THE COMPLETE GUIDE TO SOCCER CONDITIONING

TOTAL Soccer FITNESS

by Phil Davies

“Genius is one percent inspiration
and ninety-nine percent perspiration.”
~ Thomas Edison ~

”The principle is competing against yourself.
It's about self improvement, about being better
than you were the day before.”
~ Steve Young ~

“Just play. Have fun. Enjoy the game.“
~ Michael Jordan ~

This book is dedicated to my family and the
constant and never-ending support
they offer me to this day.

This book is for every soccer coach and player…
“who demands more from themselves
than anyone else expects.”

Disclaimer

Soccer is not without risk. Nor is physical training. Even when all the "rules" are followed to the letter, injuries and accidents can occur. That's the nature of sport and life. A book, no matter how comprehensive, can never cover every angle and every individual's unique makeup, previous history and current situation. With that in mind…

The information within these pages is intended as an educational resource only. That means you should seek the advice of a qualified Fitness Professional and a Physician, in person, before you attempt any of the exercises, drills or programs within this book. Of course, you should always discontinue any exercise that causes you pain or severe discomfort and consult a medical expert.

If you suffer (or have in the past) from any sports, back, joint or musculoskeletal injuries, you should seek the advice of a qualified Physical Therapist. They can advise you which exercises may aggravate existing injuries or cause a recurrence of previous ones.

The strength and power training programs contained within this book are only recommended for post-adolescent athletes who are physically mature. The programs and exercises also assume players have been shown correct technique and are competently supervised.

The author and the publisher of this book have made their best effort to produce a high quality, informative and helpful resource. But they make no representation or warranties of any kind with regard to the completeness, accuracy or safety of the contents of the book. They accept no liability of any kind for losses or damages caused or alleged to be caused directly, or indirectly, from using the information contained within. Just as you should take full responsibility for your successes on the soccer field, please know that any training you undertake, as a result of reading this book or otherwise, is at your own risk.

TABLE OF CONTENTS

INTRODUCTION

Ultimately in *any* sport, your level of fitness determines the level of skill you can apply…

Even world-beaters can look foolish if they lack the physical strength and stamina to apply their talents.

Every soccer player can relate to the feeling of complete exhaustion after several bouts of all-out sprinting… shortly followed by the embarrassment of jelly-like legs trying to perform the simplest of passes!

Without doubt…

The more highly conditioned you become, the more consistently you can perform. Get your conditioning program right, and it gives you (or your entire team) an unparalleled competitive edge.

At every level, the game is littered with players who lack elegance but whose physical power makes them deadly efficient. While there is no substitute for natural ability, with hard work and application you can tap a level of potential you never realized was within you.

Few players (and coaches) outside the professional game *really* appreciate the impact that a well-planned conditioning program can have on performance. Of the few who do, even less understand what it ***really*** takes to become fit for soccer.

Total Soccer Fitness will show you how to become a stronger, faster, fitter, more consistent player.

It will help you to reach a level of conditioning that allows you to perform unhindered with poise and finesse. Follow the guidelines within this text and not only will your level of self-confidence and consistency improve, you'll enjoy the game so much more.

How to Use Total Soccer Fitness

As you read this introduction it can be a little disconcerting to know there's some 150 pages or so to devour… especially if you're eager to get out there and put a program into practice.

Total Soccer Fitness covers every conditioning component important to soccer - in detail. More importantly…

It's a step-by-step guide with one end-goal in mind…

To help you **implement** a highly effective, do-able fitness plan.

Here are three ways to achieve that aim:

Option 1

Cherry-pick drills and exercises and plug them into your existing program. It will help to keep your training sessions fresh and efficient. To expand the idea slightly…

You might select an entire section – strength training or speed training for example - and use it as an adjunct to your current regimen.

Option 2

Design a full 12-month conditioning program. Yes, it will take some forethought and pre-planning and yes, you do need to be adaptable as the season throws up new challenges, but it's a challenge that could transform you as a player or a coach.

Option 3

Design a single **phase** of training. Does an entire twelve months sound like overkill for what you need? Then stick to one phase of the season – the pre-season perhaps and take it from there.

Total Soccer Fitness has been developed to make it as easy and practical as possible to design and implement your own professional conditioning program.

The first six sections of the book cover the **core elements** of an effective soccer conditioning program… everything from aerobic training to fitness testing. In each of these sections you will find sample programs and routines. Remember that many of the exercise images and descriptions are in a separate, downloadable e-book called the **Soccer Exercise Library**. For quick and easy reference, they have been organized to co-ordinate with the sections here.

The final chapter pulls everything together. It features sample annual and pre-season programs you can begin using immediately.

Goalkeepers have not been forgotten!

Each chapter contains side notes like these for goalkeepers. They address any particular adaptations and variations to training that goalkeepers should consider. Then Appendix A offers a collection of drills especially for keepers organized to follow the sections of the book itself. If you **are** a goalkeeper or goalkeeper coach don't just skip to Appendix A. Read **Total Soccer Fitness** in its entirety, as many of the conditioning principles are still relevant and important.

The Perfect Program Versus The Practical Program

The perfect conditioning program **does not** exist…

Not even for professionals.

What *they* do, and what you should do, is make the most of the time and resources available. And while it might seem like pros have an abundance of training time, they are limited by the sheer number of competitive games they must play.

In an impeccable scenario, you'd have the time to train every energy system several days a week (and allow a day's rest before a game), players would never get injured, you'd know in advance when every game was scheduled (including how far you'd progress in cup competitions) and no game would ever be postponed. An extra day in the week would also be helpful too.

Ultimately, as a coach or player you have to make an informed decision about what is best for you or your team…

Some players have the time (and the inclination) to commit to six sessions per week, others can manage only one or two. Different teams train on different days. Some weeks there are two competitive matches, other weeks there are none. And in one part of the world the in-season runs from September to April, in another it lasts just 3 months starting in January.

You'll find lots of sample programs littered throughout the chapters and then several "big picture" plans in the final chapter. Few, if any, are perfect from a training theory perspective. Instead the samples are varied and assume there

are some practical limitations in place – whether that's time, equipment or even a midweek match (nothing will ruin your best laid plans like an unscheduled, competitive game of soccer!).

So the challenge is set…

Take what you learn from this book. Add some discipline, persistence and a whole heap of determination into the mix and then…

Find out just what you are capable of!

~ SECTION 1 ~

AEROBIC & ANAEROBIC ENDURANCE CONDITIONING

Soccer is perhaps the most demanding of all sports.

Few other games have as large a playing field. No other sport lasts as long without regular rest periods. In today's game players must run virtually non-stop, oftentimes sprinting, for an hour and a half.

On average a player can cover as much as **eight miles** (13km) during a ninety-minute competitive game.

Covering that amount of distance, at any intensity, for an hour and a half requires good stamina or endurance. Couple that with the fact that in soccer much of that movement consists of high-intensity sprints, explosive jumps, running backwards and tough challenges, and high levels of stamina become absolutely crucial!

Activity Breakdown Over a 90 Minute Game

Activity/Position	Defenders	Midfielders	Forwards
Walk	36%	31%	29%
(Walk Backwards)	(4-8%)	(4-8%)	(4-8%)
Jog	41%	38%	35%
Strong Run	17%	20%	23%
Sprint	6%	11%	13%

Key: Walk backwards is a percentage of total walking i.e. for defenders 4-8% of total 36% is walking backwards

The term "endurance" is very general. When you think of related terms such as "strength endurance", "speed endurance", "cardiovascular endurance", "aerobic endurance" and so on, it can become confusing.

This section of the book covers the two types of endurance that all soccer players must possess to become successful:

- **Aerobic Endurance** (also known as cardiovascular endurance)
- **Anaerobic Endurance** (also known as speed/power endurance)

Good strength endurance is also vital for soccer players and is covered in Section 2 – Strength & Power Conditioning

To understand why aerobic and anaerobic endurance is so important in soccer, it's helpful to understand some basic exercise physiology…

1.1 Energy Systems

All physical movement (in a soccer game or any other activity) requires energy to power the working muscles. There is only one type of fuel capable of powering muscles and it's a chemical called **ATP** (Adenosine Triphosphate).

The body only stores a small quantity of this fuel… enough to power just a **few seconds** of all-out, explosive exercise. For a soccer player to last ninety minutes their body must replace ATP on an ongoing basis.

There are several options called **energy systems,** available to the body for it to continually replenish ATP. The energy system it uses depends on the **intensity** of the activity. For example, during a light jog or walk the body will use the **aerobic energy system**. Aerobic simply means the ATP is replenished "in the presence of oxygen".

When the activity is intense (like sprinting or an explosive kick), the working muscles demand ATP at a faster rate than the aerobic energy system can provide. So the body uses a different type of system – one that doesn't require oxygen – called an **anaerobic energy system.**

Side Note

Very few activities use purely the aerobic energy system or the anaerobic energy system. In practise, both are used most of the time but one will predominate more than the other - depending on the intensity of the activity.

Just as strength training for soccer consists of more than simply lifting weights, endurance training involves more than just running laps of the soccer field. By splitting endurance sessions into those that condition the aerobic energy system and those that condition the anaerobic energy system you will become a much fitter (and better) player.

1.1.1 The Aerobic Energy System

In a soccer match, activities like walking, jogging, and slow to moderate running are fuelled predominantly by the aerobic energy system. It is these activities that make up as much as 90-95% of a player's performance.

Aerobic endurance conditioning will allow you to sustain these kinds of activities at a much higher level. It will also help you to recover following shorter, more intense exercise.

Even though a player may only sprint for a total of five minutes in a game, that still equates to forty or fifty all-out bursts. As a match progresses these short, sprints become slower and less sharp. Aerobic endurance training will help you to perform at the same level in the last ten minutes as you did in the first ten minutes.

The purpose of aerobic endurance training is to:

- Improve the heart and cardiovascular system so blood (and oxygen) can be **delivered** around the body more efficiently.
- Increase the body's ability to **utilize** oxygen.
- Increase the body's ability to recover from heavy bouts of intense exercise.

1.1.2 The Anaerobic Energy System

High-intensity activities that last less than thirty seconds rely on the anaerobic system to provide energy. In soccer, these include jumping to win a header, catching a cross (goalkeepers), kicking and sprinting.

The anaerobic energy system can supply the body with ATP very rapidly. However, a by-product of this system, called **lactic acid**, quickly builds up in the muscles and causes fatigue.

A good example is repeating several maximal sprints back-to-back. Within a short while enough lactic acid will accumulate to cause the player to either stop or dramatically slow down.

The ability to repeat short bursts of power in quick succession is a measure of your anaerobic endurance. The purpose of anaerobic conditioning is to:

- Help maintain bursts of power for longer
- Increase a player’s tolerance to lactic acid
- Speed up recovery by increasing the player’s ability to remove lactic acid

Side Note!
Of all the conditioning you will undertake, anaerobic endurance training is the toughest! But it can also make the greatest difference to your performance. Very few game situations will build up as much lactic acid as training sessions do so you rarely feel uncomfortable in match. And that works wonders for your confidence!

1.2 Aerobic Endurance Conditioning

To quickly recap, **aerobic** endurance conditioning improves your body's ability to deliver and use oxygen. It will allow you to sustain an overall higher rate of work during the ninety minutes. You will also recover more quickly after high intensity exercise.

During the pre-season period aerobic endurance conditioning features heavily. Competitive games reduce the need for as many sessions during the in-season. Even during the off-season it's wise to perform several aerobic exercise sessions (see "cross training" below) to maintain fitness levels while the body is allowed to recover.

1.2.1 The Five Key Principles of Training

In any type of fitness training there are several key principles on which all good conditioning programs are based…

Specificity
The mode of training you perform should be specific to the sport. So, as an obvious example, soccer players run. Cycling or swimming **will** develop aerobic endurance but not in the same precise manner that jogging will.

Overload
A soccer fitness session must be strenuous enough to tax the aerobic system. Overload simply means enough intensity to take your body out of its comfort zone, asking it to do more than it's used to.

Intensity
Different levels of intensity bring about different physiological changes in the body. One way to measure training intensity is through heart rate. Aerobic conditioning tends to be lighter in intensity (75-85% maximum heart rate) but longer in duration compared to anaerobic training. Heart rate is discussed later in this section.

Progression
As your body adapts to vigorous training that level of intensity will soon feel comfortable and will no longer cause sufficient overload. To continue improving you must increase the intensity (and/or duration) of your training sessions on a regular basis.

Recovery
It is easy to do too much and try to progress too quickly. The body only adapts to training when it is resting so be sure to schedule in plenty of recovery time. Listen to your body. If there's a time when you feel particularly exhausted, keep training light or rest completely. This is where your plan **has** to be flexible.

1.2.2 Continuous & Interval Training for Soccer

The are two types of aerobic conditioning that are useful for soccer players and they are called…

Continuous Training - Exercising at a continuous, steady pace for a prolonged period of time.

Continuous type training is less strenuous and useful for early pre-season when players return from the off-season break. It is also useful for **active recovery** the day after a tough match and for the off-season when rest is also important.

A good example is jogging at a steady pace for thirty to forty minutes. A variation of this is **Fartlek training**, which consists of jogging, running and walking for various distances over the same time period.

Interval Training - Shorter bouts of higher intensity separated by rest intervals.

Interval type training is more intense and soccer-specific. After a few weeks of continuous running to ease players back into training, interval training should predominate in the pre-season.

The simplest form of interval training is to split a continuous session up into several short, more intense bouts. The chart below illustrates how to do this:

Basic Interval Session

You have a rough idea you can run 2 miles in 12 minutes, fairly comfortably. You divide the distance in four half-mile intervals. Running for just half a mile you aim to complete each interval in 2.5 minutes (as opposed to 3 minutes):

Intervals	Distance	Time	Total Time
4	½mile	2.5min	10min

In this scenario you have run a total of 2 miles in 10 minutes – 2 minutes less than if you ran continuously.

1.2.3 Sample Continuous Training Drills

Continuous endurance sessions are suitable for early pre-season and recovery sessions.

A session should last at least twenty minutes and ideally between thirty and forty five minutes. Where indicated, a single continuous training drill can be performed for twenty minutes. Alternatively you may wish to perform two drills for ten or fifteen minutes (keep rest breaks between minimal). You should perform a warm up (see section 5) consisting of light aerobic exercise and dynamic stretching before moving on to these drills.

Drill #1 - Continuous Running
Run for 20 to 30 minutes at a continuous pace, preferably on grass. Intensity can be dictated by heart rate although it is by no means essential. Use the formula below (called the **Karvonen formula**) to calculate target heart rate. If a heart rate monitor is not available, stop every few minutes and take a pulse by placing two fingers on the radial artery (at the wrist just below base of the thumb). Count for **15 seconds** and multiply by four to get beats per minute.

Calculating Target Heart Rate with the Karvonen Formula

- 220 – age = maximum heart rate
- Maximum heart rate – resting heart rate = heart rate reserve
- (Heart rate reserve x 80%) + resting heart rate

For example, an 18 year old with a resting heart rate of 65 beats per minute (bpm) has a target heart rate as follows:

- Maximum heart = 202bpm (220-18)
- Heart rate reserve = 137bpm (202 – 65)
- Target heart rate = 175bpm (137 x 0.8 + 65)

Take 10bpm off this value for a training zone of 165-175bpm.

Target heart rates are best for continuous runs because monitoring is easy and exercise is at a steady pace. For recovery runs (after hard games) use the same equation but multiply by 60% or 0.6 instead of 80%.

Drill #2 - Fartlek Training

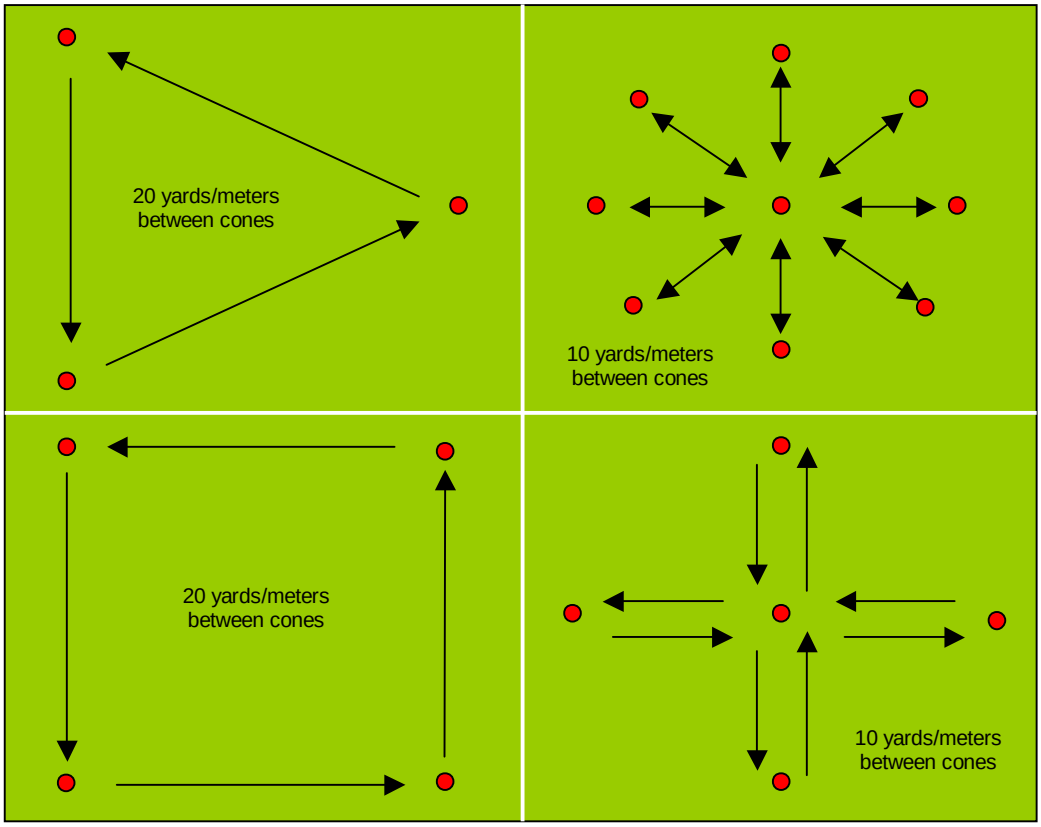
Fartlek training is an excellent conditioning method when players first return from a closed-season break. It is less monotonous than continuous running and more specific to soccer. It involves running for 20 to 30 minutes at varying paces and intensities. Here is a Fartlek session suitable for soccer:

- Warm up with a steady jog for 10 minutes
- Run hard, for 75 seconds
- Jog for 150 seconds
- Run hard for 60 seconds
- Jog for 120 seconds
- Repeat 3-4 times
- Cool down at a steady pace for 10 minutes

You will find more Fartlek sessions in the Soccer Exercise Library

Drill #3 - Figure Running

Mark out a course according to the diagram below. For team training, split the group into four smaller groups, with one group per station. On the coach's command players must dribble a ball around the designated figure continuously for 5 minutes. Players within each group should stagger their starts to allow a few yards room between each other. It is not a race and players should avoid overtaking. After 5 minutes each group immediately moves to the next station. Repeat until all four stations have been completed.



You will find more interval training drills in the Soccer Exercise Library.

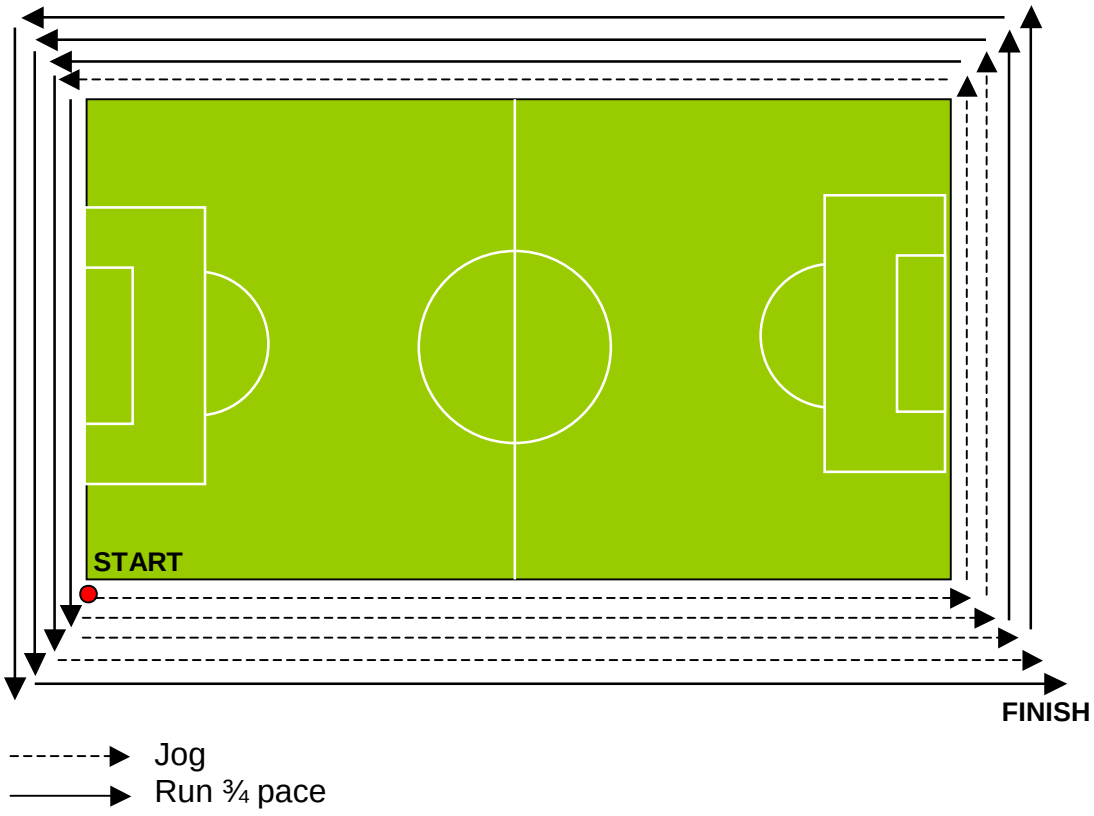
Note For Goalkeepers

Continuous endurance training is designed to build a general base of endurance. Although goalkeepers do not cover the same distances as outfield players, aerobic endurance underpins their ability to perform to the same high level even towards the end of a game. Goalkeepers can perform the drills above to develop aerobic endurance.

1.2.4 Sample Interval Training Drills

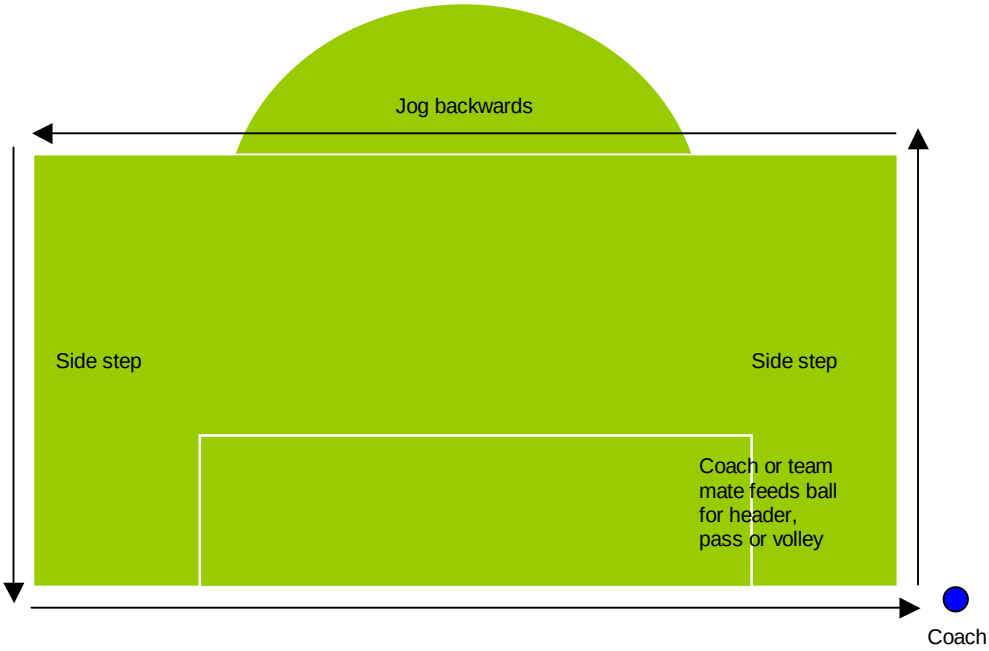
Interval type training is more intense and soccer-specific. After a few weeks of continuous training to ease players back into training, interval training should predominate in the mid to late pre-season. Interval sessions should last between twenty and forty minutes. You should perform a warm up (see section 5) consisting of light aerobic exercise and dynamic stretching before moving on to these drills.

Drill #1 – Increasing Lap Run
Use the markings of a soccer pitch for this drill. Start in one corner facing down the touchline. Jog three sides of the pitch and run ¾ pace down the final side (which should be the goal line) back to the start. Next, jog two sides of the pitch and run ¾ pace down two sides back to the start. Now jog one side and run ¾ pace down one side. Finish with a ¾ jog around the entire pitch. This can be repeated for 2-3 sets or keep to just 1 set and combine with other interval drills.



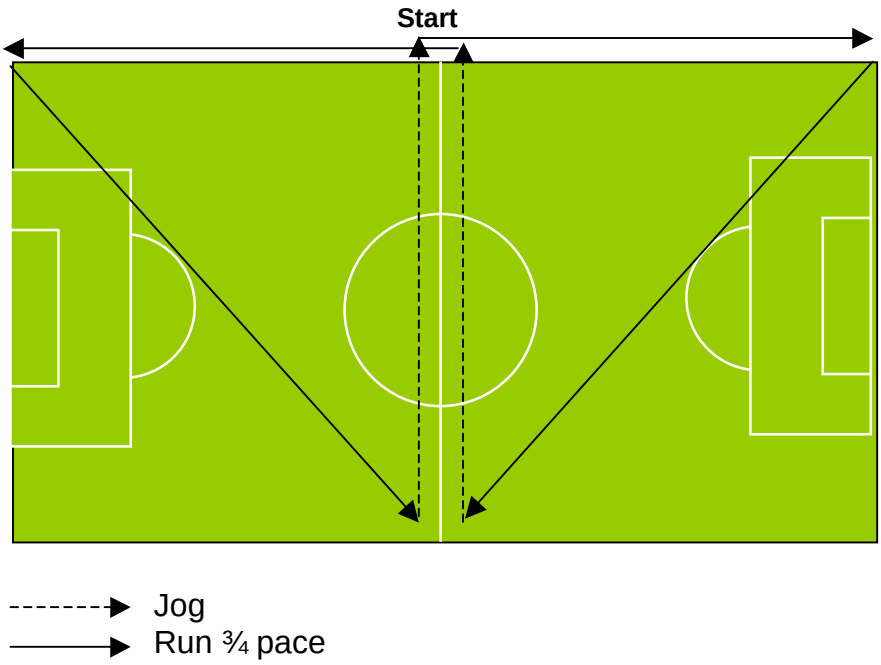
Drill #2 – Penalty Area Run

Using the penalty area markings start on one corner facing down the goal line. Run along the goal line to the corner of the penalty area. The coach or partner throws the ball to head or volley back (individuals can perform a mock header). Side-step leading with the left leg to the next corner. Run backwards to the next corner. Side-step back to the start and repeat for 1 minute. Rest for 60 seconds and repeat 3-5 times. This is one set. Rest for 2 minutes between sets and complete 2-3 sets in total.



This drill works best with individuals and small groups of no more than four players. In a large team set up several areas similar in dimension to the penalty area.

Drill #3 – Diagonal Pitch Run
Using the markings of a soccer pitch, start on the touchline at the halfway point and with the ball run ¾ pace to the corner flag. Run ¾ pace diagonally to the opposite side of the pitch at the half way point. Jog along the half way line for recovery back to the start. Continue by using the other half of the pitch **without** the ball (leave at start position). Repeat 3-5 times and rest for 2 minutes. Complete 2-3 sets in total or combine with another interval drill.

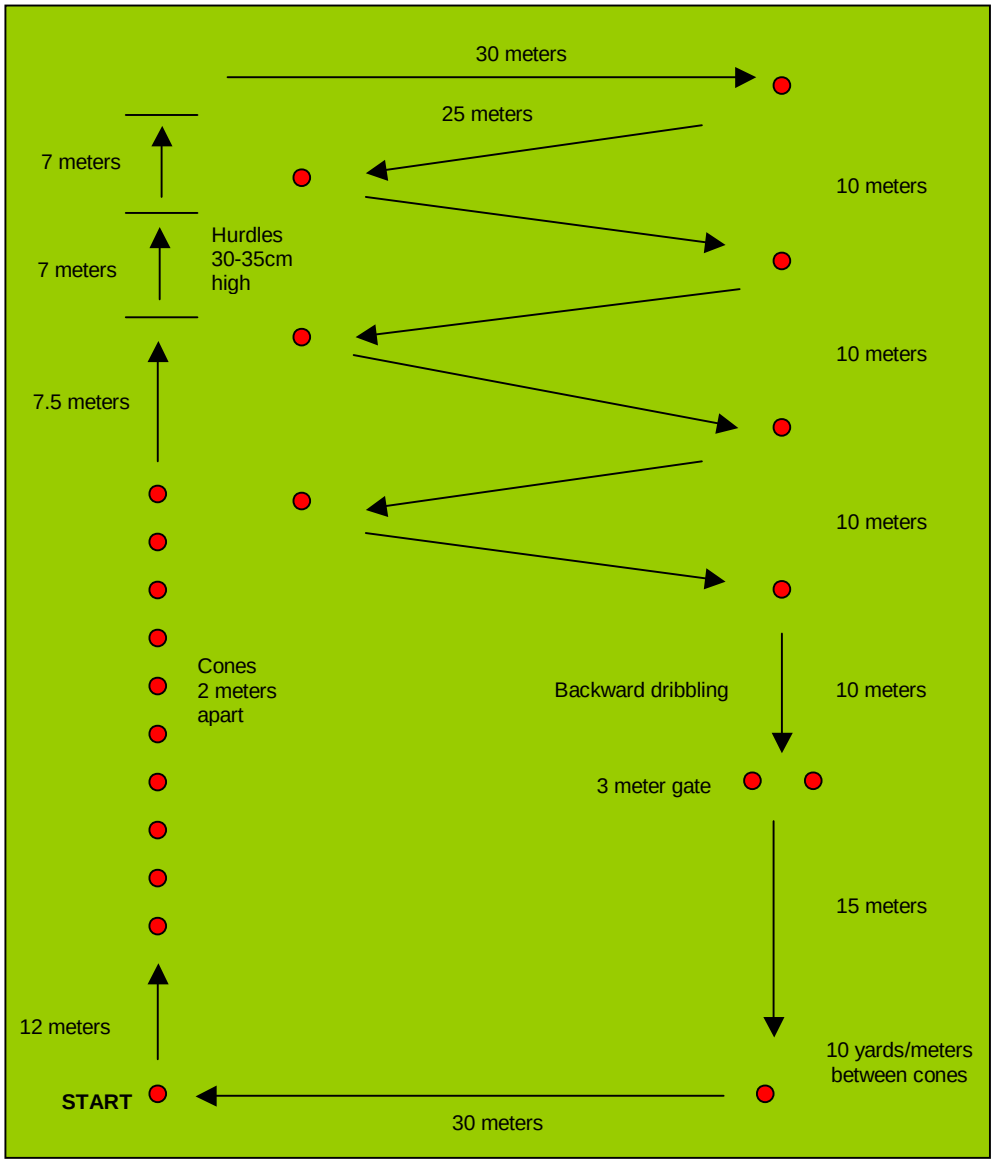


For large groups of players send half the group off towards one corner flag and half to the opposite corner flag. Make sure players keep a as tight together as possible. It helps to put the fittest player at the front!

Drill #4 – Half Pitch Run
Starting on the goal line, run at ¾ pace to the half way line and back. Turn and repeat without stopping. Rest for 30 seconds by jogging on the spot or juggling the a ball and repeat 3-5 times. This is 1 set. Complete 2-3 sets or combine with other drills in this section.

Drill #5 – Hoff Circuit

Mark out a course according to the diagram below. From the start dribble around the cones. Dribble up to hurdles passing the ball underneath and jumping over the top. Dribble around the next set of cones with fewer touches to increase speed. Dribble backwards for 10 meters to the gate, turn and dribble forwards back to start. Each player completes the circuit as quickly as possible keeping close possession of the ball. With a group of players stagger the start keeping at least 3 to 5 yards between each player. Complete 5 circuits back to back. Rest for 2 minutes and repeat for 2-3 sets.



The precise measurements between cones are not important. They are important however if you are completing the Hoff **fitness test** as described in section 6.2.2.

Variation: There are an infinite number of circuits you can devise. Try to incorporate diagonal or lateral movements and running backwards. Intricate skills should be avoided, as these will hinder the player from maintaining a high work rate.

