

The need to feel worthy is the single most powerful element of motivation. It should be easy to see why sports are a perfect vehicle for boosting an individual's sense of self-esteem. However, since only a few can be champions, there is a danger of athletes equating self-worth with the ability to win in competition. The message for the coach is this: While you cannot make every athlete feel gifted, you can make them all feel more competent. While you cannot make every one of your athletes feel some sense of great accomplishment, you can see that each feels some sense of real achievement.

What you *can* guarantee is that every one of your athletes feel important and accepted. Don't make them earn your acceptance. Accept them unconditionally. Let them know it is OK to make a mistake. If you allow athletes the security of having your time, energy, interest, belief and trust, you will be amazed at the great things they will dare to do.

ADVICE TO HELP YOU SURVIVE AND PROSPER IN COACHING

- **Put your family first.** Coaching is so time-intensive that the only way you can be assured of having time with your family is to make time *for them* before you make time for anyone else.
- **Expect success.** Visualize what you want to accomplish. Winners know what will happen...losers fear what might happen.
- **Take the lead.** Showcase the Soccer program in your school and community. Fight for equitable funding. Take a cue from football and basketball and give Soccer a chance to be a spectator sport by presenting your home games as entertainment.
- **Project yourself.** Put your "stamp" on each of your athletes, assistant coaches and on every phase of your program.
- **Surround yourself with good people.** You cannot coach a large group of athletes by yourself. To succeed in Soccer, you must recruit and train assistant coaches who will adopt the your philosophy, share your commitment and join your quest for success. An assistant coach with a bad attitude can sabotage an entire program.
- **Know who your friends are.** Anyone in a leadership role is subject to the positive or negative influence of others. Identify those who can positively influence your coaching career and make them your friends.
- **Be true to your values.** It can be easy to compromise yourself in the quest to win. Say what you believe. Do what you say. Nothing is harder to earn and easier to lose.

Developing a Coaching Philosophy

DETERMINING COACHING OBJECTIVES

The two most important considerations in developing a personal coaching philosophy are determining **coaching objectives** and **coaching style**. Your coaching objectives could include improving your win/loss record, winning your league title, being one of the top teams in the CIF, showing significant individual and team improvement, making the program fun for your athletes, or teaching your athletes to compete well.

High school coaches often believe their first responsibility is to produce winning teams. However, winning should not be the single measure of success for your athletes. An overemphasis on winning can cause negative responses in young athletes, such as anxiety, fear of failure, reduced self-esteem and a loss of motivation. This is not to say that winning is not an important objective. Winning is important, but for the high school sports to bring out the best in young athletes, *coaches must keep winning in proper perspective.*

Your coaching success should be defined and measured in a variety of ways other than a stat ranking, win/loss record, or place in your league. The number of athletes you attract to the program, your athletes' enthusiasm for Soccer, the improvement your team shows *throughout* the course of the season, and the amount of parental/community/school interest and support you generate for your program are equally important measures of success. Winning the majority of your games does not necessarily mean you are a good leader or role model for your athletes. As a coach, your actions speak louder than your words, especially during competition. You must teach respect for the rules, your opponents and the judgment and integrity of officials by example of your behavior.

DEVELOPING AN EFFECTIVE COACHING STYLE

This brings us to the second part of your coaching philosophy: coaching style. Your coaching style reflects how you choose to lead and interact with your student-athletes. It affects how you motivate and discipline, and what role, if any, you permit your athletes to have in making decisions that affect them. There are authoritarian, cooperative and passive coaching styles. Your style of coaching must fit your personality, but every coaching style is a somewhat different combination of these three approaches.

CHAPTER 1

A Philosophy for Coaching High School Athletes

also teach athletes emotional self-discipline, responsibility, self-esteem and how to maintain poise by focusing on the things they can control. No less important are social values such as appropriate behavior, fair play, good sportsmanship and the importance of working together to accomplish team goals and objectives.

Learning is the athletes' acceptance of what you teach. Learning is greatly influenced by the atmosphere a coach creates in helping athletes reach for their best. Effective learning requires communication, motivation, feedback, cooperation and purposeful training. A positive approach to practice and training that emphasizes skill development, fitness, teamwork and fun will help to ensure athletes' learning experiences are positive.

Competition is the essence of sport. Competitive skills are essential to prosper in a society where we compete for grades, spouses, jobs and promotions to achieve success, happiness and security. Soccer is a sport in which athletes demonstrate both their physical and competitive skills. Coaches should portray the adventure of athletic competition as an opportunity for success rather than failure.

Coaches must help athletes learn as much as possible from their competitive experiences, analyze what they do well and what they don't do well, and resume training with renewed energy and a renewed determination to improve. Coaches should emphasize that success in sports should be measured by each athlete's personal performance goals. Just because every soccer game has only one winner doesn't mean everyone on the other team is a loser. Competition should serve as a reference point for athletes to measure progress.

Sometimes the pressures of competition can result in athletes setting goals that are unattainable. Goals that are too high guarantee failure even when the athlete performs well. Coaches should help athletes set realistic goals.

MOTIVATING AND COMMUNICATING WITH YOUNG ATHLETES

Sport psychologists have learned that two of the most important needs of young athletes are the need to *have fun* and the need to *feel worthy*. Certainly, it is easy to see when athletes have fun. They appear to be challenged, excited, stimulated and focused. They express feelings of enjoyment, satisfaction and enthusiasm.

Athletes also have a need to feel competent, worthy and positive about themselves. Sports can be threatening to young athletes when they equate achievement with self-

Managing a Soccer Program

Developing a successful high school Soccer program takes dedication and well-organized planning. Although the high school Soccer season lasts roughly three to four months, you must have a year-round plan for player development, fulfilling equipment needs and selecting and training your coaching staff. The plan can be divided into four periods: pre-season, in-season, post-season and summer season.

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Responsibilities of a Head Coach

PRE-SEASON

- Encourage your prospective team members to enroll in a sixth (last) period pre-season Soccer class. Follow school procedures for adding and dropping students from the class.
- Monitor the academic eligibility of all team members.
- Develop a fitness program that includes work with and without the ball. Make the program fun and include much variety. Remind your players to bring both Soccer and running shoes to school every day. If you include training that will take your athletes off campus, be sure to obtain permission from your school administration. Plan runs that avoid busy roads and unregulated intersections. Monitor your athletes closely.
- Meet with your coaching staff to discuss your overall coaching philosophy, season goals, coaching and administrative responsibilities, team and school policies, safety guidelines, and emergency medical procedures.
- Discuss tryout procedures with your coaching staff. Review the previous year's team roster to determine the number of players you expect to return and the positions that need to be filled. Schedule dates for tryouts. Remember to adhere to the federation rules governing the number of allowable tryout days.
- Review and confirm your game and bus schedules with your athletic director.
- Hold a pre-season meeting with your players and their parents to explain team policies, solicit volunteer help, and preview the season. Introduce your coaching staff, preview your tournament and game schedule, explain transportation policies, team rules, and state your goals for the season. Make yourself and your staff available to answer any questions.
- Select team captains and assign them specific leadership roles.

IN-SEASON

- Have a written plan and a purpose for each and every practice.
- Follow school procedures for taking attendance during sixth period P.E. Soccer class.
- Meet with your coaching staff at least once a week to handle administrative mat-

Sexual Abuse in Youth Sports

The problem of sexual abuse of young athletes by adult coaches has gained increased attention in recent years. Many youth sports organizations have taken steps to combat the problem. The LA84 Foundation encourages all coaches to be aware of the issue and learn what steps to take if you suspect a problem in your youth sports organization. The Foundation also requires that all of its grantees have a written policy addressing their commitment to keeping their athletes safe from sexual abuse. For assistance in developing a policy, or to become more knowledgeable about protecting the safety of young athletes please see the Foundation's Resource Guide On Preventing Child Sexual Abuse in Youth Sports (http://la84foundation.org/1gm/ResourceGuide_frmst.htm).

Developing a Pre-Season Plan

Effective pre-season planning lays the groundwork for a successful season. Administratively, you will need to ensure that all your equipment needs have been addressed, verify your schedule of games and tournaments, finalize transportation arrangements, and obtain athlete information and class schedules. On the field, focus on player development, fitness training, and team tryouts. Develop a training plan that best suits your coaching philosophy, incorporates your goals for the season, and falls within the federation (CIF), district and school guidelines.

A detailed pre-season plan is the hallmark of a coach who approaches his or her sport with a professional attitude. Set a good example for your players by being well-organized and prompt. Your pre-season plan, though detailed, should remain flexible. Pay close attention to the physical and emotional well-being of your players. Alter your plan according to the needs of your players. You may need to increase or decrease the intensity of fitness training or allow them to scrimmage on a scheduled fitness day.

