H.I.T. HIGH INTENSITY TRAINING
NEWSLETTER
Reliable and Sensible Information on Strength Training and Conditioning
Volume 1 No. 2 Winter 1989

The Washington Redskins Strength Program

by Dan Riley, Strength Coach

IN-SEASON TRAINING

The success and effectiveness of a strength program must be evaluated during the season. Wins and losses are not the criterion used to determine how successful and effective a conditioning program is. What are some of the requisites of a successful in-season program? How do they differ from the off-season program? In this issue of the HIT newsletter, I'll try and answer those questions. Space does not allow me to go into depth on program specifics but I'll do my best to give you some basic concepts on in-season training.

Most athletes spend time in the weight room for two reasons. They are: 1. injury prevention; 2. enhancement of those abilities used to participate in their event. If this is so, doesn't it make sense that the most important time to protect the athlete and enhance their abilities to perform, is during the competitive season?

Your in-season program is your program. Why is it so important to train hard during the season? The body's ability to retain strength at near maximum levels is not very good. I once reviewed a source that stated the body will begin losing strength somewhere between 48-96 hrs. from the last workout. The loss will be approximately 1% per day until the next workout is performed. The first day's loss is 1% of 100%, the 2nd days loss is 1% of 99% (and so on). The initial loss in strength (first few weeks) is rapid. After a period of time the loss in strength gradually levels off. That's why the body can retain low level strength and endurance gains over a long period of time. But at the upper end (near maximum strength levels), the body will lose rapidly if frequent workouts (every 48-96 hrs.) are not performed.

The brain has the ability to remember things by placing them in its'long or short term memory. Unfortunately the body's ability to retain the benefits of strength building exercises and learned skills are not very good. To maintain near maximum strength levels the athlete must exert those same efforts that initially built the strength. For example, a player trains hard during the off-season and can now lift 200 lbs. for 9 good reps. His competitive season then begins.

In an attempt to maintain strength throughout the entire season this athlete must lift within 48-96 hours of his last workout. He must also attempt to lift 200 lbs. for at least 9 reps. If he doesn't lift within the 48-96 hour time period, he'll begin losing strength. If he lifts anything less than the 200 lbs. for 9 reps, he'll begin losing strength rapidly.

The same holds true for learned motor skils. Ask a golfer what happens to his skill level if he doesn't play for a week? Two weeks? Two months? Ask an athlete who plays tennis, baseball, basketball, or any skilled event what happens to their skills if just a short layoff occurs. If your an advocate of the plyometric craze to amplify the pre-stretch reflex (etc.), you better "keep on amplifying" during each week of the competitive season.

If your players are juggling during the off-season and you believe it's an essential element to protect your athletes or enhance their abilities to perform, then make sure they juggle regularly during the season. If it's mud wrestling in the off-season, then mud wrestle during the season.

It was just last year that we did away with sky diving during the off-season. I was going after the plyometric effect when the players hit the ground. I was telling them to concentrate on rebounding as soon as their feet hit. Unfortunately a few concentrated so hard on rebounding they forgot to open their chutes. That darn wind was a problem too. We'd lose players for days when they'd get hung up in the woods. If you're using sky diving for the plyometric effect I'd recommend you really emphasize the part about opening the chute.

Forget about philisophical differences in theory, techniques, or equipment. Based upon your philosophy, organize the most sound off-season program you can. And then make sure you implement that same basic package during the season. Better yet, organize a sound in-season strength program, and implement that during the off-season.

REDSKINS OFF SEASON TRAINING

Before I discuss our in-season strength program let me give you some of the guidelines of our off-season program. Our goal with the Redskins is to generate maximum strength gains as the off-season progresses and peak during the month of July. During many of our off-season workouts we use 5 basic routines recorded on a workout card. Our players never go through the same routine twice in a row. We constantly rotate the cards to insure variety and so that the different movements in each routine will eventually be performed.