You will find more interval training drills in the Soccer Exercise Library.

1.2.5 Recovery Training

An intense training session or match may cause muscle soreness twenty four to forty eight hours later. Although the precise mechanisms for why this occurs are unclear it could be due to lactic acid, minor inflammation and muscle spasm.

Rather than resting completely the day after a tough competition, many professional athletes find that a **recovery training** session helps to alleviate stiff and sore muscles.

The session should be light. The aim is NOT to induce overload or a training response. It is purely and simply to help the muscles recover by increasing blood flow to remove any waste products.

Intensity should be no more than 60-65% maximum heart rate (220-age x 0.65) lasting for about twenty minutes. Jogging is fine as are other forms of exercise such as cycling, a cross trainer and particularly swimming.

1.2.6 Cross Training (For The Off-Season)

The closed or off-season is a time for rest and recovery after a hard competitive year. Not only will it allow you to recuperate physically, it provides a much-needed mental break that will help you return as enthusiastic as ever.

The downside of resting completely for even just a few weeks is a significant loss of fitness. Instead, **cross training** can help you to maintain a good level of your fitness whilst also acting as active recovery.

Cross training is simply the use of other forms of exercise in your training program. By choosing activities other than jogging you can give overused muscles a rest and condition other muscle groups that may get neglected.

Here are some good cross-training activities for soccer players:

- Swimming
- Cycling
- Stair climbing (gym machine)

- Elliptical trainer (gym machine)
- Rowing
- Racket sports (tennis, badminton, squash etc.)
- Basketball
- Skating (inline or ice)

Exercise intensity should be 70-85% maximum heart rate although it is a good idea to move away from specific numbers and figures and just do what you feel like for a change!

The duration of cross training sessions can range from thirty to forty five minutes and the frequency should be three to five times per week.

Cross Training in The Off-Season	
Frequency	**3-5 x week**
Intensity	**70-85% Max HR**
Time	**30-45 Minutes**
Type	**Swimming, cycling etc.** **Avoid too much jogging**

Note For Goalkeepers

As endurance features so heavily in outfield positions, a training program is split into continuous and interval sessions. Goalkeepers don't require this level of specific aerobic endurance and their time is better spent on anaerobic endurance drills (see below), agility & reaction training, hand-eye coordination drills and strength & power conditioning etc.

1.3 Anaerobic Endurance Conditioning

Anaerobic endurance conditioning will help you to recover more quickly from successive bursts of speed and power. It will increase your tolerance to lactic acid and allow you maintain a high work rate for longer.

This type of training could also be called speed endurance or power endurance.

In a competitive game there is nothing more discouraging than trying to perform the most basic of skills when your muscles are flooded with lactic acid. During a game players are frequently required to make strong runs or sprints up and down the length of the pitch without rest. Receiving the ball in this exhausted state is often the last thing they want.

While anaerobic endurance training is very tough it can also have the greatest impact on your performance. It is a great confidence booster to feel fresh and alert whenever you receive the ball.

In the annual plan, anaerobic endurance conditioning starts midway through the pre-season. It's best not to start with this type of training because it is so intense. A more effective approach is to first build an aerobic base with continuous and interval training (see section 1.2.2).

During the in-season the objective is to maintain the level of conditioning you build up in the pre-season. This can usually be achieved purely through competitive games but you may want to add in a session or two during the week.

1.3.1 Sample Anaerobic Endurance Training Drills

These drills are very demanding in their nature. They are designed to produce high levels of lactic acid so the body becomes more tolerant to it and able to remove it more efficiently. Perform any skill/tactical or speed and agility work **before** these drills and don't perform other demanding conditioning drills in the same session.

A typical session might include 30 minutes work in total (including the rest periods in between sets). This may only consist of one or two drills at most. You should be thoroughly warmed up before moving on to these drills.

Note: Anaerobic endurance conditioning is less effective when a ball is involved because it hinders maximal effort. Some of the drills below incorporate a ball but there is minimal contact.

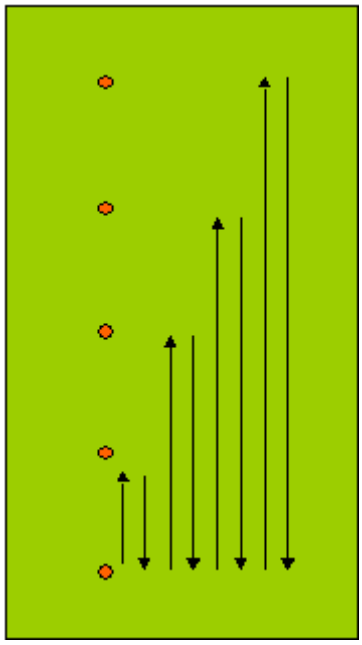
Drill #1 – Sprint & Back

Face a partner standing 20 meters/yards away. This player acts as a feeder. Sprint towards the feeder from the starting position; play a controlled pass, header or volley, turn and sprint back to the start. Repeat for 60 seconds and change positions. Complete 5 times each. This one set. Rest for 2 minutes and repeat for a total of 2-3 sets.

The feeder should move on the spot rather than standing still. They should also serve the ball to the working player when they are about 5 meters/yards away. The working player should touch the ground at the turn without the ball.

Drill #2 – Shuttle Runs

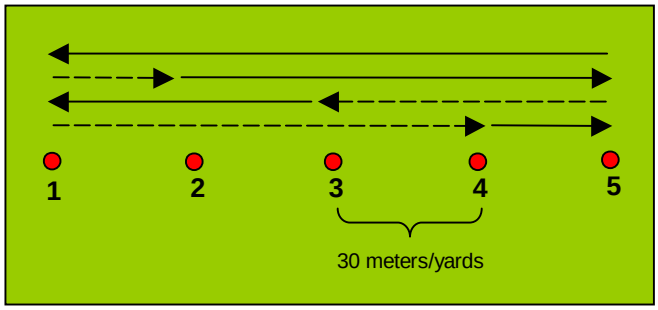
Place 5 cones out 10 meters/yards apart. Starting on cone 1, run to cone 2 and back, then cone 3 and back, 4 and back, then 5 and back. The sprint should be flat out and with emphasis on sharp turns. Rest for 30 seconds and repeat. Rest another 30 seconds and repeat for a third time. This is one set. Rest for 2 minutes with active recovery such as walking. Complete a total of 3-5 sets.



Quick Tip!

This is a very simple but very effective drill. After the very last shuttle of the very last set take your pulse for 3 minutes while you walk around to recover. Make a note after minute 1, minute 2 and minute 3 to see how quickly it comes down. If you perform this drill just once per week, you'll notice after several weeks how much quicker your pulse rate starts to fall. Proof that you are becoming fitter and fitter!

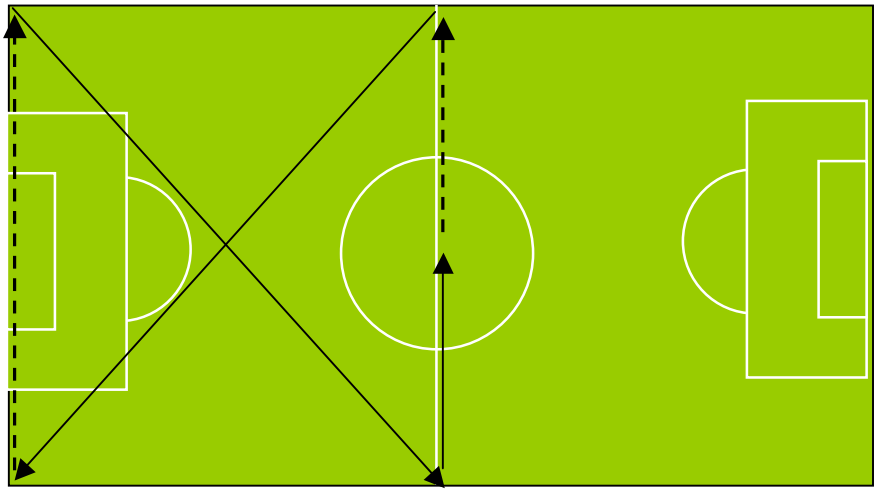
Drill # 3 – Progressive Shuttles
An excellent variation on classic shuttles! Set out 5 cones 10 meters/yard apart. Look at the diagram below. Starting on cone 1, jog to cone 4 then immediately sprint to cone 5. Turn and jog to cone 3 and then sprint to cone 1. Turn and jog to cone 2 and sprint to cone 5. Finally, turn immediately and sprint to cone 1. Rest for 60 seconds and repeat 3-5 times. This is one set. Complete 2-3 sets.



Jog
Sprint

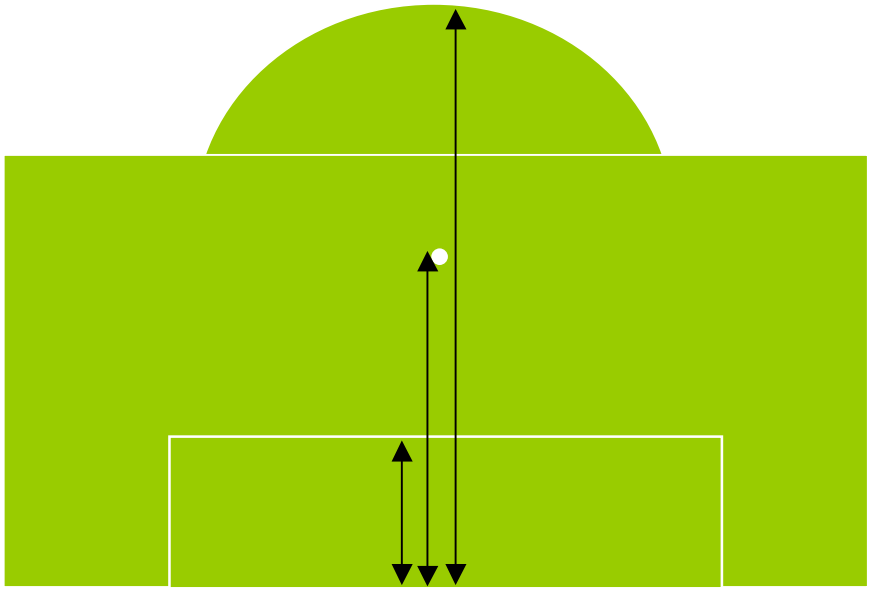
Drill #4 – Union Jacks (Team & Individual)
Starting at one corner of the pitch, sprint to the touchline at the halfway point. Immediately turn and sprint along the halfway line to the center circle. Jog from the center circle to the far touchline. Turn and sprint diagonally to the opposite corner flag. Immediately turn and sprint to the centre of the goal. Jog back to the start and repeat (a total of 2 times). This is one set. Rest for 2 minutes with active recovery. Compete 4-6 sets.

Start



Jog
Sprint

Drill #5 – Penalty Area Sprint
Starting on the goal line sprint to the edge of the 6-yard box and back. Turn and sprint to the penalty spot and back. Turn and sprint to the edge of the D and back. Continue for 60 seconds. Rest for sixty seconds. Repeat 3-5 times. Rest for 2 minutes. This is one set. Complete a total of 2-3 sets.



You will find more interval training drills in the Soccer Exercise Library.

Note For Goalkeepers

Goalkeepers often have to make several consecutive saves back to back. They must react and move with the same level of power and agility each time, despite any fatigue. Anaerobic endurance training will help goalkeepers to perform explosive movements back to back with as little loss in power and speed as possible. See section 8 for some sample drills.

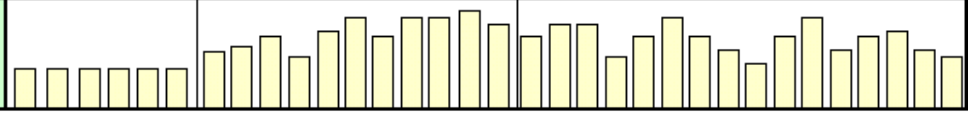
1.4 The Annual Soccer Endurance Program

Changing your endurance sessions over the course of a year does take a little more forethought and planning. However, it's something you only have to do once and you can use the program again and again each season.

The chart below shows you how to incorporate different types of endurance training into the 12-month plan.

It assumes the competitive season starts in September and ends in April so you may need to adjust according to your completive year. What is more important is how the training changes in relation to what point of the season you are in.

The Annual Endurance Conditioning Plan

Month	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Phase	OS		EPS		LPS		CS					
Endurance Objective	Aerobic		Aerobic		Anaerobic		Maintain aerobic & anaerobic endurance					
Continuous Sessions	3-5 x week		1-2 x week		None		1 x Recovery Session					
Interval Sessions	None		1-2 x week		1 x week		Maintain: 1 x week					
Anaerobic End. Sessions	None		None		1-2 x week		Maintain: 1 x week					
Practice Match	None		None		0-2 x week		N/A					
Training Intensity												

Key: OS - Off Season, EPS - Early Pre-Season, LPS - Late Pre-Season, CS - Competitive Season

~ SECTION 2 ~

STRENGTH & POWER CONDITIONING

In soccer, excellent muscular strength is vital. But it's not only so you can withstand challenges and hold off opponents…

Basic strength forms the foundation of nearly all athletic movements. It is the base on which power, speed and quickness are built.

Long gone are the days when strength training was seen as a hindrance to performance -- creating too much bulk, restricting movement and hampering skill.

In fact, the **right kind** of strength conditioning can turn an average soccer player into a truly superb athlete and a significantly better performer on the field. There is one caveat though…

Strength training for soccer involves a different approach than simply lifting weights all year round. While traditional weight training does feature in the overall program, it is a means to end rather than the end in itself.

The good news is that few soccer players (or coaches) get strength conditioning for soccer right… which gives you yet another edge over your competitors!

The Benefits of Strength Training

Soccer players require strength in both the lower and upper body. Nearly every movement in the game from kicking, to tackling, to twisting and turning, sprinting and heading, requires a good foundation of strength and power.

Here are some of the major benefits a strength conditioning program can bring to your game:

- Increased speed and acceleration
- Improved agility - stopping, starting, turning and decelerating
- Greater ability to hold the ball up and resist challenges
- Increased jumping power to win more headers
- Reduced risk of injury both chronic and acute
- Superior kicking power – greater range of passing, more powerful shots
- More forceful tackles, less prone to injury
- Greater short-term endurance – ability to reproduce same level of speed and power over several successive bouts

2.1 The Different Types of Strength in Soccer

The term “strength” has become so broad and it’s used interchangeably with “power”, “force” and “endurance”. Here are a few strength terms that are important for soccer players to understand when designing a conditioning program:

2.1.1 Concentric Strength

When a muscle **shortens** as it contracts (tenses) it is referred to as a concentric contraction. A classic example is the quadriceps during a kicking motion. As the knee moves from a bent or flexed position to an extended position the thigh muscles contract and shorten.

Lifting free weights or using weights machines in the traditional way usually trains muscles concentrically. This type of strength is important in most of the movements found in soccer.

2.1.2 Eccentric Strength

A muscle can also **lengthen** as it contracts. It is trying to shorten but the force is too great for it to overcome and so it actually lengthens. A good way to demonstrate this is to hold a heavy weight in your hand with your elbow bent. As you **slowly lower** the weight by extending your arm you will see your bicep contracting but also lengthening.

Eccentric strength is also important in soccer – particularly sprinting, jumping and sudden changes of direction. Plyometrics (covered later in this section) uses eccentric contractions to develop speed and explosive power.

2.1.3 Isometric Strength

If a muscle contracts but does not lengthen or shorten it is said to be contracting statically or isometrically. Holding a weight steady out at arm’s length is an example of isometric strength.

Although isometric strength is used far less by players in match, static strength training can be very useful in injury rehabilitation and prevention. It can help strengthen the muscles, ligaments and tendons without placing an undue amount of stress on the joint involved.

2.1.4 Maximal and Relative Strength

Maximal strength is the maximum force that a muscle group can exert in a single, momentary contraction. For example, a player who can leg press 100kgs (220lbs) has greater maximal strength than a player who can leg press 90kgs (200lbs).

Relative strength is simply maximal strength divided by a person's bodyweight. The stronger you are in relation to your bodyweight, the easier and more quickly you can move your body around a soccer pitch.

While this type of strength is important in some game situations (i.e. resisting challenges) its main purpose is to act as a platform for more **soccer-specific** types of strength. The first one being…

2.1.5 Strength Endurance

Strength or muscular endurance is the ability of a muscle group to perform repeated, high-intensity movements over and over again. Strength endurance is essential for soccer because a typical game is littered with bouts of high intensity work with minimal rest periods.

Just as important as strength endurance is…

2.1.6 Explosive Power

Stronger players are NOT necessarily more powerful players.

Power is a product of both maximal strength **and** the speed of contraction.

Think of a weightlifter for example. He or she can spend 30 seconds or more slowly lifting a weight inch by inch. That's not much use to soccer players who perform nearly all their athletic movements in little more than a second.

This is the case even for movements like sprinting, which may *seem* to last longer than a few seconds. From a conditioning perspective, sprinting is a series of very short, explosive movements completed in quick succession.

2.2 The Four Kinds of Strength Conditioning in soccer

Unlike many general weight training programs, strength conditioning for sport changes significantly over the course of the year. Top athletes and their

coaches know that by splitting the program up into several distinct **phases** they can develop different types of strength without over-training.

By first following a phase of training to develop **maximal** strength you increase your potential for explosive power and strength endurance. It's much more effective to **convert** an existing base of muscular strength into power and endurance than it is to try and develop all three at once.

Splitting a program up like this is called **periodization** and is examined in detail in section 7. For now, just think of a phase as a short training program (six to eight weeks perhaps) with a very specific training outcome.

Here are the **four** different types of strength conditioning a soccer player should focus on:

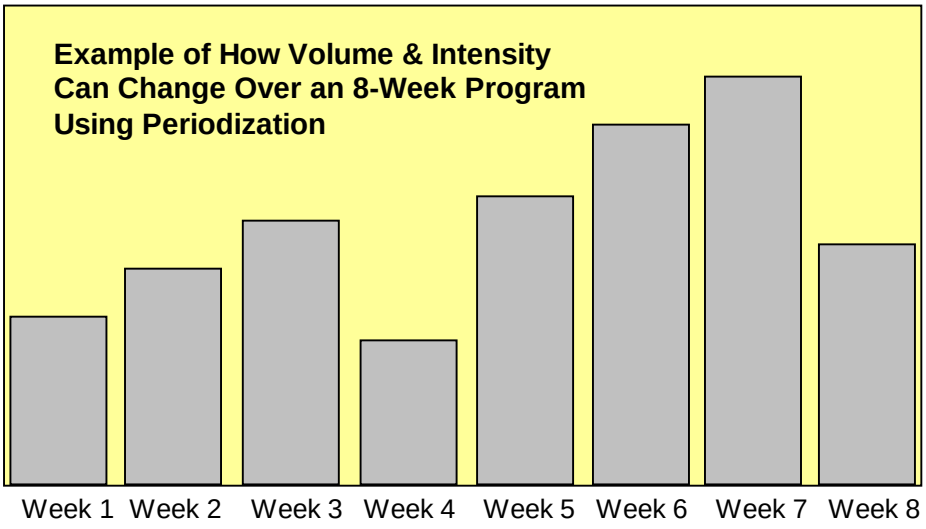
- **Foundational Strength Conditioning**
- **Maximal Strength Conditioning**
- **Strength Endurance Conditioning**
- **Explosive Power Conditioning**

Although it might appear that training this way takes a great deal more time and commitment, it doesn't. No extra sessions are required on a weekly basis. It is simply involves changing the program as the year progresses to focus on a different aspect of strength.

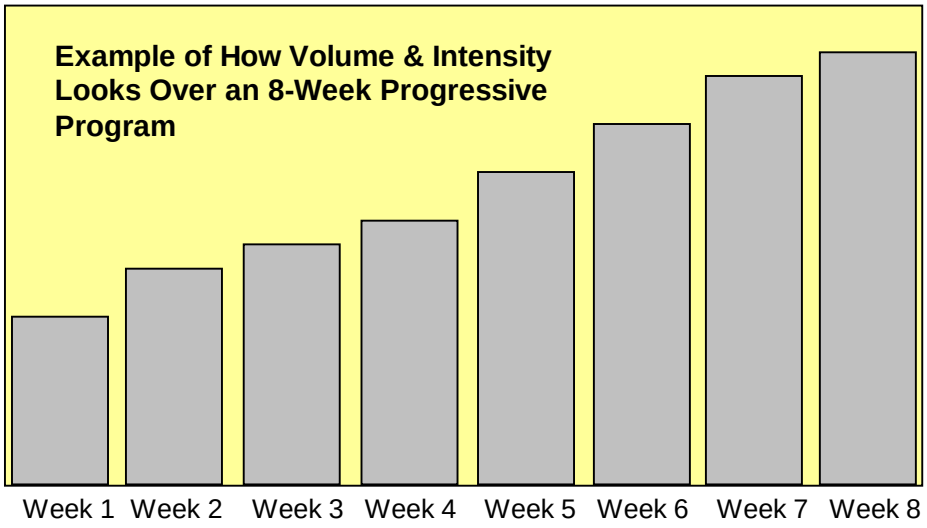
2.3 The Periodization of Volume & Intensity

One of the most important principles of training is **progression**. In order for a muscle to become continually stronger, the resistance or load must increase as the body adapts to the exercise. Traditionally, this meant trying to lift more and more weight each and every session.

A more effective approach for sport (and for soccer) is to think of intensity as a series of peaks and troughs. For example, over an 8-week, the first week might consist of lighter weights and fewer sets. During week two, an extra set for each exercise might be added. For week three the weight is increased. At week four however, the weight and the number of sets are reduced again. This pattern continues for the entire 8-week phase so it looks something like this:

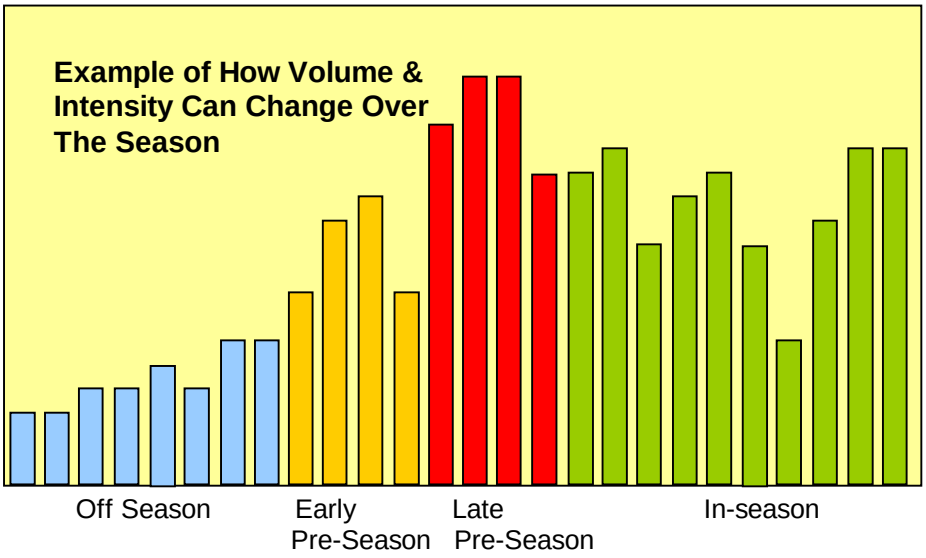


Compare this to the traditional progressive approach to training…



The problem with this continuous increase in intensity and volume is that it can quickly lead to over-training and stagnation. By factoring in rest weeks athletes can reach a higher peak and they can time it to occur just before an important competition or game.

Not only can volume (the amount of sets and repetitions) and intensity change over a single phase, it can also change over the course of a season. The off-season will obviously be a lower intensity than pre-season training. Here's how volume and intensity might look over 12-months:



2.4 Foundational Strength Conditioning

Soccer, like any sport, places a lot of uneven demands on the body. Most players have a predominant kicking foot for example. Players kick using the same motor patterns tens of thousands of times a year. The result?

Some muscles become more conditioned than others. Some joints are placed under greater stress than others. Eventually, left unchecked, these imbalances can lead to an increased risk of muscles tears, inflammation and other chronic injuries.

Strength conditioning can help to prevent this… or it can also compound the problem! It's important that each year you devote a phase of your strength conditioning to compensate for any imbalances that might occur over the competitive season. The best time to do this is during the closed or off-season.

The aims of foundational strength training are:

- To prepare the joints, muscles, ligaments and tendons for more intense work in subsequent phases
- To strengthen underused stabilizer muscles
- To balance the right and left side of the body

- To redress the balance between the flexors and extensors (soccer players, for example, are notorious for having over-developed quads from repetitive kicking actions (which may account for the prevalence of hamstring injuries in the game).

This phase should also heavily emphasize developing strength and power in the muscles of the trunk region.

2.4.1 Selecting the Correct Load

Developing maximal strength, strength endurance and explosive power requires different weights or loads to be selected.

Load is often expressed as **repetition maximum** and is simply defined as "the most amount of weight you can lift for a set number of repetitions". For example, **one repetition maximum** (1-RM) is the most amount of weight you can lift once and no more. If you can lift a weight for ten repetitions and no more that is your **ten repetition maximum**.

To develop strength endurance you should aim to select weights that you can lift at least fifteen to twenty times. To develop **maximal strength** (see below) choose a weight that you can lift no more than five or six times or your **5-RM**.

The chart below shows how repetition maximum relates to the different elements of strength.

The Effects of Load on Strength

Load (% of 1-RM)	95%	85%	70% →	60%	50%
Predicted Repetitions	2	6	12 →	20	25
Maximal Strength	+++++	++++	+++	++	+
Power	+++	++++	+++++	+++	++
Strength Endurance	+	++	+++	++++	+++++

Key: At 95% of 1-RM maximal strength is highly developed (+++++) while strength endurance is less developed (+).

2.4.2 When Should Foundational Strength Conditioning Occur?

Ideally foundational strength training should take place during the off-season when no soccer is played. Players who are new to strength training should spend up to ten weeks in this foundational phase. Even experienced lifters should allow four to six weeks of functional strength training.

Of course you may be mid way through the season and don't want to wait until the off-season. In this case you should still begin with a foundational program. Don't skip immediately to power or maximal strength conditioning or you run the risk of injury and your training will be much less effective.

2.4.3 Avoid Over-Training

A foundational strength session should not be a gruelling workout. The off-season is a time for rest and recuperation so functional strength training should not be too intense. While muscles **do** have to be overloaded in order to adapt, you should not feel exhausted at the end of a session like you might during pre-season work.

During the off-season don't be too concerned with a rigid routine. Two to three sessions per week is ample and you can perform less if you are feeling tired. Vary some of the exercises within your routine every few weeks to keep your interest levels high.

The chart below covers the guidelines for functional strength circuit training:

Guidelines for Functional Strength Training		
Training Parameter	**Beginner**	**Experienced**
Length of Phase	8-10 weeks	4-6 weeks
Time of Year	Off-Season	Off-Season
Load/Weight	30-40% 1-RM	40-60% 1-RM
No. Repetitions	12-15	12-15
No. Sets	2-3	3-4
No. Exercises	10-12	8-10
Duration of Session	20-30min	30-40min
Rest Between Exercises	90sec	60sec
Frequency Per Week	2-3	2-3

Key: 1-RM = One repetition maximum (see section 2.4.1 for explanation).

You'll find sample circuit routines and specific exercises later in this chapter to help you develop foundational strength.

2.4.4 Foundational Strength Training Basics

- Foundational strength training uses lighter weights for a higher number of repetitions. Don't try to lift too much too soon.
- Perform a warm up consisting of light aerobic exercise and dynamic stretching before starting a strength training session.
- Lift with a smooth and even rhythm. Pause for a second at the top of the lift and then lower the weight in a controlled manner.
- Remember to breathe. Most people find it easiest to breathe out on the exertion or the actual lift and breathe in as the weight is lowered or returned to the starting position.
- Increase the weight gradually over time as the exercise becomes easier and easier. Once you can comfortably perform the set number or repetitions increase the weight by the smallest amount i.e. 2.5kg or 5lbs.
- For bodyweight exercises such as push ups and crunches increase the number of repetitions as the weight cannot be increased.
- Remember that although a strength program should get progressively harder, it does so in a series of peaks and troughs. Don't try to increase the weight every single session.

2.4.5 Sample Foundational Strength Programs

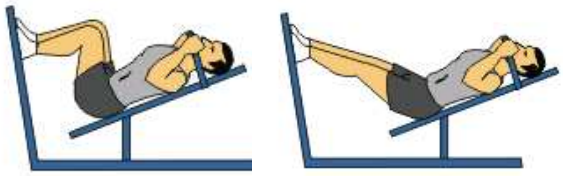
Program #1 - Beginner
The beginner program incorporates a greater number of exercises to strengthen all the major muscle groups, joints and ligaments. The program should last for at least 6-8 weeks and up to 12 weeks with 2-3 sessions per week.

Exercise	Load	Repetitions	Sets	Rest Interval
Dumbbell squats **OR** Lying leg presses	30-50% 1-RM	12-15	2-3	90 seconds
Barbell bench presses **OR** Dumbbell bench presses	30-50% 1-RM	12-15	2-3	90 seconds
Back extensions on ball	Bodyweight	12-15	2-3	90 seconds
Dumbbell lunges	30-50% 1-RM	12-15	2-3	90 seconds
Front pull downs	30-50% 1-RM	12-15	2-3	90 seconds
Crunches	Bodyweight	12-15	2-3	90 seconds
Dumbbell shoulder presses **OR** Military presses	30-50% 1-RM	12-15	2-3	90 seconds
Standing machine calf raises	30-50% 1-RM	12-15	2-3	90 seconds
Barbell upright rows	30-50% 1-RM	12-15	2-3	90 seconds
Side bridges	Bodyweight	10-30 seconds	2-3	90 seconds

Dumbbell Squats

1) Grasp dumbbells and let arms hang down at sides.
2) Start position: Stand with feet slightly wider than hip width apart. Knees should be slightly bent.
3) Lower body by flexing at the hips and knees. Upper body can flex forward at the hips slightly (~5°) during movement. Be sure to "sit back" so that knees stay over the feet.
4) Once thighs are parallel to floor, return to start position.
5) Remember to keep head and back straight in a neutral position - hyperextension or flexion may cause injury. Keep weight over the middle of foot and heel, not the toes.
6) DO NOT allow knees to go past the big toe or deviate laterally or medially throughout movement. Keep abdominals tight throughout exercise by drawing stomach in toward spine.

Lying Leg Presses



1) Sit in machine and place your legs on the foot plate about hip width apart.
2) Release the safety stops and bend your knees towards your chest.
3) When your knees are at right angles, extend your knees until your legs are almost fully extended.

Barbell Bench Presses

1) Lie on back with head underneath bar, eyes aligned with bar, and feet flat on floor.
2) Position hands on bar slightly wider than shoulder width.
3) Start position: Lift bar off rack with bar directly overhead.
4)Lower bar to chest at the nipple-line. Press bar up to starting position.

Dumbbell Bench Presses

1) Sit in an upright position on a flat bench with a dumbbell in each hand. (You may rest each dumbbell on the corresponding thigh.)
2) Start position: Lie onto your back and bring the dumbbells to your shoulders. Press the dumbbells up directly above the chest with palms facing forward.
3) Lower the dumbbells keeping your forearms perpendicular to the floor and your hands aligned at the nipple line.
4) Let your upper arms go slightly past parallel to the floor and press the dumbbells up to the start position.

Back Extensions on Ball

1. Lie face down on a stability ball positioned under your hips and your feet on the floor.
2. Hold a light weight within your crossed arms and held against your chest.
3. With your upper body parallel to your hips, hyperextend slowly and raise your shoulders up towards the ceiling.
4. You should only move a couple of inches and there is no need to forcefully hyperextend or extend past your bodies range of motion. You will only risk injury.
5. Return to the neutral or parallel position and repeat.

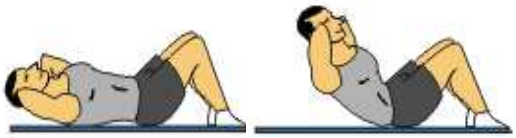
Dumbbell Lunges

1) Start position: Stand with feet hip width apart. Grasp dumbbells and hang arms down at sides.
2) Step forward 2-3 feet forming a 90°bend at the front hip and knee. DO NOT allow front knee to extend past the big toe.
3) Pushing off front foot, return to start position and repeat with the other leg.
4) Remember to keep head and back upright in a neutral position. Shoulders and hips should remain squared at all times.
5) Watch for proper knee alignment - do not let front knee extend past big toe or deviate laterally or medially. Back knee should not come in contact with floor.

Front Pull Downs

1) Adjust seat or knee pad height so that knees are secured while seated.
2) Grasp bar with a overhand grip wider than shoulder width apart and sit with knees secured in pads.
3) Start position: Fully extend arms with elbows facing out with back straight (you may lean back at hips approximately 5°-10°).
4) Pull bar down to upper chest area and squeeze shoulder blades together at end of movement.
5) Return to start position.
6) Remember to keep torso stationary throughout movement.