Training should be purposeful and fun.

Pre-season training is made much easier if you have a scheduled class period in which to work with your players. In Southern California, most schools have a sixth period class that permits athletes and coaches to conduct pre-season training, although no practice is allowed after school. If your school does not have a Soccer class, we suggest that you ask the administration to add one. This class period will allow you to work with your players and evaluate their progress before the actual practice season begins.

will be able to train a larger number of players. No coach can predict exactly how younger players will develop. A large player pool lets you hold on to the proverbial “late bloomer.”

The number of players you carry on the varsity team can vary widely. Most varsity teams carry 16 to 18 players. Although most young athletes want to be part of the varsity team, in most cases you will serve your athletes and program better by letting borderline players get experience and playing time on the junior varsity.

Organizing Your Coaching Staff

Your coaching staff is a vital part of your Soccer program. Select assistant and lower level coaches who share your coaching philosophy. Although individual coaching styles will differ somewhat, your assistant coaches need to coach according to your philosophy. Fundamental differences between coaches often create serious problems for teams.

Discuss your coaching objectives and philosophy with all prospective coaches. Enthusiasm, commitment and effective communication skills are as important as Soccer knowledge. Former players can be a good source for assistant coaches. Keep in mind that young coaches may need special attention and guidance regarding professional coaching behavior.

Once you have selected a coaching staff, be sure to follow the hiring policies of your school and district. All coaches, whether paid or volunteer, must register with your school’s personnel office (fingerprints, TB test, etc.).

Organizing Daily Practice

Just as your coaching style reflects your overall coaching philosophy, the nature of your practice sessions will also reflect it. Some coaches emphasize individual skill development while others prefer to concentrate on team play. Some coaches prefer short, intense practices with little rest time while others prefer longer practices with time to reflect and discuss. Some coaches prefer well-planned and regimented practices, while others prefer general guidelines that can be altered if needed.

Building team feeling starts with the coach. Communicating your commitment to the success of every athlete is the first, and most important, step in forming team identity.

Treating your athletes equally is another requirement of team building. While that doesn't mean that every athlete must be treated identically, it does mean that every athlete must be valued equally regardless of talent. Head coaches who devote almost all their energy and attention to the top athletes communicate a subtle message of value to the rest of the squad. That message will be reflected in a weak sense of team unity.

You can help create strong team identity by encouraging, and sometimes demanding that every athlete have stock in the performance of teammates. Don't let your varsity players ignore the efforts of the Junior Varsity and Freshmen teams. Your athletes should spend some time together during daily training and competition. Teammates need to know each other to have any sense of common identity.

Team identity and tradition also are reinforced by weekly team meetings, acknowledging effort and achievement before the team promotes competition support and cohesion. Approval from peers bonds team members together. Nicknames, T-shirts, pins, buttons, patches, candy, etc., are all small tokens that recognize effort and accomplishment on behalf of the team.

Encouraging off-campus interaction is another way to promote team spirit among your athletes. Provide social opportunities that bring teammates together. Often, athletes of vastly different abilities may find a bond of different origin that only serves to cement their relationship as teammates.

COMPETITION

Competition defines tradition. The strengths and weaknesses of your program are revealed most clearly in competition. It's relatively easy to build tradition if you win a lot of games. To that extent, your recruiting and technical coaching ability contribute to your program's tradition. But programs with strong tradition and identity thrive in competition regardless of whether they win or lose.

HISTORY

Part of tradition is history. Although the historical memory of most high schoolers is about 15 minutes, you need to impart a sense of continuity within your program. If

athletes you coach while gathering support for the team. Encourage parents to ask questions.

One good way to build parent support is to have interested parents form a caravan to games. Parents can arrange to leave school together at a predetermined time, perhaps meeting for breakfast or coffee beforehand. Of course, fans arriving en masse wearing school colors, hats, shirts, or jackets always inspires the team.

Team meals are opportunities to involve parents. Instead of heading off to the nearest pizza parlor, see if you can enlist a group of several families to host a pasta dinner. A combined team-parent gathering lets parents and athletes get to know one another.

Last, enlist parents to help you put on the team awards night. Even if your school has a spring sports banquet, you might put together a team-only gathering, at which you can acknowledge the contributions of each athlete individually.

Some coaches avoid soliciting help because they fear parents will disrupt their programs. Many coaches have horror stories to that effect. If organized properly with a clear set of expectations and rules, however, parents can be a tremendous asset to your program. It is your responsibility as coach to provide the guidance and leadership that best elicits the support that most parents are willing to offer.

Planning and Organizing a Team Trip

Taking an athletic team on an overnight trip can be one of the most enjoyable events of the season or it can become a frustrating nightmare. As with most things, planning and organization determine the quality of the experience.

Team trips are most enjoyable when you prepare in advance for both expected and unexpected situations. It is always a good idea to have a written set of procedures for any contingency. Checklists of “What to Do” or “What to Bring” help prevent you from overlooking details that might be forgotten in a busy moment or emergency.

When considering an overnight trip, ask yourself the following questions. What is the purpose of the trip? Does it help fulfill my coaching objectives for the season? How does the trip help meet the team and individual goals? Does this trip serve the overall purpose of the program?

WARM-UP SCRIPT

1 RUNNING WARM-UP

2 FLEXIBILITY STRETCHES

Sitting on the ground, legs extended with shoes off:

- Toe Pointers (Fig. 3-1)
- Butterfly Arms-to-Toes (Fig. 3-2)
- Reach Over-Toes/Insteps/Ousides of Feet (Fig. 3-3)
- Pull Forehead-to-Knees (Fig. 3-4)
- Yoga Sit (Fig. 3-5)
- V-Stretch (Fig. 3-6)
- Hurdler's Stretch/Lay Back (Fig. 3-7)
- Sit-on-Heels/Hip Bridge/Lay Back (Fig. 3-8)
- Figure "4" (Fig. 3-9)
- Sciatic Stretch (Fig. 3-10)
- Abdominal Stretch (Fig. 3-11)
- Hip Flexor (Fig. 3-12)

3 MOBILITY STRETCHES

Standing, holding onto a stationary object, and swinging the outside leg up toward hip level:

- Forward-&-Back Swings (Fig. 3-13)
- Side Swings (Fig. 3-14)
- "C" Swings (Fig. 3-15)

4 RHYTHM DRILLS

- Easy Jogging
- High Knees (Fig. 3-16)
- High Skipping (Fig. 3-17)
- Jogging Butt Kicks
- Skipping Kicks (Fig. 3-18)

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Running Fitness

Good physical fitness is an absolute requirement for good play. Soccer is a physically demanding game, lasting from 60–90 minutes, requiring bursts of strenuous activity such as sprinting, dribbling, shooting, tackling and jumping for high balls. Players often run anywhere from 3–6 miles over the course of a game. Adding to the fitness demands of Soccer, are its substantial technical demands. Without good physical fitness, players are rarely able to play the game with good technique. When fatigue sets in, technique deteriorates.

For Soccer players, basic fitness training includes *aerobic conditioning, speed training and strength/power training.*

Soccer players need to be able to run, but their running requirements differ from those of distance runners or sprinters. ***They need the ability to:***

- Run fast for short distances
- Sprint repeatedly
- Run throughout the course of a game

You need to train your athletes to handle all three types of running.

The type of running done in Soccer is known as **varied** or **broken-pace running**. Although Soccer players cover a lot of distance during a game, the type of running they do is very different from that done by distance runners. Actually, much of Soccer running is short-distance sprinting. Soccer players, however, sprint many times throughout a game. This creates a unique and seemingly contradictory demand for both endurance and speed.

The challenge for Soccer coaches is that endurance and speed are developed by different means of training. This is because different systems of human energy production are used to fuel different types of exercise. To understand why Soccer requires a mix of running training, you need to understand a bit about the nature of energy production in response to exercise.

muscle fiber. Muscular endurance comes as the result of the specific aerobic training of that newly developed muscle fiber.

PRINCIPLES OF WEIGHT TRAINING FOR SOCCER

The universal principles of training must guide every strength training program. Progressive overload, or resistance, is the cornerstone of weight training. Gradual increases in the amount of weight stress the body to adapt with greater strength. In general, progressive increases are the measure of increased strength.

Weight training must be specific to the demands of Soccer. It should aim to increase the overall strength of your athletes.

Remember that all gains are made during periods of recovery. Without adequate rest between workouts, the strength of your athletes will actually decrease. The process of super-compensation that produces increased strength occurs while the athlete is recovering, not while the athlete is training.

