

**Welcome to Dan Riley's latest installment of Texans Fitness Corner. The response continues to be overwhelming. We will continue to post selected answers to your questions throughout the year.**

***NOTE: Before engaging in any new physical activity, always consult your physician.***

In my last installment of the Fitness Corner I wrote about a visit I had from John Riggins, a former Redskin and current member of the National Football League Hall of Fame. During this past week I had a visit with Darrell Green, current Redskin and future member of the National Football League Hall of Fame.

I met Darrell at Stafford High School to watch him work out. Some athletes are genetically gifted but never reach their full potential. Darrell Green reached his physical potential and sustained it at the highest level for 18 years in the National Football League. During his workout Darrell ran a series of 300's. He ran each in less than 40 seconds. His running speed, strength, and recovery are unbelievable for a man in his forties.

Darrell's accomplishments on the field are well documented. His accomplishments off the field are equally impressive. His presence and impact on young people in the Washington, D.C. community is immense. Upon completion of his workout at the high school he volunteered an hour of his time to talk with a group of Stafford High coaches and athletes. They hung on his every word.

I first met Darrell in April of 1983. The Redskins had just drafted him as their number one pick. I thought our scouts had lost their minds. We drafted a guy in the first round that stood 5'9" tall and weighed 165 pounds. During my first conversation with him I told him, "You're going to get killed."

Little did I know that Darrell had the heart of a lion. He currently weighs 180 pounds and hasn't lost a step. Each year when I met with the rookies I encouraged them to emulate a veteran with a long and successful career. I'd ask them to observe how Darrell takes care of himself during the season and how he carries himself as a person and a professional. Darrell is originally from Houston. Most of his family resides here. Wouldn't it be a fitting end to a brilliant career to see Darrell Green finish his career as a Texan?

Let's get down to business and go to the Fitness Corner to answer some of your questions.

*My name is Brad. I'm going to be a freshman at a local high school here in Houston. I've been working out at our school's weight room with my brother who is a senior starting linebacker and team captain. My oldest brother was also a captain when he played for our high school. My brothers are both bigger and stronger than I am. Some people say I am too small (5' 6", 125 pounds) to be a really good football player. I have good speed but I need to gain weight and get taller. I hope you have an answer to my situation of being one of the smallest but most dedicated athletes in my class. I would like to carry on the tradition of my brothers.*

If you haven't read the intro to this segment please read the information I included about Darrell Green. Darrell is one of the smallest players in the NFL and one of the

greatest. He's also one of the smartest and hardest working, both on and off the field. He watches more film than most players and uses his size and speed to his advantage. You can do the same.

Jamie Morris was a running back and played college football for the University of Michigan. The Redskins drafted him many years ago. He continues to hold the Redskins team record for most carries in a game (43) by a running back. Jamie is 5-6. He also had the heart of a lion and great work habits. I have observed many athletes in high school, college, and the professional ranks that were shorter than the average athlete, yet had outstanding athletic careers.

You can do the same. It's possible you may not grow to be as big as your brothers. It's also possible you may be bigger. Don't worry about your height. Continue your lifting and running program. Eat a balanced diet, drink plenty of water, and get enough rest.

You are young and still maturing physically. You will probably grow taller and gain more muscle and body weight. Enjoy your high school career. It will pass rapidly and soon become a fond memory. Your work habits and the effort you exhibit will earn respect from your coaches and your teammates.

Not many athletes get the chance to continue playing after they graduate from high school, and even fewer get the chance to compete at the college level. My message to all high school athletes is to take the discipline and dedication they use to prepare for playing the game, and apply that to the real world.

Your successes on the field will be forgotten rapidly. Your successes in the classroom and your work habits will be remembered for the rest of your life. Good luck to you and your team.

*I recently attended a strength seminar. There were coaches from the H.I.T. (high intensity training) camp and coaches from the high volume multi-set periodization camp. These two camps couldn't disagree more. They could start religious wars over this stuff. It's very confusing. I hope you can shed some light. Also, in some of the H.I.T. programs, I've seen some multiple set protocols. If multiple sets are the protocol do you use the same weight for each set?*

-- Jim, Chicago

I'll try my best to answer your question in two parts. In Part I I'll provide information regarding the high intensity controversy. In Part II I'll respond to your high intensity multiple set question.

## **Part I**

In one of my earlier installments of the Fitness Corner I gave a brief historical survey of how I initially learned about strength development. Most strength coaches learned in the same manner. In the late 1960's competitive weight lifters and bodybuilders were the sole participants of muscle building activities. Very few athletes engaged in any strength training and most coaches wouldn't allow it. The

primary sources of information during this period were Joe Weider, Bob Hoffman, muscle magazines, and hard-core gyms.