Crunches

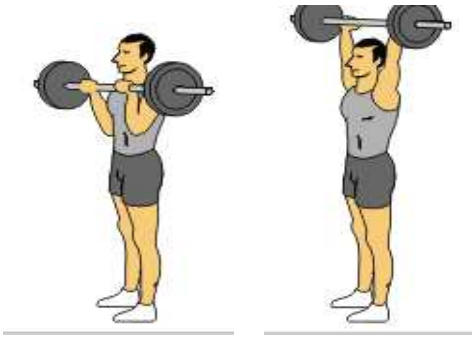


1) Start position: Lie back onto floor or bench with knees bent and hands behind head (not neck). Keep elbows back and out of sight. Head should be in a neutral position with a space between chin and chest.
2) Leading with the chin and chest towards the ceiling, contract the abdominal and raise shoulders off floor or bench.
3) Return to start position. Remember to keep head and back in a neutral position. Hyperextension or flexion of either may cause injury.

Seated Dumbbell Shoulder Presses

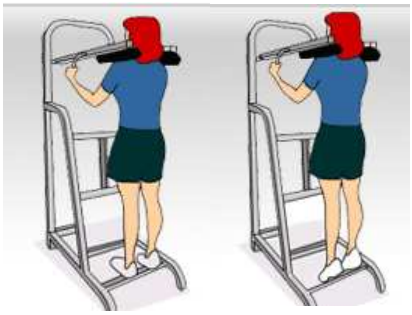
1) Sit in upright position or stand with feet shoulder width apart and knees slightly bent.
2) Start position: Position dumbbells to ear level with an overhand grip (palms facing forward).
3) Press hands up above head keeping wrists over the elbows and arms moving parallel to body at all times.
4) Return to start position. Remember to keep back and head straight in a neutral position.

Standing Military Presses



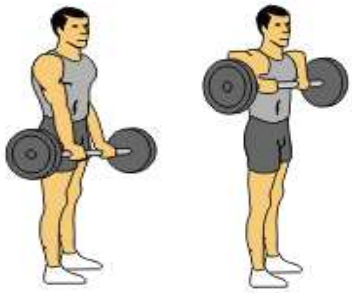
1) Stand with feet shoulder width apart and knees slightly bent.
2) Start position: Position barbell to ear level with an overhand grip (palms facing forward).
3) Press hands up above head keeping wrists over the elbows and arms moving parallel to body at all times.
4) Return to start position. Remember to keep back and head straight in a neutral position.

Standing Machine Calf Raises



1) Step into provided shoulder pads. Adjust lever arm so that plates do not touch when lowering the weight.
2) Stand with feet hip width apart on the balls of feet with heels hanging over edge. Toes should be pointing forward.
3) Contract calves by pushing off balls of feet to raise heels up in air (standing on toes)
4) Lower heels and repeat.
5) Remember to keep knees slightly bent throughout movement to prevent any knee strain. Adjust weight load accordingly.

Barbell Upright Rows



1) Stand with feet shoulder width apart
2) Start position: Grasp barbell with an overhand grip (palms down). Arms should hang down to front with elbows slightly bent.
3) Raise barbell by pulling elbows towards the ceiling and pull barbell to chest level.
4) Return to start position.
5) Remember to keep back and head straight in a neutral position.

Side Bridges

Start on your side and press up with your right arm. Form a bridge with your arm extended and hold for 10-30 seconds. Repeat other side.

Program #2 - Advanced

The foundational phase is still important for experienced lifters. This program should last 4-6 weeks with 2-3 sessions per week. It contains fewer exercises and loads are slightly higher than the beginner program.

Exercise	Load	Repetitions	Sets	Rest Interval
Barbell squats **OR** Lying leg presses	40-60% 1-RM	12-15	2-3	60 seconds
Dumbbell shoulder presses **OR** Military presses	40-60% 1-RM	12-15	2-3	60 seconds
Crunches	Bodyweight	12-15	2-3	60 seconds
Dumbbell lunge crossovers	40-60% 1-RM	12-15	2-3	60 seconds
Barbell bench presses OR Dumbbell bench presses	40-60% 1-RM	12-15	2-3	60 seconds
Back extensions	Bodyweight	12-15	2-3	60 seconds
Front pull downs	40-60% 1-RM	12-15	2-3	60 seconds
Standing machine calf raises	40-60% 1-RM	12-15	2-3	60 seconds

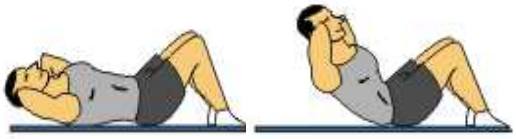
Barbell Squats

1) Grasp bar with overhand grip (palms forward) and slightly wider than hip width apart. Step under bar and position bar across posterior deltoids at middle of trapezius (as shown). DO NOT rest bar on neck. Lift elbows up, pull shoulder blades together, and lift chest up to create a “shelf” for the bar.
2) Start position: Using the legs, remove bar from rack. Stand with feet slighter wider than hip width apart. Back should be straight in a neutral position.
3) Lower body by flexing at the hips and knees. Upper body can flex forward at the hips slightly (~5°) durin g movement. Be sure to “sit back” so that knees stay over the feet.
4) Once thighs are almost parallel to floor, return to start position.
5) Remember to keep head and back straight in a neutral position - hyperextension or flexion may cause injury. Keep weight over the middle of foot and heel, not the toes.
6) DO NOT allow knees to go past the big toe or deviate medially or laterally throughout movement. Keep abdominals tight throughout exercise by drawing stomach in toward spine.

Seated Dumbbell Shoulder Presses

1) Sit in upright position or stand with feet shoulder width apart and knees slightly bent.
2) Start position: Position dumbbells to ear level with an overhand grip (palms facing forward).
3) Press hands up above head keeping wrists over the elbows and arms moving parallel to body at all times.
4) Return to start position. Remember to keep back and head straight in a neutral position.

Crunches



1) Start position: Lie back onto floor or bench with knees bent and hands behind head. Keep elbows back and out of sight. Head should be in a neutral position with a space between chin and chest.
2) Leading with the chin and chest towards the ceiling, contract the abdominal and raise shoulders off floor or bench.
3) Return to start position. Remember to keep head and back in a neutral position.

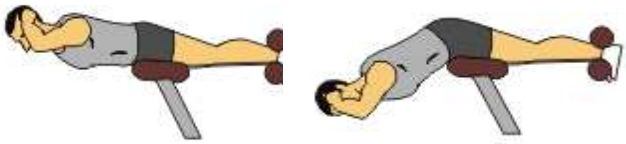
Dumbbell Lunge Crossovers

1) Start position: Stand with feet hip width apart. Grasp dumbbells and hold out in front of body
2) Step forward 2-3 feet forming a 90° bend at the front hip and knee. DO NOT allow front knee to extend past the big toe - may cause injury. As you are lunging swing dumbbells across body towards the hip.
3) Pushing off front foot, return to start position with legs and dumbbells. Continue by alternating legs.
4) Remember to keep head and back upright in a neutral position. Shoulders and hips should remain squared at all times.
5) Watch for proper knee alignment - do not let front knee extend past big toe or deviate laterally or medially. Back knee should not come in contact with floor.

Barbell Bench Presses

1) Lie on back with head underneath bar, eyes aligned with bar, and feet flat on floor.
2) Position hands on bar slightly wider than shoulder width.
3) Start position: Lift bar off rack with bar directly overhead.
4)Lower bar to chest at the nipple-line. Press bar up to starting position.

Back Extensions

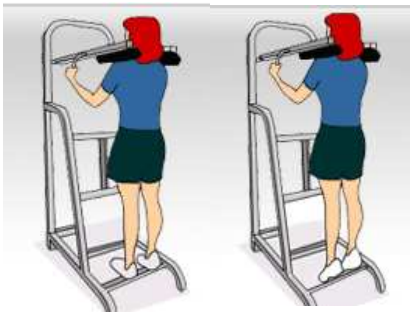


1) Position body face down on apparatus placing hips and ankles on respective pads.
2) Place hips (and not stomach) on pad. Place lower leg or achilles tendon area on pad. Cross arms and place on chest.
3) Start position: Back should be parallel to ground with knees slightly bent.
4) Lower body until legs and hip are approximately at 90°.
5) Return to start position. To increase resistance, place arms behind head -> arms extended overhead -> holding weight plate or weighted object across chest.

Front Pull Downs

1) Adjust seat or knee pad height so that knees are secured while seated.
2) Grasp bar with a overhand grip wider than shoulder width apart and sit with knees secured in pads.
3) Start position: Fully extend arms with elbows facing out with back straight (you may lean back at hips approximately 5°-10°).
4) Pull bar down to upper chest area and squeeze shoulder blades together at end of movement.
5) Return to start position.
6) Remember to keep torso stationary throughout movement.

Standing Machine Calf Raises



1) Step into provided shoulder pads. Adjust lever arm so that plates do not touch when lowering the weight.
2) Stand with feet hip width apart. Toes should be pointing forward.
3) Contract calves by pushing off balls of feet to raise heels up in air (standing on toes)
4) Lower heels and repeat.
5) Remember to keep knees slightly bent throughout movement to prevent any knee strain. Adjust weight load accordingly.

You'll find some more sample foundational strength programs in The Soccer Exercise Library

Note For Goalkeepers

As strength training at this stage is more general there is no need for goalkeepers to follow a separate routine. The programs above work all the major muscle groups including the upper body.

2.5 Maximal Strength Conditioning

Once you have developed a solid and balanced foundation you should move on to more intense conditioning designed to increase overall strength.

The ultimate goal of any strength program for soccer is to develop explosive power and strength endurance. It makes sense to first develop as much muscular strength as possible and then **convert** that later into power and muscular endurance with sport-specific drills.

Of the few soccer players who spend time in the weights room this is where they end. They follow the same (or similar) routine week in week out trying to lift heavier and heavier weights.

You should take a different approach. Think of this phase in the strength training plan as a means to an end. Becoming the best soccer player you can is not about how much weight you can lift, it's about how powerful you are and how well you can apply that level of power over and over again on the pitch.

2.5.1 Keep Sets, Repetitions and Exercises to a Minimum

This type of conditioning places a large demand on the body's muscular and nervous system. It's easy to over-train and because a low number of repetitions won't leave you feeling breathless the temptation is to do extra.

Stick to a small number of exercises that target the major muscle groups and build up to three or four sets of five or six repetitions. Here's how you might structure the first six weeks of a pre-season strength conditioning program (complete details on how to plan pre-season training are in section 7):

Maximal Strength Training During Early Pre-Season

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Sessions Per Week	1-2	1-2	2-3	3	2-3	2-3
Sets Per Exercise	2	2-3	3	3-4	3-4	3-4

2.5.2 The Speed of Lifts

The speed at which you lift weights is important for sports conditioning. Many of the movements in soccer are performed explosively. The faster you can recruit muscle fibres the faster and more powerful a player you will become.

First and foremost, as this phase uses relatively heavy weights, the emphasis must be on proper and safe form. As long as the athlete is experienced enough they should also concentrate on activating working muscles as quickly as possible even though the weight will move only slowly. This will help to condition the neuromuscular system to recruit fast twitch muscle fibres more rapidly.

2.5.3 It's Not The Same As Bodybuilding!

Many coaches and athletes confuse maximal strength training with bodybuilding. The bodybuilder's aim is for maximum muscle **size** or what is known as **hypertrophy**.

Larger muscles are **not** necessarily stronger muscles. To achieve maximal strength, training must simulate neurological adaptations and bodybuilding is **not** the most efficient way to do this.

Bodybuilders typically lift weights in the ten to fifteen repetition range. Only by lifting near maximal loads will maximal strength improve (although it won't result in the same level of muscle bulk). Bodybuilders also perform drop sets and "super sets" to stimulate as many fibres as possible. They complete a considerable number of exercises to target every muscle group in isolation. Again, this is not ideal for soccer players.

2.5.4 When Should Maximal Strength Conditioning Occur?

This phase of strength conditioning should always follow a period of foundational training whenever it occurs during the season. Ideally maximal strength conditioning should start either in the off-season or the early pre-season. It can take months and even years to reach peak strength but from a practical point of view allow a six-week phase.

Here the parameters for the maximal strength training phase:

Guidelines for Maximal Strength Training		
Training Parameter	**Beginner**	**Experienced**
Length of Phase	6-8 weeks	6 weeks
Time of Year	Early Pre-Season	Early Pre-Season
Load/Weight	75-85% 1-RM	85-95% 1-RM
No. Exercises	6-8	5-8
No. Repetitions	6-8	4-6
No. Sets	2-3	3-4
Rest Between Exercises	3-6minutes	2-5minutes
Speed of Lift	Controlled	Controlled/Explosive
Frequency Per Week	2-3	2-3

2.5.5 Maximal Strength Training Basics

- Foundational strength training uses lighter weights for a higher number of repetitions. Don't try to lift too much too soon.
- Perform a warm up consisting of light aerobic exercise and dynamic stretching before starting a strength training session.
- Lift with a smooth and even rhythm. Pause for a second at the top of the lift and then lower the weight in a controlled manner.
- Remember to breathe. Most people find it easiest to breathe out on the exertion or the actual lift and breathe in as the weight is lowered or returned to the starting position.
- Increase the weight gradually over time as the exercise becomes easier and easier. Once you can comfortably perform the set number or repetitions increase the weight by the smallest amount i.e. 2.5kg or 5lbs.
- For bodyweight exercises such as push ups and crunches increase the number of repetitions as the weight cannot be increased.

Remember that although a strength program should get progressively harder, it does so in a series of peaks and troughs. Don't try to increase the weight every single session.

2.5.6 Sample Maximal Strength Programs

Program #1 - Beginner
The beginner program incorporates less complex lifts and is performed with slightly lighter loads. It should last for 6-8 weeks with 2-3 sessions performed each week.

Exercise	Load	Repetitions	Sets	Rest Interval
Barbell squats **OR** 45% Leg Presses	75-85% 1-RM	6-8	2-3	3-6 minutes
Barbell bench presses **OR** Dumbbell bench presses	75-85% 1-RM	6-8	2-3	3-6 minutes
Lying hamstring curls*	70-75% 1-RM	8-10	2-3	3-6 minutes
Front pull downs	75-85% 1-RM	6-8	2-3	3-6 minutes
Seated knee extensions	75-85% 1-RM	6-8	2-3	3-6 minutes
Seated dumbbell shoulder presses	75-85% 1-RM	6-8	2-3	3-6 minutes
Standing machine calf raises	75-85% 1-RM	6-8	2-3	3-6 minutes
Oblique crunches	Bodyweight	15-20	3	90 seconds

Barbell Squats

1) Grasp bar with overhand grip (palms forward) and slightly wider than hip width apart. Step under bar and position bar across posterior deltoids at middle of trapezius (as shown). DO NOT rest bar on neck. Lift elbows up, pull shoulder blades together, and lift chest up to create a “shelf” for the bar.
2) Start position: Using the legs, remove bar from rack. Stand with feet slighter wider than hip width apart. Back should be straight in a neutral position.
3) Lower body by flexing at the hips and knees. Upper body can flex forward at the hips slightly (~5°) durin g movement. Be sure to “sit back” so that knees stay over the feet.
4) Once thighs are almost parallel to floor, return to start position.
5) Remember to keep head and back straight in a neutral position - hyperextension or flexion may cause injury. Keep weight over the middle of foot and heel, not the toes.
6) DO NOT allow knees to go past the big toe or deviate medially or laterally throughout movement. Keep abdominals tight throughout exercise by drawing stomach in toward spine.

45% Leg Presses

1) Sit in machine and place your legs on the foot plate about hip width apart.
2) Release the safety stops and bend your knees towards your chest.
3) When your knees are fully bent extend your knees until your legs are fully extended

Barbell Bench Presses

1) Lie on back with head underneath bar, eyes aligned with bar, and feet flat on floor.
2) Position hands on bar slightly wider than shoulder width.
3) Start position: Lift bar off rack with bar directly overhead.
4)Lower bar to chest at the nipple-line. Press bar up to starting position.

Lying Hamstring Curls*

1) Lie face down on bench with pad adjusted to fit behind ankles. If machine does not angle upper torso downward, it is recommended that a pillow be placed underneath stomach.
2) Start position: Position knees below bottom edge of bench or pad. Legs should be straight with knees aligned to the lever arm axis of motion and hands grasping handles or side of bench (if applicable).
3) Raise lever arm by flexing at the knees past 90°.
4) Return to start position. Remember to keep hips in contact with bench at all times. Do not hyperextend the low back during movement.
*Weights are lighter as hamstrings are a weaker and more injury prone muscle group

Front Pull Downs

1) Adjust seat or knee pad height so that knees are secured while seated.
2) Grasp bar with a overhand grip wider than shoulder width apart and sit with knees secured in pads.
3) Start position: Fully extend arms with elbows facing out with back straight (you may lean back at hips approximately 5°-10°).
4) Pull bar down to upper chest area and squeeze shoulder blades together at end of movement.
5) Return to start position.
6) Remember to keep torso stationary throughout movement.

Seated Knee Extensions

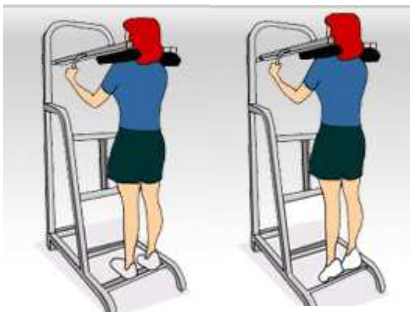
1) Sit in machine and place your shins behind the pad.
2) Extend your legs by pushing into the pad until the legs are parallel to the ground.
3) Return to the starting position.

Seated Dumbbell Shoulder Presses

1) Sit in upright position or stand with feet shoulder width apart and knees slightly bent.
2) Start position: Position dumbbells to ear level with an overhand grip (palms facing forward).
3) Press hands up above head keeping wrists over the elbows and arms moving parallel to body at all times.
4) Return to start position. Remember to keep back and head straight in a neutral position.

Standing Machine Calf Raises

1) Step into provided shoulder pads. Adjust lever arm so that plates do not touch when lowering the weight.
2) Stand with feet hip width apart. Toes should be pointing forward.
3) Contract calves by pushing off balls of feet to raise heels up in air (standing on toes)
4) Lower heels and repeat.
5) Remember to keep knees slightly bent throughout movement to prevent any knee strain. Adjust weight load accordingly.



Oblique Crunches

1) Start by placing your left foot over your right knee and place your hands behind your head (but not your neck).
2) Lift your shoulders up off the ground and twist so that your right elbows tries to touch your left knee.
3) Return to the starting position and repeat according to the required repetitions.
4) Repeat with the other side.

Program #2 - Advanced

The advanced program consists of fewer exercises and heavier loads. This program is split over two separate sessions performed alternatively 2 or 3 days a week.

Exercise	Load	Repetitions	Sets	Rest Interval
Day 1				
Hang cleans to push presses	80-90% 1-RM	4-6	3-4	2-5 minutes
Front pull downs	80-95% 1-RM	4-6	3-4	2-5 minutes
Barbell **OR** dumbbell bench presses	80-95% 1-RM	4-6	3-4	2-5 minutes
Weighted crunches	50-60% 1-RM	10-12	3-4	2-5 minutes
Day 2				
Barbell squats **OR** 45% leg presses	80-95% 1-RM	4-6	3-4	2-5 minutes
Barbell deadlifts*	70-75% 1-RM	Oct-05	3-4	2-5 minutes
Lying hamstring curls*	70-75% 1-RM	8-10	3-4	2-5 minutes
Standing machine calf raises	80-95% 1-RM	4-6	3-4	2-5 minutes

Hang Cleans to Push Presses

1) Start with the torso straight but bent forward at the hips slightly.
2) Shrug your shoulders and at maximum elevation of the shoulders start pulling with the arms as in barbell shrugs.
3) Keep the elbows high during the pull until the highest point and then rotate elbows around and underneath the bar.
4) Rack the bar across the front of the shoulders and slightly flex the hips and knees to absorb the weight.
5) This should be a fluid motion where all the steps flow together.
6) Now go into a semi squat and explode upwards and press the barbell overhead using the momentum from the squat.
7) Return to the starting position.

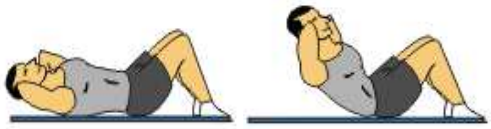
Front Pull Downs

1) Adjust seat or knee pad height so that knees are secured while seated.
2) Grasp bar with a overhand grip wider than shoulder width apart and sit with knees secured in pads.
3) Start position: Fully extend arms with elbows facing out with back straight (you may lean back at hips approximately 5°-10°).
4) Pull bar down to upper chest area and squeeze shoulder blades together at end of movement.
5) Return to start position.
6) Remember to keep torso stationary throughout movement.

Barbell Bench Presses

1) Lie on back with head underneath bar, eyes aligned with bar, and feet flat on floor.
2) Position hands on bar slightly wider than shoulder width.
3) Start position: Lift bar off rack with bar directly overhead.
4)Lower bar to chest at the nipple-line. Press bar up to starting position.

Weighted Crunches



1) Start position: Lie back onto floor or bench with knees bent and hands on your chest. Hold a weight plate on your chest. Head should be in a neutral position with a space between chin and chest.
2) Leading with the chin and chest towards the ceiling, contract the abdominal and raise shoulders off floor or bench.
3) Return to start position.
4) Remember to keep head and back in a neutral position.

Barbell Squats

1) Grasp bar with overhand grip (palms forward) and slightly wider than hip width apart. Step under bar and position bar across posterior deltoids at middle of trapezius (as shown). DO NOT rest bar on neck. Lift elbows up, pull shoulder blades together, and lift chest up to create a “shelf” for the bar.
2) Start position: Using the legs, remove bar from rack. Stand with feet slighter wider than hip width apart. Back should be straight in a neutral position.
3) Lower body by flexing at the hips and knees. Upper body can flex forward at the hips slightly (~5°) durin g movement. Be sure to “sit back” so that knees stay over the feet.
4) Once thighs are almost parallel to floor, return to start position.
5) Remember to keep head and back straight in a neutral position - hyperextension or flexion may cause injury. Keep weight over the middle of foot and heel, not the toes.
6) DO NOT allow knees to go past the big toe or deviate medially or laterally throughout movement. Keep abdominals tight throughout exercise by drawing stomach in toward spine.

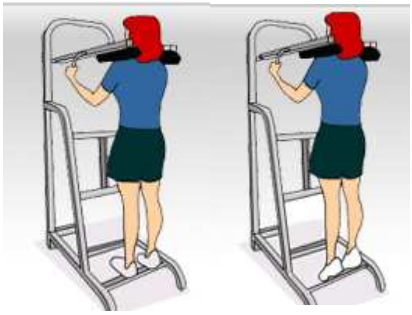
Barbell Deadlifts*

1) Start Position: Assume a shoulder width stance, knees inside arms. Feet flat on floor.
2) Position shoulders slightly over bar and grab bar. Begin pull by extending the knees.
3) Keep angle of your back constant and lift bar straight up. Keep bar close to the body and keep shoulders directly over the bar.
4) Return to starting position.
*Weights are lighter as lower back can be more prone to injury.

Lying Hamstring Curls*

1) Lie face down on bench with pad adjusted to fit behind ankles. If machine does not angle upper torso downward, it is recommended that a pillow be placed underneath stomach.
2) Start position: Position knees below bottom edge of bench or pad. Legs should be straight with knees aligned to the lever arm axis of motion and hands grasping handles or side of bench (if applicable).
3) Raise lever arm by flexing at the knees past 90°.
4) Return to start position. Remember to keep hips in contact with bench at all times. Do not hyperextend the low back during movement.
*Weights are lighter as hamstrings are a weaker and more injury prone muscle group

Standing Machine Calf Raises



1) Step into provided shoulder pads. Adjust lever arm so that plates do not touch when lowering the weight.
2) Stand with feet hip width apart or stand on the edge of a step on the balls of feet with heels hanging over edge. Toes should be pointing forward.
3) Contract calves by pushing off balls of feet to raise heels up in air (standing on toes)
4) Lower heels and repeat.
5) Remember to keep knees slightly bent throughout movement to prevent any knee strain. Adjust weight load accordingly.

Note For Goalkeepers

As with foundational strength training, maximal strength training doesn't differ for goalkeepers. The goal is to develop the total body regardless of the playing position.

2.6 Strength Endurance Conditioning

Soccer involves many bouts of intense activity that often have to be repeated with little or no rest intervals. As a result, high levels of lactic acid can quickly accumulate in the muscles, severely hampering a player's performance until they recover.

Without a phase of conditioning that mirrors these demands in the game, strength training has very limited use. The key objective of a strength endurance phase is to help players tolerate fatigue and a high build up of lactic acid.

Assuming you have a built up a good level of maximal strength from the previous phase, you can now work on applying as much of that strength as possible over prolonged, repeated bouts.

A higher number of repetitions with a lower weight is used to develop muscular endurance. Even more relevant to sports like soccer is lifting lighter loads for set periods of time rather than a set number of repetitions.

2.6.1 Circuit Training for Soccer

One of the best modalities for developing strength endurance is circuit training. Circuit training is simply a series of exercises performed consecutively – as opposed to performing several sets of one exercise before moving on to the next.

There is a misconception that circuit training has to incorporate endurance exercises and must take place in an enclosed room with stations set up closely next to one another. Circuit training can take many forms and might consist purely of resistance exercises.

There is literally an infinite number of possibilities with circuit training. The exercises used and the format is limited only by the coach or player's imagination.

2.6.2 Keep Exercises Soccer-Specific

Until now strength conditioning has been quite generic. More traditional **compound** exercises are used in the maximal strength phase – bench presses, squats and military presses for example.

As the competitive season draws closer strength conditioning must become more specific to the sport. Exercises should stress the same muscles in a similar way as a competitive game would. For example, using high box step ups rather than lying leg presses is more specific to soccer. As soccer usually incorporates the entire body, try to include total body exercises in this phase as much as possible.

Another example could be to use medicine balls for upper body and core strength as opposed to resistance machines. A medicine ball gives you the flexibility to design drills that closely re-create movement patterns in a soccer match, particularly goalkeepers. Machines on the other hand tend to fix the body in position and isolate only a few muscles groups.

Finally, the very best way create soccer specific strength endurance is to incorporate a ball or adapted game situations. If you're training individually this isn't always practical but as team (or with a partner) you can easily set up some excellent drills. Here's a quick example…

Squat jumps are a classic circuit training exercise that build strength in the lower body. Having a partner throw a ball in the air to head is one way to make the drill more soccer specific. Another adaptation is to have a partner play a ball along the deck for you to pass back on every landing.

Quick Tip!

Don't worry if you're not sure which exercises are "soccer-specific" and which aren't. You will find lots of sample routines, exercises and drills at the end of this section and in the Soccer Exercise Library for each phase of the soccer conditioning plan. They all follow the guidelines set here so there's no guesswork needed on your part.

2.6.3 The Speed of Exercises

The stations or exercises with a strength endurance circuit should be performed rhythmically but quickly. The idea is to try and repeat the kind of

intensity found in a game. During this phase you will be using much lighter loads than with maximal strength training – often only your bodyweight.

However, because each station can last up to ninety seconds, strength endurance training can be very tough – both physically and mentally. The aim is to quickly accumulate large amounts of lactic acid so that your body can build a tolerance to it and perhaps even disperse it more rapidly.

2.6.4 When Should Strength Endurance Conditioning Occur?

Your goal should be to reach a peak in strength endurance just as the competitive season begins. So the best time for strength endurance conditioning is the late pre-season. Allow at least four weeks of circuit training following your maximal strength phase and ideally six.

Here are the parameters for the strength endurance training phase:

Guidelines for Strength Endurance Training		
Training Parameter	**Beginner**	**Experienced**
Length of Phase	4-6 weeks	4-6weeks
Load/Weight	40-50% -RM	40-60% 1-RM
Duration of Exercises	30-60seconds	30-60seconds
No. Exercises	6-8	6-8
No. Circuits	2-3	3-4
Rest Between Exercises	60-90seconds	30-60seconds
Rest Between Circuits	2-3minutes	1-2minutes
Frequency Per Week	2-3	2-3

2.6.5 Strength Endurance Training Basics

- Training for strength endurance incorporates lighter weights and more repetitions. One of the best formats is circuit training where several exercise stations are performed consecutively.

- Complete a warm up consisting of light aerobic exercise and dynamic stretching before starting a strength training session.

- Lift with a smooth and even rhythm. Pause for a second at the top of the lift and then lower the weight in a controlled manner.

- Remember to breathe. Most people find it easiest to breathe out on the exertion or the actual lift and breathe in as the weight is lowered or returned to the starting position.

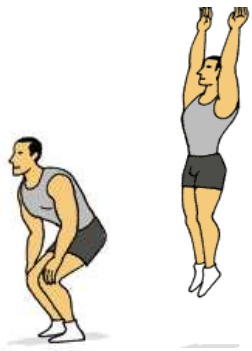
- Once you can perform exercises for the prescribed amount of time, either increase the weight slightly or decrease the rest interval between stations.

2.6.6 Sample Strength Endurance Programs

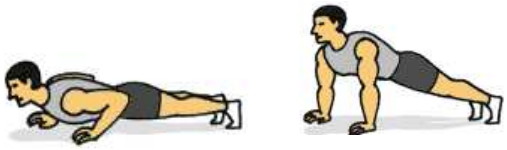
Program #1 - Beginner
This beginner circuit has slightly longer rest intervals, uses a higher load and includes less complex stations. A strength endurance phase should last 4-6 weeks during the late pre-season.

Exercise	Load	Station Time	Rest (exercises)	Rest (circuits)
Squat jumps	Bodyweight	30-60 seconds	60-90 seconds	
Push ups	Bodyweight	30-60 seconds	60-90 seconds	
Mountain climbers	Bodyweight	30-60 seconds	60-90 seconds	
Sit ups with twist	Bodyweight	30-60 seconds	60-90 seconds	
Box steps with knee drive	40-50% 1-RM	30-60 seconds	60-90 seconds	
Dips	Bodyweight	30-60 seconds	60-90 seconds	
Lateral bounds	Bodyweight	30-60 seconds	60-90 seconds	
Alternating supermans	Bodyweight	30-60 seconds		2-3 minutes **2-3 circuits**

Squat Jumps
1) Stand with feet shoulder-width apart, trunk flexed forward slightly with back straight in a neutral position.
2) Arms should be in the “ready” position with elbows flexed at approximately 90°.
3) Lower body where thighs are parallel to ground.
4) Explode vertically and drive arms up.
5) Land on both feet and repeat.
Prior to takeoff extend the ankles to their maximum range (full plantar flexion) to ensure proper mechanics.



Push Ups



1) Lie face down on the floor with hands palm down, fingers pointing straight ahead, and aligned at the nipple line.
2) Place hands slightly wider than shoulder width, and feet should be at hip width with toes on floor.
3) Start position: Extend the elbows and raise the body off the floor.
4) Lower your entire body (legs, hips, trunk, and head) 4-8 inches from the floor.
5) Return to the start position by extending at the elbows and pushing the body up.
6) Remember to keep the head and trunk stabilized in a neutral position by isometrically contracting the abdominal and back muscles. Never fully lock out the elbows at the start position and avoid hyperextension of the low back.

Mountain Climbers

1) Start by getting on your hands and feet in a prone position.
2) Keeping your body parallel to ground drive your knees up towards your chest alternating back and forth.
3) Repeat this movement for the required number of seconds.

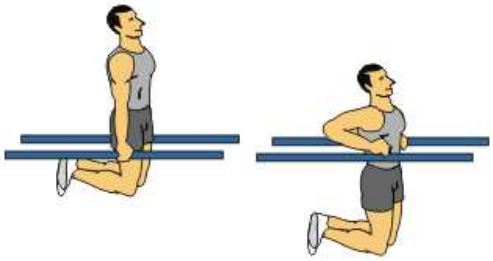
Sit Ups with Twist

1) Start position: Lie back onto floor or bench with knees bent and hands behind head. Keep elbows back and out of sight. Head should be in a neutral position with a space between chin and chest.
2) Leading with the chin and chest towards the ceiling, contract the abdominal and raise shoulders off floor or bench. As you come up twist one shoulder towards the opposite knee.
3) Return to start position and repeat with the other shoulder.
4) Remember to keep head and back in a neutral position.

Box Step with Knee Drive:

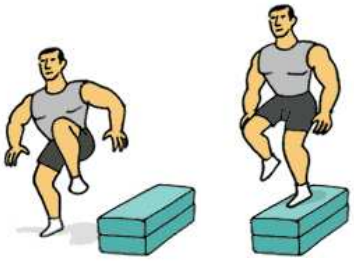
1) Stand behind box (about 12-15” high) and place one foot on top of box, heel close to the closest edge. Hold a dumbbell in each hand.
2) Push off the box and explode vertically and drive your other knee up towards your chest. Complete the prescribed number of reps.
3) Repeat with other leg.