The neuromuscular system makes its greatest changes in response to an unaccustomed stimulus, or shock. This requires weight training to incorporate a relatively large amount of variability. Research has shown that planned variations in the volume, intensity and mode of weight training produce the greatest gains in strength.

At no time is there a greater range in the individual physical characteristics of similarly aged individuals than during high school. Strength training programs must adapt to the different capacities of individual athletes. Sometimes the difference between your most and least mature athletes will literally be the difference between adult and child. Failing to construct your strength training program accordingly will lead to the frustration and/or injury of your athletes. Don't make the mistake of assuming that your best players are the strongest. Often, they are quite weak even though talented.

In addition to the general principles of training that govern strength training, there are principles specific to weight training:

- Muscular endurance should be developed primarily by running. The weight room is for strength and power training.
- Proper posture, biomechanics and technique enhance weightlifting performance and prevent injury.

tal back problems (bulged discs, loose ligaments), knee problems, etc., should not be allowed to lift until those problems have been remedied.

The Strength and Weight Training Program

The following section offers a strength training program designed for high school Soccer athletes. The program has two levels, each intended for athletes of various maturity levels and strength training backgrounds.

Your program also will be defined by the limitations of your school facilities and team characteristics:

- Equipment
- Weight training knowledge
- Available time
- Number of athletes
- Staff available for supervision
- Maturity of athletes

CONSTRUCTING A STRENGTH TRAINING PROGRAM

There are a number of ways to integrate strength training into your Soccer program. Most coaches develop a short weight training circuit that their athletes follow throughout the season. Such a regimen is easy to teach, takes little time, and can be done by a large number of athletes. To be optimally effective, however, weightlifting must be periodized over the course of the season.

There are two points to keep in mind when creating weight training for Soccer players. First, while strength training is quite important to the long-term development of your athletes, it is less important than Soccer skills and tactics training. Your team definitely needs strength training to remedy weaknesses and prevent injury. But, fundamentally, your athletes are Soccer players, not bodybuilders.

Second, strength training for Soccer players is often remedial. The wide range of physical maturity among high school athletes, gender differences and the range of body types among Soccer players make a uniform strength program nearly impossible. As a coach, your first task is to develop the basic physical strength of your athletes. Some

It is a very dangerous mistake to bend backward to catch the bar. The bar should be caught with the torso erect, not leaning. Another error is jumping or throwing your body unevenly in order to complete the lift. The feet may move a few inches to either side but not forward or backward. It's best if your feet stay in place.

During *Phase V*, the weight returns to the starting position. Here, powercleans become a problem in weight rooms without bumper plates or padded surfaces. The bar can be lowered safely to the floor if done in stages. First, drop the bar from the rack position on the chest to the hips. Then slowly lower the bar past the thighs until it reaches the floor. Your back must remain straight, with legs flexed, to decrease pressure on the lower back.

The rhythm of the lift is very important. Movement is slow to fast. If you rip the weight off the floor as fast as possible, lower back problems usually result from the premature use of the arms and shoulders. There should never be a struggle for control at the end of the lift. Reduce the amount of weight if this happens.

Flexibility of the ankles, hips, shoulders and wrists is a major factor affecting technical proficiency. If you are not flexible, a remedial stretching routine must be undertaken. Until you improve flexibility, only light weights should be lifted.

Back Press. Also referred to as Good Mornings, this lift strengthens the thighs, buttocks, hamstrings, stomach and lower back. Place a bar on the shoulders as in the squat, spreading the feet slightly more than a shoulder width apart. Keep the back straight and the head up while bending forward at the waist. To minimize the shearing forces on the lumbar spine, maintain a moderate bend in your knees. Lower until the back is parallel to the floor, hold for a count of two, and then slowly raise back to the starting point. It may take a while to get the bar in a comfortably balanced position.

When doing this lift, it is essential that the athlete keep the back straight and the knees bent. Otherwise, very serious back injury can result.

Sit-Up Crunches. Abdominal conditioning is a very important element of strength training and also one of the most neglected. We recommend sit-up crunches. When doing a crunch, only raise the shoulders about 30 degrees off the floor. Beyond that point, most of the work is done by the psoas muscles, putting unhealthy stress on your lower back.

done cautiously. As with double leg hops, a small intermediate hop between full hops is a good way to introduce the exercise. Do 2–3 sets of 6–8 reps for each leg.

Speed Plyometric Exercises

Speed plyos use velocity to force the neuromuscular system to develop speed and quickness. For Soccer, include them as drills preceding running training.

- Speed Skips
- Fast High Knees
- Butt Kicks
- Fast Hands/Quick Feet
- Speed Hops

Speed Skips. These skips stress fast execution, not distance. The athlete should appear to be doing a quick shuffling step. Do 2–3 sets of 10–15 yards.

Fast High Knees. As with normal high knee drills, the arms and knees drive vigorously, but emphasize fast leg turnover. The range of motion will be 1/3–1/2 of normal. Do 2–3 sets of 10–15 yards.

Butt Kicks. The athlete tries to kick the butt as fast as possible while running slowly forward. As with high knees, the range of motion shortens. Do 2–3 sets of 10–15 yards.

Fast Hands/Quick Feet. The aim is to move both the hands and feet as quickly as possible within a short range of motion. Do 2–3 sets of 5–10 seconds, or 10–15 yards.

Speed Hops. The athlete performs a double leg hop in place, driving the arms and knees up very fast. Upon landing, the next hop should be done as quickly as possible. Do 2 sets of 10–12 repetitions.

SOCCER-SPECIFIC PLYOMETRIC EXERCISES

In addition to the general plyometric drills discussed above, you might want to include a number of exercises that specifically develop the type of power skills used in Soccer. Plyometric training is especially effective in developing explosive acceleration and jumping ability. In Soccer, that translates into being able to accelerate away from a defender, making explosive and quick changes of direction, greater vertical jump when

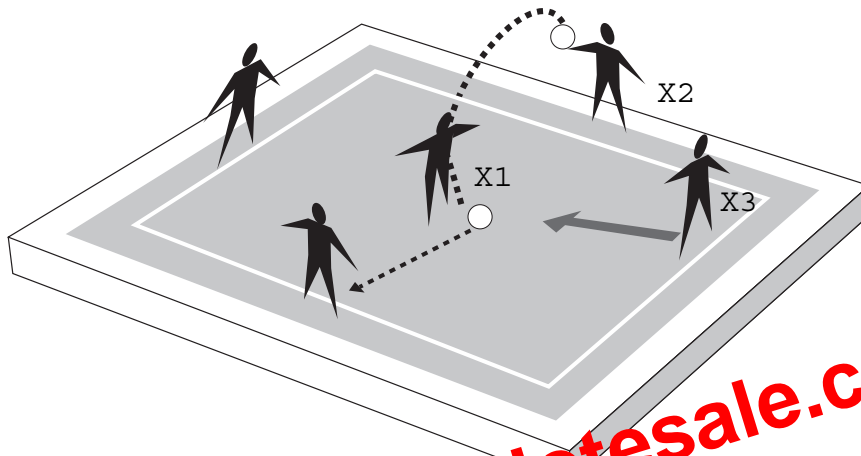
Teaching Soccer Technique

The sport of Soccer is unique in demanding excellent physical fitness *and* excellent technique. Without strong technical skills your players will not be able to score goals or defend effectively.

Collecting, dribbling, passing, shooting and heading are fundamental techniques all players must develop and continually refine. The best players always have strong technique.

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Exercise 3. X2 serves to X1. When the serve is made, X3 is released and will try to win the ball from X1. X1 will try to control the ball quickly before the challenge from X3, and play 2v1 with X2 against X3. Rotate the players, and repeat. Ball control must be practiced under the pressure of opponents. (Fig. 4-10)



Exercise 4. Soccer tennis, with only one allowed to have one bounce. Like volleyball, the ball can be touched 3 times on one side before crossing the net (or cones or stakes used as an imaginary net). (Fig. 4-11)

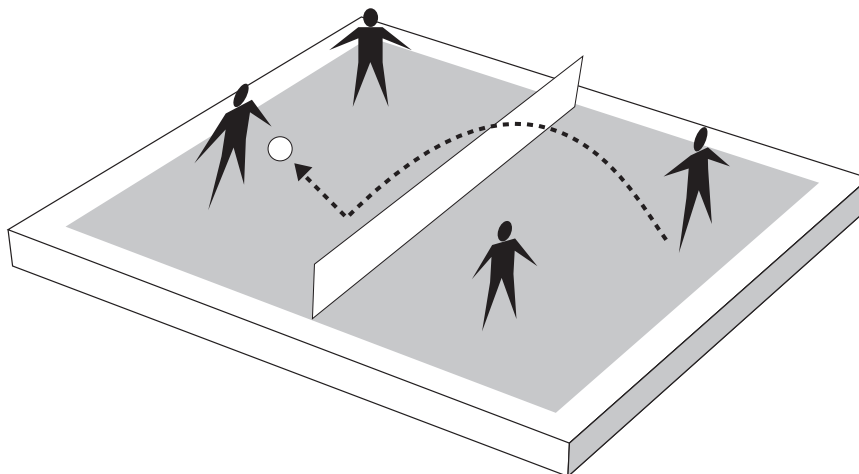


Fig. 4-11.