In each workout we vary the order of exercise, the exercises performed, the manner in which an exercise is performed, and the equipment used. We use the same

Tim Krumrie of the Bengals "Hands of Steel"

By Kim Wood, Assistant Coach, Cincinnati Bengals

> "Tim Krumrie is the finest nose tackle in the NFL, bar none. The guy's a great player. *He uses his hands very well*, he's got good leverage, he's tough to knock off his feet and he plays every down like it's the only one in the football game..."
> — Chuck Knox, Head Coach Seattle Seahawks
> The Cincinnati Enquirer, Dec. 29, 1988

For many years I have told people that Cincinnati Bengals' nose tackle Tim Krumrie was the best nose tackle in all of football. This year Tim Krumrie has gained the All-NFL/All-Pro Recognition he has deserved for some time. It takes great strength to play defensive line in the NFL. Tim Krumrie could be the strongest man in football.

The tenacious Tim Krumrie in pursuit of an opponent.

The strength of football players is measured in many different ways. Some coaches place great value on bench pressing ability or performance abilities in the other power lifts. Some coaches esteem performance abilities in the classical Olympic lifts. The Cincinnati Bengals value what we call *Football Strength*. Football strength is how a player uses strength in the playing of his position... functional football strength is all we are interested in when we train our players. Tim Krumrie could be a great power lifter or Olympic lifter if we trained him to be one... but we are not training him to be a power lifter or Olympic lifter... *we are training him to be a football player*. In the context of football combat I know of no stronger player in the game...

One of the keys to Tim Krumrie's great football strength is the amazing strength and development of his fore-arms, wrists, hands and fingers. There is no question that Tim has great genetic gifts for such strength but his strength in the area is also the product of hard, intense work... *The Cincinnati Bengals feel that you play football with your hands.* I know of no other team in football that places such value on the training of the hands and fore-arms. I know of only a few other programs that place *any* value on training the hands and fore-arms. Many seem to forget that if you can control another man with your hands you've got him... and the greater the mass of your fore-arm and fists the greater the intensity of impact in football combat. You play football with your hands and fore-arms and you must train your hands and fore-arms.

Like all of our strength training we stick with the basics of high intensity training... one set to failure working to make every rep count... in every strength workout we will include three or four of the following hand/fore-arm exercises:

- Thick Bar Exercises
- Reverse Curls
- Wrist Curls
- Reverse Wrist Curls
- Supination/Promation Exercises
- Grip Machines
- Leverage Exercises with Heavy Sledge Hammers
- Hanging from Bars
- Wrist Rollers
- Pinch Gripping
- One-Finger and Two-Finger Deadlifting
- Hammer Curls

Hand and fore-arm exercises are easy to perform and are extremely result producing... no magic Bulgarian solutions here just the basics. And by the way, should you ever meet Tim Krumrie in a "Close Quarters" situation, don't *ever* let him get a hand on you... and don't every let him get near your throat...

Special considerations for Strength Training Females

By Matt Brzycki, Assistant Strength Coach, Rutgers University

Of our 32 intercollegiate sports at Rutgers University, we have 15 varsity programs for women. As an assistant strength coach, I work extensively with many of our female athletes in the weight room. Just to give you an idea of the numbers we're dealing with, 6162 workouts were recorded in our two "non-revenue" facilities during the Fall of 1988 Semester (16 weeks); female athletes accounted for 1977 (32.4%) of these workouts. In fact, the success we've had in training large numbers of female athletes prompted a representative of a major equipment manufacturer to remark that "Rutgers has one of the most aggressive — if not *the* most aggressive — approaches to training female athletes in the country." That's quite a statement, especially when you consider that this particular individual has nearly 20 years of experience in the business end of strength training and has seen numerous programs oper-

ate on a first-hand basis literally over most of the civilized world!

A Rutgers gymnist performing a set of dips.

This article is by no means a scientific document... nor should it be viewed as such. Rather, I'd like to share some thoughts and feelings concerning the strength training of females through my experiences gained at colleges, YMCA's and fitness centers. My hopes are that other individuals can use this information in order to encourage more females to initiate or continue a strength training regimine.

ENVIRONMENT

I think the first step in attracting females to the weight room is to provide a pleasant, professional atmosphere. At the very minimum, the facility needs to be clean, carpeted, well-lit, properly ventilated and professionally staffed. Additionally, the equipment should not only be safe but also aesthetic-looking and geared specifically towards a female's smaller body dimensions (or of the "unisex" variety). Let's face it, females simply aren't interested in a medieval-looking chamber of horrors that smells like a buffalo with flatulence. Remember, you've only got one chance to make a first impression.