Dips



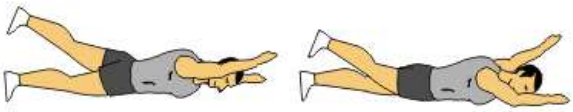
1) Step up on foot platform (if available) and position hands on dip bars.
2) Start position: Remove feet from platforms and suspend the body with slightly bent elbows. Lean forward slightly so that your elbows are slightly past the plane of your back and knees slightly bent.
3) Lower your body until your upper arms are parallel to the floor.
4) Return to starting position by extending the elbows to a slightly bent position.
5) Remember to keep the trunk bent forward, head neutral, and chest up.

Lateral Bounds



1) Stand side on to a box approximately 8-12 inches high
2) Standing on one leg (furthest from box) dip down and jump up to box landing with opposite foot.
3) Land softly on one leg and repeat keeping a fluid motion throughout.
4) Repeat for the other side.

Alternating Superman

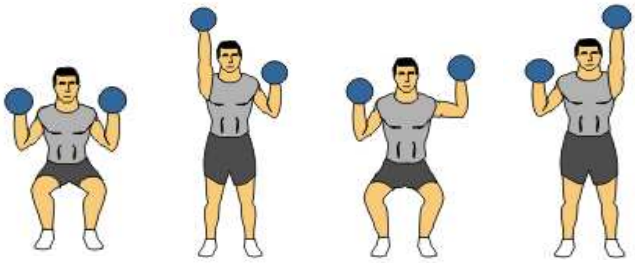


1) Lie face down on floor with arms extended overhead. You may place a rolled towel under forehead to clear face from floor.
2) Raise right arm and left leg 4-8 inches off floor.
3) Lower and raise alternate opposite arm and leg. Remember to keep head and back in a neutral position. Shoulders and hips should remain squared throughout movement.

Program #2 - Advanced
The advanced circuit includes more complex exercise stations and has shorter rest intervals.

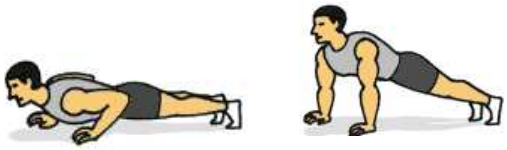
Exercise	Load	Station Time	Rest (exercises)	Rest (circuits)
Alternate squat & presses	50-60% 1-RM	30-60 seconds	30-60 seconds	
Push ups	Bodyweight	30-60 seconds	30-60 seconds	
Dumbbell double lunges	50-60% 1-RM	30-60 seconds	30-60 seconds	
Double crunches	Bodyweight	30-60 seconds	30-60 seconds	
Box steps with knee drive	50-60% 1-RM	30-60 seconds	30-60 seconds	
Dips	Bodyweight	30-60 seconds	30-60 seconds	
Alternating split squats	Bodyweight	30-60 seconds	30-60 seconds	
Supermans	Bodyweight	30-60 seconds		1-2 minutes **3-4 circuits**

Alternate Squats & Presses



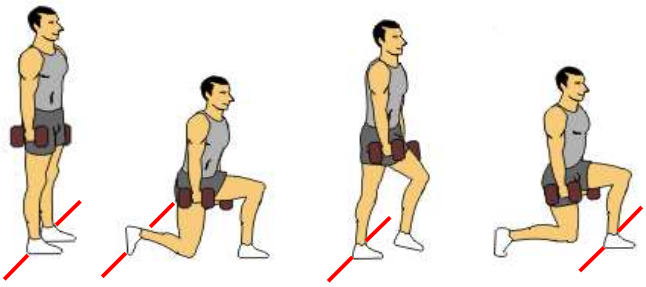
1) Start by holding a dumbbell in each hand at shoulder level.
2) Squat down to about parallel and explode up to a standing position.
3) Once you have squatted half way up start pressing the dumbbells over your head.
4) Use the momentum from your squat to propel the dumbbells above your head. Remember to stay in control of the dumbbells at all times.

Push Ups



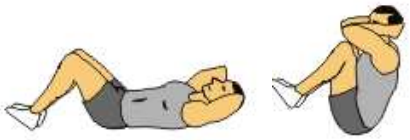
1) Lie face down on the floor with hands palm down, fingers pointing straight ahead, and aligned at the nipple line.
2) Place hands slightly wider than shoulder width, and feet should be at hip width with toes on floor.
3) Start position: Extend the elbows and raise the body off the floor.
4) Lower your entire body (legs, hips, trunk, and head) 4-8 inches from the floor.
5) Return to the start position by extending at the elbows and pushing the body up.
6) Remember to keep the head and trunk stabilized in a neutral position by isometrically contracting the abdominal and back muscles. Never fully lock out the elbows at the start position and avoid hyperextension of the low back.

Dumbbell Double Lunges



1) Start by placing your feet shoulder width apart and holding dumbbells at your side.
2) Step forward into a lunge keeping your upper body upright.
3) Return to the starting position and proceed into a reverse lunge with the same leg lunging backwards.
4) Return to the starting position and repeat with the other leg.
5) Continue for the required number of repetitions.

Double Crunches

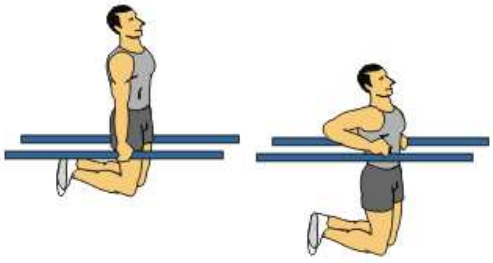


1) Lie back onto floor or bench with knees bent and hands behind head. Keep elbows back and out of sight. Head should be in a neutral position with a space between chin and chest.
2) Start position: Hands behind head and knees bent at 90 degrees.
3) Leading with the chin and chest towards the ceiling, contract the abdominals and raise shoulders off floor or bench. During the crunch, also bring knees towards chest.
4) Return to start position. Remember to keep head and back in a neutral position.

Box Step with Knee Drive:

1) Stand behind box and place one foot on top of box, heel close to the closest edge. Hold a dumbbell in each hand.
2) Push off the box and explode vertically and drive your other knee up towards your chest. Complete the prescribed number of reps.
3) Repeat with other leg and continue according to prescribed number of repetitions

Dips

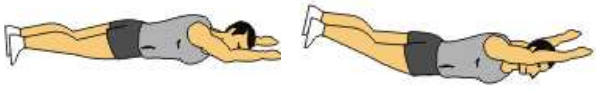


1) Step up on foot platform (if available) and position hands on dip bars.
2) Start position: Remove feet from platforms and suspend the body with slightly bent elbows. Lean forward slightly so that your elbows are slightly past the plane of your back and knees slightly bent.
3) Lower your body until your upper arms are parallel to the floor.
4) Return to starting position by extending the elbows to a slightly bent position.
5) Remember to keep the trunk bent forward, head neutral, and chest up.

Alternating Split Squats

1) Stand with feet hip width apart. Take left leg and step back approximately 2 feet standing on the ball of back foot.
2) Feet should be positioned at a staggered stance with head and back erect and straight in a neutral position. Place hands on waist.
3) Lower body by bending at right hip and knee until thigh is parallel to floor then immediately explode vertically.
4) Switch feet in the air so that the back foot lands forward and vice versa.
5) Prior to takeoff extend the ankles to their maximum range (full plantar flexion) ensure proper mechanics.

Supermans



1) Start position: Lie face down on floor with hands down at sides. You may place a rolled towel under forehead to clear face from floor.
2) Raise chest and head off floor keeping feet in contact with floor.
3) Return to start position.
4) To increase resistance, extend arms and place hands overhead.
5) Do not raise head past 8-12 inches - excessive hyperextension may cause injury. To vary exercise raise feet while raising trunk.

You'll find some more sample foundational strength programs in The Soccer Exercise Library

Note For Goalkeepers

Goalkeepers require some strength endurance but not to the same level as outfield players. The routine should also place more emphasis on the upper body than those above. See Appendix A for a sample strength circuit for goalkeepers.

2.7 Explosive Power Conditioning

The modern game of soccer seems to be all about speed and power. Today's players are faster and sharper than ever. Shots are harder and challenges are more forceful.

The end-goal of any soccer strength conditioning program is to increase a player's explosive power. Until this point, all previous resistance training has been about increasing strength (or muscular endurance). Without a final, all-important phase to convert newfound strength gains into explosive power, you won't tap your full, physical potential on the field.

Power is the ability of the **neuromuscular** system to produce the greatest amount of force in the least amount of time. An athlete can be very strong but unable to apply that strength rapidly, so their explosive power is limited.

If a player can increase either their strength or their speed (without affecting the other) they will increase their power. The best approach of course, is to improve both!

The aim of this phase of conditioning is to improve the player's rate of **force production**. As a good strength foundation has already been laid, the exercises in this phase are designed to increase the **speed of contraction** in the working muscles.

There are several training methods that can help you improve explosive power. One of the most effective and widely used in soccer is **plyometrics**…

2.7.1 Plyometrics… The Bridge Between Strength and Speed

Research has shown that a muscle stretched before contraction will contract **more forcefully and rapidly** (like an elastic band)**.** This is essentially what plyometric exercises do – they stretch muscles rapidly and then immediately demand a powerful contraction. It's easier to imagine with a practical example…

Imagine the jumping movement to win a header.

The very first phase of this movement has to be a downward thrust. If you try jumping off the ground without first bending your knees can't even leave the ground. As you "dip" down just before a standing jump you are stretching

muscle groups like the quadriceps and hip extensors. These are the muscles that will contract very forcefully a split second later to produce the jump.

The shorter and more rapid this downward movement or pre-stretching action is, the more forcefully those muscle groups can contract…. and the higher you will jump!

The science behind **why** this occurs can get quite technical. In simplistic terms, energy is stored in the elastic part of the muscle. This stored energy is then used when the muscle contracts and shortens. If you would like to know more for research purposes, look up terms such "the stretch-shortening cycle" or "myotactic stretch reflex".

Plyometric exercises help muscles store and use energy rapidly. Lower body plyometrics is similar to jump training. A classic example is the drop or depth jump. The player stands on a bench or box roughly 12inches, steps off and attempts to jump as high as possible as soon as they make contact with the ground. You'll find lots of plyometric routines later in this section and in the **Soccer Exercise Library**.

Quick Tip!

Try to minimize ground contact time when performing plyometric exercises. It's important that movements are fast and reactive. For example, in a drop jump you should explode upwards as soon as you feel your feet touching the floor. Avoid sinking down into a deep squat.

Upper body plyometrics are less relevant to outfield soccer players and very often left out completely. Although power in the upper body can help to increase running speed and hold off opponents, it is less important than explosive power in the legs (unless you're a goalkeeper which is discussed below).

Performing a wide range of upper body plyometrics requires a medicine ball (or something similar). Medicine balls are an excellent fitness tool for athletes because of their flexibility. Even if you limit upper body plyometrics in your routine, you can use medicine balls to develop excellent soccer-specific power in the core region.

Isotonic Power Training

Plyometrics is not the only way to develop sport-specific power. Isotonic power training involves using traditional resistance exercises like leg extensions, military presses, leg presses etc., and performing them rapidly.

To move a weight quickly, a relatively light load is used. The athlete must concentrate on contracting the working muscles rapidly, particularly during the initial stages of the lift.

- Load: 30-60% 1-RM
- Repetitions: 6-10
- Sets per exercise: 2-3
- No. Exercises 5-8
- Rest between exercises: 3-4minutes
- Speed of contraction Explosively

Important: Avoid locking or 'snapping joints during the lifts as this can lead to injury. Instead extend joints only 90% always maintaining some degree of flexion.

2.7.2 Different Plyometric Exercises... Different Intensities!

Plyometric exercises can be grouped into one of two categories:

- **High Impact** – depth jumps; reactive jumps; bounding (2 feet); jumps off, onto or over boxes higher than 35cm (15") etc.
- **Low Impact** – skipping; bounding (1 foot); jumps off, onto or over smaller boxes, hops etc.

The exercises that you select determine the number of sets and repetitions you perform in a single session:

- 3-6 sets of 8-10 repetitions per exercise for high impact drills.
- 6-10 sets of 8-10 repetitions per exercise for low impact drills.
- Maximum of 120 repetitions in total for the session

Take some time to plan a plyometric session so that it combines high and low impact drills and falls with the guidelines for sets and repetitions above. You can use the same plyometric session right throughout the late pre-season, or simply cut and paste similar exercises for variation

Here is an example of how to plan a session with the right number of sets and repetitions:

Plyometric Session Using Three Plyometric Drills			
	Sets	Reps	Total Reps
Plyometric Drill #1 (high intensity)	4	10	40
Plyometric Drill #2 (high intensity)	3	10	30
Plyometric Drill #3 (low intensity)	5	10	50
Total Repetitions for Session			120

In the **Soccer Exercise Library** plyometric exercises are classed as either high impact or low impact to make planning simpler.

2.7.3 When Should Explosive Power Conditioning Occur?

As with strength endurance the aim is to reach a peak level of power for the beginning of the in-season. In reality a peak may be achieved a few weeks into the completive year. Allow four to six weeks prior to the start of the season to convert muscular strength into explosive power.

Soccer is a fairly unique sport in that it requires high levels of all-round fitness – endurance, strength, power, speed, agility and so on. The challenge is to try and condition one element of fitness without detriment to another.

The last four to six weeks of the pre-season must incorporate strength endurance training and power training. This could be in the shape of one plyometric session and one strength endurance circuit per week. Alternatively, you might opt for two power sessions and one strength endurance session.

Careful planning is required to develop both types of strength optimally. This is covered I detail in section 7

Here are the parameters for the explosive power training phase:

Guidelines for Plyometric Training		
Training Parameter	**Beginner**	**Experienced**
Length of Phase	4-6 weeks	4-6 weeks
Time of Year	Late Pre-Season	Late Pre-Season
Load/weight	Bodyweight	Bodyweight
No. Repetitions Per Exercise	8-10	8-15
Sets Per Session	Varies (see 2.7.2)	Varies (see 2.7.2)
Rest Between Sets	3-6minutes	2-5minutes
Speed of Movement	Explosive	Explosive
Frequency Per Week	1-2	1-2

2.7.4 Plyometric Guidelines

Plyometrics can be deceptively strenuous. You won't feel tired after a routine and there is often a temptation to do extra. After all, it's only jumping up and down!

However, it's jumping up and down in a very specific way that puts joints, ligaments and tendons under an unusual amount of stress. Failure to follow some simple Dos and Don'ts can quickly lead to over-use injuries and burnout.

Here's a list of general guidelines to make plyometrics both effective AND safe:

- A solid strength base is required before starting a plyometrics program. As a rule of thumb you should be able to squat twice your bodyweight or leg press 2.5 times your bodyweight.
- It is not recommended that anyone under the age of 16 uses plyometrics. This applies particularly to the more intense plyometric exercises.
- Warming up is crucial. Spend 10mins jogging or skipping followed by 5-10mins of stretching the muscles involved. Don't forget to stretch your lower back. See Section 5 for more details
- Do NOT be tempted to add extra sets and repetitions even if you feel fresh at the end of a session.

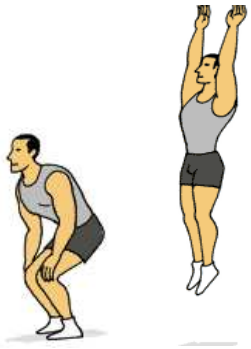
- Perform plyometric exercises on a soft surface such as grass or a synthetic running track.
- Rest completely between sets, 3-5 minutes at least. Quality is all-important.
- Perform each action and each repetition with maximum speed, effort and technique.
- A plyometric session should not contain more than 120 ground contacts for any muscle group.
- Do NOT use ankle or wrist weights for extra resistance. This will hinder the speed of the movement and increase the risk of stress injuries.
- Try to keep you torso erect during the movements -- it prevents undue strain on the lower back.
- If you feel any pain or discomfort, stop immediately.

2.7.5 Sample Explosive Power Programs

Program #1 - Beginner
Both the beginner and advanced programs are split over two days. This is simply to incorporate a wider range of plyometric exercises and to minimize the amount of similar repetitive strains on placed on the body.

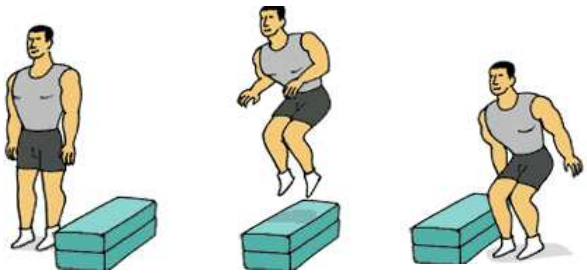
Exercise	Load	Repetitions	Sets	Rest Interval
Day 1				
Squat jumps	Bodyweight	8-10	3-4	2-5 minutes
Step jumps	Bodyweight	8-10	3-4	2-5 minutes
Box drill with rings	Bodyweight	8-10	3-4	2-5 minutes
Day 2				
Hurdle jumps	Bodyweight	8-10	3-4	2-5 minutes
Lateral high hops	Bodyweight	8-10	3-4	2-5 minutes
Bounding	Bodyweight	8-10	3-4	2-5 minutes

Squat Jumps



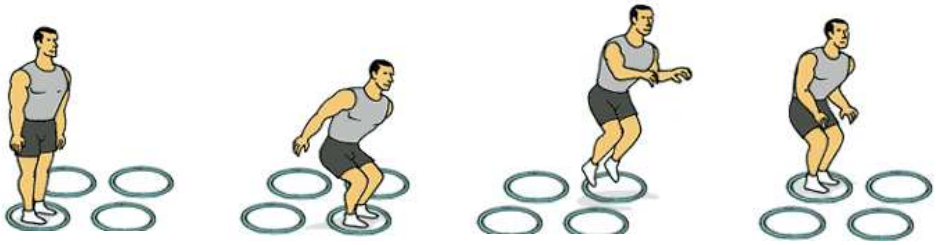
1) Stand with feet shoulder-width apart, trunk flexed forward slightly with back straight in a neutral position.
2) Arms should be in the "ready" position with elbows flexed at approximately 90°.
3) Lower body where thighs are parallel to ground.
4) Explode vertically and drive arms up.
5) Land on both feet and repeat.
Prior to takeoff extend the ankles to their maximum range (full plantar flexion) to ensure proper mechanics.

Step Jumps



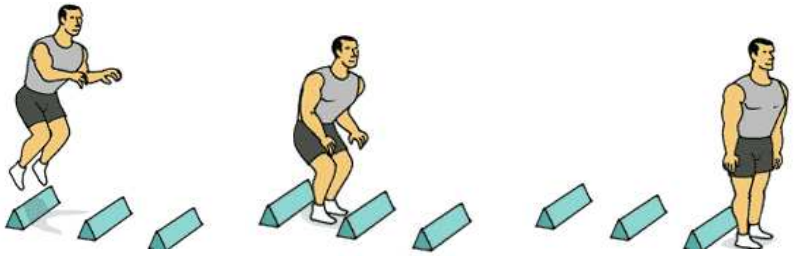
1) Stand beside object to be cleared.
2) Bring knees up and jump vertically but also laterally off ground and over the barrier.
3) Land on both feet and jump the other direction over barrier.

Box Drill with Rings



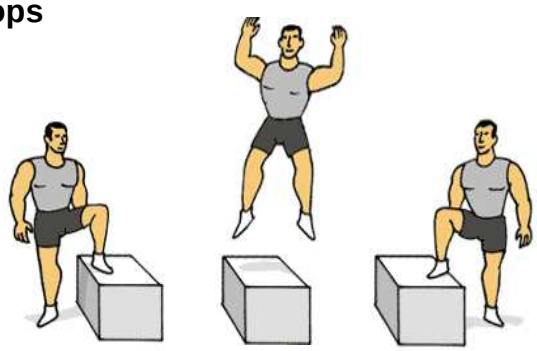
1) Stand with feet slightly wider than hip-width apart with your body facing the first ring.
2) Hop forward using both feet and land in first ring.
3) Now hop to the left and land in the ring to the side. Now jump backwards to land in ring behind you. Finish by jumping to your right to land in final ring.
4) Repeat according to the prescribed number of repetitions.
Note: There is only one set of 4 rings (not 4 sets as in the diagram above). The diagram above is just to illustrate the various stages.

Hurdle Jumps



1) Stand 1-2 feet away from hurdle. Feet should be slightly wider than hip-width apart in a semi-squat position.
2) Driving the arms up and jump over hurdle.
3) Upon landing, quickly jump over next hurdle keeping ground contact time to a minimum.

Lateral High Hops



1) Stand to left side of box (12-18” high) and place right foot on top of box.
2) Push off the box using the right leg only and explode vertically as high as possible. Drive the arms forward and up for maximum height.
3) Land with opposite foot onto box. Repeat with the other foot.
4) Repeat according to prescribed number of repetitions.

Bounding

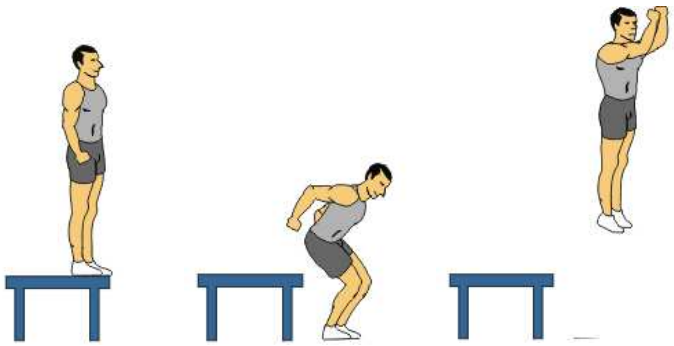
1) Jog into the start of the drill for forward momentum.
2) After a few feet, forcefully push off with the left foot and bring the leg forward. At same time drive your right arm forward.
3) Repeat with other leg and arm
4) This exercise is an exaggerated running motion focusing on foot push-off and air time.

Program #2 - Advanced

The drills in the advanced routine are slightly higher impact and more intense. They will help to generate greater explosive power but they are only suitable for players who have been weight training for some time.

Exercise	Load	Repetitions	Sets	Rest Interval
Day 1				
Depth jumps	Bodyweight	8-10	3	2-5 minutes
One leg lateral box hops	Bodyweight	8-10	3-4	2-5 minutes
Two foot zig-zag hops	Bodyweight	8-10	4-5	2-5 minutes
Day 2				
Hurdle jumps	Bodyweight	8-10	3	2-5 minutes
Lateral barrier jumps	Bodyweight	8-10	3	2-5 minutes
Bounding with rings	Bodyweight	8-10	4-6	2-5 minutes

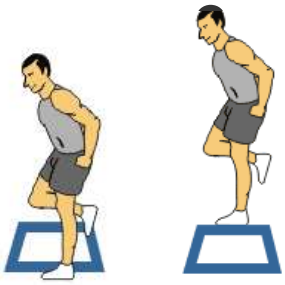
Depth Jumps



1) Stand on box (12-18" high) with toes close to edge and facing the hoop
2) Step off (don't jump off) box and land on both feet. Immediately jump up and reach with both hands towards the sky.
3) Ground contact time should be minimal (don't sink into the ground) and landings should be soft.

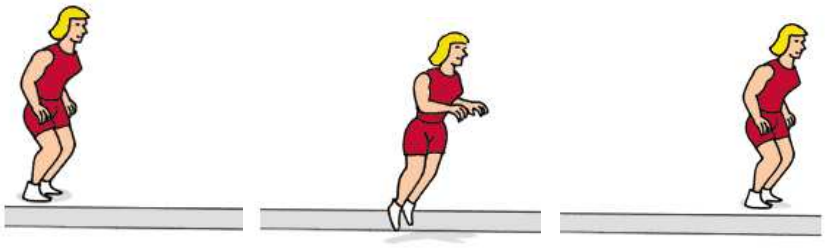
Note: There is only one box (not 3 boxes as in the diagram above). The diagram above is just to illustrate the various stages.

One Leg Lateral Box Hops



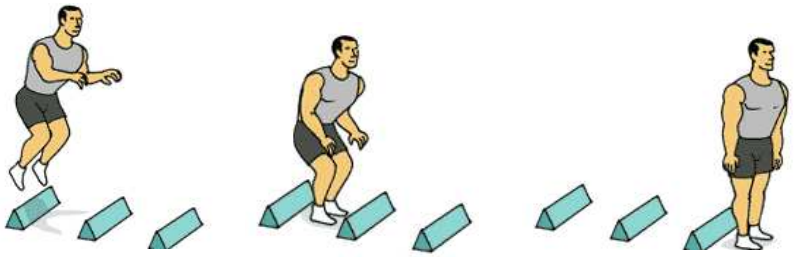
1) Stand on left foot with the right side of body next to the box.
2) Jump to the right using just one foot.
3) Land on top of the box and then jump back down to the starting position.
4) Repeat according to the prescribed number of repetitions and change legs.

Two Foot Zig-Zag Hops



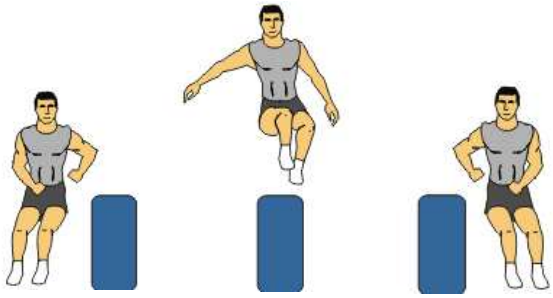
1) Stand to the left of an agility ladder (or 2 pieces of string about 12 inches wide).
2) Forcefully push off both feet and land the on the other side of the ladder.
3) Repeat and land feet back on the other side, continue repeating and so on down the ladder.
4) Ground contact time should be minimal. Each ground contact counts as a repetition.

Hurdle Jumps



1) Stand 1-2 feet away from hurdle. Feet should be slightly wider than hip-width apart in a semi-squat position.
2) Driving the arms up and jump over hurdle.
3) Upon landing, quickly jump over next hurdle.

Lateral Barrier Jumps



1) Stand with feet slightly wider than hip-width apart with right side of body facing the barrier.
2) Hop to the right using both feet over the barrier (12-18 inches high).
3) jump back to the start point.
4) Repeat according to the prescribed number of repetitions.

Note: There is only one barrier (not 3 barriers as in the diagram right). The diagram is just to illustrate the various stages.

Bounding with Rings

1) Jog into the start of the drill for forward momentum.
2) After a few feet, forcefully push off with the left foot and bring the right leg forward. At same time swing left arm forward and land into the first ring, which is 3-4 feet out and to the left with the right foot.
3) Continue and repeat with other leg and arm into the second ring, which is now 3-4 feet up and to the right.
4) This exercise is an exaggerated running motion focusing on foot push-off and airtime.

Note For Goalkeepers

Explosive power training will play a bigger role in a goalkeepers strength training program than strength endurance training. A plyometric session for goalkeepers should also contain upper body exercises. See Appendix A for a sample routine.

2.8 The Annual Soccer Strength Conditioning Program

Following an effective soccer strength program takes a little more planning **upfront**. However, it's only something you have to do once a year at most. Not only that, it can be extremely motivating setting a goal and then devising a workable plan to reach it.

The chart below shows how to incorporate all the phases of strength conditioning into one, organized, 12-month program.

It assumes the competitive season starts in September and ends in April but take the actual months with a pinch of salt. What is more important is how each phase relates to the timing of the competitive in-season.

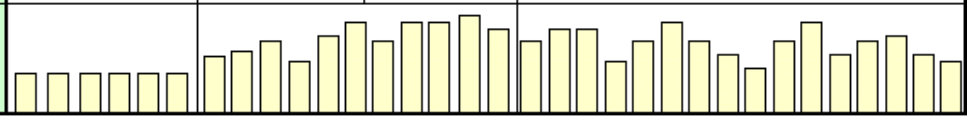
The Annual Strength Conditioning Plan												
Month	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**
Phase	**OS**		**EPS**	**LPS**	**CS**							
Strength Objective	Foundational		Maximal	Str.Endurance & Power	Maintain Basic Strength & Strength Endurance							
Foundational Sessions	2-3 x week		None	None	None							
Maximal Sessions	None		2-3 x week	None	Maintain: 0-1 x week							
Str. Endurance Sessions	None		None	1-2 x week	Maintain: 0-1 x week							
Power Sessions	None		None	1-2 x week	Maintain:1-2 x week							
Training Intensity												

Table 5: The Annual Strength Conditioning Plan
Key: OS - Off Season, EPS - Early Pre-Season, LPS - Late Pre-Season, CS - Competitive Season

In-season strength conditioning is about maintaining the gains made in pre-season. Competitive games take a priority however and some weeks you won't have time to do any strength conditioning sessions.

Aim to complete one or two plyometric sessions per week during the in-season or perform some drills at the start of team training (immediately following the warm-up).

You can rotate strength endurance conditioning and maximal strength training perhaps lifting heavier weights one week and performing circuit training the

next week. It may be more practical (and just as effective) to combine some heavier weights sessions into a circuit.

~ SECTION 3 ~

SPEED & AGILITY CONDITIONING

Speed and quickness separates the outstanding players from the average.

As you progress to a higher and higher standard the speed of the game will increase. To excel you must be a quick player. However, in soccer being quick means much more than simply the ability to run fast…

Here are some of the attributes that will make you a better player:

- Quick speed **off the mark**
- Fast **acceleration** over 10-15 yards
- Good **speed endurance** (the ability to repeat sprints without fatigue)
- Speed **in possession** of the ball
- **Quickness of feet** or agility
- The ability to quickly **change direction**
- The ability to **execute skills** quickly
- Last but not least... **speed of thought**

You can see from the list above that being able to run the 100M in record time is NOT a prerequisite for being a fast player. Rarely in a game will you sprint more than fifty or sixty yards. In fact the average sprint in soccer is between thirteen and fifteen meters.

Much more important is the ability to change pace suddenly and in multiple directions. Soccer is never played at one pace and never in a straight line. It is also much harder for your opposition (or your marker) to defend against players that can change pace without warning.

3.1 How to Increase Your Speed

Absolute speed, or you ability to run fast, is determined by a number of factors – particularly genetics. However, regardless of your genetic make-up, you can significantly increase your sprinting power with the right conditioning program.

By the same token, even players who are not typically fast runners can excel if they have sharp feet and quick speed of thought. Remember the old phrase… "The first ten yards are in your head."

Developing **all-round** speed and quickness in your game comes from **four** different types of training…

Strength and Explosive Power Training

Your **explosive power** relates directly to your sprinting speed. To run faster you need to become more powerful. Section 2 covers strength and power training. Although greater strength will help you to resist challenges it has an equally important function of improving your power and your speed.

Speed Endurance Training

Soccer players are often required to make several, high intensity sprints in quick succession. With each sprint, speed and power decreases due to fatigue. Speed endurance or **anaerobic** training will help you to maintain a higher work rate for longer. See Section 1 for anaerobic endurance training.

Flexibility training

Flexibility training can release tightness and promote the relaxation leading to quicker contraction. Increasing the range of motion also helps to lengthen leg stride and is important for quick and agile changes in direction. If muscles can apply force over a greater range of motion, this also helps to increase speed and power. Flexibility training is covered in Section 4.

SAQ Training

SAQ stands for Speed, Agility and Quickness. Speed training or sprint training will help to improve you speed off the mark, acceleration and power.

Agility training allows you to change direction without the loss of balance, strength, speed or body control.

Quickness training will help to improve your foot speed and co-ordination.

In reality there is a lot of overlap between these three types of training. From a practical point of view they can all be combined into one session using just a handful of drills. The remainder of this section will focus on SAQ training.

3.1.1 Speed & Agility Training Must Be Soccer-Specific

Perhaps the most important and overlooked principle of training is **specificity**. The more specific your training is to your sport, the more effective it will be. It's especially important in SAQ training. Speed drills that can't be transferred to the field of play are of little use to the soccer player.

Players spend the vast majority of a game **without** possession of the ball. When they do receive the ball it's important the make the very most of it. Training should help to increase speed and agility with and without the ball.

Speed Without The Ball

Soccer players seldom run further than fifteen to twenty yards so sprint drills should reflect this.

Unlike the 100M-sprinter, who always begins from a set position, soccer players must sprint from a multitude of starting positions. They might be facing backwards, lying on the ground after a sliding challenge or in the air. They might have to jump over a player or hold off an opponent first.

To reflect this, speed drills should have as many varied starts as possible. You will find lots of sample drills in the **Soccer Exercise Library** that help to mimic the movement patterns found in a game.

Finally, because soccer players often have to deviate their sprints, it's sensible to incorporate a similar movement into some of your speed and agility drills.