Players often turn their backs to the defenders and keep the ball directly in front of their bodies. This leaves the ball exposed between the attacking player's legs, allowing a defender an opportunity to poke the ball away. Players who shield this way are often called for obstruction because they tend to bend over the ball and back into the defender.

Turning away from an opponent will help a player get away from direct pressure and maintain possession of the ball. Players should learn to become adept with their feet to make different turns with the ball. The attacking player must have the ability to change pace and accelerate quickly after the turn. A player must explode into the open space after the turn to elude the defender and create space to pass or shoot.

DRIBBLING FOR PENETRATION

Dribbling for penetration simply means to attack the defender using the dribble as a way of advancing toward your opponent's goal. Players should attack the open space behind the defender in a manner that takes them directly toward the opponent's goal by being creative and using different dribbling feints to beat the defender. Emphasize the importance of exploding, or accelerating, into the open space that was created by the feint. This change of pace allows the player with the ball to leave the defender behind and penetrate toward the goal.

The best dribblers in the world are creative. Encourage your players to try new moves at practice. Teach them to use the body as a way of deceiving the defender by dropping a shoulder, lunging at the opponent, and using their eyes and voice. When teaching your players different feints and fakes, remember to begin with simple moves. Once players are comfortable, move on to more difficult feints. Players tend to use moves they feel they can execute well in games, so make sure to practice feints regularly.

Teach your players to dribble straight at a defender so they will be able to make a penetrating move on either side of the opponent. The attacking player must time the move correctly. Committing too early allows the defender time to respond and cut off the open space. A move made too late usually results in a strong tackle and a turnover. A well-timed move creates space for the attacker to penetrate. It is essential that the player with the ball use feints and fakes to entice the defender into committing first. Once the defender commits to one side, either by leaning or moving into the space, the attacker must accelerate past the defender into the unoccupied space.

receive a ball will tend to lose valuable passing space. Players must be taught to see the field of play. Players must lift their heads and observe the play around them. Being able to see the field of play allows players to act confidently and not make risky passes.

Passing to a Running Player

The player in possession of the ball determines when to play a pass to a teammate running into open space. The run of the teammate, however, determines where that pass must be played. Ideally, the run will take the receiving player away from defenders. The player making the run must continue to run in advance of the ball. The player making the pass should have several passing options and offensive support.

When to Pass Backward

If a player cannot pass the ball forward, and dribbling is not an option, the pass must be made back toward a team's own goal. High school players, all too often, try a dangerous pass across the width of the field. Passes made in the middle and defensive thirds of the field must be accurate and simple. Passes should be made to the feet of a teammate, not into open space. This reduces the chance that the pass will be intercepted. A player should pick the simplest pass possible.

Quick Passes

At times, changing the point of attack through quick passing is the means to getting good penetration. Quick passes require the ability to pass the ball with one touch. One-touch passing requires players to see the field and decide on the direction of the pass before the ball arrives. Playing two-touch passing allows the receiving player to look up and assess the situation before passing.

Risk Passes

When an offense moves into the "attacking" third of the field, it sometimes becomes advisable to try a difficult pass in an attempt to penetrate the compact concentration of defenders. Attacking players need to calculate the likelihood of completing the pass and the risk involved if the pass fails.

The Don'ts of Passing

- Players should not run alongside the ball. They should move to the ball and collect the pass.

players to jump early so as to strike the ball at the peak of the jump. They want to try to meet the ball at the height of the jump. Whenever possible, encourage players to use a single leg take-off because it allows them to get the most height. Teach your players to drive the nonjumping leg up toward the ball when jumping. The arms also should be driven up toward the ball. The arm drive gives more height to the jump.

TEACHING PROGRESSION FOR HEADING

When teaching heading, create situations where players can focus on different parts of the overall technique. It is easiest to start from the shoulders up and then introduce the trunk and leg motion.

It is best to teach heading using the following progression: sitting, kneeling, standing and jumping. This progression allows your players to slowly combine all of the different technical aspects of heading. Once you begin heading drills, encourage your players to give each other good service. Bad service will cause players to use incorrect heading technique and possibly suffer a minor injury.

Sitting is the first stage of the teaching progression. Heading from a sitting position allows a player to concentrate on keeping the eyes open, striking the ball with a correct part of the forehead, and keeping the neck firm. It also introduces the whipping motion of the trunk.

Heading the ball while *kneeling* continues to develop the coordination of the eyes, forehead and neck. The arms and trunk now contribute to the motion. While kneeling, a player can arch back and use the arms in a rowing motion to make solid contact with the ball. Have the player head the ball and continue the motion forward, landing in a push-up position on the ground. This teaches the player to head *through* the ball by using the trunk.

Next, have the player head from a *standing* position. One foot should be placed in front of the other. The full heading motion can be used. Take the time to stop and correct bad technique. If the player is unsuccessful, do not hesitate to return to the kneeling position. Teach using the legs, arms and trunk to head the ball with power.

Once comfortable standing and heading, have the athlete head the ball while jumping. The heading technique is the same whether using a single or a double-leg take-off. Begin with double leg take-offs and then progress to jumping off a single leg. The knee

- Two teams of two players each in a 10x12-yard grid. The goals are the full width of the 10-yard end line at each end of the field. The game begins with one player tossing the ball to his or her teammate, who either heads to score or heads back to the server, who must then head the ball. The two players from the opposing team act as goalkeepers and may use their hands to make saves. Once the ball is in the air, the players must use only their heads to pass or shoot. If one team misplays the ball, the opposing team takes possession at the point where the ball lands. Encourage your players to react quickly when the ball is turned over to keep the game moving fast. Continue to emphasize that your players should keep their necks firm and chins tucked in. The ball should be headed down toward the goal line.

Heading for Clearance

- In the penalty box with one server, one attacker and one defender: The server stands with the ball outside the penalty box, even with the 6-yard line. The defender stands in the corner of the goal box. The attacker stands opposite the defender approximately 10–12 yards away. The server tosses the ball to the defender, who must head the ball high to a target area located far outside the corner of the penalty box. If the ball is cleared to the target area, the defender gets a point. If the defender misplays the ball or is unable to clear it out of the box, the attacker attempts to gain possession of the ball and score. As the drill progresses, vary the height and distance of the service and bring the attacker closer to the defender to increase the pressure on the defender. Teach your defenders to head the ball high to the target area. (Fig. 4-39)

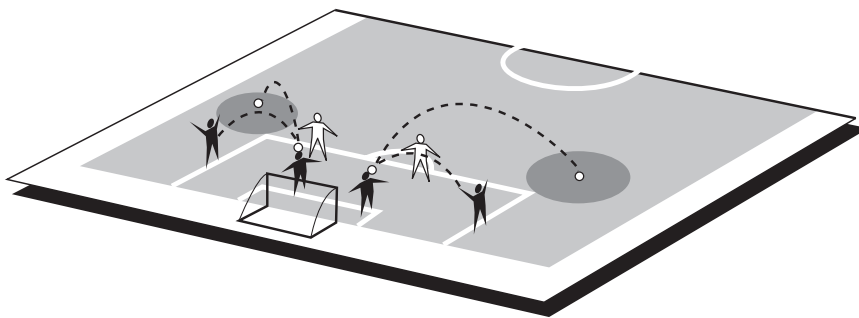


Fig. 4-39.

Goalkeeping

The goalkeeper is a specialist who plays the ball with both hands and feet. Because your team relies heavily on your goalkeeper to make saves during the game, it is important to provide your keeper with daily specialized training. Goalkeepers need at least 45-minutes of personal training at every practice. Many coaches have the tendency to put goalkeepers in the goal during shooting drills and feel that is sufficient training. Shooting drills are not the best time to build a goalkeeper's confidence or perfect goalkeeping techniques. Instead, take the time to work one-on-one with your goalkeeper. The training should be highly intense for short periods. Goalkeepers should maintain a relaxed but focused manner. Good service to your goalkeeper during drills is very important. Bad service will only work to destroy your keeper's confidence. Remember, when working on technique, keep drills simple. Give your keeper a chance to gain confidence and get a feel for proper technique.

