Why Arms Are Regressing In The U.S.

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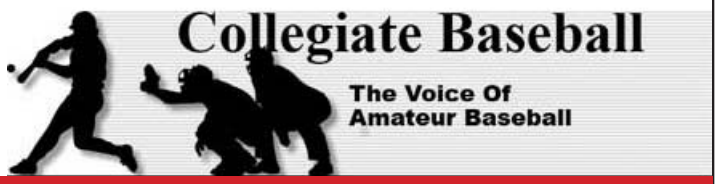

In nature, some trees are short, while others, like the Great Redwoods, can grow above 350 feet

Nature knows best. That's why if you sit in one place, like on a plane, for a long enough period of time you will feel an urge to stretch, or get up and go for a walk. This urge is called your life force. It is nature's way of telling you, instinctively, that your body needs to move some energy around because it's atrophying.

You see, if muscles are inactive for a long enough period of time, or aren't used close to their desired capacities, the life is taken out of them. When muscles are given proper blood flow, oxygen, and range of motion -- in short, when they are nurtured -- they are free to work at their optimum capacity.

For baseball players in general, and pitchers specifically, when this freedom from the muscles of their throwing arm are taken away, they too begin to atrophy. For a pitcher, who's career is dependent on his arm, atrophy is a dangerous kind of word. In many cases, it's a career ending kind of word. It's the kind of word that turns an arm with life into a lifeless arm; a free and easy arm into a maximum effort arm. It's the kind of word that takes the magic out of a 95mph arm.

More than anything, it's the kind of word that reflects the state of arms in our country.

Unfortunately, in this day and age, here in the United States we aren't taking very good care of our arms. Instead of working with nature and providing a forum for arms to evolve, many of today's throwing programs that are being implemented at the professional level (which has trickled down to the amateur levels) are not only stunting the growth of a baseball players arm, they are putting these arms in harms way.

Instead of giving players the freedom to throw according to the individual needs of their arms, they are being forced to throw according to someone else's "arbitrary" set of rules, that places extreme limits and constraints on the arm. Specifically, pitchers are being told in many of these throwing programs not to exceed 120 feet (as you will see later, 120 feet equates to only 40% of the average distance -- 300 feet -- a 90mph pitch will travel at a 30 degree angle). These "rules" not only teach arms how to "train" at less than half of their capacity, but they are uniformly applied to all pitchers as if all arms are built the same.

But not all arms are built the same, just as some players hit for more power or have more running speed. That's why in nature, some trees will only grow to be 10 feet tall while others, such as the Great Redwoods, can grow to be 350 feet or more. The point is, it's in the hands of nature and as long as each tree is given the freedom in the great outdoors, without someone arbitrarily putting a ceiling on it, it will grow according to it's own uniqueness. But, could you imagine what would happen if we put a baby redwood (whose capacity to grow has been measured as high as 367 feet) into a greenhouse with a 10 foot ceiling, reinforced with steel? Needless to say, it's capacity to grow would be significantly inhibited (this is what happens in Japan to Geisha girls, who's feet are put in unusually small shoes so their feet won't grow).

Which begs the question, if all arms are unique, and some have the growth potential of a Giant Redwood, why would we take this potential away by putting artificial limits, e.g. 120 feet, on an arm that causes it to stunt, rather than grow? And why would we create a throwing program that places a universal ceiling on players' arms that we know are diverse in nature?

As you will see, a throwing program based on such restrictions conflict with the most basic laws of nature. The arm, like anything else in nature thrives on freedom. It doesn't want to be put in a cage. It doesn't want limits. It wants to grow according to it's needs and it's potential. To realize the optimum health, strength and endurance of an arm, these limitations must be lifted. Otherwise, the next generation of baseball players will suffer the consequences imposed on this generation.

This article has been written with this in mind.