Speed With The Ball

The ability to execute skills quickly can make you appear to be a faster player whilst a poor first touch will slow you down. Once a player has mastered good technique unopposed and without time constraints, they should progress to more pressurized situations.

This might be as simple as running as fast as possible with a ball over a set distance (taking fewer touches will help). Or it might include having a player run along side to provide that extra physical and mental challenge.

Conditioned games can be a practical way of achieving speed with and without the ball. However, it can be difficult to control the amount and quality of speed work a player performs in these sessions. Ideally conditioned games should occur along side more structured SAQ drills.

Running with close possession of the ball significantly inhibits sprinting speed. It's not a player's lack of power that limits their speed but the need to keep the ball close to the body. As such, speed with the ball is more about technical skill and practise than fitness conditioning.

3.2 SAQ Conditioning

The goal of SAQ training is to increase your speed off the mark, acceleration over ten to fifteen yards, foot speed, ability to change direction rapidly as well as your balance and co-ordination.

Soccer-related speed, agility and quickness exercises should be introduced during the mid to late pre-season. Early pre-season is a time for building

general strength and endurance that can be converted later into sport-specific fitness.

Speed and agility training is all about quality. Unlike endurance and strength training, an SAQ session should not leave you exhausted or gasping for breath.

Many professional teams perform speed and agility drills the day before a competitive match. Being less demanding, they won't deplete players' energy reserves and they can help to increase mental sharpness in preparation for the game.

3.2.1 Sample Soccer Speed Drills

Speed drills are often more effective without the involvement of a ball. In order to become faster, players must concentrate on sprinting as quickly as possible and a ball usually hinders this. If a ball is incorporated, keep contact minimal.

A typical speed session might consist of approximately five sets of ten repetitions. Try to keep a work to rest ratio of 5:1. For example a six second sprint should be followed by approximately thirty seconds walking recovery.

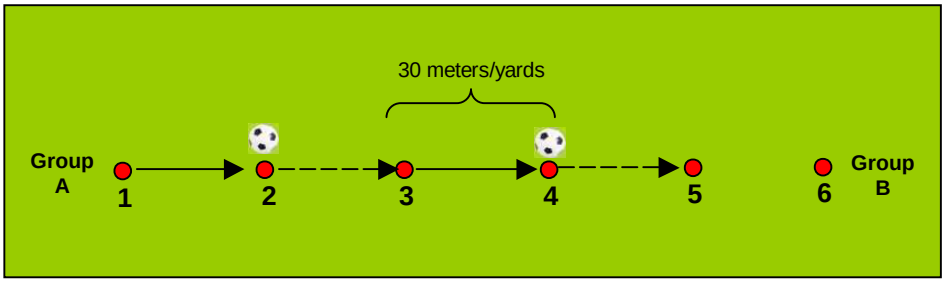
Drill #1 – Alternating Starts
The basis of these speed drills is a 10-20 meter/yard sprint. You should focus on accelerating as quickly as possible by powering away with your arms and legs. At the end of the sprint have a feeder pass or throw a ball for a pass, header or volley back. This helps players to compose themselves quickly after an all-out sprint so they can perform the skill with finesse. This is a frequent scenario in a game situation. Here are some ideas to alternate the starts:

- Do 1-3 push ups, squat thrusts or burpees and sprint
- Start by kneeling, lying face down, sitting on your hands (which can't be used to get up) and sprint
- Do 5 keep ups or 5 ball touches and sprint
- Have some one throw or pass your the ball for you to control and lay off and sprint
- Run backwards for 5yards and turn and sprint
- Touch left hand down, touch right hand down, jump to head the ball and sprint

Complete a sprint and walk slowly back to the start to repeat for the desired number of repetitions.

Drill #2 – Hollow Sprint with Ball
Set up five markers about 30 meters/yards apart. Place a ball at marker 2 and marker 4. Starting on marker 1, sprint to marker 2, dribble the ball to marker 3, sprint to marker 4, dribble the ball to marker 5. Walk back to the start replacing the balls as you do.

Note: To make this drill work for a larger group, simply add an extra marker to one end and have two equal groups at either end. A player from group A performs the drill leaving the balls at cones 3 and 5. They join the back of group B. A player from group B performs the drill leaving the balls at cones 4 and 2 and joins the back of group A. See the diagram below.



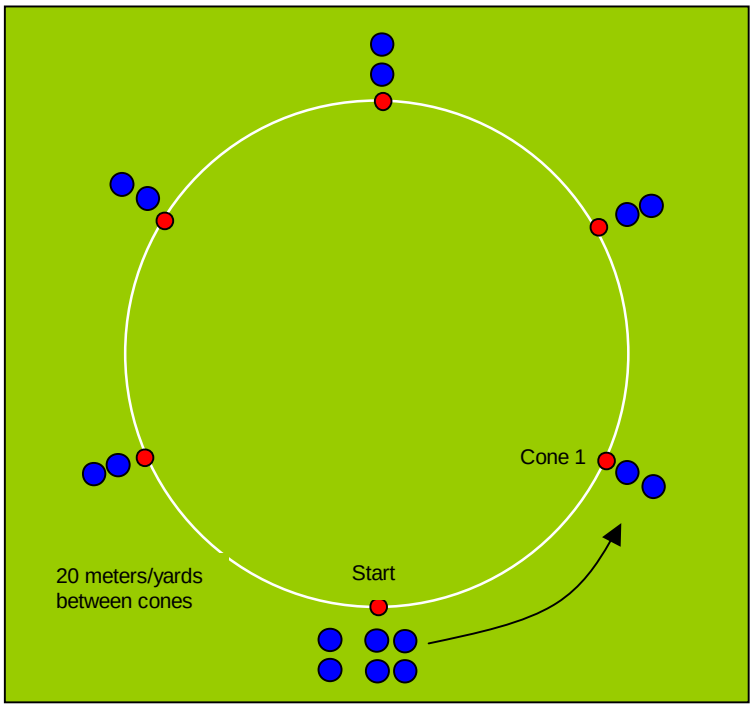
Jog with ball
Sprint

Drill #3 – Hollow Sprints
Sprint for 30 meters/yards, jog for 30 meters/yards, sprint for 30meters/yards, jog for 30meters/yards. Walk slowly back to the start and repeat.

Drill #4 – Downhill/Uphill Sprints
Running down a light hill will help to develop leg speed and co-ordination. It's often called **over-speed** training. A small grassy embankment is ideal as long as it's not so steep that you need to brake as you run. You should be able to run at full speed without feeling like you will fall over. Keep distances to 10 meters/yards and walk slowly back to the start before repeating.

Running uphill will help to develop acceleration power. The incline can be steeper than for downhill sprints. Some professional and semi-professional clubs take their players to the beach during pre-season and perform this drill on a sand dune. Keep distances short (10 meters/yards) and allow plenty of time to recover.

Drill #5 – Liverpool Sprints
Set up a series of cones about 20 meters/yards apart in a circle formation (see diagram below). Place two players on each cone. On one cone only there should be six players. This is the starting point. In the group of six, four players sprint to cone 1. The back two players wait at cone 1 while the front two players carry on to cone 2. They are also joined by the two players originally at cone 1. In effect, each pair sprints the length of two cones and then rests.



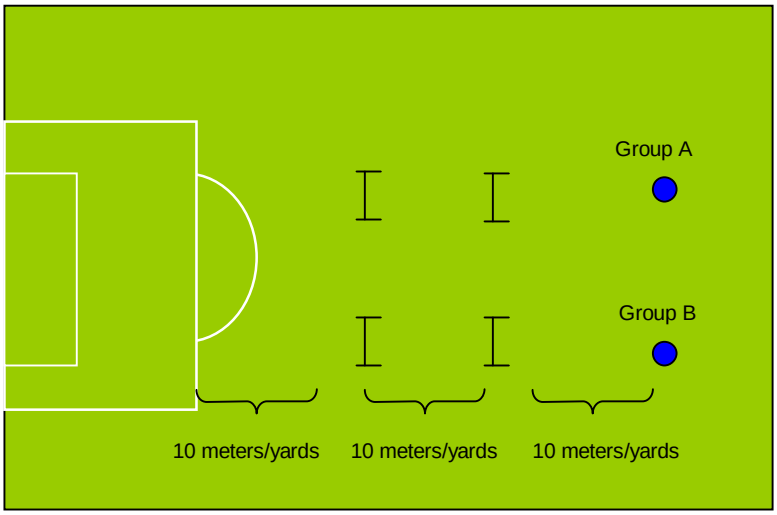
You will find more speed training drills in the Soccer Exercise Library.

3.2.2 Sample Agility & Quickness Drills

As with speed drills, agility and quickness drills are not meant to be physically demanding. The movements should be very high quality and are best performed when players are fresh. Perform some agility drills alongside the speed drills above. They can also be worked into other training sessions or used as part of an extended warm up.

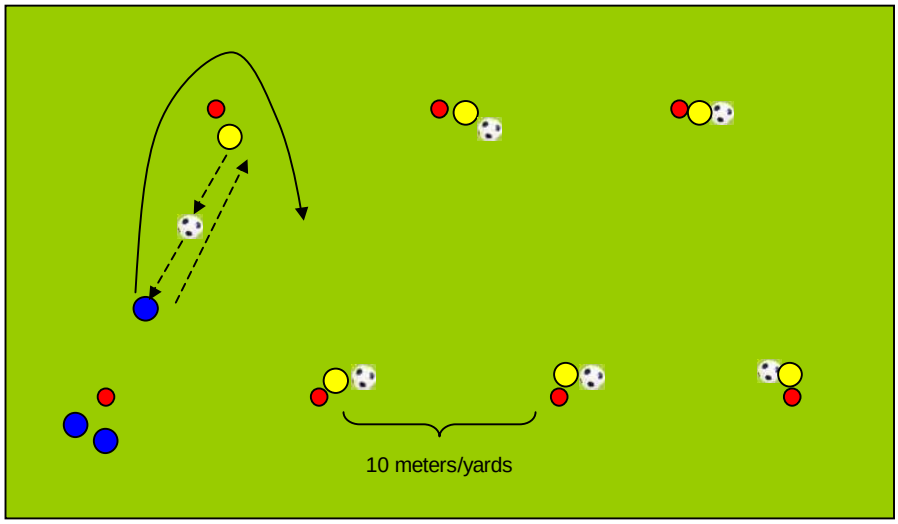
As with speed drills, keep the work to rest ratio to roughly 5:1. For example a 5 second sprint should be followed by approximately 25 seconds walking recovery. There is no need to time this with a stopwatch. The goal is to simply avoid a build up of lactic acid.

Drill #1 – Over-Under Hurdle
Set up a course according to the diagram below. Two sets of hurdles are placed 10 meters/yards outside the penalty area. Group A are designated attackers and group B defenders. On the coaches command, a player from each group sprints to the first hurdle, jumps it, sprints to the next hurdle and crawls under it before sprinting to a ball on the edge of the box. If the defender wins they clear the ball. If the attacker wins they shoot at goal.



Variation: Add alternate starts such as lying, sitting on hands, facing backwards etc.

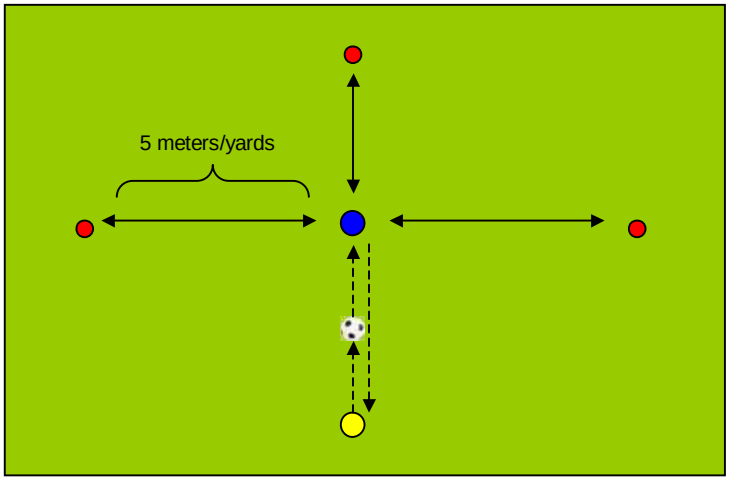
Drill #2 – Pass and Move
Set up a course according to the diagram below. A server (yellow) stands at each cone with a ball. As the player (blue) sprints towards the server they receive a pass and play it back with one touch. They sprint around the back of the receiver and on to the next receiver. When each player has performed the drill three times, change the groups over.



Note: The emphasis on speed should be as soon as the ball is played. Players are encouraged to focus on a sharp burst of acceleration as soon as the ball is passed back to the receiver.

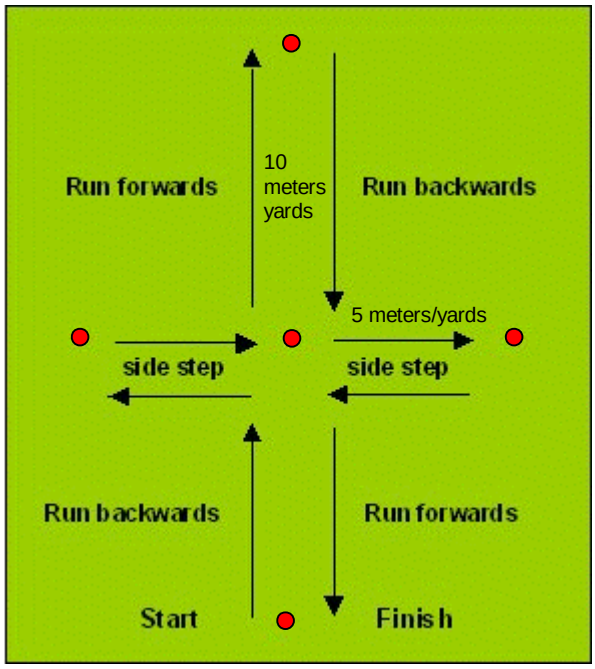
Drill #3 – Agility T Drill

Set up a series of cones similar to the diagram below. In pairs, one player acts as the server (yellow). Start by sitting down cross-legged. The drill begins with the server throwing the ball for you to get up quickly and volley back. Immediately side step to the right and back. The server should throw the ball for you to knee or chest back. Immediately side step to the left and back. The server should bounce the ball for you to pass back. Immediately run backwards and back to the start this time to head the ball back to the server. Change places.



Drill #4 – Super Shuttle

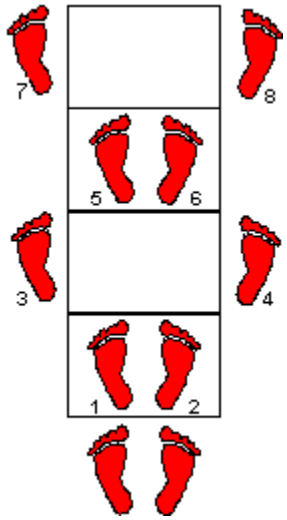
Set a series of cones out in a cross formation. See the diagram below. Run backwards to the center cone, side step to the right cone (or your left as you look at it on the diagram), side step back to the centre cone still facing the same way. At the center cone turn and sprint forward to the end cone. Now run back to the center cone, side step to the right, side step back to the center, then turn and sprint back to the start.



Drill #5 – Agility Ladder Drills

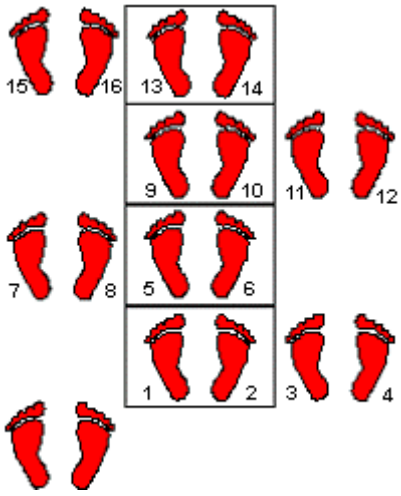
Agility ladders are excellent for improving foot speed, co-ordination and overall quickness. They can cost anywhere from $30 for shorter ladders to over $100 for more elaborate designs. An alternative is to either make your own with some white parcel string and a few soccer net pegs (make sure the pegs are pushed flush into the ground). Alternatively, you can paint a simple ladder pattern on grass with some white wash. Each section should be about 1.5 feet square and ten sections is ample. Practise the co-ordination slowly several times before you attempt these drills at speed. Here are three classic ladder drills:

In-Out



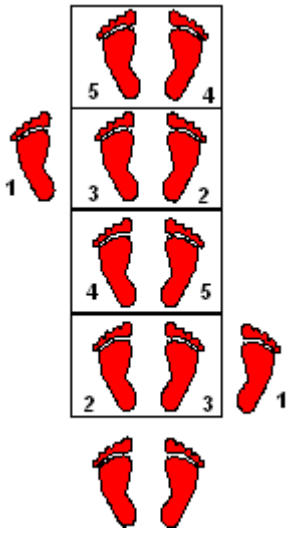
- Start with your feet hip width apart at the bottom of the ladder
- Step into the first square with your **left** foot first, immediately followed by your **right** foot
- With your **left** foot step outside to the left the second square, then immediately step outside the second square with your **right** foot
- Step back into the third square with your **left** foot first, followed by your **right** foot.
- Repeat this pattern in fluid motion for the length of the ladder

Lateral Feet Drill



- Start with both feet outside of the first square and to the left
- Step into the first square with your **left** foot first, immediately followed by your **right** foot... in a 1-2 motion
- Step to the right, outside the first square again with your **left** foot fist, followed by your **right**
- Now step diagonally left into the second square, with the **left** foot leading always keeping the same 1-2 motion
- Now step out to the left-hand side of the second square and repeat for the full length of the ladder

Five Count



- Start with your feet hip width apart at the bottom of the ladder
- Step out to the right of the first square With your **right** foot immediately followed by placing your **left** foot into the first square
- Bring your **right** foot along side your **left** in the first square then step into the second square with your **left** foot immediately followed by the **right**
- Count these first five steps in a 1-2-3-4-5 manor
- Reverse the sequence by stepping out to the right of the third square with your left foot
- Repeat for the full length of the ladder

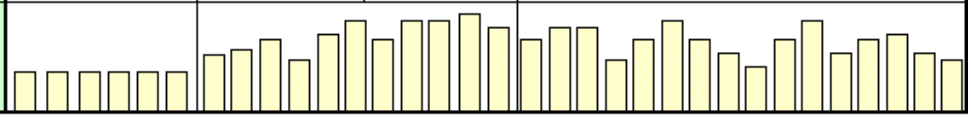
You will find more agility and quickness training drills in the Soccer Exercise Library.

Note For Goalkeepers

Speed and agility training for goalkeepers differs from outfield players. More emphasis should be placed on lateral (sideways) movements and shorter, sharper reaction drills. Some of the drills above are still useful for keepers such as some of the basic sprints from various starts and the ladder agility drills. For more goalkeeper specific SAQ drills see Appendix A.

3.3 The Annual Speed & Agility Conditioning Program

The Annual Speed & Agility Conditioning Plan

Month	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Phase	OS		EPS		LPS		CS					
SAQ Sessions	None		None		1-2 x week		Maintain 1-2 x week					
Power Sessions *	None		None		1-2 x week		Maintain: 1 x week					
Speed End. Sessions **	None		None		1-2 x week		Maintain: 1 x week					
Flexibility Sessions ***	None		None		3 x week		3 x week					
Training Intensity												

Key: OS - Off Season, EPS - Early Pre-Season, LPS - Late Pre-Season, CS - Competitive Season

* covered in Section 2 ** Covered in Section 1 *** Covered in Section 4

~ SECTION 4 ~

FLEXIBILITY CONDITIONING

Flexibility has to be the most undervalued of all the components of fitness.

Not only can it help to reduce the risk of injury, good flexibility also improves athletic and technical performance. Here are some of the reasons why:

- Muscles can apply force over a greater range of motion which in turn increases speed and power.
- Rebound movements such as kicking and jumping can become more explosive.
- Greater range of motion helps players reach further for the ball.

Flexibility training also helps to prevent and reduce the severity of injury (acute and chronic). How does it do that?

- Reduces muscle tightness and increase range of motion making tears less likely.
- Helps to improve posture and prevent low back pain.
- Increases tissue temperature, blood flow and nutrient supply within joint capsules helping to keep them healthy.
- Increases elastic strength allowing muscles and tendons to better cope with impact and forced extensions.
- Acts as an important part of a rehabilitation program following injury.
- Can help to maintain balance between the left and right side of the body preventing possible chronic pain and injuries in the future.

Despite all these important benefits, studies have shown that professional soccer players have poorer flexibility compared with other athletes.

Flexibility training should be given high priority in any soccer conditioning program – and not just as part of the warm up. It should also feature heavily right throughout the year.

4.1 The Different Types of Flexibility

Flexibility is simple defined as ***"The range of motion about a joint."***

However, there are **three** different types of flexibility and some are more relevant to soccer than others…

4.1.1 Dynamic Flexibility

Dynamic flexibility is the ability to perform dynamic movements across the full range of motion at a joint. Imagine kicking your leg out in front of you as high as possible (as if kicking an imaginary ball). The higher you can kick during this movement is a measure of the dynamic flexibility in your hamstrings and hip extensors.

A player's dynamic flexibility will be tested on many occasions during a game – stretching to intercepts passes, kicking, lunging, reaction saves, taking throw-ins and so on.

4.1.2 Static-Passive Flexibility

Static-passive flexibility is the ability to hold a stretch using your body weight or some other external force. Imagine raising your leg out in front of you and resting it on the back of a chair. As you gently lean forward you stretch the hamstrings.

During a game, static-passive flexibility is often tested when lunging for a ball, making a tackle and sudden twisting and changes in direction. In all these examples, contact with ground provides the external force against which muscles are stretched.

Having good static-passive flexibility will help to prevent muscles tearing from over-stretching.

4.1.3 Static-Active Flexibility

Static-active flexibility is the ability to stretch an **antagonist** muscle using only the tension in the **agonist** muscle. Agonists and antagonists are simply opposing muscles groups. Take the example above. Rather than resting your leg on the chair you would hold it out in front of you as high as possible. The hamstring (antagonist) is being stretched while the quadriceps and hip flexors (agonists) are holding your leg up.

In soccer, static-active flexibility is used less often than dynamic flexibility. One example is a 'side on' volley where a controlling the movement is as important as stretching to reach the ball.

4.2 Different Types of Stretching

Although there only three types of flexibility, there are at least twice as many stretching techniques. Some are more suitable than other and some should be avoided altogether. Here the most popular types of stretching:

- Dynamic stretching
- Static (passive or active) stretching
- Ballistic stretching
- Isometric stretching
- PNF (contract –relax) stretching

The most appropriate for soccer players are **dynamic** and **static** stretching.

4.2.1 Dynamic Stretching

Arm swings, leg swings, kicking an imaginary ball in an exaggerated way and twisting side to side are all examples of dynamic stretching. Rather than holding a stretch, dynamic stretching involves moving parts of your body and gradually increasing reach. The movements are controlled and rhythmical rather than 'bouncy' or 'jerky'.

Dynamic stretching is ideal as part of a pre-match or pre-training warm up. Recent research recommends dynamic stretching in the warm up ahead of static-passive stretching (see 4.2.2 next) to aid performance and prevent injury.

Quick Tip!

Do NOT bounce into a stretch or use 'jerky' movements. This is called ballistic stretching and it uses your momentum to stretch a muscle beyond its normal range of movement. When you see someone bouncing to touch their toes they using a ballistic stretch. Don't copy them!

As you would imagine, dynamic stretching increases dynamic flexibility. However, static-passive stretching also increases dynamic flexibility so it's more effective to combine both types of stretching into a routine.

4.2.2 Static-Passive Stretching

When you stretch without moving the limb it is said to be a static stretch. When you use some external support (such as the ground) it is called a static-passive stretch.

The classic quadriceps stretch where, standing on one leg, you pull your heel into your buttocks is an example of a static stretch. The leg is held in a static position using your hand to hold it there. If you squat down and extend one leg out in front so your heel is in contact with the floor, it is a static-passive stretch for the hamstrings. Again the leg is stationary and you use the ground to provide the support.

Static-passive stretching is one of the safest and most effective ways to increase both static-passive flexibility AND dynamic flexibility. It's best to perform these types of stretches at the end of a session or game when the body is completely warm and muscles are most receptive to changing length.

Note: Whenever you hear someone talk about "static stretching" this is what they are referring to even though technically it is called "static-passive".

Stretching in The Warm Up

Traditionally static stretches have always played a significant role in the warm up. But more and more findings are showing that it offers no additional injury prevention and it can actually reduce athletic performance! The best approach for warming up?

Stick to whole-body, aerobic exercise followed by dynamic stretching (more details in section 5).

4.3 Stretching For Soccer

To maintain and increase flexibility it is important to stretch regularly. The minimum recommendation is two to three times a week. Spend ten to fifteen minutes stretching at the end of a training session or match. As well as saving time on separate flexibility sessions you will also be thoroughly warmed up.

To increase your range of motion keep to **static** stretching exercises. Dynamic stretching is ideal during a pre-match or pre-training warm up (see section 5 for more details). You can finish a static stretching session with some dynamic stretches if you wish just to loosen limbs and help flush out any lactic acid that may have pooled in the muscles.

4.3.1 General Static Stretching Guidelines

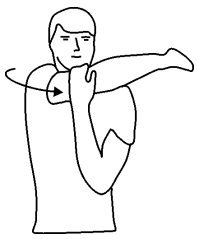
- You should be thoroughly warmed up before performing these exercises
- Stretch to just before the point of discomfort
- The feeling of tightness should diminish as you hold the stretch
- Breath out into the stretch. Avoid breath holding
- Hold each stretch for 10-30 seconds
- If tightness intensifies or you feel pain stop the stretch
- Shake out limbs between stretches
- Complete 2-3 stretches before moving onto the next exercise

4.3.2. Sample Static Stretching Session

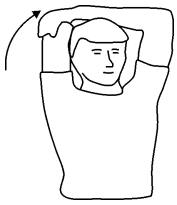
Perform the following stretches in order completing 2-3 stretches before moving on to the next stretch:

Stretch #1 – Shoulder & Chest
This can be performed kneeling or standing. Clasp hands behind back and straighten arms. Raise hands as high as possible and bend forward from the waist and hold.

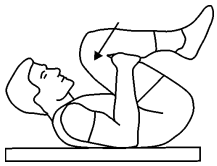
Stretch #2 – Arm Across Chest
Place one arm straight across chest. place hand on elbow and pull arm towards chest and hold. Repeat with other arm.



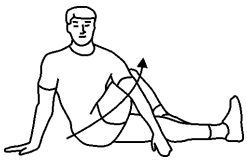
Stretch #3 – Triceps Stretch
Place one hand behind back with elbow in air. Place other hand on elbow and gently pull towards head. Hold and repeat with other arm.



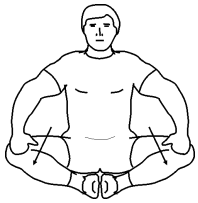
Stretch #4 – Knees To Chest
Lying on back pull both knees into chest and hold. Hands should be on hamstrings as shown and not on knees.



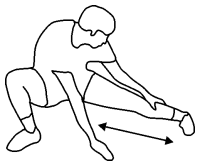
Stretch #5 – Glute Stretch
Sitting on floor with right leg bent, place right foot over left leg. Place left arm over right leg so elbow can be used to push right knee. Hold and repeat for other side.



Stretch #6 – Seated Groin
Sit with legs bent and soles together. Gently press knees down to increase Stretch.



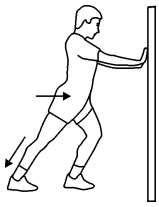
Stretch #7 – Adductor Stretch
Stand with feet as wide apart as is comfortable. Shift weight to one side as knee bends. Reach towards extended foot and hold. Repeat for other side.



Stretch #8 – Single Leg Hamstring
Place leg out straight and bend the other so your foot is flat into your thigh. Bend forward from the waist keeping your back flat. Hold and repeat with the other leg.

Stretch #9 – Standing Quadriceps
Standing on one leg grab the bottom of one leg (just above ankle). Pull heel into buttocks and push the hips out. Your thigh should be perpendicular to the ground. Hold and repeat with the other leg.

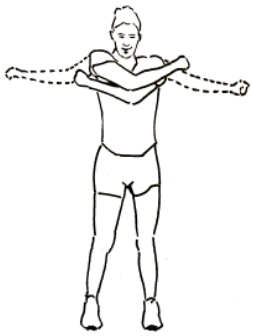
Stretch #10 – Standing Calf
Place feet in front of each other about 18 inches apart. Keep back leg straight and heel on the floor. Push against a wall to increase the stretch. Hold and repeat with other leg.



4.3.3 Sample Dynamic Stretching Exercises

These stretches are useful during the warm up and at the end of a cool down (see next section). They can also be used at the end of a stretching session to loosen limbs and redistribute any blood pooled in the muscles.

Stretch #1 – Arm Swings & Circles
Standing with feet shoulder width apart, extend the arms out to the sides and then bring them across the chest. This stretches the chest and shoulder muscles. Another good upper body dynamic stretch is to make large circles again crossing the arms in front of your body.



Stretch #2 – Side Bends
This stretch loosens the torso and upper back muscles. Place one hand by your side and the other above your head. Reach down to one side as far as is comfortable and then immediately repeat to the other side switching the position of your arms as you do.

Stretch #3 – Carioca

This stretch helps the muscles surrounding the hip joint and the lower back to release. Moving in a sideways direction start by putting your right leg across your left (as in the diagram). The next step is with your left foot to the side. Now step with your right leg behind your left leg. The result looks something like a salsa dance!

Stretch #4 – Funny Walk

To stretch the hamstrings dynamically walk without bending the knees, attempting to touch each foot with each stride.

Stretch #5 – High Knees

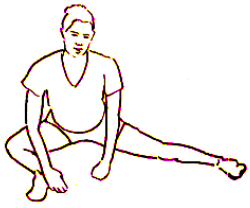
To stretch the hip extensors dynamically, walk bringing the knees as close to the chest as possible.

Stretch #6 – Walking Lunges

This stretch is superb for stretching the hip flexors which can become tight in soccer players. With hands clasped behind your head walk with an exaggerated lunging movement. Be sure to keep your trailing knee off the floor.

Stretch #7 – Inside Leg

This stretch is very similar to static stretch #7 (adductors) above. The difference is that the stretch is not held in position. Instead shift your weight from side to side (without bouncing) so that the left leg is stretched then the right and so on.



Note For Goalkeepers

Stretching is particularly important for goalkeepers. It will improve their reach, their reactions and their mobility in and around the goal area. The sample goalkeeper stretching program in Appendix A places more emphasis on the upper body compared with the routine above.

~ SECTION 5 ~

WARMING UP & COOLING DOWN

Just as you warm up and mentally prepare before every competitive game you should take the same approach to all your training sessions.

Warming up helps to prepare the body physically as well as helping you to get into the right mental state to perform at your best. A simple cool down will allow your body to recover more quickly from an intense session and can even reduce post-exercise muscle soreness.

5.1 Warming Up

Every player and coach appreciates the value of warming up. By increasing blood flow to the muscles and raising body temperature it helps to reduce muscle stiffness - which is thought to be directly related to injury such as strains.

Here are the key benefits of warming up:

- Muscles can contract and relax more rapidly when they are warm
- Muscle tightness can be reduced leading to greater economy of movement
- At higher body temperatures, muscles are more able to take up and utilize oxygen
- It can prevent muscle strains that are more likely to occur in cold, rigid muscles
- A specific warm up can help the body to recruit motor units more rapidly for all-out activity like sprinting and jumping

5.1.1 To Stretch or Not to Stretch?

For some time now, there has been debate between experts as to whether stretching should be performed before or after performing… or even at all.

The traditional school of thought claims that stretching before exercise helps to prevent injury and improve performance, and there are some studies to back this up. However, more recent research questions the value of pre-exercise stretching and actually suggests that it can hinder performance (reducing strength, strength endurance, explosive power, speed, co-ordination and balance).

The detrimental effect of stretching prior to a game relates specifically to static stretching and PNF stretching rather than to dynamic stretching. See section 4 “Flexibility Training” for more details on these different types of stretching.

Recommendations from more up-to-date research are to focus on dynamic, total body activities that increase muscle temperature and **dynamic stretching** exercises to increase range of movement.

Dynamic stretching may be more efficient at preventing injury than classical static stretches. Studies have shown that dynamic movements through the full range of motion are more effective at reducing muscles stiffness.

If any static stretching is performed it should take place **after** the session or game as part of the cool down or as a separate flexibility session.

5.1.2 General Warm Up Guidelines

A good warm up routine is limited only by the coach or player's imagination. However, there are a few general guidelines that will help to make the warm up more effective…

Warm Up Activities & Intensity

The routine should start light and gradually increase to near-competitive intensity at the end.

Start with general activities that involve large muscle groups. Examples include light jogging (with or without a ball) or skipping followed by some dynamic stretches. It's important you **avoid** sharp, explosive movements like kicking or sprinting or any activities that might cause over-stretching.