THE STANCE

The goalkeeper's stance should be comfortable. Teach your goalkeeper to place the feet shoulder-width apart with the heels slightly off the ground. Your keeper should lean forward slightly with the knees bent so the weight is on the balls of the feet. The arms and head, with the palms facing toward the field, should be raised into a comfortable position above the hips. Have your keeper stand comfortably but at the same time appear as large as possible to present a powerful image to the opponent. (Fig. 4-40)



Fig. 4-40. Stance.

POSITIONING

There are many factors for a goalkeeper to consider before choosing a position on the field. The goalkeeper must consider the speed, direction, distance and location of the player with the ball. The goalkeeper also must take into consideration the location of all other players. Many factors determine whether the goalkeeper should stay on the goal line or come out of the goal to minimize the shooting angle of the player with the ball.

Positioning to Minimize Shooting Angles

Controlling angles is a vital part of a goalkeeper's success. Proper positioning will make the goalkeeper's job much easier by presenting the smallest possible angle from which the offensive player can shoot. Teach your goalkeeper to take a position that bisects the angle formed by the ball and the two goalposts. The goalkeeper must adjust position every time the ball moves.

Angle Play Drill

The goalkeeper plays in the goal with several balls placed in and around the penalty area. One server jogs and pretends to kick one of the balls. As the server moves to a different ball, the goalkeeper must move to cut down the angle of the shot.

Occasionally, the server sprints to a ball as if to shoot but freezes just prior to contact. At that point, check to see if your goalkeeper is in the correct position to cut down the angle. Every third or fourth fake, the server should actually shoot the ball for the goalkeeper to save. The objective is to keep the goalkeeper moving and constantly adjusting to the movement of the server.

GOALKEEPER TRAINING

Warm-Up

Before beginning specialized training, your goalkeeper should complete a vigorous warm-up. The emphasis should be on stretching and exercises, known as **ball gymnastics**, that improve agility, quickness and hand-eye coordination. Many stretches can be done while holding the ball.

Ball Gymnastics

As discussed above, ball gymnastics should be incorporated into every goalkeeper's warm-up. Your goalkeeper should be relaxed but focused during ball gymnastics. As with any exercise, ball gymnastics take practice before a goalkeeper feels comfortable serving and catching balls. Emphasize proper technique.



Fig. 4-43. Catching Technique.

Exercise 1. The goalkeeper stands with a ball, feet placed shoulder-width apart and the knees slightly bent. With both hands in front of the body, the goalkeeper bounces the ball through the legs and twists around to catch the ball as it bounces behind. The goalkeeper then bounces the ball back through the legs and catches it in front of the body. Teach your goalkeeper to twist in both directions. Insist that your goalkeeper always catches with thumbs and index fingers forming a “W,” with thumbs almost touching. (Fig. 4-43)

Exercise 2. The goalkeeper stands with a ball in a comfortable, ready stance. The goalkeeper punches the ball to the ground with a fist. After the ball bounces, the goalkeeper catches the ball before it rises above the knees. To vary the service, the goalkeeper should alternate fists. Your goalkeeper must be quick in order to catch the ball before it rises above the knees. Encourage bending the knees and catching with the “W.”

Functional Training

Functional training addresses the specific skills that a player needs to play a given position on the field. It teaches players how and when to use basic skills and tactics unique to his or her role on the team. For example, a central defender must be able to head the ball for clearance, while a central forward heads to score. Although heading is a fundamental skill, the defender must head high and far to an open player, while the attacker must strike the ball downward when attempting to score goals. A functional training session places players on the field in the locations they will occupy during a game. Specificity and game simulation are achieved by arranging defenders and supporting players accordingly.

FUNCTIONAL PLAY FOR WINGERS

Set up the field with a 10-yard-wide zone on each side. The two wingers play without opposition inside the strips. The ball is passed to one of the wingers, who plays a crossing pass to an “A” player for shots on goal. Each winger must stay inside the 10-yard zone. If a winger leaves the zone, the defense may pressure the ball. (Fig. 4-54)



Fig. 4-54.

Winger A1 dribbles the ball to the goal line and passes back toward the top of the penalty box. A2 and A3 make runs forward for a shot on goal. They should time their runs so that they do not arrive at the spot before the ball. Defenders play passive defense. The drill's primary purpose is to develop the winger's ability to make precise offensive passes. (Fig. 4-55)

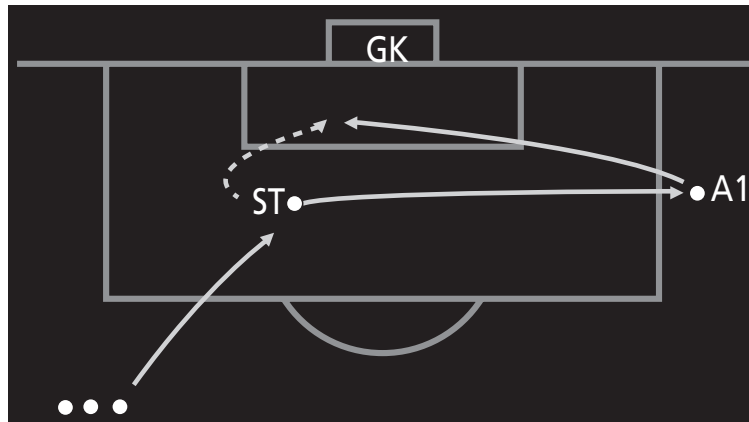


Fig. 4-57.

FUNCTIONAL PLAY FOR FULLBACKS

A server plays a ball to a fullback inside the penalty area. The fullback must control the ball while facing high pressure from a striker. The fullback must control the ball until able to make a clear, accurate pass back to a target player outside the penalty area. The drill teaches fullbacks the importance of control and good decision making in the defensive third of the field. (Fig. 4-58)

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Fig. 4-58.

The midfielder (MF) plays the ball to the goalkeeper. The fullback runs wide, taking position *facing* the GK as the MF passes to the GK. The GK then passes the ball to the fullback, who must control the ball and pass forward to the winger. Practice first without defensive opposition. As the level of play improves, add defenders and pressure. (Fig. 4-59)

Introducing the Game of Soccer

In the game of soccer, teams manipulate space and time in order to score and prevent goals. Understanding how these two concepts govern play is essential to a proper understanding of the game. The intent of offensive strategy is to create space and time in which to open scoring opportunities. Defensive strategy aims to constrict space and limit time in the hope of denying the offense.

The concept of creating space often is difficult for young players to grasp. Intelligent movement off the ball creates both time and space. Players need to learn that making runs without the ball opens space for teammates and creates opportunities to score. Take the time to explain to your players the relationship between these concepts and the principles of offensive play. Create practice situations that force players to develop their skills in the context of manipulating time and space. The best players are those who can combine refined technical skills with the ability to use time and space to their advantage.

Principles of Play

The game of Soccer is not a random combination of individual skills. It is a game of strategy and tactics based upon principles of space and movement. In Soccer language, these are known as the **principles of play**.

OFFENSIVE PRINCIPLES

You will need to understand and teach the following principles of offensive play:

- Mobility
- Width and Depth
- Improvisation
- Penetration
- Finishing

Mobility

There are two types of mobility: **individual mobility** and **team mobility**. Individual mobility does not refer to pure speed, but to the ability to cover the right distance at the right time. A mobile player makes runs in order to create space, not simply to receive the ball.

The only way to win games is to score goals. The ability to finish the play is extremely important. Scoring opportunities are rare in soccer, and good teams are able to exploit their chances to score. Shooting exercises should be part of every practice session. Every player should practice shooting, not just forwards. At the high school level, especially, your midfield players should regularly practice shooting. When developing finishing skills, stress the importance of placing shots accurately. Don't let your players just strike the ball as hard as possible. Any ball that crosses the line is a goal, regardless of its velocity. A rocket shot and a well-placed soft shot are both worth the same point. Teach players to aim for the far post. Trying to shoot between the goalkeeper and the near post requires an extremely good shot. Shooting to the far post offers several advantages. A shot to the far post requires a bit less precision; there is more goal space left open. Second, if the shot goes wide, teammates have a chance to run in from the far side and touch or head balls into goal. Such second-touch shots are very hard for the goalkeeper to save. Insist that your players shoot consistently to the far post.

Much of goal scoring is mental. Scoring requires technical skill but also the ability to choose the right moment and the right spot. Teach your athletes to shoot calmly and quickly once they see a good opening to score.

DEFENSIVE PRINCIPLES

Defensive strategy is a key component of your strategic game plan. To build a sound defensive strategy, you need to understand the principles of defense and how they apply to man-to-man marking and combination defense.

