The “Speed of Champions” Secret

Most athletes never truly know how fast they can become because it’s not commonly taught by coaches and trainers. Our bodies are designed to move a specific way for maximum speed and velocity. Therefore, we need to make sure we do it that way in order not to impede the most effective and powerful movements.

The most basic thing we can do to help improve our speed is to learn how to move our arms and legs correctly.

## The A.D.R. Key Kinetics

**Key 1** – Arm movement is the key in helping to deliver force to move the body forward. Ensure that the arms are continuously and intentionally moving from the hip to the eye with an open hand to be the most efficient runner you can possibly be (Images 1.1. and 1.2). Making a fist can cause an athlete to tighten up and become stiff; so do not clench your hand when you run.



**Image 1.1**

**Make sure each hand comes to eye level and remains open. A fist or clenching causes rigidity.**



**Image 1.2**

**The alternate hand is lowered to hip height each time.**

**“Arm movement is the key in helping to deliver force to move the body forward.”**

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**Key 2 – Legs!** You want to make sure that you drive the leg up and push down behind you. (Images 1.3 - 1.5). When each leg is driven down hard and extended behind you, the combination of mechanics and physics naturally causes the body to be propelled forward at a higher rate.



**Image 1.3**  
**Knee drives up**



**Image 1.4**  
**Other leg drives down**



**Image 1.5**  
**Push off powerfully**

**Key 3 – Another key to improved speed is the feet.** When running you want to have the feet pointed up dorsiflex. (Image 1.6). Most times athletes will have their feet pointed down in a (Plantar) position (Image 1.7).



**Image 1.6**  
**More powerful dorsiflex position**



**Image 1.7**  
**Less powerful plantar position**

These three elements are guaranteed to enhance and improve your speed. Working on them and perfecting them is of vital importance. If you do not have proper mechanics, you'll never truly know how much faster you could run!

**“If you do not have proper mechanics, you will truly never know how fast you can run.”**

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## - Chapter 2 - Acceleration Amplified!

Acceleration is the first phase of any sprint. This movement needs to be explosive on your take off and it needs to be worked every day. Most athletes who I watch have horrible starts. They have a hard time getting their bodies moving. It is the initial start where most fail. That is why learning and doing this correctly is so important.

Now, one of the keys to acceleration is getting low into an athletic stance. The athletic stance I am referring to is the split athletic stance (Images 2.1 & 2.2). It is important because this is how the body will look on the first few steps when you start to run. So getting the body into this position makes it easier for the athlete to learn how to explode quickly from the start. You must also learn how to create force, which requires you to push into the ground. If I started standing up tall I would not be able to create the force needed to develop great acceleration. To create force you need to be bent down with knees bent, and then push your weight into the ground so the ground will push back on you.



**Image 2.1**  
**Split Stance (Front View)**



**Image 2.2**  
**Split Stance (Side View)**

**“First step acceleration is critical to team sports requiring an explosive start.”**

### **Keys to Acceleration:**

- **Stay Low**
- **Push back and down into the ground**
- **Drive opposite arm up**
- **Maintain Balance**

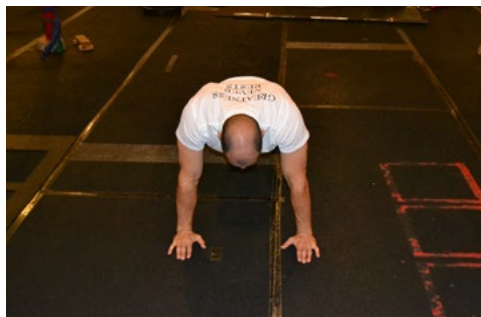
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One of the most basic drills you can perform or have your athletes perform is to have them get in an up pushup position (Images 2.3 & 2.4). Make sure when they are in this pushup position the back is flat and not rounded. As the trainer, you call out to the athlete left or right depending on what foot you want them to drive forward first. That leg drives up and right into the chest. (Image 2.5)



**Image 2.3**  
**Proper Pushup Position**



**Image 2.4**  
**Proper Pushup Position**



**Image 2.5**  
**Drive Leg Up To Chest**

On the next command, call the opposite leg and at this point the athlete drives that leg forward coming up into a running stance or athletic split stance. (Images 2.6 & 2.7) The key is to maintain that low stance when stepping forward. Make sure to also drive that opposite arm forward. Work both sides equally getting comfortable pushing off with each foot. If you can develop a greater first step you can become a better runner. First step acceleration is so important to team sports requiring an explosive start. First step acceleration is critical to team sports requiring an explosive start.



**Image 2.6**  
**Running Stance (Side)**



**Image 2.7**  
**Running Stance (Front)**

## - Chapter 3 - Perfecting the Deceleration Movement

This may be the most important aspect of speed training when it comes to working with a court or field sport athlete. The reason is that we all need to stop or change direction at some point during the game. Sometimes direction will need to change 3 or 4 times in a short period of time. Getting an athlete's body ready for that change could make all the difference when it comes to their performance.