Incorporate both individual and team drills. While it is good to get the team working together, many players have their own specific preferences, which may help them prepare mentally.

It goes without saying that the warm up should incorporate a ball as much as possible. This allows players to get a feel for the ball and the playing surface. A ball might be introduced with some simple passing drills or ball juggling. Towards the end of the routine, drills that replicate the time pressures in a game will help to increase reaction time and speed of thought.

It's often a good idea to end the warm up with conditioned games in restricted spaces. The intensity should be similar to a competitive match (apart from tackling!) with players focusing on sharp, quick movement.

Warm Up Length

It takes about ten minutes of light exercise for muscles to reach an optimum temperature. A warm up should be at least this long but in cold conditions it may need to be longer.

Feeling warm is NOT the same as warming up. Even on hot days it's important to follow a warm up routine to increase blood

The time between finishing a warm up routine and starting a match or training session should be five minutes at most. Muscles rapidly cool after exercise so if the break is fifteen or twenty minutes most of the benefits will be lost.

Psychological Benefits

Many players benefit from the same warm up **structure** before each game as it helps them to get into a focused mental state. In Sports Psychology this is called a pre-match routine and it can be used to trigger a sense of confidence that the player is fully prepared. This doesn't mean you must perform exactly the same drills each week. It can be good to vary the exercises within the same overall structure.

Quick Tip!

Use the warm up to mentally prepare yourself for the game. Many pro players use Sports Psychology techniques such as visualizing a great game or using positive self-talk to get themselves into the right frame of mind. If you set yourself a specific outcome for a game (such as having 5 shots on goal, or winning 5 defensive headers) the warm up is a good time to affirm and visualize it.

Finally, you should warm up before **every** type of training session – whether it's team practise or an individual fitness session. Obviously you may want to reduce or omit the soccer-specific drills using a ball before some training sessions.

5.1.3 Sample Warm Up Routine

3-5 Minutes Light Jogging

Rather running across the pitch, jog from the touchline to the edge of the penalty area and back (about 5-6 yards/meters). Interchange straightforward jogging with backwards jogging, side stepping, carioca's, high knees, heel flicks, walking lunges etc. Alternatively, have the team form a circle (the centre circle can be used) jogging in and out to the center spot.

3-5 Minutes Dynamic Stretching

Perform some of the dynamic stretches from Section 4.3.3for the upper and lower body. Here are four more soccer specific dynamic stretches you may want to include:

High Knee to Ball

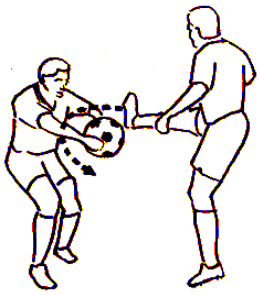
Have a partner hold a soccer ball at waist height and try to touch the ball with alternating high knees. The movement should be kept rhythmical and continuous by bouncing on your toes gently in between each high knee. Change places after 1 minute.

High Toe to Ball

As with the drill above have a partner hold a ball at waist/chest height. Try to touch the bottom of the ball alternating with each foot. You should be bouncing gently on your toes rather than staying flat footed throughout the drill. Continue for 1 minute and change places.

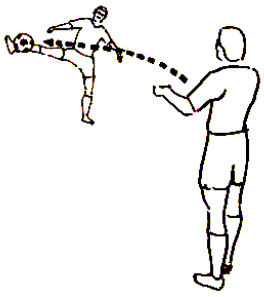
Round House

With a partner holding a ball at arms length lift your right foot over and around the top of the ball in an anticlockwise direction. Now take the same foot over and around the ball in a clockwise direction. Repeat for a total of 10 “roundhouse” kicks and repeat on the left leg.



Straight Leg Volley

Have a partner throw a ball for you to volley back at about waist height. Keep your leg straight and use the inside of the foot. You may have to adjust your position to the side so you are further away from the ball in order to avoid bending the knee. Repeat 10 times for each leg and repeat for the other leg.



5 Minutes Work With Ball

Ball work at this stage will help players to get a feel for the playing surface as well as help prepare them mentally. Ball should still keep the heart rate elevated however. You can use any number of the speed and agility drills

from the **Soccer Exercise Library.** A simple drill is to split the team into two groups of six or seven players. Within each group two players act as defenders and must intercept the ball from the other four. When they do two other players take their place.

5 Minutes Speed & Agility
At the end of the warm up intensity should almost mirror the level found during a game. Some short, basic sprints with alternate starts could be used at this stage. A ball can be incorporated also i.e. coach acts as a feeder for a volley pass or header at the end of the sprint.

Dynamic Stretching
At the very end of the warm up perform some more dynamic stretches.

There are literally an infinite number of possible warm up routines. Use some of the drills in the **Soccer Exercise Library** to build your own following a similar structure above

5.2 Cooling Down

While most athletes have heard of cooling down very few actually do it. The higher the level you want to play, the more demanding your training program will become. As training becomes more intense it's important that you give your body the best chance of recovery between sessions and after games.

The cool down will help to remove adrenaline from the blood as well as waste products such as lactic acid. It also gradually lowers heart rate, blood pressure and body temperature to resting levels.

A cool down can help to prevent delayed onset of muscle soreness the following day and it is the best warm down to prevent light headedness due to blood pooling in the extremities.

5.2.1 General Cool Down Guidelines

A cool down should be simple and not mentally taxing. Keep to basic movements that incorporate the large muscle groups (similar exercises to the start of the warm up).

Begin with five to ten minutes of light jogging gradually decreasing to a walk. Move on to five to ten minutes of static stretching exercises to all the major muscle groups. During the cool down period of a training session you can work on increasing your flexibility through static stretching (rather than having a separate session). See section 4 for more details on increasing flexibility.

5.2.2 Sample Cool Down Routine

5-10 Minutes Light Jogging
Jog at a steady pace gradually reducing the speed over 5-10 minutes until you come to a walk. Avoid any intense activity, sharp turning and sprinting. The objective is to help the body gradually reduce heart rate and blood pressure and flush out lactic acid.

Dynamic Stretches
Perform some dynamic stretches (as in the warm up).

5-10 Minutes Static Stretching
Follow the flexibility routine in section 4.3.2. You are now completely warm and this is the best time to increase range of motion with static stretching. It may also help to prevent muscle soreness the next day.

~ SECTION 6 ~

TESTING SOCCER FITNESS

Fitness testing should form the basis on which your entire conditioning program is built.

Every professional athlete (not just soccer players) understands the value of evaluating their level of fitness at regular intervals. The path to any performance goal is never usually a straight line but a series of peaks and troughs. How can you tell if you're on course for success if you never measure your progress?

Here are the three main reasons why fitness testing should be step number one in the design of any conditioning program…

They Act as a Benchmark

You can't begin to plan a program if you don't have a starting point. With a series of test results to hand you can determine how close (or far away) you are from where you want to be. From a training perspective it might help you with something as simple as setting the correct starting load in the weight room.

If you want to play professionally or semi-professionally what level of endurance do you require for example? If the average pro soccer player can run 3500m in twelve minutes (a test to determine maximal aerobic power), how do you compare?

They Help You to Prioritize

Even the most committed soccer players have limited training time available. In the perfect scenario you would be able to devote an equal amount of time to developing every aspect of your fitness. In reality, you must prioritise your time. Where do your weaknesses lay?

Do you have excellent stamina but lack explosive power? Are you quick off the mark but find it hard to hold the ball up and resist challenges? Only with a series of fitness tests will you have an objective answer. And you may even be surprised!

They Provide Motivation

Looking back and seeing how far you've come and how much you've developed is one of the most satisfying experiences in sport. You can only take full advantage of this positive reinforcement if you objectively measure your progress.

6.1 Fitness Testing Guidelines

A battery of fitness tests is simply a group of assessments that **closely represents** the various physical demands of your sport or event.

Soccer is an intricate blend of endurance, strength, power and speed. The test battery should include assessments that measure each of these components.

Ideally, each test must also replicate the same **energy demands** and **movement patterns** within the game. Taking endurance as an example, a running test is more appropriate than a cycle ergometer test. An **intermittent** running test (such as the multistage shuttle run) is more suitable than a continuous run.

There is nothing to stop you from making your own tests up! Many professional coaches do this already. Be sure to make a precise and detailed note how your test was performed so that it is repeatable.

Here are the most important points to bear in mind to make your fitness testing sessions as accurate and as reliable as possible:

- Always warm up thoroughly before performing a fitness assessment. Perform 5-10 minutes of light aerobic exercise followed by dynamic stretching to all the major muscle groups. Perform exactly the same warm up in future testing sessions.

- Always complete short, explosive tests first. For example, a standing vertical jump should be performed before a multistage shuttle run.

- Always keep the order of the fitness tests the same.

- Try to perform the assessments at the same time of day.

- Use exactly the same equipment. This is especially important in strength tests. The same weight settings on different machines can greatly vary in difficulty.

- If an examiner is taking measurements, have the same person take the measurements each time.

- Familiarise yourself with the testing procedures. Do a 'dummy run' if necessary but be sure not to exert maximal effort and tire yourself out!

- Avoid eating within two hours of the test battery, and avoid smoking, coffee and alcohol on the day of the test.

- Avoid training heavily the day before the physical fitness tests and do no training at all on the test day.

6.1.1 When Should Fitness Testing Occur?

The most obvious time is at the very beginning of pre-season when you are returning from a lengthy break. This is when results should be at their lowest during the season.

It's also sensible to complete a second assessment just prior to the start of the competitive season. This will give you a good indication as to how effective pre-season training has been and can act as a real confidence boost going into the first competitive game.

You may also want to perform a re-test midway through the in-season. This will help you to gauge whether your week-to-week training is maintaining the gains made in the pre-season.

Finally, any time you embark on a new type of conditioning, one you are new to, it's sensible to test prior to starting and then after six to eight weeks.

6.2 Aerobic Endurance Testing

Aerobic capacity is most accurately measured in laboratory setting using sophisticated gas analysers. Of course, for most players and teams this is completely impractical.

There are a number of field tests that measure aerobic endurance power. They are simple to perform, require little or no equipment and are reasonably accurate. They also allow coaches to test large groups of players simultaneously.

6.2.1 VO_{2max} – A Soccer Player's Aerobic Power

VO_{2max} is the maximum amount of oxygen (in millilitres) a player can take in and utilize every minute. It's expressed in relation to bodyweight and it has a very high correlation with endurance performance.

VO_{2max} in Other Elite Male Athletes

Sport	VO_{2max} (ml/kg/min)
Cross country skiers	83
Middle distance runners	80
Swimmers	77
Speed skaters	76
Cyclists	75
Rowers	62
Soccer players	62
Weight lifters	54
Sedentary Male	42
Sedentary Female	38

When coaches or athletes talk about aerobic capacity or aerobic power they are referring to $VO_{2max.}$ Several studies on soccer players have demonstrated that a relatively small improvement VO_{2max} substantially influenced their technical and tactical performance during a game. This includes more involvement with the ball and similar technical performance despite significantly higher exercise intensity, increased number of sprints, and a longer distance covered during the match

Several factors affect VO_{2max} including genetic makeup, age, gender and body fat percentage. Endurance training can increase VO_{2max} by as much as twenty percent so it's important to use a reliable test before and after any aerobic conditioning program.

VO_{2max} (ml/kg/min) For Various Soccer Positions

	Professional	Semi-Professional
Full Back	62	55
Center Back	56	55
Midfield	62	58
Striker	60	54
Goalkeeper	51	N/A

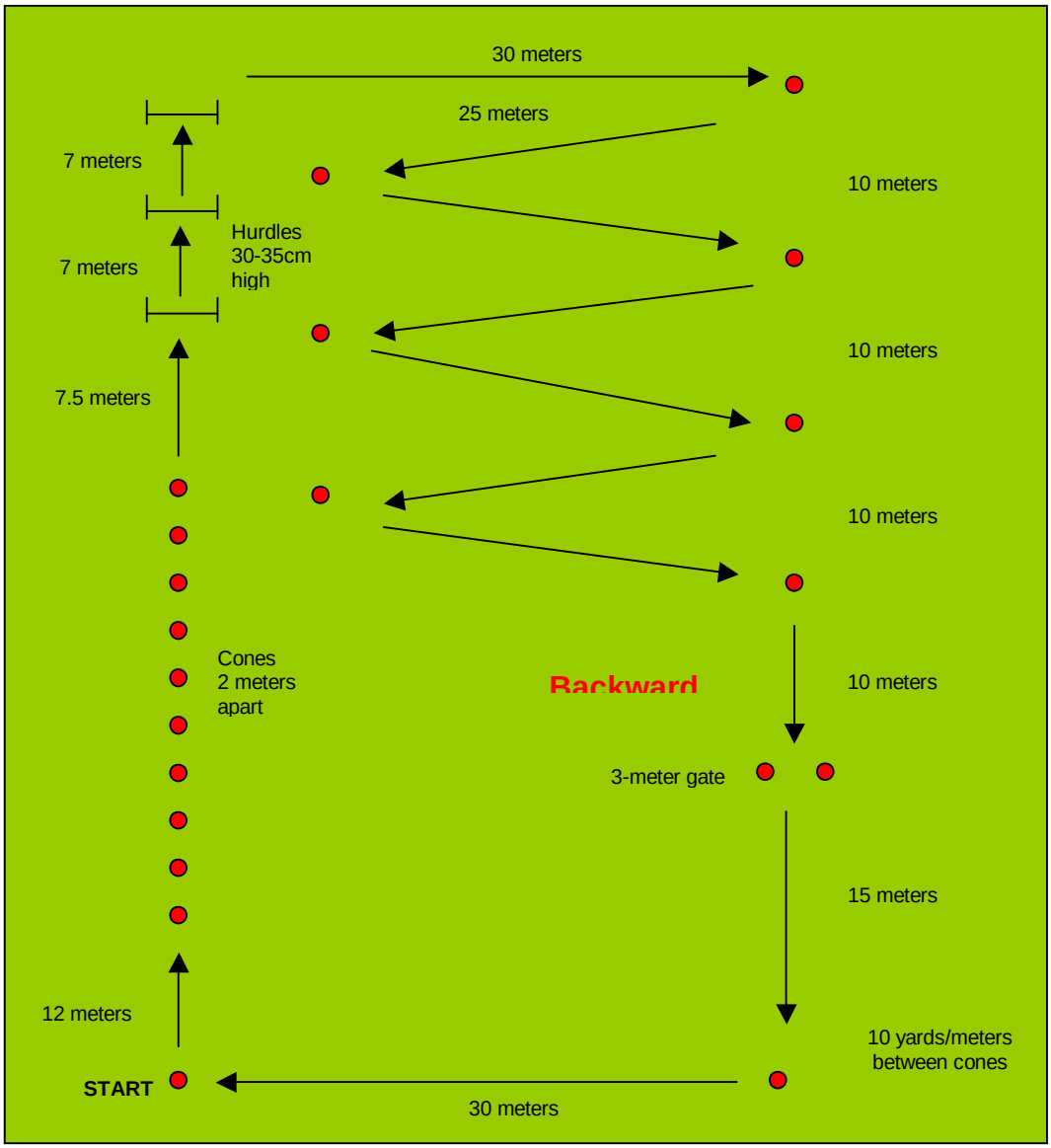
6.2.2 Aerobic Endurance Tests For Soccer

There are a number of field tests that measure aerobic endurance power. They are simple to perform, require little or no equipment and are reasonably

accurate. They also allow coaches to test large groups of players simultaneously. An endurance test is usually one of the last assessments in the test battery as it is the most exhausting.

Test #1 - Hoff Shuttle Run

This recently devised test is based on a dribbling circuit and results show a strong correlation to laboratory testing for maximum oxygen uptake. A recommendation is provided that under-15 soccer players should be able to cover more than 2100m in the Hoff test. The diagram below shows the circuit. There is no formula to convert to a score to VO_{2max} but for practical purposes VO_{2max} is not needed anyway.



Players perform the circuit for 10 minutes. The total number of circuits and the point on the final circuit is noted. Players dribble a ball around the first set of cones and up to the three hurdles. They pass the ball through the hurdle while jumping over it being careful not to knock the ball too far ahead. They must then navigate the next series of cones as quickly as possible. They dribble backward up to the 3-meter gate and then back to the start.

Overall this is an excellent soccer-specific endurance test and one of the few to incorporate a ball.

Test #2 - Multistage Shuttle Run

This test involves continuous running between two cones 20m apart in time to recorded beeps. The time between beeps decrease every minute forcing the players to speed up. Each minute is called a 'level'. The player must reach each cone at or before the bleep. If they are short a warning is given and they must catch up. If they fail to reach the next cone in time the test is ended. There are several versions of the multistage shuttle test; the most common version has an initial running speed of 8.5 km/hr and increases by 0.5 km/hr every minute.

The player records the number of levels and shuttles. This score can then be converted into a value for VO_{2max} with a table supplied with the test kit should it be required. You can get the multistage shuttle test (tape or cd recording and conversion chart) from several specialist stores online. You will also need a tape recorder/cd player, measuring tape, cones and recording sheets.

Test #3 – Cooper 12-Minute Run

This test simply involves running continuously for 12 minutes. If you have access to a standard, 400 meter athletic track, use that to measure the distance. Alternatively run around the perimeter of a soccer pitch. You should know the dimensions of the pitch either in yards or meters. Either way, use the same track/pitch each time you test. Use one of the following formulas to predict VO_{2max}:

For distance in Meters...
0.0225 x meters covered minus 11.3

For distance in Yards...
0.0206 x yards covered minus 11.3

For example, if you covered 3000 meters...

0.0225 x 3000 - 11.3 = **56.2**

Compare this result to that of professional and semi-professional footballers in section 6.2.1

6.3 Strength Testing

To measure a player's strength accurately it's important to conduct a few different assessments. One measures maximal or basic strength. A second test measures strength endurance and a third test will measure explosive power.

Remember that the order in which these tests are performed is important. Maximal strength and power assessments should precede strength endurance testing, which is more fatiguing.

It's also important to leave at least five to ten minutes between tests so you are fully rested.

6.3.1 Maximal Strength Test For Soccer

One Repetition Maximum (1-RM)
The one rep max (1-RM) is still considered the 'gold standard' of strength tests by most coaches. The procedure usually consists of the **bench press** and **leg press**. Both of these are **compound movements** incorporating most of the large muscle groups in the upper and lower body. However, you may want to perform a 1-RM test on the **leg extension** and **hamstring curl** as these movements closely match a kicking action. You could also test each leg unilaterally (one at a time) to compare strength in the right side compared to the left.

Free weights are usually more appropriate than weight machines for sports-specific strength training. However, if you plan to train using machines then test on machines also. Remember that the two different type of equipment will produce slightly different physical adaptations.

Testing Procedure
1. Warm up thoroughly with light aerobic exercise and 10 minutes of stretching to all major muscle groups.
2.Chose a weight that you think is about 90% to 100% of your 1-RM.
3. Perform the exercise making sure a coach or training partner is there to support you.
4. Rest for **at least 5mins**.

5. Add as small a weight increment as possible and try again. Remember to have your spotter with you.
6. Keeping resting and repeating until you find a weight that you can't quite manage on your own. The weight before that is your 1-RM.

Take your 1-RM weight for the bench press and leg press and **divide it** by your **body weight**. So for example if you leg pressed **300lbs** and you weigh **175lbs** your score is **1.7**. Check your score with the table below:

Relative One Repetition Maximum Results

Bench Press	Poor	Fair	Average	Good	Excellent
Male	0.6	0.8	1.0	1.2	1.4+
Female	0.3	0.4	0.5	0.6	0.7
Leg Press					
Male	1.4	1.8	2.0	2.4	2.8
Female	1.2	1.4	1.8	2.0	2.2

6.3.2 Strength Endurance Tests For Soccer

Test #1 - Push-Up Test
Along with the sit up test below, the push-up test is a standard field assessment for measuring **strength endurance**. The aim is to complete as many full push-ups as possible in **one minute**. Men should perform a standard push up while for women push-ups with bent knee support (i.e. weight on knees rather than toes) are more suitable. Use the table below to measure your score:

Push-Up Test Results

Push Ups	Poor	Fair	Average	Good	Excellent
Male	10	20	30	40	50+
Female	10	20	30	40	50+

Test #2 - Sit-Up Test
Complete as many full sit-ups in one minute as possible. A full sit-up should be performed and not a crunch. Knees should be bent with feet flat on the ground. Hands should rest against temples rather than behind the neck. Use the table below to measure your score:

Sit-Up Test Results

Push Ups	Poor	Fair	Average	Good	Excellent
Male	20	30	40	50	60+
Female	20	30	40	50	60+

6.3.3 Explosive power Tests For Soccer

Test #1 - Standing Long Jump
Along with the standing vertical jump the long or broad jump is an accepted assessment for ultra-short term power.

Testing Procedure
1. Mark out a line and stand with your feet slightly apart.
2. Taking off and landing with both feet, swing your arms and bend your knees to jump forward as far as possible.
3. Measure the distance in meters. Rest fully and repeat for a total of **3** jumps. Take the longest of the three trials as your final score.
4. Compare your results with the table below:

Standing Long Jump Results

Push Ups	Poor	Fair	Average	Good	Excellent
Male	<2.0m	2.3m	2.5m	2.7m	>3.0m
Female	<1.7m	1.9m	2.2m	2.5m	>2.8m

Test #2 - Standing Vertical Jump
This is a good test for soccer because it measures jumping power relevant for heading ability. It's also useful for goalkeepers. You will require some powdered chalk for this test.

Testing Procedure
1. Chalk your hand and stand next to a wall side on. Keeping your feet flat on the ground, reach up as high as possible and make a mark.
2. Relax for a moment. Bend your knees to right angles and jump as high as possible making a second mark on the wall.
3. Measure the distance between the two marks. Rest fully and repeat **3** times. Take the best score over the three trials and compare your result with the table below:

Standing Vertical Jump Results

Push Ups	Poor	Fair	Average	Good	Excellent
Male	<46cm	50cm	55cm	60cm	>65cm
Female	<36cm	40cm	45cm	50cm	>55cm

***** Professional soccer players average 60cm

Jump height can also be converted into power using the following formula:

Power = Body Mass (kg) x (4.9 x height jumped in meters)^2

For example, a 176lb player (80kg) who jumps 50cm (0.5 meters) would have 480kg-m of power:

80 x (4.9 x 0.5)^2

= 80 x 2.45^2
= 80 x 6.0
= 480kg-m

6.4 Speed & Agility Testing

Speed testing for soccer should measure acceleration and quickness over a relatively short distance (30 meters for example).

An agility test is used to measure a player's ability to change direction quickly. Soccer is rarely played in a straight line so a suitable agility test in an important assessment.

As soccer players are often required to repeat short sprints in quick succession, a speed endurance test is also very valuable.

Sprint tests should generally be carried out at the start of the test battery. The exception might be the sprint fatigue test which is more likely to leave a player feeling fatigued.

6.4.1 Speed Test For soccer

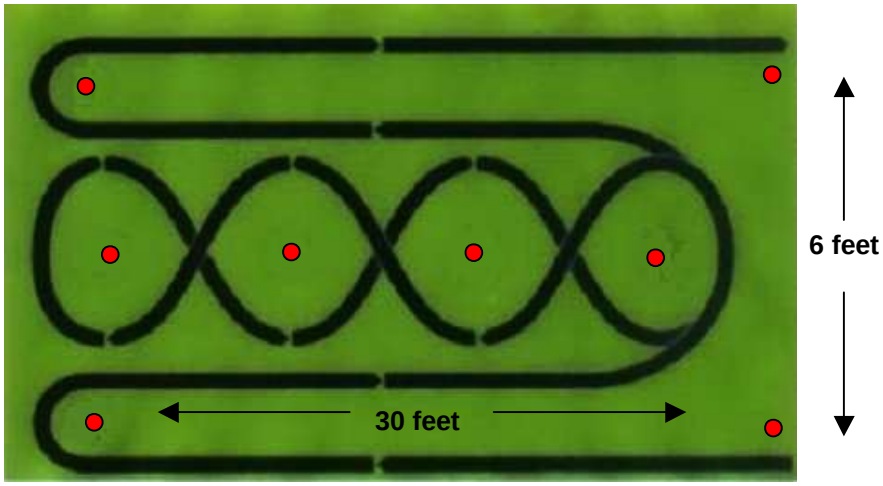
30-Meter Sprint Test
This test is used to measure acceleration and speed off the mark. A longer distance isn't relevant to soccer where players rarely run flat out for more than 20-30 meters/yards.

Testing Procedure
1. Set up 2 cones 30 meters apart starting at one cone.
2. On a signal of "Marks – Set – Go" sprint to the other cone as quickly as possible.
3. Have a training partner record the time.
4. Rest fully and repeat **three** times. Take your best time as the result.

Any time less than **5.0 seconds** is good. Professional soccer players average 4.0 seconds.

6.4.2 Agility Test For Soccer

Illinois Agility Test
This test measures your ability to change direction quickly. You will need 8 cones, a stopwatch and a training partner to record the time.



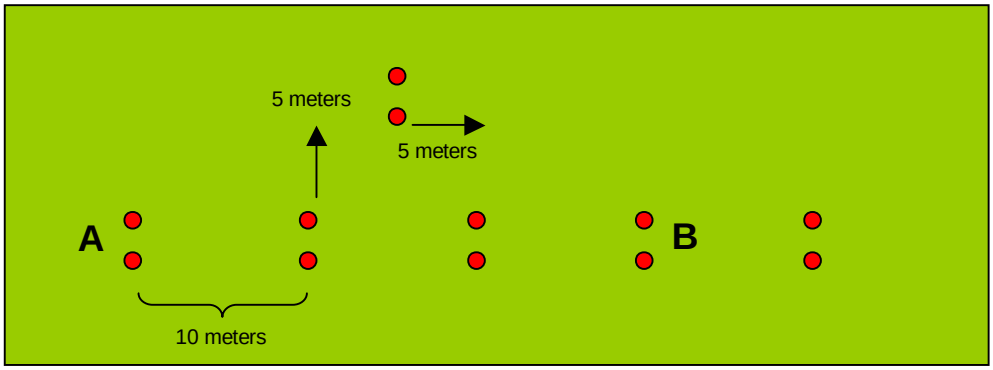
Testing Procedure
1. Set up the cones according to the diagram above.
2. Sprint the course from start to finish and have your training partner reord the time.
3. Rest fully and repeat the test a total of **3** times. Take your best time and compare to the table below:

Illinois Agility Test Results

	Poor	Fair	Average	Good	Excellent
Male	>18.8s	17.7-18.8s	16.8-17.6s	15.9-16.7s	<15.9s
Female	>23.4s	22.5-23.4s	18.7-22.4s	17.5-18.6s	<17.5s

6.4.3 Speed Endurance Test For Soccer

30-Meter Sprint Fatigue Test
Soccer players are often required to produce back-to-back sprints during a game. This test measures sprint fatigue or speed endurance. It's made more soccer-specific by adding in a deviation. For this test you will require 12 cones, a stopwatch and training partner to record times.



Testing Procedure
1. Set up the cones according to the diagram above.
2. Sprint from **A** to **B** through the cones as quickly as possible deviating 5 meters sideways. Have your training partner record the time.
3. Slow down over 10 meters and jog slowly back to **A** taking **30 seconds** to do so.
4. Repeat the sprint again immediately.
5. Complete a total of **10** sprints and have your training partner record all the times.
6. Subtract your fastest time from your slowest time. This is your **sprint fatigue index**. For example, if your slowest sprint was 7.5 seconds and your fastest was 6.9 seconds your sprint fatigue is **0.6.**

Use the table below to compare your results to professional players:

Sprint Fatigue for Professional Players

	Best Sprint	Ave. Sprint	Sprint Fatigue
Average	6.80	7.10	0.64
Range	6.53-7.01	6.83-7.31	0.15-0.92

Another useful way of interpreting the results is to take the average of the first 3 trials and divide it by the average of the last three trials. If your results were…

7.1s, 6.9s, 6.9s, 7.0s, 7.2s, 7.1s, 7.3s, 7.3s, 7.4s, 7.5s

The average of the first three trials is **6.97s.**

The average of the last three trials is **7.40s.**

6.97 ÷ 7.40 = 0.94 = 94%

You can then compare your score with the table below:

Sprint Fatigue (%)			
Poor	**Fair**	**Good**	**Excellent**
<79%	80-84%	85-89%	+90%

6.5 Flexibility Testing

Measuring flexibility is quick and easy. You may want to perform flexibility tests more often than other tests, perhaps every six to eight weeks.

These assessments are best carried out at the end of a testing session when your muscles are most warm. Also, stretching before strength and power assessments may negatively affect the results.

6.5.1 Flexibility Tests For Soccer

Test #1 – The Modified Sit & Reach Test
The sit and reach test is the most commonly used flexibility test. It measures the range of movement in the lower back and hamstrings. You will need a box about 30cm (12 inches) high and a 1-meter rule.

Testing Procedure
1. Sit on the floor with your back and head against a wall. Legs should be out straight ahead and knees flat against the floor.
2. Have someone place the box flat against your feet (no shoes). Keeping your back and head against the wall stretch your arms out towards the box.
3. Have someone place the ruler on the box and move the zero end towards your fingertips. When the ruler touches your fingertips you have the zero point and the test can begin.
4. Lean forward slowly as far as possible keeping the fingertips level with each other and the legs flat. Your head and shoulders can come away from the wall now. Do NOT jerk or bounce to reach further.
5. Slowly reach along the length of the ruler 3 times. On the third attempt reach as far as possible and hold for 2 seconds. Have your training partner read the score. Repeat twice and compare your best score with the table below:

Modified Sit & Reach Test Results				
Poor	**Fair**	**Average**	**Good**	**Excellent**
5cm	25cm	30cm	35cm	45cm

Alternatively you can buy the sit and reach test including a protocol guide from somewhere like http://www.power-sytems.com/

Test #2 – Trunk Rotation Test
The trunk rotation test measures the flexibility of the core and shoulders. You require nothing other than a brick wall and a piece of chalk.

Testing Procedure
1. Mark a vertical line on the wall. Stand with your back to the wall directly in front of the line. You should be about arms length away from the wall with your feet shoulder width apart.
2. Extend your arms out directly in front of you so they are parallel to the floor. Twist your trunk to your right and the touch the wall behind you with your fingertips. Your arms should stay extended and parallel to the floor. You can turn your shoulders, hips and knees as long as your feet don't move.
3. Mark the position where your fingertips touched the wall. Measure the distance from the line. A point before the line is a negative score and a point after the line is a positive score.
4. Repeat for the left side and take the average of the 2 scores and compare with the table below:

Trunk Rotation Test Results				
Poor	**Fair**	**Average**	**Good**	**Excellent**
5cm	10cm	12cm	15cm	20cm

Test #3 – Groin Flexibility Test
This test measures range of movement in the adductor muscles. The only piece of equipment you need is a ruler or tape measure.

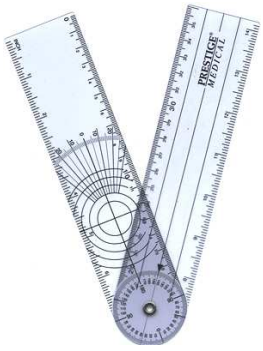
Testing Procedure
1. Sit on the floor with your knees bent, feet flat on the floor and legs together.

2. Let your knees drop sideways as far as possible keeping your feet together. The soles of your feet should be together.
3. Clasp your feet with both hands and pull you ankles as close to your body as possible. Measure the distance from your heels to your groin. Compare the results with the table below...

Groin Flexibility Test Results

Poor	Fair	Average	Good	Excellent
25cm	20cm	15cm	10cm	5cm

Test #4 – Goniometer Testing
A goniometer is basically the same as a set of compasses. You can use them to accurately measure your range of movement at every joint angle. You will find them at http://www.allheart.com for under $7.00.



6.6 A Sample Fitness Test Battery

Here is a sample test battery you could perform in a single afternoon. If you can't perform the tests as part of a team then have a partner help you record the data.

It's a good idea to keep a training log and the first entry should be your day one test results.

The order of the assessments below is designed to allow maximum performance in each test with minimal negative impact on the next test. Whichever order you choose; keep it the same for future assessment sessions.

Sample Fitness Test Battery for Soccer			
Test No.	**Fitness Test**	**Fitness Component**	**Time (mins)**
1	Standing vertical jump	Explosive power	10
2	30 meter sprint	Speed/acceleration	10
3	Sprint fatigue	Speed endurance	10
4	One repetition maximum	Maximal strength	15
5	Press up test	Strength endurance	10
6	Sit up test	Strength endurance	10
7	Multistage shuttle run	Aerobic endurance	30
8	Sit and reach	Lower body flexibility	5
9	Trunk rotation	Core flexibility	5

Note For Goalkeepers

You'll find a sample test battery for goalkeepers in Appendix A. You can still use many of the tests found in this section however.

