



# PERFORMANCE SOCCER CONDITIONING

A NEWSLETTER DEDICATED TO IMPROVING SOCCER PLAYERS

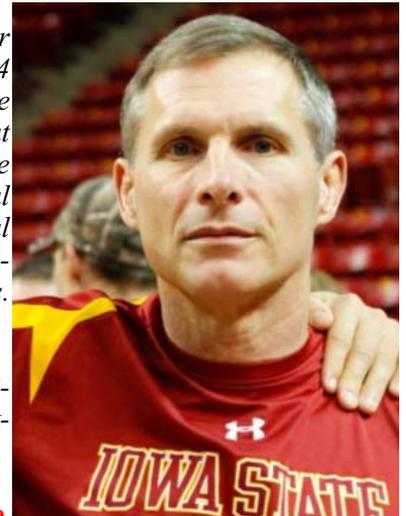
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## Conditioning Interview: Arizona Arsenal-Ultimate Performance Team Operations at the Club Level

*Tim McClellan, M.S., C.S.C.S., C.E.S., C.S.H., C.L.C.*

*Tim McClellan, M.S., C.S.C.S., C.E.S., C.S.H., C.L.C., has enjoyed a long, blessed career in the performance enhancement field. Among those he coached are more than 200 NFL players, 14 Olympic gold medalists, over a dozen NCAA individual champions, 9 NCAA team champions, more than 200 NCAA All-Americans and National Champions of 17 different sports. Tim also coached at Arizona State University for 13 years and has worked with the USA Olympic wrestling team, the World Champion USA powerlifting team, and the Boston Bruins. He was honored by the National Strength and Conditioning Association as a recipient of their President's Award. A multiple National Champion himself in karate-do, Tim holds black belt ranks in five different martial arts. He has authored/co-authored 8 books, over 40 magazine articles and produced 17 instructional videos/dvds. Currently he consults for the Arizona Arsenal Soccer Club in Gilbert, AZ*

*The challenges of club/high school soccer play is presented in the Arizona Arsenal Periodization Philosophy is at the end of this interview. It provides a great perspective on the total workload placed on you youth soccer player. Be sure to read it. - Ken Kontor Publisher.*



Tim McClellan

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# A

**Director, what are the mission/goals of the Health and High-Performance Division of the Arizona Arsenal Soccer Club and how is it organized to meet these goals?**

We ask a great deal of our athletes. Elite level athletics and taking the steps required to get there are not for the faint of heart. There is a lot of mental and emotional breakdown, heartache, injury and isolation from the norms of society. Because we ask a great deal of our athletes, we assume a great responsibility to make their journey successful and life-enriching. This journey is obviously enhanced through an injury-free, or reduced injury career and higher levels of play.

Our objective is to provide a seamless integration of the highest quality medical profession services with a state-of-the-art injury prevention and strength and conditioning programs. We want our athletes on-field and healthy. They deserve to have the best Medical Doctors, Physical Therapists and Conditioning Coaches to accomplish this.

**Describe how you organized the medical portion of the Division and what are their responsibilities?**

The division was birthed from necessity. Youth sports has changed so much throughout the last three decades. It was only a few decades ago when adolescent injuries attributed to overtraining were estimated to be approximately 8% of the total number of injuries. That figure today has been approximated to be around 80%, a ten-fold increase in overuse injuries!

We aren't in the business of hurting kids with high ambitions, so we set out to try and reduce likelihood of injury. Our Strength and Conditioning staff was hired, using revenue generated from annual participation fees. Athletes ages 10 and older are all assigned a coach to help with injury prevention and performance optimization. The exercise prescribed is specific to the age, ability and physiological capabilities of each age group.

We were fortunate to have Matt Midkiff coaching in the club. Matt co-owns and operates Foothills Physical Therapy in Mesa,

AZ. Matt played college soccer and has had much success as a soccer coach. He extended an invitation to do free injury assessments and to expedite Arsenal players that could benefit from physical therapy into same day or next day service.

Dr. Alex Onofrei has a local sports medicine/family practice and is regarded in the highest esteem in the sports community in Arizona. We sat with him and presented our vision. He graciously offered us what no Doctor ever offers: instant evals and medical care to the highest level. This has been a huge blessing and critical element to those whom have incurred injuries. The confidence we have in sending him injured players and their expected path to return has been a game-changer.