EDUCATION

Once you've created an appealing environment, you're next step is to dispel the many myths and misconceptions that have surrounded resistance training for decades. Many women still fear weight training and one of your tasks will be to ease these suspicions. For example, most women will have the notion that strength training will create unsightly, unfeminine muscles or produce other masculinizing effects. Major issues generally include the training effects (e.g. muscle size, blood pressure response, spot reducing, etc.), nutrition (fad diets, supplementation) and training guidelines (frequency, intensity, sets, reps, etc.). In short, you've got to be a reliable source of information. It is not within the scope of this article to detail any of these areas, However, you should attend clinics that will provide you with useful, valuable information from other members of the professional community. Furthermore, keep abreast of current literature and subscribe to periodicals that disseminate safe, practical and productive training information. Read everything critically to determine whether or not it makes sense. Avoid those glossy magazines that are loaded with advertisements for nonsensical, and unnecessary nutritional products. More often than not, this "literature" is a veritable cesspool of biased advise that is many times unproductive, impractical and sometimes borderline psychotic.

Conducting your own clinics and mini-seminars is an effective way of supplying information to large groups of people at one time. If you're a strength coach at the college level, meet with as many teams as possible and encourage the sport coaches to attend. (We have been very successful in attracting many female athletes - especially basketball and gymnastics - because their coaches believe in the necessity of strength training as a way of injury prevention and, therefore, have been extremely supportive of our role.) You can also make use of a bulletin board to post reliable information or simply hand out copies of articles that you feel are appropriate. In short, education is your best weapon in combating a woman's fears of resistance training.

APPROACH

Another key to success lies in your basic approach to training females. My experience suggests that most females have absolutely no desire to train like competitive weightlifters. In other words, they don't want to spend several hours a day in the weight room performing countless sets of each exercise; likewise, they don't want to spend needless time and energy learning how to do complex lifts like power cleans and snatches. I've also heard much dissatisfaction from women (and men as well) who have experienced joint pain and sometimes injury from the repetitive musculoskeletal trauma associated with competitive lifting and plyometrics. Hey, females want a productive form of exercise that is safe and time-efficient. It's that simple.

Those ubiquitous "Pound Clubs" which adorn many weight room walls tend to glorify one's ability to demonstrate strength due to favorable body proportions. Understandably, it's motivating for some people to walk into a weight room and see their name and maximum lifts in bright lights for everyone to marvel. Hey, you're going to get these people into the weight room even if we were under nuclear attack! But what about others who may never make those "Pound Clubs" because of unfavorable body proportions? It would certainly be quite frustrating to them as well as intimidating. You'll get a much more enthusiastic response overall by deemphasizing maximum lifts. Why not reward attendance instead in the form of a "Most Dedicated Lifter?" After all, one of the goals is to attract people anyway. Besides, attempting a one repetition maximum lift is also potentially dangerous.

Remember, the intent is to build strength not demonstrate strength. Verbally reinforce proper form and good effort as much as possible. Make each workout and every exercise meaningful. Encourage improvement from one workout to the next, but allow for progression at each individual's pace. Keep in mind that each person has a different potential for attaining strength.

SPECIFIC CONCERNS

There are several areas of concern that are specific in the strength training of females. Keep in mind that women are generally weak in the upper torso musculature. most women are concerned with training their lower bodies, but you need to make sure that they don't neglect their upper bodies. So, your program should address all major muscle groups in the entire body.

Females are susceptable to hyperextended joints - especially the knee and elbow. This suggests that they should not get an extreme stretch during leg curls and bicep curls. This also implies that they should avoid "locking out" their elbows and knees during pressing movements (i.e. leg press, bench press, etc.).

Incidentally, women will benefit greatly from a strength program based on high intensity training. And, for the record, women can train just as intense as men. I see it every day.