~ SECTION 7 ~

PLANNING YOUR SOCCER CONDITONING PROGRAM

So far, each section of Total Soccer Fitness has focused on one specific component of conditioning and how it develops of the course of the season.

Now it's time to combine **all** the elements of fitness into one, cohesive and highly effective 12-month plan. Of course not all players and coaches have the time and resources to commit to such a program, so this final section also features a variety of less comprehensive plans.

Be realistic with your expectations. The most intricately planned program in the world is useless if you simply cannot follow it through. If your time is limited then prioritize. Remember the "80-20 principle"… about 20% of your training will make 80% difference to your game. And how do you know which 20% to focus on?

Complete a battery of soccer-specific fitness tests from Section 6. From the results you can identify any weaknesses and devise your plan to around them for maximum efficiency.

7.1 The Conditioning Phases of a Soccer Season

From a conditioning point of view the soccer season always lasts a full 12 months. The reason is that the closed-season or off-season is just as important as any other time of year for players.

A 12-month soccer program can be divided in to four categories of phases:

- Closed/Off Season
- Early Pre-Season
- Late Pre-Season
- Competition/In-Season

The Conditioning Phases of Soccer Season				
	Closed Season	**Early Pre-Season**	**Late Pre-Season**	**In-Season**
Endurance	Cross-Training, low intensity	General, aerobic endurance	Soccer specific anaerobic endurance	Maintain soccer specific endurance
Strength	Foundational, general strength	Maximal strength	Strength endurance & explosive power	Maintain strength endurance & power
Speed/Agility	None	None	Soccer specific speed and agility	Maintain speed & agility
Flexibility	Maintain/Increase	Maintain/Increase	Maintain/Increase	Maintain
Fitness Testing	None	Test at start of pre-season	Test at end of pre-season	Test midway through season

Splitting up the season this way allows you to develop a much more effective program. Even if you train the same number of times per week as you always have, you can develop a higher level of fitness and reach your peak just as you need it.

7.1.1 Closed Season Conditioning

Far too many players and coaches just abandon all forms of training once the competitive season is over. It doesn't take long to lose the fitness you've worked so hard to build up. In fact, just 4-5 weeks of doing little or nothing reverses the majority of positive changes training can build up.

At the other end of the scale are the players who just don't know when to give themselves a break. Rest is important not just to allow the body to recover physically but it also helps to prevent mental fatigue and injury going into next season.

Cross-training is ideal for soccer players during the closed season. It helps to maintain aerobic endurance but uses different muscles groups in different movement patterns providing a break from the repetitive kicking, twisting and turning in soccer. See section 1.2.6 for more details. No speed and agility training and no anaerobic endurance drills in this phase!

Many players may find it beneficial to follow a strength training program during the closed season. Strength for sport can take several months to develop (even more for players new to strength training). The closed season is a good time to address some of the imbalances that competitive sport places on the body with a foundation strength program. While the amount of weight and number of sets should be less than during the rest of the year, the sessions should still be intense enough to bring about the proper adaptations. See section 2.4 for more details.

Maintain flexibility by stretching (section 4.3) at the end of all exercise sessions.

7.1.2 Early Pre-Season Conditioning

The pre-season phase is probably the most important phase in the soccer conditioning program as it lays the foundations for the entire season. As such it's better to split this phase in two – early and late pre-season. The pre-season as a whole (early and late) should last ideally 8 – 12 weeks.

The early pre-season is about preparing for the more demanding late pre-season. Overall intensity should be higher than the closed season but still only moderate.

Endurance
The first week or two should consist of continuous sessions like fartlek training (section 1.2.3). Starting with a gruelling interval session on day one can leave players sore for days and hamper subsequent training sessions. After a week or two of gradually easing back into training begin to incorporate some interval runs (found in section 1.2.4). A session may only last 20-30 minutes but will be more intense than the continuous sessions.

Strength
If you've completed a 6-8 week phase of foundational training, the early pre-season is a good time to increase the intensity and build maximal strength. Again sessions will be shorter with fewer exercises but lifting relatively heavy weights will make the sessions more demanding. See section 2.5 for more details.

Speed and agility training won't usually feature in the early pre-season but you should maintain flexibility with a stretching program.

7.1.3 Late Pre-Season Conditioning

Training during the late pre-season becomes much more intense and soccer related. This phase is the most demanding in the year and as a result sessions tend to be shorter.

Endurance
Interval sessions are continued to build aerobic endurance. Anaerobic endurance drills are now are also introduced to help players develop a greater tolerance to lactic acid. See section 1.3 for sample anaerobic endurance drills.

Strength
Strength training should also become more soccer related during the late pre-season. Previous phases have built a solid and balanced base of strength which can now be converted into muscular endurance (section) and power (section).

Speed & Agility
Speed, quickness and agility drills are introduced during the late pre-season. The strength and power training completed in early phases will make a great difference to your speed. SAQ drills will add sharpness and good technique and they should continue into the competitive season.

Try to maintain flexibility throughout this phase also.

The late pre-season is not only the most demanding phase of conditioning, it also involves more different types of training than any other phase. Careful

planning is need to make the best use of the time available and if it's possible you may want to consider adding in an extra session for these 4-6 weeks.

7.1.4 In-Season Conditioning

There are two major goals for in-season conditioning. The first is to maintain the high levels of soccer-specific fitness built up over a tough pre-season. The second is to avoid over-training and burn out.
The emphasis should be on interval and anaerobic endurance sessions, power training with plyometrics and speed drills. Don't forget that a competitive match counts as a training session! Teams often have two competitive games in a week so it's best to plan training on a week-to-week basis rather than the entire season at once.

To avoid fatigue, schedule in a week of lighter training every 6-8 weeks. This might include replacing interval drills with less strenuous continuous sessions. Strength and power training can skipped for a week or replaced with a light, bodyweight circuit.

If you or your team is fortunate enough to reach a major final, then training should taper towards the event. Gradually reduce the amount and the intensity of training 3-4 weeks prior to the game.

7.1.5 Weekly Conditioning Guidelines

- Plan training on a week-to-week basis **as well** as having an overall general program. There will always be some unexpected event that forces you to change your schedule and flexibility is crucial to success.

- Avoid two very intense training sessions on consecutive days. A competitive match counts as an intense training session.

- If you perform two types of training in the same day, the training that requires higher quality/intensity should be performed first. For example, lower body strength training should occur before endurance training. Speed drills should be performed before lower body strength training and endurance sessions. You wouldn't perform a tough anaerobic endurance session in the morning and then do speed drills in the evening for example.

- Ideally try to schedule a rest day before a match. However, you can perform some SAQ drills but remember these are about quality and speed of movement and should not leave you fatigued.

- If you feel tired or sore from previous training sessions don't attempt any high quality drills such as speed training, plyometrics or lower body strength training. (Upper body strength training is not usually a problem because it's the only training session that places strain on the upper body).

- If you feel generally fatigued or run down, then rest for a day or two. Don't be so rigid with your plan that you have to follow it to the letter. Learn to listen to your body. If you're honest with yourself you'll know when you genuinely need a rest and when you are just being lazy!

Here's the complete 12-month soccer training program incorporating all the components of fitness and how they fit together:

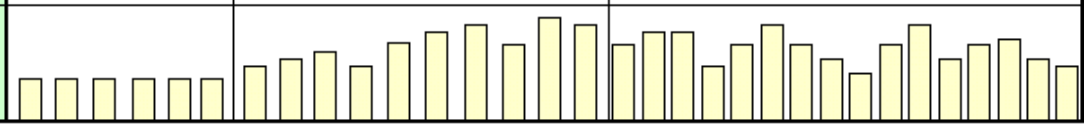
The 12-Month Total Soccer Fitness Program												
Month	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**
Phase	**OS**		**EPS**	**LPS**	**CS**							
Endurance	Cross Training & Active Recovery		Continuous & Interval Training	Lactate Tolerance & Speed Endurance	Maintain Lactate Tolerance & Speed Endurance							
Strength	Foundational		Basic Strength	Strength Endurance	Maintain Basic Strength & Strength Endurance							
Power	None		None → Low	High (Plyometrics)	Maintain							
Speed/Agility	None		None → Low	High	Maintain							
Flexibility	Improve/Maintain		Improve/Maintain		Improve/Maintain							
Fitness Test			Test Start and End Pre-Season		Test 1-2x mid Season							
Training Intensity												

Table 5: The Annual Soccer Conditioning Plan
Key: OS - Off Season, EPS - Early Pre-Season, LPS - Late Pre-Season, CS - Competitive Season

7.2 Sample Soccer Conditioning Programs

Here is a collection of sample conditioning programs for each phase of the season. They are based on a different number of days available for training during the week. The list is not exhaustive – there is literally an infinite number of different scenarios faced by each player and team every season. These varied examples will give you a clear idea of how everything fits together so that it's easy for you to develop your own tailor-made program.

All these programs assume you warm up and cool down adequately at the start and end of each session. See section 5 for details.

7.2.1 Closed Season Programs

A closed season program should begin immediately at the end of the competitive year or at least after a week or two of rest. How long it lasts depends on when you decide to begin your pre-season program. Pre-season training should start between 8 and 12 weeks before the start of the new competitive season so take the closed season up until that point.

Program #1 – 3 Days Per Week

Exercising just 3 days a week will allow your body to recover from the strains of a tough season and will also help you to maintain a good proportion of your fitness.

Closed Season Program (3 Days)		
	Sample Session	**Intensity**
Mon	Weights session (foundational, total body routine, emphasis on core region), 30-45 minutes cross training (cycling, swimming, elliptical trainer, tennis etc.). Finish with 10-15 minutes static stretching to all major muscle groups.	Light-Moderate
Tue	Rest	
Wed	30-45 minutes continuous training session cross training or running. If monitoring heart rate aim for 70-75% of maximum (220-age). Finish with 10-15 minutes static stretching to all major muscle groups.	Light-Moderate
Thu	Rest	
Fri	Weights session (foundational, total body routine, emphasis on core region), 30-45 minutes cross training (cycling, swimming, elliptical trainer, tennis etc.). Finish with 10-15 minutes static stretching to all major muscle groups.	Light-Moderate
Sat	Rest	
Sun	Rest	

Monday: Choose a foundational strength program from section 2.4.5 or from the Soccer Exercise Library. Aim for the lower end of the recommended amount of exercises, sets and repetitions so that your sessions don't become too long. The weights session should take 30-45 minutes maximum. Next complete 30-45 minutes of aerobic exercise preferably, something other than running. You may also want to finish with some stretching (section 4.3.2) if the session is not too long.

Wednesday: Complete a 30-45 minute aerobic exercise session. If a heart rate monitor is available use the Karvonen formula in section 1.2.3 and work

to a target heart rate of 70-75%. Again complete the session with some stretching.

Friday: Repeat Monday's session.

Program #2 – 5 Days Per Week

Although the closed season is primarily about rest and recovery, that doesn't mean fewer exercise sessions will allow the body to replenish more quickly. Three longer sessions may be more stressful than five shorter, lower intensity sessions. Recovery comes from controlling the volume and intensity rather than the number of training days per week.

Closed Season Program (5 Days)		
	Sample Session	**Intensity**
Mon	Weights session (foundational, total body routine, emphasis on core region)	Moderate
Tue	30-45 minutes cross training (cycling, swimming, elliptical trainer, tennis etc.). Finish with 10-15 minutes static stretching to all major muscle groups.	Light-Moderate
Wed	30-45 minutes cross training (cycling, swimming, elliptical trainer, tennis etc.). Finish with 10-15 minutes static stretching to all major muscle groups.	Light-Moderate
Thu	Weights session (foundational, total body routine, emphasis on core region)	Moderate
Fri	30-45 minutes cross training (cycling, swimming, elliptical trainer, tennis etc.). Finish with 10-15 minutes static stretching to all major muscle groups.	Light-Moderate
Sat	Rest	
Sun	Rest	

Monday: Choose a foundational strength program from section 2.4.5 or from the Soccer Exercise Library.

Tuesday: Complete a 30-45 minute aerobic exercise session. If a heart rate monitor is available use the Karvonen formula in section 1.2.3 and work to a target heart rate of 70-75%. Follow the stretching program in section 4.3.2 to complete the session.

Wednesday: Repeat Tuesday. For variation choose a different mode of exercise i.e. cycling if swimming was chosen on Tuesday. Finish with some stretching exercises to all major muscle groups.

Thursday: Repeat Monday's weights session.

Friday: Repeat Tuesday's aerobic endurance session.

7.2.2 Early Pre-Season Programs

Split the early and late pre-season into two equal phases. The length of the early pre-season should range from 4-6 weeks depending on how long you decide to make the entire pre-season.

Program #1 – 4 Days Per Week
During the pre-season, training must be stepped up. Aim for a minimum of 4 training sessions per week. Any practice games count as a session as does any team training (assuming it involves a fitness element).

Early Pre-Season Program (4 Days)		
	Sample Session	**Intensity**
Mon	Weights session (maximal strength, upper body). Rest. Continuous training session (i.e. Fartlek running). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Tue	Rest	
Wed	Team Training (continuous/interval endurance session, ball work). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Moderate
Thu	30-45 minute interval training session (i.e. increasing lap run, Hoff circuit, penalty area run). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Fri	Weights session (maximal strength, lower body)	Intense
Sat	Rest	
Sun	Rest	

Monday: Select a maximal strength program from section 2.5.6. The advanced program is split in to two separate sessions – upper body and lower body. When training time is limited this will allow you to perform other sessions on the same day without over-training certain muscle groups. If this is the first time you have followed a maximal strength training program you may want to use the beginner program and split it into two separate sessions – upper body and lower body.

Wednesday: Most team training during the pre-season will incorporate an element of endurance fitness work. If it doesn't, it's worthwhile staying an extra half hour and completing a continuous or interval session followed by some stretching exercises outlined in section 4.3.2.

Thursday: Choose an interval training drill from section 1.2.4 or from the Soccer Exercise Library and complete a 30-45 minute endurance session. You may want to combine two drills and perform fewer sets than recommended. The aim is to train for at least half an hour. Again finish with stretching to all the major muscle groups.

Friday: Complete the second session in your maximal strength routine (lower body). If you were to perform this session on Monday, it would be difficult to carry out an endurance session immediately afterwards. Setting up the routine this way your legs have the weekend to recover. This is the ideal set up but don't worry if it's not possible within your own schedule.

Program #2 – 5 Days Per Week
Here is a sample program that assumes you have 2 team training sessions per week.

Early Pre-Season Program (5 Days)		
	Sample Session	**Intensity**
Mon	Weights session (maximal strength)	Intense
Tue	Team Training (continuous/interval endurance session, ball work). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Moderate
Wed	30-45 minute interval training session (i.e. increasing lap run, Hoff circuit, penalty area run). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Thu	Team Training (continuous/interval endurance session, ball work). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Moderate
Fri	Weights session (maximal strength)	Intense
Sat	Rest	
Sun	Rest	

Monday: Select a maximal strength program from section 2.5.6. Unlike the previous 4-day program there is no need to split the program into two separate sessions. The extra day allows an interval training session to be performed later in the week.

Tuesday: Team training session. Finish with stretches outlined in section 4.3.2.

Wednesday: Choose an interval training drill from section 1.2.4 or from the Soccer Exercise Library and complete a 30-45 minute endurance session. If

team training consists of a lot of hard interval training you may want to complete a lighter, continuous session here.

Thursday: Team training session.

Friday: Repeat Monday's strength session.

7.2.3 Late Pre-Season Programs

The late pre-season is the most demanding and most soccer-specific phase in the entire year. It usually also sees the introduction of practice matches. If you can commit to 4 training sessions and 1 practice match a week (or 5 training sessions) just for this 4-6 week period it will set you up for the rest of the season.

Program #1 – 4 Days Per Week + 1 Practice Match
Notice how a rest day is scheduled before and after a game. If your practice match falls on a different day then rearrange the schedule to allow for adequate rest. It's less important than it is during the competitive season but for many players the pre-season is a time when they must prove themselves to coaches and that's difficult to do if you are suffering from the day before!

Late Pre-Season Program (4 Days + 1 Practice Match)		
	Sample Session	**Intensity**
Mon	Speed drills 5 sets of 10 reps (i.e. alternating starts). Rest. 30-45 minute interval training session (i.e. increasing lap, Hoff circuit, penalty area run). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Tue	Plyometrics	Moderate
Wed	Team Training (anaerobic endurance session i.e. shuttle runs, union jacks, ball work). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Thu	Weights session (strength endurance circuit training). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Moderate
Fri	Rest	
Sat	PRACTICE MATCH	Intense
Sun	Rest or recovery run	Light

Monday: Start the session with speed drills from section 3.2.1. These require high quality work when muscles are fresh. They shouldn't leave you fatigued so after a short rest you can complete an interval session as in section 1.2.4

or from the Soccer Exercise Library. Finish with some static stretching exercises.

Tuesday: Choose a plyometrics routine from section 2.7.5. Like speed drills these should be performed when you are fresh so if you plan plyometrics on the same day as other training, complete them first.

Wednesday: Team training session. This program assumes team training at this stage will involve some hard anaerobic endurance work such as shuttle runs. If it's more of an interval session you may want to complete anaerobic endurance drills on Monday in place of the interval session there.

Thursday: Strength training now focuses on developing soccer-related muscular endurance. Complete one of the sample circuits from section 2.6.6 or from the Soccer Exercise Library.

Saturday: Practice Match. The end of a game is good time to following a stretching program when the body is completely warm.
See section 4.3.2.

Sunday: If you are particularly sore from the game the day before you will benefit from a light recovery run found in section 1.2.5.

Program #2 – 4 Days Per Week + 1 Practice Match
This example program is still based on 4 training days but includes an extra plyometrics session and agility drills.

Late Pre-Season Program (5 Days + 1 Practice Match)		
	Sample Session	**Intensity**
Mon	Plyometrics. Rest. 30-45 minute interval training session (i.e. increasing lap, Hoff circuit, penalty area run). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Tue	Agility drills 3-5 sets of 10 repetitions (i.e. agility ladder). Speed drills 5 sets of 10 repetitions (i.e. alternating starts)	Light
Wed	Weights session (strength endurance circuit training). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Moderate
Thu	Plyometrics. Rest. 30-45 minute anaerobic endurance session (i.e. shuttle runs, union jacks, penalty area sprint). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Fri	Rest	
Sat	PRACTICE MATCH	Intense
Sun	Rest or recovery run	Light

Monday: Start the session with a plyometrics routine (section 2.7.5). These require high quality work when muscles are fresh. They shouldn't leave you fatigued so after a short rest you can complete one of the interval sessions from the Soccer Exercise Library or in section 1.2.4. Finish with some static stretching exercises.

Tuesday: As this day is reserved purely for SAQ training you can add in some agility drills from section 3.2.2 as well as some speed drills from section 3.2.1

Wednesday: Complete one of the sample circuits found in section 2.6.6 or from the Soccer Exercise Library. Finish with some flexibility training.

Thursday: Repeat Monday's session only replace the interval training with 30-45 minutes of anaerobic endurance drills from section 1.3.1 or from the Soccer Exercise Library. Finish with some static stretches.

Saturday: Practice Match. The end of a game is good time to following a stretching program when the body is completely warm.

Sunday: If you are particularly sore from the game the day before you will benefit from a light recovery run found in section 1.2.5.

Program #3 – 4 Days Per Week + 1 Practice Match

Teams very often have 2 practice matches in the weeks leading up to the season start. It becomes difficult to incorporate all the elements of fitness AND allow for adequate rest in a single week. Remember though that ALL training is a means to an end and that end is to make you or your team better. Training should never get in the way of games – even practice matches, so be flexible and accept that you will have to forgo some conditioning sessions during these weeks.

Late Pre-Season Program (3 Days + 2 Practice Matches)		
	Sample Session	**Intensity**
Mon	Plyometrics. Rest. 30-45 minute anaerobic endurance session (i.e. shuttle runs, union jacks, penalty area sprint). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Tue	Rest	
Wed	PRACTICE MATCH	Intense
Thu	Rest	
Fri	Agility drills 3-5 sets of 10 repetitions (i.e. agility ladder). Speed drills 5 sets of 10 repetitions (i.e. alternating starts)	Light
Sat	PRACTICE MATCH	Intense
Sun	Rest or recovery run	Light

Monday: Start the session with a plyometrics routine found in section 2.7.5. These require high quality work when muscles are fresh. Complete 30-45 minutes of anaerobic endurance drills from section 1.3.1 or from the Soccer Exercise Library. Finish with some flexibility training found in section 4.3.2.

Wednesday: Practice Match. Some flexibility training if possible.

Friday: SAQ training should be performed “all-out” but the drills should be short enough with long enough work to rest ratio that you are not left fatigued. Complete some agility drills from section 3.2.2 as well as speed drills from section 3.2.1.

Saturday: Practice Match. The end of a game is good time to following a stretching program when the body is completely warm. See section 4.3.2.

Sunday: If you are particularly sore from the game the day before you will benefit from a light recovery run found in section 1.2.5.

7.2.4 In-Season Programs

Here are 3 sample programs for the competitive season. They are designed to maintain the gains in strength, power and endurance made in the pre-season. Everything is built around the competitive game.

Program #1 – 3 Days Per Week + 1 Match

In-Season Program (3 Days + 1 Competitive Match)		
	Sample Session	**Intensity**
Mon	Plyometrics. Rest. 30-45 minute interval training session (i.e. increasing lap, Hoff circuit, penalty area run). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Tue	Rest	
Wed	Team Training (speed & agility drills followed by anaerobic endurance session i.e. shuttle runs, union jacks, ball work). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Thu	Weights session (strength endurance circuit training). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Moderate
Fri	Rest	
Sat	MATCH	Intense
Sun	Rest or recovery run	Light

In this program there is only time for one strength training session and one plyometric session a week. In this example the strength session consists of circuit training to maintain strength endurance. Maximal strength however, should not be forgotten. Without any maximal strength training power and muscular endurance will decrease (even with plyometric and circuit sessions).

A solution is to rotate circuit training and maximal strength training every other week i.e. week one perform a circuit session on Thursday, week two perform a maximal strength session on Thursday and so on.

Program #2 – 4 Days Per Week + 1 Match

In-Season Program (4 Days + 1 Competitive Match)		
	Sample Session	**Intensity**
Mon	Plyometrics. Rest. 30-45 minute interval training session (i.e. increasing lap, Hoff circuit, penalty area run). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Tue	Weights session (maximal strength) *Keep no. of exercises and sets to a minimum	Moderate
Wed	Team Training (speed & agility drills followed by anaerobic endurance session i.e. shuttle runs, union jacks, ball work). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Thu	Weights session (strength endurance circuit training). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Moderate
Fri	Rest	
Sat	MATCH	Intense
Sun	Rest or recovery run	Light

This program allows you to maintain maximal strength, power and strength endurance as well as the other important elements of soccer related fitness. Keep the number of sets and exercises in the maximal strength session and the strength endurance session to the minimum in the recommended guidelines.

For maximal strength session pick just 3 to 4 exercises that work the major muscle groups such squats/leg presses, shoulder presses, bench presses and bent over rows for example.

Program #3 – 3 Days Per Week + 2 Matches

In-Season Program (3 Days + 2 Competitive Matches)		
	Sample Session	**Intensity**
Mon	Plyometrics. Rest. 30-45 minute anaerobic endurance session (i.e. shuttle runs, union jacks, penalty area sprint). Finish with 10-15 minutes static stretching exercises to all major muscle groups	Intense
Tue	Rest	
Wed	MATCH	Intense
Thu	Weights session (maximal strength) *Keep no. of exercises and sets to a minimum	Moderate
Fri	Agility drills 3-5 sets of 10 repetitions (i.e. agility ladder). Speed drills 5 sets of 10 repetitions (i.e. alternating starts)	Light
Sat	MATCH	Intense
Sun	Rest or recovery run	Light

With 2 competitive games a week there is room only for the bare minimum of training. The weights session on Thursday will be dictated by how strenuous the previous day's game was. If it was a particularly hard match you may want to focus on just a few upper body exercises or omit the session entirely.

7.3 A Step-By-Step Guide to Developing An Exceptional Soccer Conditioning Program

STEP 1 – At the end of the competitive season, decide on the length of your pre-season (8-12 weeks) in advance and the number of sessions you can commit to. Make a note of the date you will begin your pre-season training.

STEP 2 – At the end of the competitive season begin cross training to maintain your general fitness. Also start a foundational strength

training program. After 6-8 weeks of foundational strength training progress to a maximal strength training program (you don't have to wait until your pre-season starts before you begin the maximal strength phase).

STEP 3 – Complete a battery of fitness tests just before you begin pre-season training.

STEP 4 – Design your overall pre-season program based on the results giving the most attention to any weaknesses where time is limited. Use the sample plans in section 7.2 for as an outline. At this stage don't plan what you'll do on what particular days of the week. Here's an example of what it might look like:

Sample 8-Week Pre-Season Program				
	Endurance	**Strength**	**Speed & Agility**	**Flexibility**
Week 1	3 continuous session	2 maximal strength sessions	None	3 stretching sessions
Week 2	2 continuous sessions, 1 interval session	2 maximal strength sessions	None	3 stretching sessions
Week 3	1 continuous sessions, 2 interval sessions	2 maximal strength sessions	None	3 stretching sessions
Week 4	2 interval sessions, 1 anaerobic endurance session	2 maximal strength sessions	None	3 stretching sessions
Week 5	2 interval sessions, 1 anaerobic endurance session	1 circuit session, 2 plyometric sessions	1 speed & agility session	3 stretching sessions
Week 6	1 interval session, 1 anaerobic endurance session, 1 practice match	1 circuit session, 2 plyometric sessions	1 speed & agility session	3 stretching sessions
Week 7	1 interval session, 1 anaerobic endurance session, 1 practice match	1 circuit session, 2 plyometric sessions	1 speed & agility session	3 stretching sessions
Week 8	1 anaerobic endurance session, 2 practice matches	1 plyometric session	1 speed & agility session	3 stretching sessions

Note: With a shorter, 8 week pre-season like this you should have completed at least 2 weeks of maximal strength training in the closed/off season. If it was a 12-week pre-season you can spedn the first 6-8 weeks of the early pre-season on maximal strength training.

Remember that you can perform some of the training above in the same session. For example plyometrics or speed training can precede interval training. You could actually perform week 1 above in as little as three sessions and week 7 in just five sessions.

STEP 5 – Plan your weeks' training at the beginning of each week. Write down what you'll do Monday, Tuesday and so on. If you have

team training put that in first and work around it. The same applies for any practice matches. Remember to apply the weekly conditioning principles in section 7.1.5

STEP 6 – You may want to re-test yourself at the beginning of the in-season to see just how far you've come!

STEP 7 – Plan your maintenance program for the in-season. Work around how much training time is available to you and plan your training on a week-to-week basis. Assume that a competive game each week will maintain your aerobic endurance so focus on maintaining power and anaerobic endurance. You may also want to consider 1 strength endurance and 1 maximal strength session every week or every other week.

STEP 8 – He didn't play soccer but knew how to get the best out of himself when it mattered. Heed the words of Michael Jordan and…

"Just play. Have fun. Enjoy the game"

7.3 Starting Midway Through the Season

What happens if you are midway through a season as you read this book? Should you wait until the end of the competitive year before you begin to improve your fitness for soccer?

No! The best time to start is now.

Here are a few points to consider though:

Endurance Training
Playing soccer every week will keep you generally fit so there's no need to start from scratch. You can move straight on to the interval training drills and anaerobic endurance drills (perhaps one session of each between games). There is no need to start with continuous training sessions.

Strength Training
Regardless of where you are in the competitive season, always start any strength program with at least 6 weeks of foundational strength training. If it's early on in the competitive year (i.e. you have at least 5 months until the end of the season) you might have time to complete a phase of foundational strength training, a phase of maximal strength training and phase of power/strength endurance training before the season is out.

If it's only a month or two until the season end start with foundational strength training and just extend this phase through the closed season. You may end up with 3 or 4 months in this phase but it will thoroughly prepare your body for more strenuous sessions later on. If this is the case you might want to vary the exercises every 6 weeks of so.

Speed and Agility Training
You can perform some speed and agility drills but concentrate on form and technique rather than speed. Speed training is best performed alongside or just after power training so you might not see a dramatic difference on the pitch.

Flexibility Training
There is never a bad time to start stretching for sport. Begin today!

~ APPENDIX A ~

CONDITIONING DRILLS FOR GOALKEEPERS

A1 Aerobic Endurance Drills For Goalkeepers

Even though goalkeepers don't run continuously, a good base of aerobic endurance is still important. Endurance allows a keeper to recover from intense bursts of effort as well as repeat them to the same high level over the course of a game.

Goalkeepers can perform the same aerobic endurance training as outfield players. It also gives them a good opportunity to mix with the rest of the team as so much of their training is isolated from the other players.

Endurance training should follow the same pattern over the season as it does for outfield players – general, continuous types drills in the off-season and early pre-season, progressing to more specific and more demanding interval drills in later pre-season.

Goalkeepers can use any of the continuous endurance drills in section 1.2.3 to build an aerobic base. Rather than using the interval drills in section 1.2.4 goalkeepers can progress to using some of the anaerobic endurance drills below…

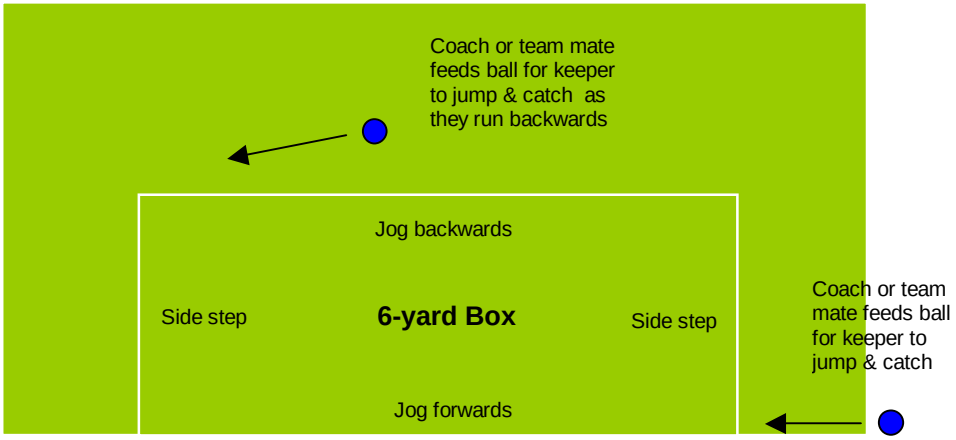
A2 Anaerobic Endurance Drills For Goalkeepers

Some of the most memorable goalkeeping in history has come from multiple, back-to-back saves. Not only does the goalkeeper manage to reach a thunderous shot headed for the top corner, they have the ability to get up quickly and make another save and then another one. Anaerobic endurance drills will help goalkeepers to maintain a high level of power needed to move around the goal quickly.

Important: Please be sure to read Section 1 of Total Soccer Fitness before attempting these drills. Although this appendix contains specific exercises for goalkeepers many of the guidelines in section 1 remain the same regardless of position.

Drill #1 – Penalty Area Run
Using the 6-yard area markings start on one corner facing down the goal line. Run along the goal line to the corner of the 6-yard area. The coach or partner throws the ball for the keeper to catch . Side-step leading with the left leg to the next corner. Run backwards to the next corner. If a second feeder is

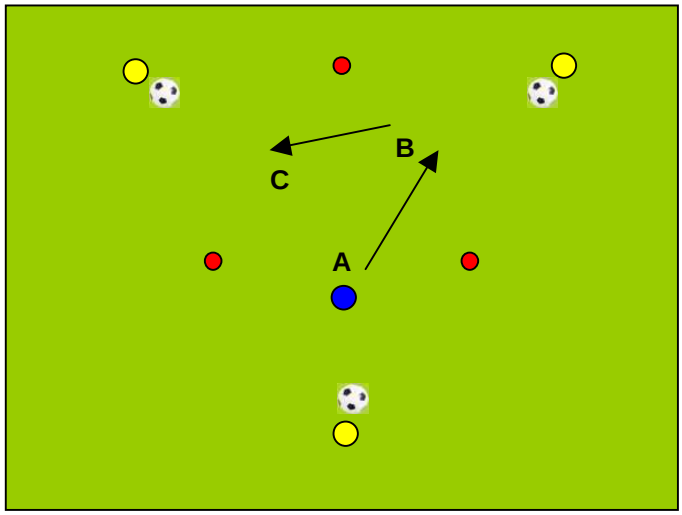
available have them throw the ball as the keeper passes them. They should force the keeper to jump as they are running backwards and either catch the ball or tip it over a mock crossbar. Side-step back to the start and repeat for 1 minute. Rest for 1 minute and repeat 3 times. This is 1 set. Rest for 2 minutes between sets and complete 2-3 sets in total.