Deceleration exercises are greatly misunderstood and most people who do train them do not perform them correctly. Those who do talk about working deceleration, do just that, they talk about it. Doing and teaching it are not easy, because so much goes into controlling the body when you decelerate. Going down a flight of stairs with control is more difficult than going up. Here is the reason. The body gets pulled downward by gravity. So to control going down the stairs we have to engage muscles that do not get worked normally and that is our posterior chain muscles. These muscles are (Hamstrings, and glutes). Attempt to perform this exercise. Have your athletes perform a step-up on a 12-18 inch box. (Image 3.1). It can be a little difficult but this is usually not hard unless there is added external resistance to the exercise. Try this one standing on a box of similar height and step down except make sure you have control on the way down. Count 2-3 seconds so your athletes will take that time reaching the ground. (Image 3.2) You do not want them just stepping off fast. The stepping down is very hard to control for most individuals because most athletes do not train that way.

We do not train deceleration of our body. In doing deceleration training, the muscles and nerves must fire at the right time for proper execution. We have to make sure that the body can handle the stress that is placed upon it. Once we understand this we can then start to develop athletes with precision cutting, stopping, slowing, and helping to mitigate injuries.



**Image 3.1**  
**Step Up on 12-18" Box**



**Image 3.2**  
**Count 2-3 Seconds on decent**

**“Deceleration exercises are greatly misunderstood.”**

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Deceleration is not just about stopping. Many times in sport it is about slowing down just enough that the body maintains balance so it can change direction and re-accelerate again (next chapter). These are two different techniques the body must do. When stopping, the shoulders must gather over the hips to square your body up and keep it in balance. When decelerating to slow down, the shoulders stay to the inside of the hips so the change of direction movement is more fluid and we also maintain balance. Another important feature of the body are the hips. The hips must lower so the center of gravity is maintained and the balance of the body is controlled. The hips must not lower too much because that could cause deceleration and get the body out of position when cutting.

When it comes to running or using the lower body to slow down we have to use muscles on the posterior side of the body. These include the hamstrings, hips, calves, and glutes. The glutes probably are the most important aspect of this whole chain. In reality, glutes are one of the weakest muscles on the whole body when they should be the strongest exclusive of the heart muscle. Not only must we work the muscles properly and correctly but we must also get the athletes in the right position to break down.

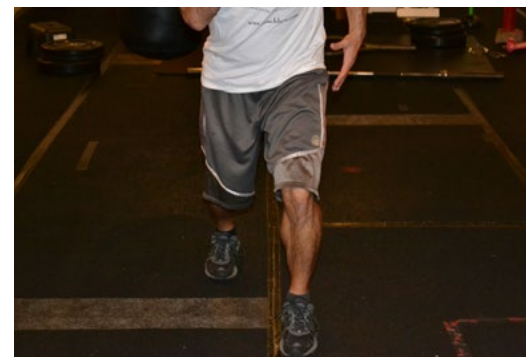
What I do with my athletes to get them in the right position is start backwards. I get them in the final position as if they have just come to a stop. (Image 3.3) There are a couple different positions for stopping or changing direction. In this case, I use the split stance position. One of the things that must be focused on is keeping the toes, hips, and knees pointed forward. (Image 3.4). The stance will look like a lunge but you will only go down about ½ way. This is also the stance I get my athletes in to start.

The question I get asked a lot is why would I have my athletes start with the split stance position and also finish with it. The answer lies in the next chapter.

With deceleration you must be able to absorb force and there is a lot of force especially when someone is running at a high rate of speed. If you cannot control that force it can lead to two things: first, poor performance, never really reaching one's potential, and second, injury especially to the knee, hip and ankle areas. So learning to absorb force and having your athletes do it correctly is so important to their success.



**Image 3.3**  
**Final Position**



**Image 3.4**  
**Toes, Hips, Knees Forward**

There are some basic drills that I do to help the athlete understand how to absorb force and understand deceleration. Start out by having your athlete's place their feet shoulder width apart with their toes pointed forward. (Image 3.5). What you will do as the trainer is call either left or right. (Image 3.6) Once you give that command the athlete then will step out with that foot and decelerate into a lunge position or our split stance position. (Image 3.7). You want to do both sides. Get use to having the athlete develop both sides so they feel comfortable using either leg to decelerate.