The principles of defense are:

- Immediate Chase and Delay
- Depth
- Balance
- Concentration
- Control and Restraint

Immediate Chase and Delay

The principle of immediate chase and delay dictates that when possession of the ball changes, the defending player nearest to the ball must quickly chase down the opposing player with the ball to prevent a quick counter-attack. The defender must

runs into the opponent's half of the field.

A direct style of play also requires long, accurate passes from the defensive third of the field. Teach your players to look up once they win a ball and look for the target player. Players must be careful, however, when playing balls from the defensive third of the field. A misplayed ball out of the back can be disastrous for an attacking team because most of its players are pushing forward into the other team's half of the field. Such a turnover can lead to a counterattack in your unprotected defensive half of the field.

When teaching your players the direct style of play, use drills that develop shielding, checking runs, overlapping runs and long passing accuracy. Fitness also is a consideration. A direct style of play requires players to be both fast and fit. Players, particularly outside midfielders, will be making many 30–50 yard runs. They will not be effective unless they are fit. Finally, practice playing 8 versus 8 up to 11 versus 11 on a full field. Have one team attack using a direct style of play.

Indirect Attack

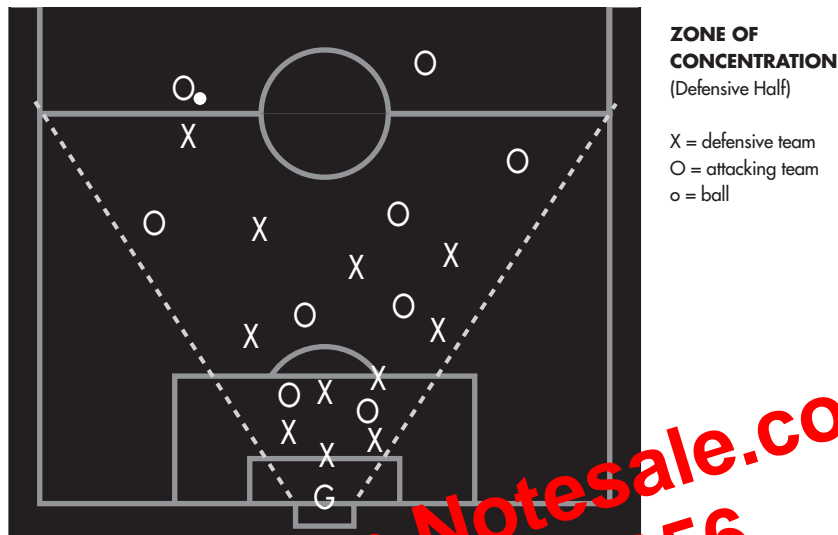
An indirect style of play requires a great deal of patience and technical ability. It is the opposite of the direct style of play. Rather than attacking in a direct, rapid manner, a team playing an indirect style builds its attack slowly. The objective is to get to goal by maintaining ball possession through each third of the field. Combination play and short passes characterize this style. Rather than making long passes, the attacking team uses the dribble or plays many short passes to advance the ball toward the goal.

To play an indirect style successfully, you need creative players with good technical skills. If your players are not comfortable and adept with the ball at their feet, this style may not be suited to them. Ball possession is of utmost importance. Teach your players to be patient and to play simple passes that allow the team to keep possession. Let them know that it may take as many as 10–15 passes before they are able to get to goal.

Teach your players to utilize the entire field by running a wide offense and providing support from behind the ball. This width and depth creates valuable space for the attacking team. Large offensive space forces the defense to spread out and become vulnerable. Playing in a large space lets the attacking team keep possession more easily and create chances on goal.

Maintaining ball possession also is a matter of vision and communication. An indirect

between its goal and the ball. This shape is known as the **zone of concentration**. It resembles a funnel that begins at the defensive team's goal and extends out to the halfway line. This funnel, or zone, allows the defensive team to concentrate its players in an area of the field and deny the attacking team valuable space. (Fig. 5-5)



Once the offense assumes proper position, players should pressure the attacking team and attempt to win the ball. The defensive arrangement should continue to remain compact. The objective of the defense is to cut off all passing lanes, occupy all attacking space, and apply tight pressure to the player with the ball.

Successful low-pressure defense requires both patience and discipline. The entire team must operate on the same mental page. If one player tries to win the ball without proper support, the shape of the entire defense collapses. This collapse can lead to a goal. Teach your players to communicate and play patiently. Patient defense is especially important if your team loses the ball in your own defensive half. The entire team must make an immediate transition to defense and get behind the ball as quickly as possible.

High-Pressure Defending

While low pressure defense emphasizes delay and withdrawal, **high-pressure defense** requires immediate and intense pressure. The defensive team confronts the offense immediately after it has lost possession, and it tries to win the ball back as quickly as possible.

game discussed above. You can view each possession of the ball by either team.

So what does computational match analysis tell you?

Computational match analysis allows you to see a visual record of the match. The beauty of computational analysis is that it provides a visual display of all the activity in a Soccer game. You might, for example, want to see where on the field your central midfielder is touching the ball. On the basis of this information, you might then restrict the player's range or urge the player to be more mobile.

Second, computational analysis allows you to interpret the action of the game with far greater objectivity. In essence, the software adds some science to the art of coaching by allowing you to see patterns of play. Sometimes, a coach's subjective impressions are inaccurate. Sometimes, an accurate observation has a more subtle interpretation that only a deeper analysis reveals.

Computational analysis does have its limits. While it can show patterns of play and a visual view of each team's offense and defense, computational software cannot make an interpretation for you. To do that, you must know a great amount of information about individual players and each team's style of play.

Here's an example. Suppose the data shows that one of your defenders has many passes intercepted. Does that mean that the player has poor skills and makes many errors? Not necessarily. Instead, the opposition might be flooding that defender's side of the field and playing high-pressure defense when they lose the ball. In this case, your fullback's time and space are being severely limited; this could account for the high interception rate. The correct analysis depends on a full knowledge of the game.

Many people believe that Soccer is a game of random play that depends almost wholly on individual skills. Computational match analysis is based on the assumption that any game produces certain discernible patterns in ball and player movement. Those patterns provide much valuable information that lets coaches adjust strategies and styles of play to help their teams play better.

LAW III. NUMBER OF PLAYERS

A team can play a game with no more than eleven players, and no less than seven, including a goalkeeper. If at any time during the game the number of eligible players on a particular team is less than seven, the game is forfeited to the opposition. Please refer to the National High School Federation and individual state rulebooks for clarification regarding substitutions.

LAW IV. PLAYER'S EQUIPMENT

This FIFA law differs from that of the National High School Federation and possibly your local governing body. Please refer to the rulebooks to determine the proper equipment.

LAW V. REFEREES

The referee is responsible for the entire game, including keeping a record of the game and acting as the timekeeper. The referee makes decisions on penalties, fouls, and ejects players for misconduct. The referee may also end the game due to inclement weather, spectator interference, etc. Time stoppage for injuries or other reasons is determined by the referee. All decisions by the referee are final.

LAW VI. LINESMEN

The two linesmen are primarily responsible for indicating to the referee when the ball is out of play and which team is entitled to a throw-in, goal kick, or corner kick; also responsible for indicating when a player may be penalized for being in the offside position. They administer substitutions, and deal with misconduct or other incidents that occur out of the view of the referee.

LAW VII. DURATION OF THE GAME

This FIFA law differs from high school rules. Please refer to the National High School Federation and individual state rulebooks for clarification on the duration of high school Soccer games in your area.

LAW VIII. THE START OF PLAY

A kickoff starts play at the beginning of each half and after a goal is scored. The ball is placed on the center spot inside the center circle. The ball must be kicked and moves

cheap, worn out, outmoded, or ill-fitting gear. Safe and well-maintained play areas are equally important.

Good Health Supervision

Before each season, an athlete should have a thorough medical examination and medical history review. Many sports tragedies are due to unrecognized health problems. Medical restrictions to participation in contact sports must be respected.

When possible, a physician should be present at all contests and should be readily available during practice sessions. It is wrong to have a trainer or coach decide whether an athlete should return to play or be removed from a game following injury. With serious injuries, the availability of a physician may make the difference in preventing permanent disability or even death.

The physician should have the authority to determine if an athlete is healthy to play. Most coaches and athletic trainers are happy to delegate such decisions to medical professionals.

As a coach, you can make a tremendous difference in preventing injuries by adhering to sound principles of conditioning and technical instruction and avoiding tactics that may lead to injuries. You have day-to-day control over the use of playing fields and the responsibility to inspect the field for dangers. Additionally, you are responsible for making sure that all equipment is safe and good repair.