ONE MORE KEEP

The bottom line is that women should be made to feel comfortable in a weight room. I think that many women are hesitant to enter weight rooms because they can sometimes. be intimidating places. Many facilities offer ittle or nothing in the way of instruction, guidance or direction for females. Furthermore, I've seen far too many weight rooms that were basically temporary homes for neanderthals who filled the air with expletives and delighted in the verbal abuse of others. Listen, it's no wonder many women are intimidated! As a manager of a strength facility, it's your job to ensure the surroundings are appealing and that everyone receives guidance and direction. Remember, a woman has just as must right to be in a weight room as a man — so make them feel that way.

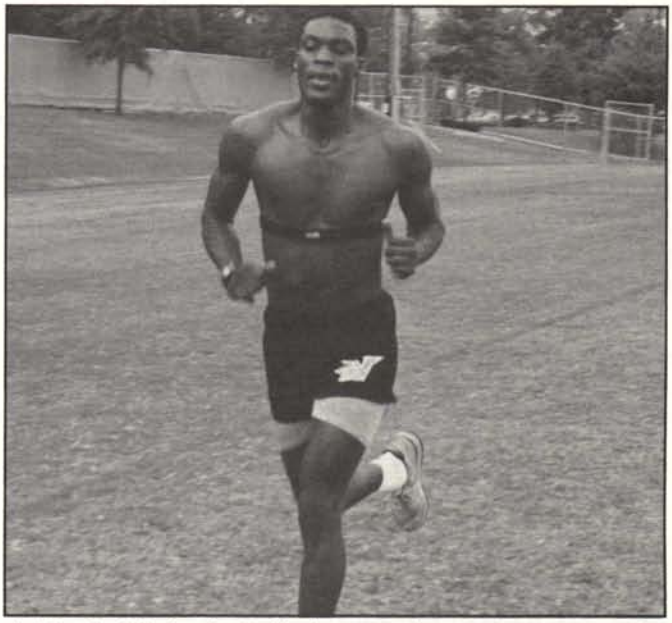
Understanding Aerobics... The Benefits And The Limitations

An Opinion By Roger Schwab

In the 1980's **aerobics** has become the generic term for exercise — any or all exercise. Since exercise is a concept examined by nearly all people, undertaken by most yet understood by few, it is important that we take a serious look at aerobics.

The term **aerobics** spawned in the early 1970's under the tutelage of Kenneth Cooper, M.D. A definition, my definition, of aerobics is literally an exercise taking the heart rate to X level, for Y period of time, with Z results. The intended benefit of aerobic exercise practiced on a regular basis is improved cardio-respiratory efficiency manifesting in among other values, a lower resting heart rate. Obviously, the potential benefits aerobic exercise present are enormous. Though aerobic exercise cannot guarantee increased life expectancy, the physiological benefits are real and supportive data of a scientific nature is accepted. If our story ended here there would be no conflict. Unfortunately, the story doesn't end here and there **is** conflict. Aerobics, for all of its benefits has limitations! In order to strengthen the muscular structures of the body, to enhance the structural integrity of the connective tissues, the joints and the bones themselves, aerobics unfortunately but definitely falls short.

While working in an aerobic pathway, the muscles, working against minimal or zero resistance, are contracting with little of their potential force output. Under such conditions a muscle can continue work for lengthy periods of time without stimulating any meaningful strength gain. **Anaerobic** exercise by contrast requires much higher muscular force production. In anaerobic exercise you induce fatigue in the muscle faster than the muscle can compensate. Soon, while working against a sufficient resistance, your reduced strength level will no longer be enough to allow you to continue against that level of resistance. Such exercise, if progressive, does have the potential to stimulate strength gain. Jogging would be aerobic. Weight training would be anaerobic.



A Vanderbilt basketball player performing some aerobic work while wearing a pulse monitor to insure proper training intensity.

The problems caused by the misunderstanding of these two types of exercise should be obvious. They seldom are! Aerobics in of itself can **not** be the be-all or end-all of a sensible exercise program. The failure to understand this point has led to the physiological and psychological trauma of a very large number of sincere but misdirected participants. Many of our favorite activities fall into the category of aerobic exercise. These include jogging, swimming, bicycling, step climbing or walking briskly on a treadmill. However, aerobics is generally perceived by much of the population as "exercise classes" or "aerobic dancing" classes. **All** of the above aerobic activities may potentially increase cardio-respiratory efficiency **if** certain criteria are fulfilled.