Drill #2 – Triangle Drill

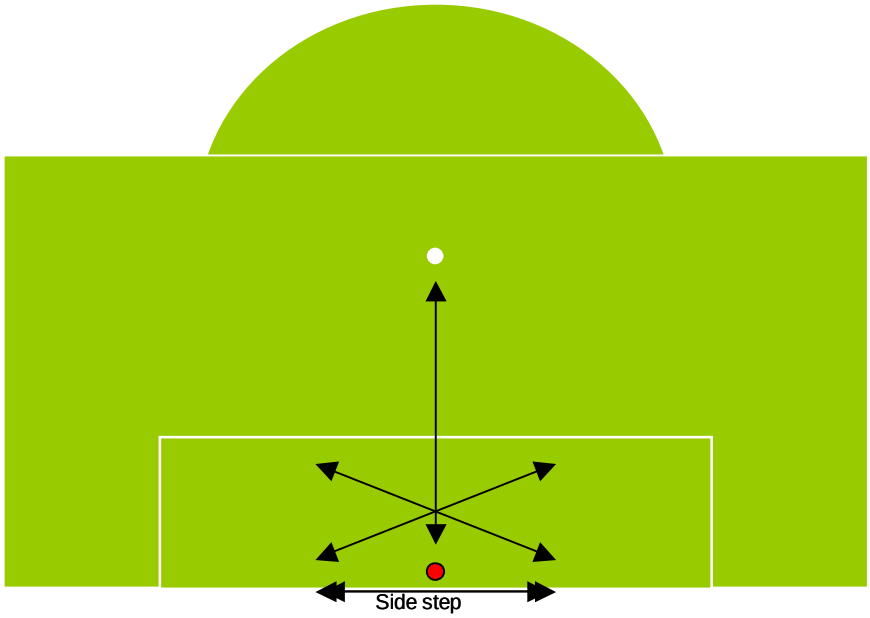
Mark out an equilateral triangle using 3 cones with each side approximately 7.5 meters (8 yards) long. Each side of the triangle represents a goal (labelled A, B and C below). Three feeders stand outside the triangle with a ball each, one facing each goal about 8-10 meters/yards away. The goalkeeper starts in front of goal A and must try to save a shot from the feeder. The keeper then returns the ball and runs through the triangle to the next goal attempting to save a shot from the next feeder. After returning the ball they run through the triangle to protect the third goal. Continue for 1 minute. Rest for 1 minute and repeat 3 times. This is 1 set. Rest for 2 minutes between sets and complete 2-3 sets in a session.

Note: The feeders should not attempt to score – the aim is to work the keeper allowing him or her to make a comfortable save to the ground. If necessary the feeders should throw the ball so the drill is not interrupted with wayward shots.



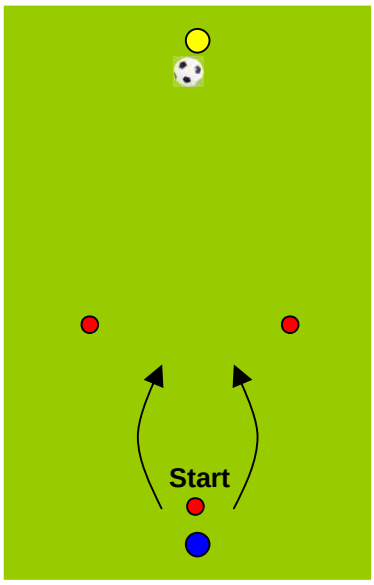
Drill #3 – Penalty Spot Run
Starting at a cone in the center of the goal, side step to the right facing outfield to the post and back. Sprint diagonally right to the corner of the 6-yard box and run backwards to the cone. Sprint to the penalty spot and run backwards to the cone. Sprint diagonally left to the opposite corner of the 6-yard box and backwards to the cone. Finally, side step to the left hand post and back to the start. Continue for 1 minute. Rest for 1 minute and repeat 3 times. This is 1 set. Rest for 2 minutes between sets and complete 2-3 sets in total.

Note: At the corners of the 6-yard box and at the penalty spot, get in the "ready" position as though anticipating a shot. Also, try to bend down and touch the cones each time.



Drill #4 – Save and Sprint

Set up a goal with 2 cones approximately 4-5 meters/yards wide. Place another cone 5 meters/yards behind the goal. This is the starting position for the goalkeeper. A server stands about 10 meters/yards in front of the goal with a ball. The goalkeeper runs from the starting cone into the goal ready to save a shot from the server. They pass the ball back and immediately turn and sprint back to the starting cone, around it, and back to the goal for a second shot. They turn and sprint around the cone this time in the opposite direction. Continue for 1 minute. Rest for 1 minute and repeat 3 times. This is 1 set. Complete 2-3 sets in a session.



Drill #5 – Multiple Shot Stopping

Two feeders and several soccer balls are required for this drill. One feeder stands in front of a regular sized goals about 10-12 meters/yards out. They serve a variety of consecutive shots to the goalkeeper who must get to his/her feet quickly and move around the goal in order to save the next shot. The feeder should play a variety of shots – in the air, on the ground, to the left and then immediately to the right etc. The second feeder retrieves saved shots and rolls them back so the drill can continue without interruption. Continue for 1 minute. Rest for 1 minute and repeat 3 times. This is 1 set. Complete 2-3 sets in a session.

A3 Strength Training Programs For Goalkeepers

Goalkeepers require excellent strength for kicking, throwing and resisting challenges as they leap to catch a cross under pressure. Strength also forms the basis of power. The ability to leap and tip a ball over the crossbar or around the post is not just about height, it also about explosive power.

Strength training for sport should always develop the type of strength that is most beneficial to the athlete. For outfield soccer players it happens to be an equal split between strength endurance and explosive power. For goalkeepers the end goal should be to develop explosive power in both the upper and lower body. While strength endurance is important is plays a smaller role in the goalkeepers game.

The most effective way to develop a high level of explosive power is to first develop maximal strength and then convert it into power with plyometric exercises. The very first step for goalkeepers however, is to build a solid strength foundation so that their bodies are prepared for more strenuous training later on in the program.

Important: Please be sure to read Section 2 of Total Soccer Fitness before attempting these routines. Although this appendix contains specific exercises for goalkeepers the guidelines in section 2 remain the same regardless of position.

A.3.1 Foundational Strength Training For Goalkeepers

Foundational strength training is fairly general and there is no need for goalkeepers to follow a different routine than outfield players at this stage. See section 2.4.5 for more details.

A.3.2 Maximal Strength Training For Goalkeepers

As with foundational strength training, goalkeepers can follow the same maximal strength programs as outfield players in section 2.5.6. At this stage strength training is still fairly generic. More specific exercises are introduced in the next phase.

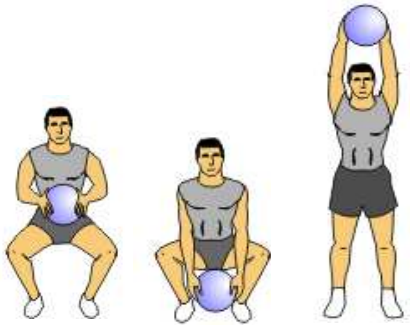
A.3.3 Strength Endurance Training For Goalkeepers

This circuit is designed specifically with goalkeepers in mind. It focuses working the upper body in most exercises and the use of a medicine ball is an ideal way to make the routine highly soccer-specific.

Exercise	Load	Station Time	Rest (exercises)	Rest (circuits)
Squat and presses with medicine ball	40-60% 1-RM	30-60 seconds	30-90 seconds	
Push ups with medicine balls	Bodyweight	30-60 seconds	30-90 seconds	
Box steps with dumbbell & knee drive	40-60% 1-RM	30-60 seconds	30-90 seconds	
Full sit ups with medicine ball	Medcine ball	30-60 seconds	30-90 seconds	
Burpees	Bodyweight	30-60 seconds	30-90 seconds	
Dips	Bodyweight	30-60 seconds	30-90 seconds	
Medicine ball lunges	Medcine ball	30-60 seconds	30-90 seconds	
Side flexions with stability ball	Medcine ball	30-60 seconds		1-3 minutes
				2-4 circuits

Squat and Presses with Medicine Ball

1) Stand with feet shoulder width apart and knees slightly bent.
2) Start position: Position medicine ball to ear level.
3) Go into a full squat. Immediately extend legs and stand up and at the same time press hands up above head keeping wrists over the elbows and arms moving parallel to body at all times.
4) Return to start position and repeat.



Push Ups with Medicine Balls

This is the same as a regular push up except that the hands are placed on two medicine balls. As well as developing strength in the major chest, shoulder and arm muscles, smaller stabilizing muscles are also worked and a greater emphasis is placed on the core region.

Box Step with Knee Drive:

1) Stand behind box (12-18" high) and place one foot on top of box, heel close to the closest edge. Hold a dumbbell in each hand.
2) Push off the box and explode vertically and drive your other knee up towards your chest. Complete the prescribed number of reps.
3) Repeat with other leg and continue according to prescribed number of repetitions

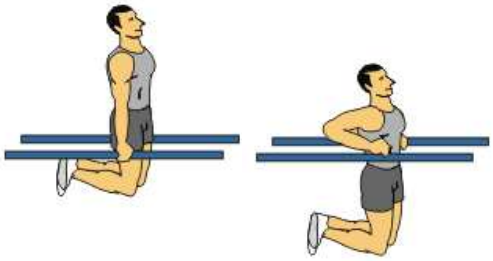
Full Sit Ups with Medicine Ball

1) Start position: Lie back onto floor or bench with knees bent and hands straight over your chest. Hold a medicine ball during the exercise. Head should be in a neutral position with a space between chin and chest.
2) Leading with the chin and chest towards the ceiling, contract the abdominal and raise shoulders off floor or bench until you are seated in an upright position.
3) Return to start position. Remember to keep head and back in a neutral position.

Burpees

1) From a standing position, jump as high as possible and land down on your feet with your hands on the ground.
2) Kick your feet back. For a moment you will be in a push up position and jump back up again as fast as possible.
3) Repeat for the required repetitions

Dips



1) Step up on foot platform (if available) and position hands on dip bars.
2) Start position: Remove feet from platforms and suspend the body with slightly bent elbows. Lean forward slightly so that your elbows are slightly past the plane of your back and knees slightly bent.
3) Lower your body until your upper arms are parallel to the floor.
4) Return to starting position by extending the elbows to a slightly bent position.
5) Remember to keep the trunk bent forward, head neutral, and chest up.

Medicine Ball Lunge

1) Start position: Stand with feet hip width apart. Place hands on waist or out to sides for stability.
2) Step forward 2-3 feet and lower body forming a 90° bend at the front hip and knee. DO NOT allow front knee to extend past the big toe - may cause injury. Take medicine ball during this movement and press the ball over your head.
3) Pushing off front foot, return to start position. Continue with same leg or alternate as prescribed.
4) Remember to keep head and back upright in a neutral position. Shoulders and hips should remain squared at all times.

Side Flexions with Stability Ball

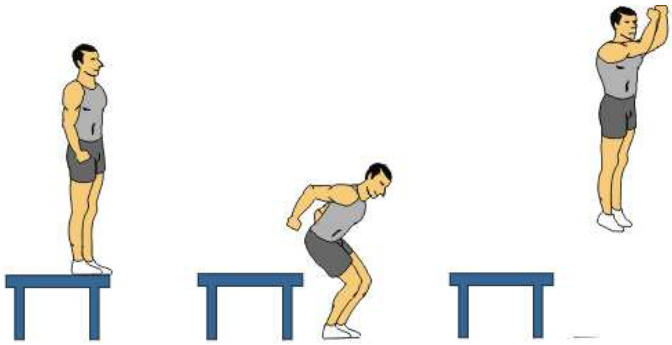
Starting Position: Lie on your side over the stability ball and spread your legs for balance.
Hold a medicine ball over your head and curl up towards the ceiling. Lay back down across the ball and repeat the movement.
Repeat with the other side.

A.3.4 Explosive Power Training For Goalkeepers

This routine uses a medicine ball to for upper body plyometric exercises. Medicine balls are the perfect piece of equipment for developing highly specific drills for goalkeepers. They are generally available in 1kg, 2,kg, 4kg and 5kg (2lb, 4lb, 6lb, 10lb) weights and as heavy as 10kg (20lb). Remember for these drills to create power they must be performed explosively. If the weight is too heavy and the movement is slow then the desired training effect won't occur.

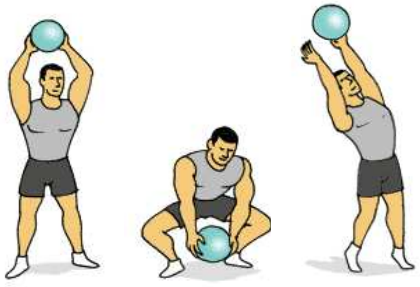
Exercise	Load	Repetitions	Sets	Rest Interval
Day 1				
Depth jumps	Bodyweight	8-10	3-4	2-5 minutes
Over the back toss	Medicine ball	8-10	3-4	2-5 minutes
Lateral high hops	Bodyweight	8-10	3-4	2-5 minutes
Squat throws from chest	Medicine ball	8-10	3-4	2-5 minutes
Day 2				
Single arm throws	Medicine ball	8-10	3-4	2-5 minutes
Hurdle jumps	Bodyweight	8-10	3-4	2-5 minutes
Wall throws	Medicine ball	8-10	3-4	2-5 minutes
Lateral barrier jumps	Bodyweight	8-10	3-4	2-5 minutes
Modified hammer throws	Medicine ball	8-10	3-4	2-5 minutes

Depth Jumps



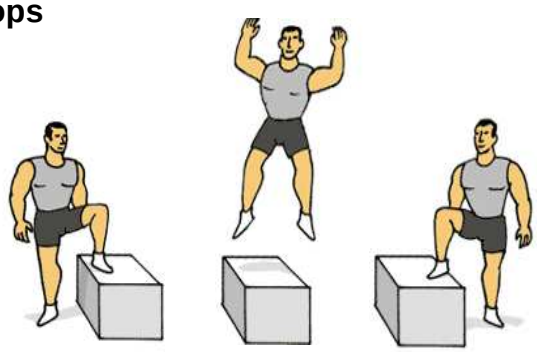
1) Stand on box with toes close to edge and facing the hoop
2) Step off (don't jump off) box and land on both feet. Immediately jump up and reach with both hands towards the sky.
3) Ground contact time should be minimal (don't sink into the ground) and landings should be soft.

Over the Back Toss



1) Stand with feet slightly wider than hip-width apart. Have a partner or trainer stand approximately 10-15 yards behind you.
2) Grasp ball and lower body into a semi-squat position. Explode up extending background- the entire body and throwing medicine ball up and over the head.
3) The aim is to throw the ball behind you as far as you can and generating most of the power in the legs.
4) Catch ball on the bounce from your partner and repeat according to prescribed repetitions.

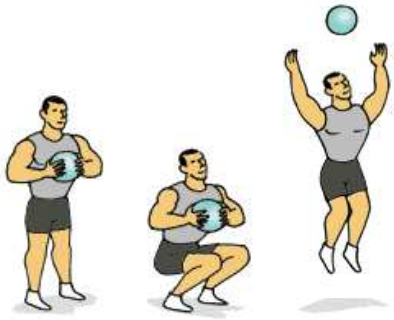
Lateral High Hops



1) Stand to left side of box and place right foot on top of box.
2) Push off the box using the right leg only and explode vertically as high as possible. Drive the arms forward and up for maximum height.
3) Land with opposite foot onto box. Repeat with the other foot.
4) Repeat according to prescribed number of repetitions.
Note: There is only 1 box (not 3 as in the diagram above). The diagram is to illustrate the different stages only.

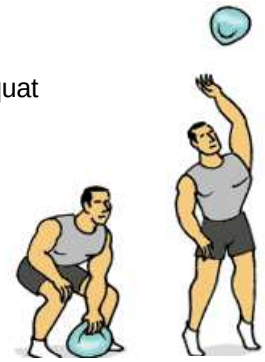
Squat Throws from Chest

1) Stand with feet slightly wider than hip-width apart. Knees should be slightly bent.
2) Hold medicine ball at chest level and squat down to a parallel position.
3) Quickly explode up and jump as high as you can. As you start your jump you should throw the medicine ball as high as possible
4) Let the ball bounce away from you rather than trying to catch it

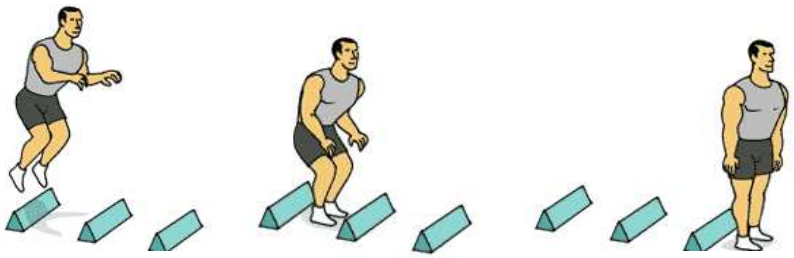


Single Arm Throws

1) Stand with feet slightly wider than hip-width apart.
2) Place hand under medicine ball and lower body into a semi-squat position.
3) Explode up extending the entire body and throwing the medicine ball up into the air.
4) The aim is to throw the ball as high as you can and generating most of the power in the legs.
4) Catch ball on the bounce and repeat according to prescribed repetitions.



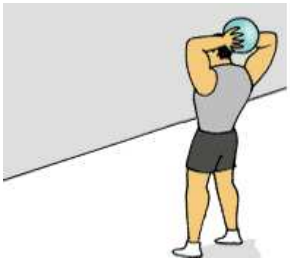
Hurdle Jumps



1) Stand 1-2 feet away from hurdle. Feet should be slightly wider than hip-width apart in a semi-squat position.
2) Driving the arms up and jump over hurdle.
3) Upon landing, quickly jump over next hurdle.

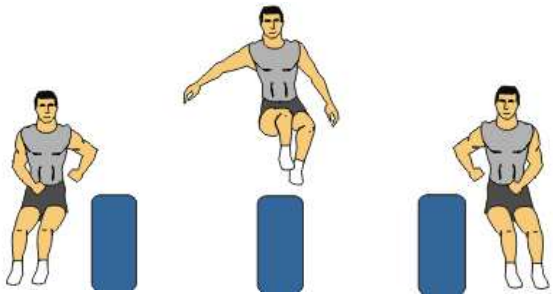
Wall Throws

1) Stand with one foot in front (staggered stance) with knees slightly bent.
2. Pull medicine ball back behind head and forcefully throw ball forward as far as possible into the wall.
3. Catch ball on the bounce from the wall and repeat according to prescribed repetitions.

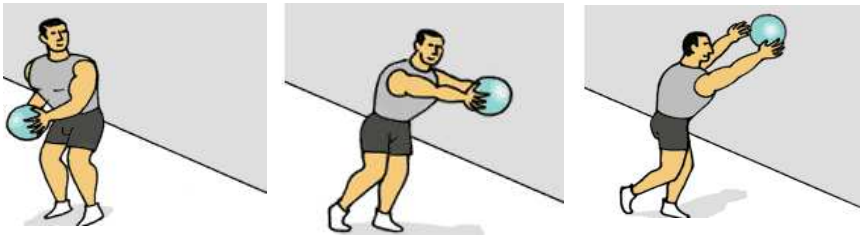


Lateral Barrier Jumps

1) Stand with feet slightly wider than hip-width apart with right side of body facing the barrier.
2) Hop to the right using both feet over the barrier.
3) jump back to the start point.
4) Repeat according to the prescribed number of repetitions.



Modified Hammer Throws



1) Stand with feet hip-width apart; place right foot approximately one foot in front of left foot.
2) Hold medicine ball with both hands and arms only slightly bent.
3) Swing ball over to the left hip and forcefully underhand toss ball forward to a partner or wall. Keep the stomach drawn in to maximize proper usage of muscle.
Catch ball on the bounce from your partner and repeat according to prescribed repetitions

A.3.5 The Annual Strength Training Program For Goalkeepers

The chart below shows how to incorporate all the different types of strength training into one, highly effective, season-long program.

It assumes the competitive season starts in September and ends in April but the actual months will vary and aren't important. What is more important is how each phase relates to the timing of the competitive in-season.

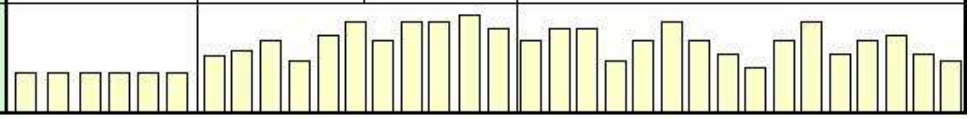
The Annual Strength Conditioning Plan For Goalkeepers												
Month	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**
Phase	**OS**		**EPS**	**LPS**	**CS**							
Strength Objective	Foundational		Maximal	Str.Endurance & Power	Maintain Basic Strength & Power							
Foundational Sessions	2-3 x week		None	None	None							
Maximal Sessions	None		2-3 x week	None	Maintain: 0-1 x week							
Str. Endurance Sessions	None		None	1 x week	Maintain: 0-1 x week							
Power Sessions	None		None	1-2 x week	Maintain:1-2 x week							
Training Intensity												

Table 5: The Annual Strength Conditioning Plan
Key: OS - Off Season, EPS - Early Pre-Season, LPS - Late Pre-Season, CS - Competitive Season

The program is very similar to outfield players except that during the late pre-season more emphasis is placed on power over strength endurance.

A4 Speed, Agility & Quickness Drills For Goalkeepers

Agility, foot speed and reaction time are such an important part of a goalkeeper's game that it's hard to separate conditioning exercises from drills designed to improve skill and technique. Many of the traditional drills that

most goalkeepers are familiar with, are designed to develop speed, agility and quickness.

This section offers a few example exercises that emphasize the conditioning component. However, you will find many drills in coaching books and videos that can easily fit into this category.

Drill #1 – Mirroring

This very simple drill involves two goalkeepers facing each other about 5 meters/yards apart. One keeper acts as the leader and side steps left and right, randomly along an imaginary line. They can also jump, touch the ground or jog backwards a few steps when they feel like as long as they always face forward. The other player must mirror the leader as closely as possible. Work for 30-second periods and swap over.

Drill #2 – Sprints With Varying Starts

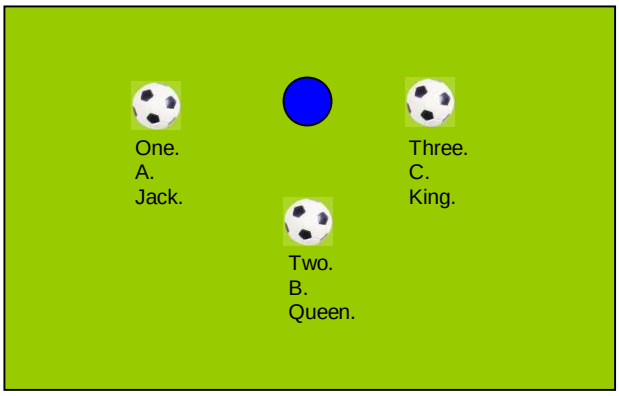
The basis of these speed drills is a 10 meter/yard sprint. Focus on accelerating as quickly as possible by powering away with your arms and legs. At the end of the sprint have a feeder pass or throw a ball for you to catch. This helps players to compose themselves quickly after an all-out sprint so they can concentrate on the ball - a frequent scenario in a game situation. Here are some ideas to alternate the starts:

- Do 1-3 push ups, squat thrusts or burpees and sprint
- Start by kneeling, lying face down, sitting on your hands (which can't be used to get up) and sprint
- Do 5 keep and sprint
- Jump up and down on the spot
- Touch left hand down, touch right hand down, jump to catch a mock ball and sprint

Complete a sprint and walk slowly back to the start to repeat for the desired number of repetitions.

Drill #3 – Speedy Hands

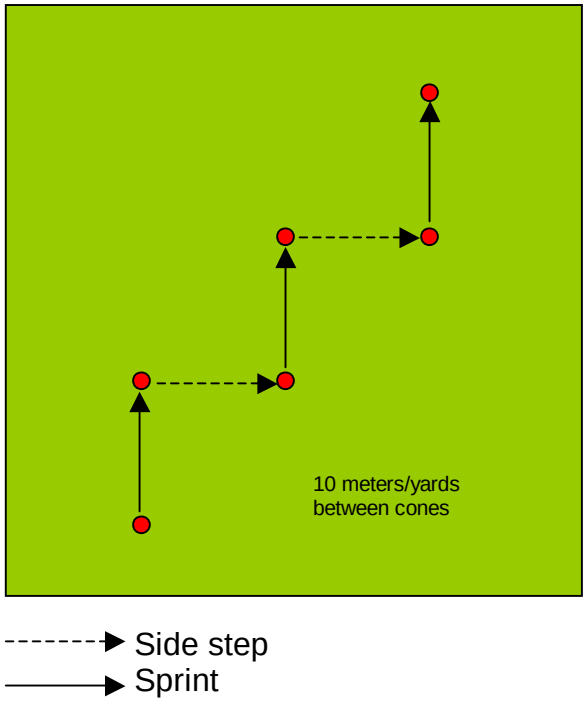
Goalkeepers work in pairs. One ball is placed in front of the working keeper, one to the left and one to the right no more than 1 meter/yard away. The other player gives each ball a name or number and calls out a series of commands. The keeper must collapse to the ground and "smoother" each ball in the order of the command.



For example, the caller might give the command “One, three, two, one”. Alternatively, they might shout “Queen, King, King Queen, Jack”. The working keeper must focus on getting up and down quickly as well as having the concentration to remember the command.

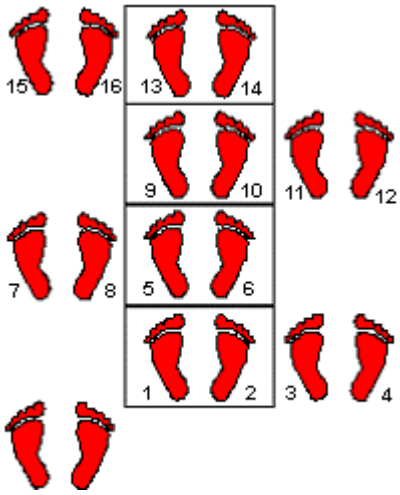
Drill #4 – Sprint With Lateral Shuffle

Set up a series of markers similar to the diagram below. Starting at the first marker sprint to the second marker and side step to the third marker. Continue until the end. Rest and repeat in the other direction so side steps lead with opposite foot.



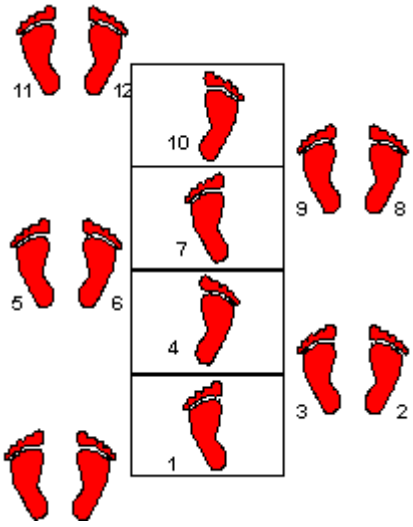
Drill #5 – Ladder Drills
These two drills are particularly useful for goalkeepers. The other ladder drills found in the **Soccer Exercise Library** can also be used with great results.

Lateral Feet Drill



- Start with both feet outside of the first square and to the left
- Step into the first square with your **left** foot first, immediately followed by your **right** foot... in a 1-2 motion
- Step to the right, outside the first square again with your **left** foot fist, followed by your **right**
- Now step diagonally left into the second square, with the **left** foot leading always keeping the same 1-2 motion
- Now step out to the left-hand side of the second square and repeat for the full length of the ladder

The Tango



- Start with both feet outside of the first square and to the left
- Cross your **left** leg over your **right** and into the centre of the first square. Your **right** leg should immediately follow to the right of the first square, followed by your **left** leg
- It's a 1-2-3 motion like you're dancing
- From here your **right** foot comes across your left and into the centre of the second square as the pattern is repeated in the opposite direction
- Repeat for the full length of the ladder

A5 Flexibility Program For Goalkeepers

All goalkeepers need great flexibility. Apart from the benefits of injury prevention and increased power and agility (discussed in section 4) it will help keepers reach shots they otherwise wouldn't. Just a few centimetres can mean the difference between conceding a goal and making a breath taking save by tipping the ball over the crossbar or around the post. A good stretching program will certainly help to gain those extra few inches.

Good flexibility also promotes relaxation in the muscles. The more relaxed a muscle group is the quicker your reactions will be. The goalkeeper stretching program below places a greater emphasis on the upper body. It also focuses on the core region as goalkeepers are required to bend to reach low shots regularly in training.

Important: Please be sure to read Section 4 of Total Soccer Fitness before attempting this stretching routine. It contains the important general guidelines for stretching effectively regardless of playing position.

Stretch #1 - Neck
Keeping your chin and head level rotate your head to the right and hold. Look back to the center and then repeat with the other side. Now point your chin to your chest and hold. Return back to center and tip your head to the right (ear by shoulder) and hold. Repeat for the left side.

Stretch #2 - Shoulders
Sit or Stand in upright position. Pull your elbow with opposite hand until a stretch is felt in rear of shoulder. Hold and repeat for the other arm. While pulling elbow, be sure that our forearm remains perpendicular to floor (fingers pointing up).

Stretch #3 - Triceps
Place one arm above your head and bend your elbow. Now place your other hand above your head and grab the opposite elbow. Pull your elbow across behind your head until you feel a good stretch in your triceps. Hold and repeat with the other arm.

Stretch #4 – Upper Back
Grab onto a secure bar (or secured goal post) with one hand and lean back with your hips to allow your back to stretch. Hold and then repeat with the other arm.

Stretch #5 - Chest
Stand in an upright position and reach back with your arms extended and clasp your hands together. Raise your hands towards the ceiling keeping your arms straight until you feel a stretch in your chest and hold.

Stretch #6 - Forearms
Starting Position: Start on your hands and knees with your fingers pointed back towards your knees. Lean backwards with your hips and shoulders. You should feel a stretch on the outside of your forearm.

Stretch #7 - Sides
Start by placing your feet as far apart as possible and your hands overhead. Lean to a side and try to reach ankle with your hand. Remember to keep your body parallel and do not lean forward or backwards. Hold and repeat to the other side.

Stretch #8 - Low Back A
Lie on your back on the floor. Gently rotate trunk and legs to other side. Remember to keep shoulders on the ground.

Stretch #9 - Low Back B
Lie facedown on floor. Using your arms, press upper body upward raising your chest and keeping hips in contact with floor. Keep your low back and buttocks relaxed. If you feel any pain in your back during this stretch, discontinue immediately.

Stretch #10 - Glutes A
Sit in upright position. Bring your left knee up and place your foot on the other side of your right leg. Now place your right elbow on the outside of your left knee. Gently rotate your trunk to the side so that your body is facing entirely to the side. Hold and repeat for the other side. Remember to keep hips squared.

Stretch #11 - Glutes B
Lie on your back with knees bent and feet flat on the floor. Grasp one knee with both hands and pull towards your chest. Hold and repeat for the other leg. Remember to keep hips in contact with the ground.

Stretch #12 - Quads
Stand with a shoulder width stance and hold onto a secure object for support if required. Bring one foot up and grab just above your ankle with your hand. Pull your foot up until you feel a stretch on the front of your thigh. Hold and repeat with the other leg.

Stretch #13 - Hamstrings
Sit in an upright position. Tuck one foot near your groin with your opposite leg straight. Bending from the hips and leading with the chest, reach down until a stretch is felt in back of thigh. Hold and repeat with the other leg. Remember to keep the low back straight to isolate the stretch in your hamstrings.

Stretch #14 - Groins
Sit in an upright position and place your heels together. Spread your knees apart and pull your feet toward groin until a stretch is felt in groin and inner thigh. Remember to keep low back straight to emphasize the stretch.

Stretch #15 – Calves
Place your hands on the wall with one foot forward and the other foot back. Keep the heel of the back foot on the ground and lean forward using the wall for support. Lean forward until you feel a stretch in your back calf. Hold and then repeat with the other foot.

A6 Fitness Testing For Goalkeepers

Fitness testing is a crucial first step in any conditioning program and it's no different for goalkeepers. Use the fitness assessments outlined in section 6 or create your own test that is highly specific to the position. Just remember to keep all the variables the same each time.

Here is a sample battery of fitness tests that a goalkeeper can perform over a single morning or afternoon:

Sample Fitness Test Battery for Goalkeepers

Test No.	Fitness Test	Fitness Component	Time (mins)
1	Standing vertical jump	Explosive power	10
2	Illinois agility test	Speed & agility	10
3	One repetition maximum	Maximal strength	15
5	Press up test	Strength endurance	10
6	Sit up test	Strength endurance	10
7	Multistage shuttle run	Aerobic endurance	30
8	Sit and reach	Lower body flexibility	5
9	Trunk rotation	Core flexibility	5

Total Soccer Fitness