The 120 Foot Throwing Program

Over the past 15 years or so, for various reasons, many of today's pitching coaches and trainers have adopted a 120 foot throwing program that places rigid limits on: 1) Distance (120 feet), 2) Time (10-15 minutes), and 3) Arc (Linear Throwing). These "parameters" not only place extreme limits on the development of the arm but *ironically* mimic the same "rehabilitation" throwing program a player will be put on after surgery. Which begs the question...why are we utilizing a rehab program to train and develop healthy arms?

This throwing program is used by many of the Major League organizations, which naturally has trickled down to amateur baseball. This program is in direct contrast with nature because the arm, if given a chance, wants to throw. Like any other muscle, it wants to stretch out, expand, and condition. It wants to be used, not coddled.

This is what training is all about — to allow the arm to work toward it's capacity, or even beyond what we "think" it's capacity is. The arm doesn't want artificial restrictions — it doesn't want to be limited by a "clock", a "measurement" or a "line". This is suffocating and unnatural to the arm.

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The best way to find out what's in the arm is to remove these constraints, and give the arm a chance to grow -- to create a forum where the arm, on any given day, dictates how much, how far and at what angle it wants to throw. This is Long Toss at it's best -- the freedom to allow your arm to dictate what it wants to do from day to day. Because there aren't any artificial constraints put on the arm, it has the freedom, like a tree in nature, to grow according to it's plan. And based on many years of experience of training baseball players, working with nature best positions us to find out how healthy, how strong and how durable a players arm can be.

The following section will address the various reasons why the 120 foot throwing program was "created". After each "reason" is addressed, I will respond with an explanation or "comment" section as to why I believe the reasoning is not only counter-intuitive, but ultimately, counter-productive to the arms optimum health and potential.

Reason #1) Mechanics: Proponents of the 120 foot throwing program suggest that maintaining proper mechanics is the main reason for "not" throwing beyond 120 feet. Simply put, once a player goes beyond 120 feet, the tendency is for the player to start arcing the ball or throwing uphill, which causes the back shoulder to be lower than the front shoulder and the release point to be "late". Throwing the ball "on a line" or in a linear fashion keeps the front shoulder from "lifting", and promotes a consistent release point. This is the major mechanical argument for the 120 foot throwing program because proponents of this theory ultimately think that "arcing the ball" will cause the release point to become inconsistent.

Comment: First of all, if coaches want to maintain a "consistent release point", they should have their pitchers do all of their throwing off a mound for the rest of their careers. Any throwing, not done on a mound at 60 feet 6 inches, will alter the release point anyway. Besides, what's the relevance of getting used to a "consistent" release point on flat ground when pitchers throw on a decline?

Secondly, throwing on a line takes the athleticism out of the pitcher. It causes pitchers (who are athletes) to become robotic and less dynamic. Ironically, pitchers actually want some tilt (hence the term "pitchers tilt") when throwing a baseball because it gives them leverage (if you look at a still photo of most pitchers in their balance point, their front shoulder is higher than their back shoulder).

In addition, the idea that tilting your shoulders causes your release point to be "late" is also misleading. In fact, tilting your shoulders to arc the ball actually works to your advantage. For example, if you come back into your throwing partner from 300 feet (as opposed to 120 feet), once you arrive back at 60 feet, you actually have to have a lower release point and a better downhill angle in order to "compress" 300 feet into 60 feet (assuming that you are not decelerating your arm). You also have to have amazing balance and a relaxed mind . This is also why some pitching coaches will have pitchers throw "uphill" on the back of a mound -- to create leverage and teach pitchers how to "get over" their front side.

As far as the release point being "altered", when you make throws at different increments beyond (and including) 120 feet, you develop more feel and touch from different distances. This is called getting to know your arm. It's nice to know what it feels like to make throws at 60 feet, 120 feet, 180 feet, 240 feet, 300 feet and so on -- and to learn how to make adjustments with your release point at these various distances. When the arm is free to throw at different angles pitchers (players) actually become more in tune with their release point because they are developing a feel for throwing.