Mike Lee has been held in regard by many in Arizona as the top Orthopedic Sports Medicine Doctor in state. He also agreed to come on board to serve the Arsenal athletes. All totaled, it afforded us an opportunity to circumvent the typical times associated with getting high quality medical attention. At times Arsenal athletes have sustained an injury on a late Sunday game, have had a therapy treatment, medical evaluation, MRI's taken and results read by the Doctor all on Monday! It's a service that certainly rivals what the professional sports teams are providing.

### **How is the conditioning portion organized and what are the program design considerations based on the time of year and age of the athlete?**

Arsenal philosophy is based in two objectives: reduce likelihood of injuries and optimize sport performance. The first consideration was to therefore methodically evaluate both youth sports injury trends and trends within the game of soccer itself. The second priority was to examine what research has proven to be in the demands of the game, so that exceptional strength and conditioning programs could be designed and games could be changed.

Injury analysis of youth soccer players revealed higher numbers of groin and hip flexor strains, ankle sprains and ACL tears. The ACL tears were the huge red flag. Estimates are somewhere between 80,000-100,00 per year in the U.S., with the predominant group of tears coming from players aged 13-25. Additionally, observed responses among the Arsenal staff showed asymmetrical hip shift in squatting movements, and weak stabilizers in the hips.

Science has shown the demands of the game to be significant, with as many as 1400 changes of direction in a game, and 90% or higher being sprints of less than 30 meters in length. Playing two 45-minute halves in Arizona temperatures that are often 105 degrees or higher requires exceptional stamina.

With the base philosophy set, the annual cycle was determined. The very first consideration was not what everyone else typically picks as the priority. Ours was defining an "off-season." Remember, we hit it super hard when we are training, super hard. Rest is a critical component of the athletic optimization recipe. Without rest, athletes will more likely get hurt and miss twice as much time. Our rest interval has been held directly after the championship season.

The next priority is to establish a "base" level of strength and fitness. I know, the word "base: is out of vogue as we strive to present ourselves as quasi-medical. We could perhaps call it the anatomical adaptation phase, but all phases are anatomical adaptation phases, and this is still really a phase to establish a base level of conditioning. This typically starts in the beginning of August. In Arizona we have to provide lots of fluid breaks. Oftentimes it's 105-110 degrees on field at 5 PM. Our Weightroom sessions are typical of the base phases Medvedyev wrote of four decades ago: lower, but increasing volume, low to moderate intensity, higher repetitions and fitness-oriented.

Within a month we are preparing for fall season. The emphasis shifts into strength/power cycling in the weightroom and more intense interval training for conditioning, with heavy emphasis on deceleration activities and uni-lateral training. The Arsenal philosophy is eccentric-heavy with movements designed in sagittal, frontal and especially transverse planes.

As the season kicks off in the fall, we shift to a lower volume in the strength prescription, but still remain very hard working. This time is still viewed as developmental. It is not a time to merely hang onto previous gains. Research has shown deconditioning effects in soccer players due to the long seasons, little rest time and huge metabolic demands. We aren't interested in losing physical capability during the fall season, we want to continue to develop it. The work at this time increases in intensity and the volume lowers to accommodate the increasing intensity.



*Arsenal Health and High Performance*

The high school season starts in Arizona in November and that's the toughest time for both Arsenal players and Conditioning coaches. Unfortunately, some high school programs get a little over-exuberant and train their players like they aren't involved in club soccer, essentially making them do double the work. This is a huge time of concern and we often have to turn our developmental sessions into pure recovery sessions to accommodate this increased potential for overuse injury. Thankfully we have a coach on staff, Jeff Decker, that has researched and become a rejuvenation expert and he has helped us devise fully-comprehensive rolling/stretching/yoga/recovery/relaxation protocols.



Some of the Arsenal elite players choose to forego the high school experience because the level of play is typically lower and not conducive to improved performance. Those players are put on individual plans in on-field training and off-field as well. They are afforded a nice regenerative break over the Christmas holiday season.

Once high school season ends in late February, the Arsenal players that played in high school return. The first month is typically concerting: players have lost strength, have deconditioned and are showing signs of extreme fatigue. Some have played as many as ten games over an eight-day period of time. It's of little wonder that they are over-fatigued and under strong. Add to that, that this is the start of our championship club season and it becomes a challenging task to reconstruct optimal levels of fitness. Sessions are typically restorative at first and then progress to trying to develop levels of strength and conditioning.