**“With deceleration you must be able to absorb force.”**



**Image 3.5**  
**Feet shoulder width apart**  
**Toes forward**



**Image 3.6**  
**Call Left or Right**



**Image 3.7**  
**Lunge or Split Stance**



The next drill I would do is two steps at a time. Start in the parallel stance, (Image 3.8) as the trainer will call left and then right. On the right command the athlete will break down into the split stance. ( Images 3.9 - 3.11). Drill number three would be doing three steps and do the same thing as above. Have them break down into the split stance on step three. Get these first couple of steps down and make sure they understand what it feels like to absorb the force of their own body. Once you progress past the three steps then it is time to have them walk a distance of maybe 5 to 10 yards. Have them decelerate at a certain mark and hold that position so you can see how they absorb the force. Are they moving (losing balance) after getting into their stance? If so, just slow it down. Athletes need to learn how to slow their bodies and control them. After they have mastered the walking 5-10 yards with good control of deceleration then move up to jogging and then sprinting.

Sprinting can be difficult for many beginning athletes who are just learning the deceleration position. So this may take some time and a lot of it. Just keep reviewing the fundamentals with them and they will get it. Once the sprinting is mastered there are other deceleration drills you could do. There are different deceleration positions when it comes to stopping the body but this is by far the most common and easiest stance to perform especially since the next thing you need to do is, restart.



**Image 3.8**  
**Parallel Stance**



**Image 3.9**  
**First Step from Parallel**



**Image 3.10**  
**Second Step**



**Image 3.11**  
**Deceleration from Split Stance**

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## Chapter 4

# Maximizing Your Re-Acceleration

Every athlete who participates in a sport needs to be able to do this. Very few people know how to maximize this with their athletes. Just like deceleration training most people talk about it being important but few know how to execute it. Re-acceleration is very difficult for an athlete to execute. For this reason, technique, just like everything else, is most important. Deceleration plays such an important role in how well you will be able to re-accelerate. Getting the body in the right position will help to eliminate unwanted movement that can slow down and even burn you out. For re-acceleration to be mastered you must be in the right position to move and that position is just like the start for the acceleration technique. You might ask yourself why this position. The body is going from a start, to a stop, or slow down, (deceleration) and back to a start. So the start position would be getting the body into a split stance position.

The split stance is where 1 leg is in front of the other. Toes pointed forward and knees are bent with the head and chest up. (Picture Chapter 3 #3 hip, toes, knees) From this position you would follow the principles of acceleration. Driving the body forward while not dropping the heels to the ground. Getting these principles correct will pay dividends when re-accelerating.

Re-acceleration is important because when an athlete changes speed, or comes out of a break, they cannot do it fast or explosive enough! Most athletes usually look slow and don't have that zip that is needed to get away from a defender. For example, imagine a Wide Receiver in football when they run a route and that route requires them to cut or change direction. The Wide Receiver cannot create separation because of poor re-acceleration mechanics. An important aspect of re-acceleration is to be able to break away from the defensive person no matter the sport. So working on this is very important.

Start out by focusing on your acceleration. Have the athlete come to a stop maybe 5 yards away with the left foot in front, and have your athlete or yourself hold that position for two seconds. Then say "Go" or move forward again.

**Some areas to watch that may cause problems with your athlete which will hurt the athlete from becoming a dominant athlete when it comes to their speed:**



**A drop with the back foot heel, and quick raise of the body.**



**An upper body that moves backwards then forward or a body that just rises up and stays up.**

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## Chapter 5

# Developing Max Speed

Every now and then an athlete will need to run straight ahead and not have to change direction, slow down or anything else. When the athlete gets a chance like this they need to develop Max speed. Max speed usually takes over around the 30-35 yard mark and last any where from 35-50 yards. Developing this you need to practice at this yard mark. So running sprints that cover 35-45 yards is important. This is where proper running mechanics play an important role. Having the right form will help you reach that top end speed and then maintain that for a longer period of time. You can also use such devices as a parachute, bungee cords, sleds and hills. These can all help improve that max speed when done correctly. If someone does not run properly or has poor mechanics giving them external equipment will only reinforce bad mechanics, which will lead to a slow athlete. That is why I always preach fundamentals. Learn them and you will accomplish so much.



**Training athletes with Bungee Cords**

**“Fundamentals are essential to building explosive athletes.”**

## Chapter 6

### Next Steps

Speed is something we as athletes all strive to improve. Very few trainers take the time to practice and drill these mechanics over and over till it becomes second nature to the athlete. We want the cool looking drills or fancy equipment to help us accomplish this.

But it does not work that way. Sound principles will always triumph over fancy drills because the foundation has been laid with the basic phases of speed. Focusing on each phase of speed can and will help you or your athletes achieve unbelievable results. These same principles have helped the Messiah College Men's and Women's soccer teams win multiple National Championships over the past 8 years. It has also helped many programs go from losing records to winning records in just 1 year's time. This is the real deal and gaining the knowledge will get your athletes to unleash their potential on the field or court.

**“Sound principles will always triumph over fancy drills.”**

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