The popularity of strength training grew rapidly among coaches and athletes during the 1970's. Most coaches knew little or nothing about lifting and were forced to learn from the people that did. Coaches and athletes flocked to the gyms. The Olympic lifters and the power lifters inhabited these gyms. Coaches began training their athletes using the exercise protocols practiced by the weight lifters. Eventually most high schools and colleges followed the advice offered by the weight lifters. Today most people have been influenced in one way or another by the competitive lifters of the 1960's and 1970's.

The technology and terminology has changed through the years but the basic concepts of building strength remain the same. Periodization, microcycles, and macrocycles, are part of this change. High intensity exercise has also progressed from the "Up in two-down in four" protocol of the 1970's. High intensity exercise has been used by a small number of coaches and athletes for more than a quarter of a century.

Periodization was popularized in 1965 and is more widely used than high intensity exercise. The background of a coach and his or her personal preference will dictate which system they use. Both systems work very well if the person implementing the system is knowledgeable. There shouldn't be any controversy. It's like arguing about which truck is better, a Ford or a Chevy.

Periodization offers a very organized training model. Many coaches and athletes use it. Adhering to the periodization principles will generate significant improvement.

Mr. Tudor Bomba, PhD is the author of "Periodization Training for Sports," and "Total Training for Young Champions." These are two well-written books that provide the reader with the information necessary to understand the periodization training principles. The books are published by Human Kinetics, P.O. Box 5076, Champaign, IL, 61825, 1-800-747-4457. I'd recommend both books as a resource.

The roots of high intensity exercise can be traced to Mr. Arthur Jones, former owner and designer of Nautilus equipment. In the early 1970's we observed the beginning of the equipment evolution. Nautilus and Universal Gym were the major players. The "Machine Age" was upon us. The only equipment available to lifters before this was the barbell and dumbbell.

There was tremendous resistance to these new machines. Arthur Jones also preached a new training concept called "high intensity training." In 1970 he published "Nautilus Training Principles," Bulletin NO. 1, and Bulletin NO. 2. High intensity training was popularized more than 30 years ago.

In the early 1970's I was the strength coach at the United States Military Academy, at West Point. My lifting experience was with a barbell and dumbbell. The techniques I taught were those I learned from the lifters of that era. In 1975 the Academy purchased some Nautilus equipment (I strongly resisted this purchase).

I was supposed to be the Academy's "strength training expert." I didn't know anything about machines or high intensity exercise. Rather than admit this, I found it easier to discredit the equipment and the methods. I was forced to visit Arthur Jones for a week at his Nautilus plant in Deland, Florida. After meeting with Jones I found him to be arrogant and abrasive. It became easier to dislike him, his equipment, and his high intensity training.

He insulted anyone and everyone to include medical doctors, trainers, therapists, professors, scientists, football coaches, strength coaches, bodybuilders, and weight lifters. His relationship with most professionals was strained at best.

As my luck would have it, the Academy decided to do several very extensive studies using Nautilus machines and the high intensity training methods professed by Arthur Jones. Jones and his staff spent eight weeks at West Point. They made sure his equipment was used properly. He and his staff made sure each repetition of every exercise was performed in the manner prescribed by their high intensity protocol.

I was a fish out of water. It was the beginning of my education on how to use the high intensity system. As time passed I periodically experimented with some of the equipment and techniques, but always returned to the barbell and the methods I was most familiar with. Eventually I was caught between a rock and a hard spot. The equipment and the methods used became very popular at the Academy. I observed first hand the physical changes taking place with the cadets participating in the study.

I begrudgingly started training many athletes with the equipment and the high intensity methods. I continued to learn (and I'm still learning) how to effectively use this style of exercise. I visited Arthur Jones many times in Deland, and Ocala, Florida. He taught me more about exercise than anyone. We became friends.

During one of my visits I asked him why he treated people the way he does? I asked him why he insulted everybody? He told me it was what he called his, "Slap in the face with a cold fish philosophy."

He explained to me how he attended clinics and medical symposiums and tried to talk with doctors, coaches, professors, and athletes, about his equipment and new techniques. He claimed they weren't willing to listen. So he began insulting people. He said it was like meeting someone for the first time and "whacking them in the face with a cold fish." It got their attention and people began to listen to what he had to say. He said they might not believe him, but at least they were now willing to listen. Some people listened and learned, but many more refused to accept or believe anything he had to say.