Obviously we try to achieve a "peak" in health and conditioning at the championship season time, by decreasing volume and ensuring thorough warm-ups, injury prevention modes and decreased volume.

**How is conditioning information presented to the soccer coach and what is the relationship of the conditioning coach and soccer coach as it relates to monitoring the total workload, technical-tactical needs and areas of what the soccer athlete needs to work on conditioning wise? How is it bundled together?**

We have approximately 750 players, 45 coaches and 12 part-time Strength and Conditioning coaches. People are coming and going everywhere so we don't typically get time all together. This necessitates a relationship-based cohesion between the coaches and the conditioning professional assigned to their teams. We feel like this is a critical component. The Strength and Conditioning staff needs to know the way teams and individuals are playing. If I could



say one thing I have learned that I would recommend most highly is for all Strength and Conditioning coaches, is to establish a close relationship-based environment with the soccer coaches. Not only can it benefit teams as a unit but individuals within the team may have significant struggles or challenges that can be corrected with huge results. I am blessed to work closely with many of the coaches and am more able to serve players from the feedback given through close relationships with the coaches. It also helps to have extreme support from our Director of Coaching, David Belfort. He is 100% hands on and truly wants to afford every player the greatest chance for optimal outcomes. Support from the top is a critically important component if the program is to be successful. We have that support.

The approach I ask of the Strength and Conditioning coaches is to assign a number to the amount of energy each team's coach takes. For example, one coach make train the players very, very hard and I would assign a number of 80-85 to them, meaning that they have used 80-85% of their available energy on field. That leaves us with only 15-20% left that we can work with. If we try to administer a session too high in volume, or intensity, the athletes will be over trained and more susceptible to injury. Another coach may take up only 65-70% of the energy. This enables us to work the team a little more vigorously. We try to get them as close to over training as possible, without over training them. It takes a keen sense of observation, and more attention to EQ (understanding the player's emotions, understanding your own emotions to administer the proper protocol as the situation dictates and not merely clinging to the beautiful



program you wrote yourself that may not be appropriate if they players are over fatigued).

**How do you monitor recovery so that athletes don't overdue it?**

There are so many new technologies out there to help monitor expenditure and recovery. Honestly, we have evaluated some, but haven't pulled the trigger yet on any purchases. We spent the last few years designing a weight-room and covered turf area that is unrivaled by soccer clubs anywhere. We had a blessing of a huge anonymous donation and lots of help custom-designing equipment from the Samson Equipment Company, and this left us with little time to evaluate such technologies. Now that we have our incredible facility, we hope to look deeper into the new technologies. In the meantime, I have asked our staff to be diligent observers. A good coach should be able to see changes in the body's response to training stimuli. In my opinion, the first and foremost thing a coach has to be is a good observer. 0



**Arizona Arsenal Annual Periodization Template**

**Fall ECNL**

MONTHS	AUG	SEP	OCT	NOV
<b>CONDITIONING EMPHASIS</b>	BASE. Games start. Heat acclimatization. Thorough warm-ups. Low level eccentric emphasis in all planes of motion. Shorter (100M) intervals at submaximal efforts. Nothing at full speed. Ankle strength and dorsi-flexion mobility is assessed and addressed. Injury prevention exercises start here and continue throughout the entire year, without fail. There is never an off-season for injury prevention exercises, like eccentric landings in various planes, glute, hamstring and groin developers.	INTERVAL CONDITIONING. Season has started and volume of work has increased. It is still very hot in Arizona and intensity needs to increase in the second cycle, so this is a tricky time: manipulating fatigue, heat, increased intensity in weightroom and increased volume conditioning. Longer intervals. Resisted cord agility drills. Resisted sled runs. Very short sprints are at full speed, as is change of direction. Longer runs remain sub-maximal.	INSEASON/FALL PEAK CONDITION. Heavy conditioning emphasis through more metabolic-type movement (like interval training on resisted cords for acceleration, deceleration, change of direction and short sprints). Work to rest ratio is 1:1 typically. Periods of each session are very intense in conditioning, paying respect to game schedules.	TRANSITION MONTH. High schools are now typically working athletes hard. In many cases even though this is an important part of the fall schedule and games are critical we have to back down significantly in our preparation so that players avoid overuse injuries. Emphasis shifts to maintenance of previous anatomical adaptations gained, and recovering from volumes that can often times be too high.
<b>STRENGTH EMPHASIS</b>	BASE: Lighter weights. Higher reps. Low to moderate volume. Emphasis on force reducers: eccentric action of the hips. Exercises include split squats, squats, lateral squats, lateral lunges, single leg RDLs, glute ham raises and core. Injury prevention exercises are initiated in this cycle and will be utilized every training session.	STRENGTH BASE: Increased volume. Repetitions lowered to 5-8 range. Intensity increased, typically in progressing weight sets. Secondary emphasis on introduction of more power movements: dumbbell squat jumps, dumbbell split squat jumps, walking lunge jumps, step-up jumps.	STRENGTH/POWER: Strength is increased through higher intensity and lowered volume. Power movements are increased in volume and number. Complex training movements are introduced to stimulate the nervous system.	PEAKING: The first half of the month volume is reduced to bare essentials. Volume approximates 25% of highest volume during fall season. Emphasis is on injury prevention exercises, especially ones not covered in high school setting.