Unfortunately, cost considerations often prevent trained physicians or certified athletic trainers from working all contests and practice sessions. Consequently, your responsibility for caring for your athletes is even greater. The purpose of this section is not to scare you, but to acquaint you with the most common Soccer injuries and correct injury management.

Handling a Medical Emergency

You should instantly be able to answer yes to the following 10 questions. If you cannot, you are inadequately prepared for a medical emergency that might occur during training or competition.

1. Do you have medical consent cards, documenting parental permission for emergency treatment, readily available for every athlete on your team?

the ankle extra support and possibly rest for a day or two. Treat the injury by elevating, icing and compressing the afflicted joint. If there is no improvement after 48 hours, seek medical treatment.

Second-degree sprains involve partial tearing of the ligament. There is swelling and sometimes bruising. It may take 4–6 weeks of rest, rehabilitation and medication before an athlete can return to playing. A splint or taping that limits movement can keep the injured area from being reinjured while still allowing joint movement.

Third-degree, or severe sprains often require surgery to repair a rupture of the ligament. Rehabilitation takes several weeks and sometimes months. Sprains needing surgery usually end an athlete's season. After a severe sprain, only a physician should approve an athlete's return to training and competition. Any return to activity should be preceded by an exercise regimen that strengthens the muscles on each side of the injured joint. The athlete should pass a functional evaluation that include running a figure-8, a zig-zag pattern and coming to a complete stop without favoring the injured joint. Also reinforce and protect the joint with tape or a brace. However, do not substitute taping for rehabilitation exercises.

Management of sprains may be best summed up by the acronym **PRICE**.

P — *Protect* the joint from further trauma. This protection may take the form of an external support (tape, elastic bandage) or removing the athlete from further activity.

R — *Rest* the joint by restricting or suspending the athlete's athletic activity. With serious sprains the athlete might need to stop all weight-bearing activity, and may need an external support or a splint.

I — *Ice* should be applied for approximately 10–20 minutes every 3–4 hours. This may be done using an ice bag or chemical ice pack, or by immersion in cold water.

C — *Compression* will help limit swelling. Compress the injured body part by wrapping it in an elastic bandage. Begin wrapping at the point farthest from the heart and wrap toward the heart. Make sure the wrap does not constrict the injury too tightly.

E — *Elevate* the injury above the heart. This will reduce swelling.

No loss of balance should occur. You can check coordination by having the athlete alternate placing the index finger on the tip of the nose from a position in which the arms are outstretched. Pupils should be equal in size and react symmetrically to light. The athlete should have no headache, ringing in the ears, or nausea. Mental status may be checked by asking the athlete to add serial sevens. Or, ask other pertinent questions about the person (mother's first name), place (location of game), and time (day, date). Don't allow an athlete to return to practice unless the athlete is asymptomatic, able to exhibit normal technique, has normal speed and coordination on the sideline, and is mentally focused. A concussion can be potential life-threatening injury. If in doubt, *always* err on the side of caution.

FACIAL INJURIES

Facial injuries usually occur as a result of improper heading technique or blunt trauma such as collision with another player's head. The majority of Soccer facial injuries involve the nose and eye.

Nasal Injuries

Nosebleeds may be the most common facial injury in athletics. The nosebleed is usually caused by a direct blow. Usually the nosebleed presents a minor problem, stopping spontaneously after a short time. If bleeding persists, a cold compress should be applied to the nose along with direct pressure. A sterile packing may be inserted into the nostril. Care should be taken to make sure that the packing protrudes sufficiently from the nostril to facilitate its removal. After bleeding ceases the sterile packing should be removed. The athlete should not blow his or her nose for two hours after injury. If bleeding does not stop with the above measures, refer to a physician.

Eye Injuries

Although the eye is well-protected anatomically by the bony structure of the face and the eyelid, eye injuries do occur. Foreign bodies are the most frequent insult to the eye. No attempt should be made to rub an object out of the eye or to remove it with one's fingers. The athlete should attempt to wash the object out of the eye with sterile water, or saline, and an eye cup. The vast majority of foreign bodies may be removed successfully in this manner. If you are unable to remove the foreign body and pain persists, the eye should be covered with a sterile dressing and the athlete brought to a physician. Because of the presence of a foreign body and the potential for

Anabolic-Androgenic Steroids

Anabolic-androgenic steroid use in athletes has been documented since the 1950's and the effects on muscle building and performance are well known to athletes and body builders. Anabolic-androgenic steroids (AAS) are a classic performance-enhancing drug and have almost no legitimate therapeutic indications in athletes. In sport they are used almost exclusively to gain a competitive advantage. Although often called "steroids" or "anabolic steroids", they should properly be referred to as "anabolic-androgenic steroids" because they are testosterone or testosterone-like synthetic drugs that result in both anabolic (increased muscle mass) and androgenic (develops male secondary sex characteristics) effects. Although athletes use AAS for their anabolic results, all AAS have varying amount of androgenic effects that are responsible for most of their adverse reactions. The result is that athletes who take AAS for their anabolic properties, to increase lean body mass or strength, cannot avoid the undesired and often harmful androgenic properties of AAS use. Finally, it is important to distinguish AAS from anti-inflammatory steroids that are called corticosteroids or cortisone. Corticosteroids are legitimately used to treat asthma and other medical conditions, as well as in the form of joint injections to treat inflammation.

AAS can be divided into two categories: exogenous and endogenous steroids.

Endogenous AAS are those that are naturally produced by the body in some amounts and can be made into drugs and consumed by athletes. The most commonly used endogenous AAS is testosterone that is made by the testes and is necessary for normal male function. Although it cannot be taken in pill form, testosterone can be injected into a muscle, absorbed through the skin by a patch or gel, or across the lining of the cheek in the form of a pellet. Studies have demonstrated that injections of testosterone in high doses can increase muscle mass.

The other types of AAS are the exogenous or synthetic drugs. These are not produced by the body and are altered in the laboratory to change how a drug behaves in the body. For example, adding certain side chains to testosterone allows the drug to be absorbed orally. Other additions increase the potency of the drug or attempt to decrease side effects. The past few years has seen the appearance of "designer" AAS that were specifically developed to avoid detection by drug testing. Some of these are tetrahydrogestrinone (THG), norbolethone and madol (DMT).

The 1990 United States Anabolic Steroids Control Act classified AAS as a Schedule III drug and limited the legitimate therapeutic reasons for using them. Due to the

ered to exercising muscle. Unfortunately, too many red blood cells in the circulation can cause the blood to thicken and result in heart attacks and strokes. In fact, the suspicion is that several cyclists died in the 1980's as a result of excessive use of EPO. There is no evidence that EPO can increase muscular strength. In 2000, an effective test was developed to detect EPO and that has been commonly in use since.

STIMULANTS

Stimulants are a broad class of drugs that are related to naturally occurring adrenaline. These drugs act either directly or indirectly on the sympathetic nervous system and are available in foods (coffee, sodas and energy drinks) over-the-counter, prescription drugs or as illegal recreational drugs on the black market. They have a wide variety of actions in the body and the effect of a particular drug in this class depends on which receptor it favors. For example, some stimulants like an albuterol inhaler that is used in the treatment of asthma relax smooth muscle and open the pulmonary tree. In general, almost all drugs in this class act to speed up the heart rate, increase blood pressure and cause all of the effects of adrenaline, the "fight or flight" hormone. Some examples of stimulants include ephedrine, pseudoephedrine, caffeine, Ritalin, Adderal, albuterol, amphetamines, methamphetamine, cocaine, phenylephrine and phenylpropanolamine.

There is evidence that athletes have used stimulants since the Roman Gladiators in 600 B.C. At the 1960 Summer Olympic Games, a Danish cyclist died during competition from an overdose of stimulants. Today's athletes use stimulants for a variety of reasons. Some use them for their stimulants properties to feel more energetic, alert, to fight fatigue and improve performance. This is despite the fact that although you may feel more energetic, there have never been any controlled studies to definitively demonstrate performance enhancement. In sports where thinness is valued, such as gymnastics and wrestling, athletes use them as diet aids to decrease appetite, burn calories and lose weight. Athletes may also legitimately use stimulants to treat diseases, such as asthma and attention-deficit disorder (ADD or ADHD). Finally, athletes use stimulants as a recreational drug to get high in the form of drugs such as methamphetamine.

Depending on the particular drug, stimulants can have a great many adverse effects. In general, they can cause anxiety, heart palpitations, rapid heart rate and arrhythmias, tremors, stomach upset and insomnia. Since stimulants often increase the metabolism, there is a real concern about athletes exercising in the heat and the stimulants

The initial justification for oral creatine supplementation was the 1992 study of a 20% increase in skeletal muscle creatine following a 7-day loading dose. Skeletal muscle phosphocreatine is rapidly depleted during 10-20 seconds of maximum exercise, but half is resynthesized after 60 seconds with full restoration in 5 minutes. Theoretically, taking oral creatine can potentially increase phosphocreatine stores and thus power.