Remember, baseball players make throws from different places on the field. Wouldn't it be helpful to have practiced throws from these different increments? Wouldn't pitchers thrive on "PFP" and position players thrive on defense had they learned how to gauge different release points for different throws? Wouldn't they actually have a better feel for their release point because they've practiced it?

This is why Quarterbacks don't make all of their throws on a line. As important as accuracy is to them, they also need the feeling and touch to throw the football from different release points -- whether it's a short out, or a deep pass down field. Could you imagine what would happen to a quarterback's arm if he was not allowed to throw the football beyond 30 yards, or not allowed to arc the football because he was told that would alter his release point?

Finally, for health purposes, by keeping the ball on a line, shoulder muscles actually experience less range of motion. This prevents the arm from experiencing the flexibility that is gained by throwing with arc at different angles.

Reason #2) Work Load: Pitchers can get the necessary work load at 120 feet — e.g. they can get the conditioning they need at 120 feet.

Comment: Many of the 120 foot throwing programs not only restrict "how far" a player can go out to, but "how many" throws a player can make each day. Again, in many of these major league throwing programs, the amount of throws are based on time. In Spring Training for example, 10 minutes is often the amount of time allocated for players to throw. I'm not sure who came up with the idea that 10 minutes was a sufficient amount of time to prepare an arm, but again, this is very restricting to an arm that may want to throw for 15, 20 or 30 minutes.

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Again, how does anyone know (other than each individual pitcher) how long, or how many throws that pitcher wants to make on any given day. Shouldn't we allow the arm to dictate what it wants to throw from day to day?

From many years of experience of dealing with both pitchers and position players, it is very clear that when arms are given a chance, the capacity of their workload actually increases by allowing them to throw more, not less. Simply put, if given the freedom, the arm will condition itself to whatever it's capable of producing. That means, 15 minutes of throwing has the chance to turn into 20 minutes of throwing, 20 minutes into 30 minutes, and so on. 120 feet has the chance to turn into 220 feet, and 220 feet into 320 feet. Again, the arm will acclimate itself to conditioning in the same manner a marathon runner will train his or her body (legs) to run 27 miles. But, could you imagine what would happen if a marathon runner was only permitted to run 1 mile per day?

Ultimately, a greater work load also leads to greater strength, endurance and intimacy with the arm. When you spend more time throwing, you get to know your arm better. In time, the arm will dictate in and out of season how much it wants or needs to throw.

Ironically, the more that these restrictions are lifted, the more the arm will tend to want to throw. This is quite apparent in Japan, where long time player and manager Bobby Valentine has been quoted as saying that most of his starters throw 200 pitch bull-pens in the Spring, 90 pitch bull-pens the day before their start, and have their best fastball in the ninth inning the next day (Note: Daisuke Matsusaka not only threw 103 pitches in his second bull-pen session in Spring Training with the Boston Red Sox, but he is legendary for throwing 300 pitch bull-pen sessions with the Seibu Lions. Prior to his signing with the Red Sox this winter his physical showed a "whistle clean" MRI on his shoulder.

Reason #3) Overthrowing/Overuse: This is one of my favorite reasons to comment on because the 120 foot program is predicated on the notion that you only have "so many throws" in the arm.

Comment: Well, you may assure yourself that you only have "so many throws in the arm" if you condition the arm at 120 feet for 10 minutes. This is called "under training" -- it's how your arm begins to acclimate itself to a reduced workload. Ironically, by throwing less you are teaching your arm how to maintain this workload, and ultimately, reduce the "amount of throws in the arm". When you make minimal deposits (through under training) and take large withdrawals out, a baseball players arm is vulnerable. When pitchers are exposed to more aggressive throwing in bull-pen and game situations, it becomes dangerous. Quite simply, your work load is not prepared to handle it.

However, Long Toss allows the arm to condition in a way in which far more deposits are being put into the arm, than withdrawals taken out. Our philosophy, which we've seen validated over many years, is "the more you use it (correctly), the more it produces". And this is clearly one of the main reasons why Barry Zito and Dan Haren have never missed a start due to injury in the Minor or Major Leagues.