Arthur Jones is directly or indirectly responsible for popularizing the use of high intensity concepts. The number of people using some form of high intensity training is relatively small compared to the number of people using what many consider to be the more traditional approach to building strength.

You ask why? There was only one Arthur Jones to preach high intensity. There was Joe Weider, Bob Hoffman, and thousands of weight lifters, to preach the more traditional methods.

Why the controversy? Arthur Jones helped to create some of the disagreement between advocates of high intensity exercise and the free weight traditionalists. As I mentioned earlier he insulted everybody. Some people detested him. He also started selling machines in an era where the barbell and dumbbell were sacred tools.

Strength coaches (myself included) helped fuel the controversy. If my team won it was easy to credit the strength program as the primary reason for success. It was a means of justifying credibility for the strength program. It was the old adage, "When we win it's because of me and my program, but if we lose it must be bad coaching or the players fault."

I've been fortunate to be part of three teams to win a Super Bowl. I realize now it's not the system used that wins games. It's finding good players and making sure they are well coached.

Someone once asked Albert Einstein if he carried a pencil and pad around with him to write down his original thoughts? His response was, "There's no need to because I've never had that many original thoughts."

The same can be said about strength training. Strength training terminology and technology may have changed some through the years, but the basic concepts of building strength remain quite simple. All systems are effective if they provide some form of systematic progressive overload and adequate rest.

There are many more similarities than differences between and among the various training programs. My advice is to try them all and choose what works best for you. It is foolish to argue about the system you employ or the equipment you use (or which truck is better).

## **Part II**

I've been a strength coach for 29 years. For 25 of those years I've employed some form of high intensity exercise. I've learned that as the intensity increases, the volume of exercise must decrease. For example, observe an athlete walk back and forth across the length of a football field 100 times. The intensity of exercise is very low while the quantity is high. The athlete would easily recover from this workout by the next day.

On the second day have the athlete jog back and forth across the field with short rest intervals after each 100 yard run. The intensity is again low and the volume is high. If the athlete were in reasonably good shape he/she would easily recover by the next day.

On the third day ask the athlete to sprint all out while running each of the 100-yard sprints. Allow adequate rest between sprints. The intensity of this workout is very high as is the quantity of exercise. The athlete would be sore the next day and it would take several more days to completely recover from this workout. The volume of work is much too high for the intensity level of the exercise performed.

Lifting is no different regardless of the system you use. You can use weights that are too light and no progress in strength will be observed. Conversely too many high intensity sets and you won't recover.

How do you know if you are performing too much exercise? The simplest way is to keep accurate records. A decrease in strength from one workout to the next is one indicator. Undue muscle soreness is another. Experiment by adding or decreasing the number of sets and/or exercises.

You can add variety to your training by using the same weight for each set you perform, or, adjust the weight and maintain the same number of reps. If you use the same weight for each high intensity set you perform, the number of reps will decrease.

If you wish to maintain a specific rep range you must decrease the weight each set.

I have several 10-8 routines I'll use with our players. Once they have warmed up we'll select a weight that allows them to barely complete the 10<sup>th</sup> rep and unable to complete an 11<sup>th</sup>, or, they complete 9 reps but need help on the 10<sup>th</sup>.

We allow 90 seconds rest between sets (if we aren't preexhausting a muscle). The weight will be decreased on the second set. The ideal weight would allow the athlete to complete 8 reps but unable to perform a 9<sup>th</sup>, or, complete 7 reps and need help to finish the 8<sup>th</sup>.

I have experimented for many years with the amount of exercise our players perform. In the past we trained the total body three times a week. The amount of exercise was significantly less than what I recommend today. Most of our players will split their routine using a lower body/upper body format.

I encourage variety. For example, with the Redskins our players had 13 different upper routines to choose from. Five of those routines incorporated a 10 – 8 rep protocol (only for the pushing movements). One of the routines I employed a 3 x 6 protocol. A total of 18 reps per exercise are completed when performing the 10 – 8 routine or the 3 x 6 routine. The rest of the routines were a single set format. The exercises were performed with dumbbells, barbells, machines, bodyweight, or manual resistance.

The rep range varied as low as 94 reps and as high as 116 total reps. Through observation, accurate records, and player feedback, I've learned our players best respond with this volume of work. When using high intensity exercise you must pay strict attention to the volume of work completed. You can vary set/rep combinations in any manner you wish. For maximum gains do not exceed your ability to recover from one workout to the next.

Best of luck with your training. Go Texans!