Whether creatine supplementation actually provides performance benefit has been the subject of great debate. Most data suggest that oral creatine could only increase performance in repeated 6-30 seconds bouts of exertion where there are recovery periods of 20 seconds to 5 minutes. They found no benefit in the other situations. There is little evidence that these gains found in a laboratory or in research translate into improved athletic performance.

Another factor complicating creatine is the variation in individual response. Muscle-biopsy studies demonstrated that subjects with lower levels of both muscle creatine and phosphocreatine tended to have greater increases in creatine and phosphocreatine after taking creatine supplements. The factor is that skeletal muscle act as a "creatinine bank" and cannot exceed a creatine concentration of 150-160 mmol/kg. Thus, athletes who consume less dietary creatine (e.g. vegetarians), may benefit more from creatine supplementation. That also means that once your creatine banks are full, taking additional creatine is of little benefit. There is also likely little value to high-dose creatine supplementation. If creatine is to be used, most authors recommend 0.3 g/kg/day (0.15 g/pound/day) loading for 5 days, followed by 0.03 g/kg/day (0.015 g/pound/day) maintenance. Increasing the dosage will not increase the positive effects. As with other substances, there is a direct correlation between excessive dosage and the risk of side effects.

Another area of controversy is that of adverse effects. Creatine causes water to be retained by the muscles, thus pulling water away from the circulation where it is needed and giving the potential for dehydration, muscle cramping and heat injury. Although there are anecdotal reports, controlled studies do not seem to support a large increase in these symptoms nor related gastrointestinal cramping. Another fear was that once creatine muscle stores were saturated, excess creatine would unduly tax the kidneys and result in kidney problems. While urinary creatine and creatinine excretion does increase with oral creatine supplementation, there have been few reported incidents of kidney failure in subjects with normal kidney function.

CHAPTER 9

Eating for Health and Performance

A number of factors influence the body weight of adolescent athletes. Many young female athletes are concerned about their appearance and eat less than they should to appear thin. However, restricting calories can have a negative impact on performance and health. As calorie consumption decreases, so does nutrient intake. The minimum requirement for high school athletes should be roughly 2,000 to 2,200 calories per day. Athletes eating less than 1,800 calories a day probably do not consume adequate amounts of vitamins, minerals and protein. This can cause depleted fuel stores, muscle wasting, weakness, fatigue, stress fractures and impaired performance.

Some athletes have a hard time increasing their calorie intake because the volume of a larger meal causes them discomfort, especially if they are training soon after eating. Athletes juggling a heavy academic schedule with training and part-time job may have difficulty finding the time to eat. These athletes can benefit from eating several small meals and snacks throughout the day.

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CARBOHYDRATES

Carbohydrates, such as sugar and starch, are the most readily available source of food energy. During digestion and metabolism, all carbohydrates are eventually broken down to the simple sugar glucose for use as the body's principal energy source. Glucose is stored in the muscles and liver as a substance called glycogen. A high-carbohydrate diet is necessary to maintain muscle glycogen – the primary fuel for most sports. When athletes do not eat enough carbohydrate, their glycogen stores quickly become depleted, resulting in fatigue or staleness.

Though the body uses both the sugars and starches for energy, a high-performance diet emphasizes nutrient-dense carbohydrates. Nutrient-dense carbohydrates such as whole grain breads and cereals, rice, beans, pasta, vegetables and fruit supply other nutrients such as vitamins, minerals, protein and fiber. Sweet foods that are high in sugar (candy bars, donuts and cookies) supply carbohydrate, but they also contain a high amount of fat and only insignificant amounts of vitamins and minerals.

Fruit contains the sweetest of all simple sugars – fructose. Since fruit is mostly water, its sugar and calorie content are relatively low. Like starchy foods and fats, fruits are rich in nutrients and virtually fat free.

As with calories, carbohydrate needs vary among athletes, depending on the intensity and duration of training and body size. To determine how much an individual athlete needs, divide his or her weight by 2.2 to get the weight in kilograms. Then multiply the number by 6 to 8.

For example:

- 130 pounds divided by 2.2 = 59 kilograms
- 59 kilograms times 6 = 354 grams of carbohydrate

The carbohydrate content of different foods can be determined by reading food labels. As a general guide, starchy foods and fruits provide the highest amount of carbohydrate (15 grams) per serving. Table 2 gives some examples of high carbohydrate foods.

All athletes need a certain amount of fat in their diets and on their bodies. The challenge is eating a diet that provides the right amount. Most U.S. health agencies recommend consuming no more than 30 percent of calories from fat. Too much fat contributes excess calories in the diet, which can lead to weight gain. High fat diets can also increase the risk of heart disease and certain cancers. Also, athletes who eat too much fat often do not eat enough carbohydrate, which is detrimental to good health and optimum performance.

To lower fat intake, athletes should choose lean meat, fish, poultry and low-fat dairy products. Fats and oils should be used sparingly. Fried foods and high fat snacks should be limited.

VITAMINS

Vitamins are metabolic regulators that help govern the processes of energy production, growth, maintenance and repair. Vitamins do not provide energy, although vitamins are important for the release of energy from carbohydrates, fat and proteins.

Vitamins are divided into two groups: fat-soluble and fat-soluble. Fat-soluble vitamins include A, D, E and K. They are stored in body fat, principally in the liver. Taking a greatly excessive amount of vitamins A and E than the body needs over a period of time can produce serious toxic effects. Vitamins C and the B complex are soluble in water and must be replaced on a regular basis. When athletes consume more water-soluble vitamins than needed, the excess is eliminated in the urine. Though this increases the vitamin content of the urine, it does not help performance.

Athletes should try to consume the amount of a nutrient recommended by the Recommended Dietary Allowance (RDA) or Adequate Intake (AI). The RDA and AI are the amount of a nutrient that meets the estimated nutrient needs of most people. To avoid toxicity, athletes should not exceed the Tolerable Upper Intake Level (UL) for a nutrient.

Generally, athletes who consume more than 1,800 calories a day get enough vitamins from their food. However, a vitamin/mineral supplement supplying 100 percent of the RDA or AI may be appropriate for athletes with extremely low calorie intakes or for those who avoid foods groups.

Flooding Zones: An offensive tactic whereby a number of attacking players concentrate in the area around the ball in order to create space on the opposite side of the field so that a long pass can be played.

Functional Training: Specialized training that focuses on the skills necessary for specific positions on the field. Such training addresses a player's technical and tactical weaknesses.

Goal Side: The area between the goal you are defending and the ball or player you are defending.

Grid: A marked area, smaller than the entire field, that is used to teach technique and tactics.

Indirect Free Kick: A free kick awarded after a minor foul. The ball must touch a player other than the kicker before a goal can be scored.

Inswinger: A pass played in the air from the corner of the field that bends or swings in toward the goal.

Man-to-Man Defending: A high pressure defensive style whereby each defender is responsible for guarding a specific attacker.

Marking: To guard an opponent by staying in very close proximity.

Midfield Third: The middle third of the field, located between the defensive and attacking thirds.

Near Post: The post nearest to the ball.

Obstruction: When a player purposely ignores the ball and uses his or her body to impede the progress of an opponent. It is one of the five minor fouls.

Outswinger: A pass played in the air from the corner of the field into the penalty area that bends or swings away from the goal.

Overlapping Run: A run made by attacking from behind the ball, past the player with the ball, in order to receive a pass.

Parry: A technique used by the goalkeeper to quickly deflect the ball around the goalpost in order to make a save.

Penetrating Run: A run made by an offensive player through the defensive line and toward the goal.

Possession Pass: A pass that has little chance of being intercepted, usually a lateral or back pass.

Restart: The start of play after a foul, goal, or the ball out of play. Restarts take the form of a free kick, throw-in, corner kick, goal kick, or kickoff.

Shielding: A dribbling technique that utilizes the body to protect or shield the ball from the opponent.

Square Pass: A long or short distance pass made laterally.

Target Player: An attacker, usually a forward, who serves as an outlet for passes from midfielders and defenders. Target players are good at receiving balls passed in the air.

Through-Pass: A pass played by an attacker behind or over defenders toward the opponent's goal to a teammate in position to shoot on goal. Also known as a penetrating pass.

Touch line: The line that extends from endline to endline and marks the side boundaries of the field.

Weak Side: The side of the field away from the ball.

Zone Defense: A defensive strategy used in low pressure defense whereby defenders guard certain areas on the field rather than specific players.