



**STORM FOOTBALL; TRAINING AND NUTRITION 101**

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**Things to Consider?**

Things to consider when thinking about “weight training” and “dry-land training” include; how should I prepare my body best to avoid injury? How can I get maximum results and reduce the time spent in the gym and away from homework, practice, and family? What should I try to accomplish first, strength, speed, power, agility, endurance?

Well to answer these questions look to training with a periodized approach; step one in Periodization is a phase called “AA” which works all the smaller muscles, joints and stabilizers allowing athletes whether young or experienced to prepare their bodies to handle heavy loads, explosive movements and taxing workouts. Remember the muscle is only one part of the body, and tendons, ligaments, and joints are necessary to complete any weight movement no matter how strong you are.

Maximize your time by following a periodized program because this approach focuses on glycogen recovery not the myth of specific “muscle” timing. The body after training needs to expel lactic acid from the muscle and cells within, it also must recover the lost stores of glycogen and glucose used during training. This process at most can take 36-48 hours, however aside from very taxing off season workouts or hypertrophy workouts a recommended one day full body circuit on to a one day rest or conditioning day is best. Therefore try to train for example, Monday, Wednesday, Friday in the gym and stagger conditioning days or agility/speed days within those.

What to work on first? Well many abilities are only able to be properly developed after other systems are built and fine tuned first, therefore first things first. Develop core strength, and strong stable joints, muscle attachments, tendons, and stabilizer muscles. Work on technique and breathing then move on to step two. Step two is developing strength or your body’s ability to recruit a maximum amount of fast twitch fibers or strength fibers. This process is switched to slow twitch fiber if the athlete’s sport calls for long muscle endurance. Once the athlete can call on strength move to power and teach it how to draw on that strength quickly and efficiently, become explosive and work with controlled movements eccentrically and powerful concentric flexions and extensions. Speed, agility, mobility, flexibility, and stamina are all combine with the above to create functional skill and ability, therefore take care of the first two steps and the rest will follow.

Also look at every aspect of your life, try and improve eating and nutritional habits, look to supplement with proven and well absorbed multi-vitamins and mineral supplements, stretch and be committed to improving flexibility, and follow the “hydrate before it’s too late” rule, and remember your body both recovers and grows during resting hours, so sleep 6 to 8 hours per night in complete darkness. These hints combine with a periodized training regiment will help you chase down your dream of becoming fit, fast, strong and healthy.

**What is Periodization? And how does it apply to Sport Specific Training?**

Periodization is defined as; Strength training structured into phases to maximize sport specific strength. It utilizes scientific principles, objective measurements, and subjective restrictions to plan training to allow athletes to peak for his or her event or season regardless if it be in six weeks or one year. Periodization allows an athlete to sectionalize his or her off -season to maximize gains and recovery and minimize injury and plateaus caused by over/uneducated training. Periodization allows us to design a program which encompasses all aspects of training appropriate for any athlete; Transition, Anatomical Adaptation, Hypertrophy, Maximum Strength, Power, and most importantly Conversion to Power. Each stage is designed to lead into the next and finally into the Conversion to Power section, which allows an athlete to transmit the power, speed and strength acquired in the gym into practical gains on the playing field.

**What is Sport Specific Power and Agility? How can it help in my Sport?**



Power, the ability to perform an explosive movement in the shortest time possible, results from the integration of maximum strength and speed. The combination of endurance and speed is called speed-endurance. Agility is the product of a complex combination of speed. Strength, speed, and endurance are important components of sports specific performance. In every athletic activity there will be one dominant component of which there is a higher contribution required. Depending on the sport, peak performance may be needed in more than one area. The relationship between strength, speed, and endurance create crucial physical athletic qualities. Thus in every sport there is a need for the application of power, strength and speed. Through periodized training the athlete trains each component of his/her sport not just one or two.

### **Examples of Phases**

#### **Phase One: Anatomical Adaptation Training**

The Anatomical Adaptation phase of training is the first phase in what is known as the Periodization of Strength. The Periodization of Strength in short is the organizing of training "periods" throughout the year. This mode of training alternates the type of muscle function being trained to better accommodate the athletes personal needs in terms of strengths, weaknesses, and the ability to peak for specific athletic competitions or season. To achieve maximum performance, training must be planned and periodized in such a manner that ensures performance improvements through each phase, culminating or peaking during the competitive season or event. Each sport requires specific combinations of strength, speed, agility, power, endurance etc....

Objectives: The objectives of this phase are to involve most muscle groups and to prepare the muscles, ligaments, tendons, and joints to endure the subsequent lengthy and strenuous training phases. Strengthen Core areas first; including spinal column and trunk region. This is especially important in younger athlete's mainly amateur level, high school, and even collegiate players. In order to become a powerful athlete the bodies, core area must be stable enough to compensate, for tremendous levels of exerted force, without conceding in either technical or tactical areas to balance such exertion. In other words, ones strength may be tremendous however without a strong core area the ability to apply that strength is negated.

The purpose of this phase in short is not to focus on areas which the athlete is already proficient, rather to adapt other lesser developed areas to allow the application of strength both in competition and prior to that, in the following phases of training.

#### **Phase Two: Hypertrophy**

The purpose of this phase is not to gain size in terms of weight, rather to develop large, active, fat-free body mass. Force depends directly on muscle density and diameter, therefore increased active body mass is an asset to strength application.