**High School**

MONTHS	NOV	DEC	JAN	FEB
<b>CONDITIONING EMPHASIS</b>	Second half of month: pure recovery prior to huge Thanksgiving weekend games/tournaments. Arsenal workouts are typically pure recovery as many players are practicing two-a-days and some high schools are lifting very heavy in addition to the two-a-days. Players are well educated on injury prevention exercises and asked to maintain a very brief regiment on their own during the season.	OFF: players are sometimes playing up to 10 games over an 8 day period in high school tournaments.	OFF: players are sometimes playing up to 10 games over an 8 day period in high school tournaments.	TRANSITION MONTH: The first half is high school championship season. The second half we are trying to restore losses players experience from the strength and conditioning levels they had in November. During the high school season, players become over-fatigued and under-strong so this is a very tricky time. Volume is kept low at first and progression is slow but methodical. Recovery methods are utilized daily. A proper base needs to be re-established.
<b>STRENGTH EMPHASIS</b>	OFF	OFF	OFF	OFF throughout the end of high school season. Very low volume, low intensity reintroduction to the weightroom the second half of the month.

**Spring**

<b>MONTHS</b>	<b>MAR</b>	<b>APR</b>
<b>CONDITIONING EMPHASIS</b>	IN SEASON RE-CONDITIONING: The emphasis is to progress from a minor base set up in the end of February, towards the goals of a successful championship season. The daily regiment becomes a conglomerate of interval runs, resisted cord change of direction, plyometrics and speed development.	IN SEASON: The base has hopefully been set up and conditioning fairly high. This is still a developmental cycle, and very sports- specific. Intervals are typically done in shuttle runs, resisted cord runs and longer runs in a 1:1 work to rest ratio. The intensity is high. Practices are intense, with stress and critical decision making components built into the session. This prepares them to take instruction and process when tired on-field, during games.
<b>STRENGTH EMPHASIS</b>	STRENGTH ACQUISITION: Reintroduction to strength/power exercises at low volume/low intensity. Load is increased weekly with the goal of having a fully functioning player by the end of the month.	STRENGTH/POWER ENHANCEMENT: 50-50 blend of strength acquisition with force production exercises.

**Spring Championships**

<b>MONTHS</b>	<b>MAY</b>	<b>JUN</b>
<b>CONDITIONING EMPHASIS</b>	CHAMPIONSHIP SEASON/PEAKING FOR CHAMPIONSHIP SEASON: State league teams taper for the mid-month championship. ECNL teams play critical games and are in a true in-season training program where volume drops and the trend is towards peaking.	CHAMPIONSHIP SEASON: Regional and championship ECNL games are played mid-month so the two weeks preceding to that time are geared exclusively towards recovery and peaking. Very low volume. High emphasis on recovery. Everything is geared towards high specificity.
<b>STRENGTH EMPHASIS</b>	SPECIFIC POWER: Games are critical at this time. Volume of weightroom work decreases while specificity in frontal plane and transverse plane movements increases.	PEAK: Volume and intensity are lowered as this is the championship month.

**Off Season**

<b>MONTHS</b>	<b>JUL</b>
<b>CONDITIONING EMPHASIS</b>	REST AND REJUVENATION: Critical time for rejuvenation, both physically and mentally. Players are given time off. Those that wish to train are well educated as to the need for reduced volume and intensity and are prescribed protocols to achieve those objectives.
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