Throwing "a lot" is why batting practice pitchers seem to have the healthiest arms on the field -- they throw all the time, year after year. When our pitchers get into shape, it becomes quite clear that their arms respond better to throwing more, not less. This is also evidenced by one of the most respected and successful pitching coach's in our generation, Leo Mazzone, who also believes in pitchers throwing more, rather than less (Note: Nolan Ryan has stated that he averaged 160-180 pitches in 1974, including a 235 pitch game against Luis Tiant, who threw 14 1/3 innings against him that night. Ryan pitched until he was 46...Tiant, until he was 41).

The idea that there are only so many throws in the arm stems from a major misconception that we can "get more out of the arm by using it less". The truth is, the arm responds best by being utilized rather than sheltered.

Reason #4) Velocity: It's been said by some 120 foot proponents that you can't gain velocity by throwing beyond 120 feet. That Long Toss does not play a role in increasing velocity.

Comment: As discussed earlier, if according to the laws of physics a 90mph pitch will travel approximately 300 feet and a 95mph pitch will travel approximately 350 feet it's safe to say that velocity does increase as distance increases.

This doesn't mean that if a pitcher is innately unable to throw 95mph, that we can "create" 95mph. What it does mean is that whatever is innately in the arm can be tapped into through Long Toss. For example, if a pitcher throws 80 mph and has never thrown beyond 120 feet, some people may assume that 80mph is all that is in the arm. If, through training however, that same pitcher was "stretched out" to 300 feet, then we know according to the laws of physics that this pitcher gained approximately 10mph.

In other words, for a pitcher that throws 75mph (and has been limited to 120 feet), he may eventually throw 90mph just because he was able to stretch his arm out to 300 feet. In short, if we can turn 120 feet into 220 feet, or even 320 feet through training, the arm will reflect that velocity based on distanceâ and physics.

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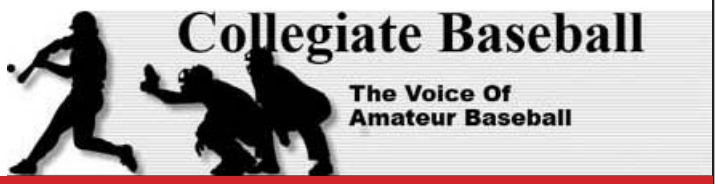

The point is that players can dramatically increase their velocity through Long Toss because they can "tap" into resources that are otherwise dormant. Ironically, the opposite is true of a player who routinely Long Tosses. If his arm has been stretched out to 300 feet or more, once he's put on a 120 foot throwing program his arm will begin to display the characteristics associated with that distance -- namely, less range of motion, less endurance, less velocity, and poorer recovery period.

To put this in perspective, a good friend of mine, and amazing pitching coach out of Houston Texas, Ron Wolforth, has a 7 year old son Garret, who, through training can now throw the ball 175 feet. What an irony -- we are teaching some of the strongest arms at the highest levels to "train" at 120 feet, and yet a 7 year old has been trained to throw a ball 175 feet.

If you are a pitcher and have never thrown beyond 120 feet, wouldn't it be nice to find out what's in your arm? In time, you may be able to work your arm out to 300, 330 or 350 feet. Does that mean that you are guaranteed to throw 90-95mph. Not necessarily, because you still have to take into consideration mechanics, and how your arm "works" off of a mound. But by stretching your arm out, you at least give it a chance to develop the velocity that's in there.

The arm is like a treasure chest -- we can't be sure what's in there until we open it up. Maybe there's 75mph, and maybe there's 95mph in it. Wouldn't it be nice to find out?

Removing The Constraints: Long Toss

Over the past 15 years of working with baseball players, I can tell you that if you take the time and distance constraint restrictions off a player, quite simply, their arm will have a chance to grow and evolve naturally. What's in the arm can reveal itself when we get out of it's way. When we learn how to listen to and trust the arm to be our guide, it will tell us what it wants to do from day to day. Over time, this process allows the arm to maximize it's strength, endurance and recovery period; over time, players tend to be more athletic and intimate with their arms. And yes, even mechanics can be benefited through proper training when Long Tossing.