During training in this phase an increased number of repetitions cause a relatively light weight into a sub maximum and then maximum load by the last repetition. Coinciding with fatigue, recruitment and synchronization of motor units is much greater. Increases in recruitment of muscle fibers and units often directly relate to increases in physiological effect on strength. Training in this phase is based on a 6/12 gradient where a weight which is maximal for 6 repetitions is trained until the athlete adapts to it for as many as 12 repetitions. Thus to be completely aggressive in this training method athlete's are trained to exhaustion. Hypertrophy is the cumulative exhaustive work in total number of sets no only per set as in bodybuilding.

The exercises are performed at low to moderate speed; this is why only select power sports such as Football linemen, heavy class wrestlers/ boxers/ martial artists and some power track and field athletes are advised to complete this phase. Also differing from bodybuilding, focus is put on prime movers only during this phase and total exercises are kept low.



It is essential not to train too many individual body parts during this phase. Over training occurs when the livers glycogen stores can't replenish fully between workouts. This is why Hypertrophy training is only done two to three workouts a micro-cycle with maximal time to recover between.

### **Phase Three: Maximum Strength Phase**

Objectives: Train to eliminate Central Nervous System (CNS) inhibition. A reduction in the inhibition and an overall increase in strength will yield the greatest increased strength potential. What this means is that just like in your sport repetition is your road to success when forced to perform activities your brain will quickly adapt and cause changes in your muscular response and the response of your CNS will become more efficient as well.

In this phase the main objective is to develop the highest level of force possible. All sports have different dominant abilities, for some it's power, and others muscle endurance, and others speed. The common denominator is that each of these abilities is affected directly by the athlete's maximum strength. During this phase the athlete must strive to achieve peak maximal force and strength. The ability to efficiently recruit FT muscle fibers depends on the content of a training period, this content will include intense (max) loads and explosive or dynamic power. When one creates high tension in the muscle, strength increases, thus when utilizing high intensity training loads and technique the same will occur, as one is a precursor to the other.

Athletic strength does not depend on body weight or size rather on recruitment of FT (fast twitch or white/type II) muscle fibers and motor units. During this phase Eccentric and Concentric contractions will be utilized. This training phase is not performed into or under exhaustive conditions therefore allowing high CNS activation, resulting in improved synchronization and coordination of muscle units both agonistic and antagonistic.

This phase or perhaps more applicably this dynamic application of force and explosiveness is performed during the later stages of the preparatory phase, or in the last phase of MxS.

MxS is required before a Power phase.

Combining MxS and Power training enhances speed and explosiveness.

The initial part of the routine is performed against a heavier load this stimulates a high recruitment of Fast Twitch Muscle Fibers. The follow up explosive/ quickness movements increase the firing rate of the Fast Twitch Muscle Fibers. Preparing the athlete for the quick, explosive actions required for all speed-power sports during the competitive phase.

### **Phase Four: Conversion to Power**

This phase exemplifies periodization and it's usefulness as an application for peak performance in athletics. During this phase of training the goal is to convert an athlete's gains in Maximum Strength in the gym and Speed/Agility on the track into practical sport specific peak performance. Depending on the sport, position and athlete, Maximum Strength must be converted into either Power or Muscular Endurance. Whichever the dominant ability is for an athlete's specific sport must be the focus of training and especially the focus of the Conversion phase.

Power is the ability of the neuromuscular system to produce the greatest possible force in the shortest amount of time. Athlete's need only know that Power must be the result of either increased Strength or Speed, or a combination of both abilities. Neural changes that help the individual muscle achieve greater performance capability. Increasing the speed of motor unit most notably fast twitch muscle fibers are recruited and the tolerance of the motor neurons enhances this ability. Neuromuscular adaptation to power



training techniques relate to muscular coordination, this type of adaptation leads to the CNS more efficiently sending or not sending impulses to contract various muscle to more effectively perform a movement.

In short dynamic explosive movements are performed to simulate game or competition conditions. This dynamic action is combined with Maximum strength exercises to achieve a module to transmit each athlete's strength to practical abilities.

### **FAQ's**

#### **How Does Periodization Work?**

You have your goals, now we need to systematically prepare you for this event. Do you need cardiovascular (aerobic) fitness, leg strength, upper body strength, range of motion (flexibility), anaerobic fitness, or absolute or relative overall strength increase? You tell us your goal, we will measure your abilities and then train you to improve – higher, faster, stronger.

#### **How Do I know I'm Improving?**

To know you have improved, you must first obtain relevant baseline measurements and then aim at your goals. If you want to compete for the soccer season, what difference is it what your bench press levels are? None! We educate you on the requirements of anatomical and physiological adaptation specific to your sport and develop your training program to achieve your goals: using the S.M.A.R.T. technique outlined above. In the case of soccer, you need knee and ankle stability, leg strength and a strong core to allow you to have good energy transfer into the ball while pivoting on one foot.

#### **How Long Does it Take?**

Training depends on your sport, your overall level of physical fitness, your injury history, your results of your functional assessment. However the more promptly an athlete begins training in an educated fashion using a Periodized Program the faster goals will be met and overtaken, regardless of the above characteristics.