Long Toss, among other things, is simply the art of listening to and following your arm. And through all of my years of training, it's remarkable and refreshing to see what each player is capable of experiencing simply by giving them the freedom to let their arm manifest it's natural abilities. It's taking the arm out of the cage, and letting it work with nature.

The arm will find it's home if given a chance. By removing time and distance constraints, only the arm knows what it's capable of doing. Only then will the arm have a chance to realize it's potential. And if there is more health, strength and endurance to be found in the arm, wouldn't you like to find this out?

Summary

"It's not about who's right -- it's about getting it right"

Though, the United States seemed to be the "leaders" in the baseball world for so many years, we suddenly find ourselves wondering why we are taking a back seat to so many other countries when it comes to the development of arms. Simply put, why are there so many arm injuries occurring at alarming rates in the U.S.? Why does it seem that so many professional scouts are "down" on throwing arms in the U.S.? Why does such a small country like the Dominican Republic represent approximately 10% of all players on Major League rosters? Why are 40% of all minor league rosters (as of 2006) comprised of foreign born players? Why are there so many more signings of "well conditioned, hard throwing" pitchers from the Far East (who are clearly not as "big" in stature)? Why do these other countries seem to produce so many players with strong, durable and healthy arms (until they come to the U.S.)?

Well, I can assure you, it's not a coincidence. From the research I've done, based on the training "culture" of the Dominican and Japanese players it is clear that players from these countries not only long toss far distances, but their throwing sessions last for a much longer period of time. This form of "training" makes complete sense because their arms are not restricted by time and distance constraints. There's no one telling them how often, how far or how hard to throw. Quite the opposite -- their arms are free to grow because they become an extension of nature. Their arms are given life, rather than having life taken away. And what's in their arm can be found.

When you get in natures way by introducing un-natural limits and constraints on your arm, you are asking for problems. For the sake of the next generation of players, I hope the "powers at be" heed the call. It's not about "who's" way is right...it's about getting it right.

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As much as I believe in Long Toss, and have seen it's effects consistently over the past 15 years on players I've trained, it doesn't mean everyone has to long toss -- if a player feels comfortable throwing 120 feet, for whatever reasons, let him -- but let's not force players into 120 feet either. Let's not put that Giant Redwood into a 10 foot greenhouse, or that Ferrari in the garage. And let's not let "mechanical theories", which I believe are unfounded anyway, to distract our attention away from the overwhelming benefits we get from Long Toss. Namely: Health, Strength, Endurance and Recovery Period.

It's time for the proponents of the 120 foot throwing program to ask themselves, why are we training players at 40% of their capacity at the professional levels, and conservatively, 50% at the high school and collegiate levels? Why are we having players throw for the same amount of time and distance, as if all arms are built the same? Ultimately, why are we getting in natures way?

The arm is like any other amazing organism. If given a chance, it has plenty of room to grow. The problem is, with the current state of many of the throwing programs here in the U.S., it's becoming an endangered species. And this trend will continue as long as we put time and distance constraints on it. Fortunately, it's only going to be a temporary thing because nature always wins. I just hope that "temporary" doesn't last for another 20 more years.

(I would like to thank Jim Vatcher, Ron Wolforth, Brent Strom, Jerry Weinstein and Rob Bruno for playing an instrumental role in writing this article).

Alan Jaeger has worked with over 200 professional baseball players (including Major Leaguer All-Stars Barry Zito, Dan Haren, Mike Lieberthal and Andrew Bailey) and several Collegiate Programs (including 2004 National Champions, Cal State Fullerton) and four Major League Organizations including the Texas Rangers. Alan founded Jaeger Sports in response to the growing need to address the two most neglected areas of baseball: The Arm and The Mind.

For more information please call 310-665-0746 or visit us at www.jaegersports.com.