



Goalkeeping

FIFA[®]

For the Game. For the World.



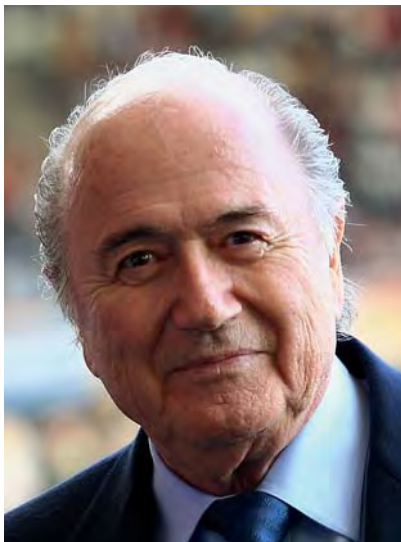
Goalkeeping

Male and female

References to the male gender in this manual in respect of coaches, players etc. are for simplification and apply to both men and women.

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Goalkeeping is a key position in football that requires special attention and a dedicated coaching programme.

To be a successful goalkeeper, it is vital that you learn special techniques and also acquire personal values such as confidence, character and decisiveness, all of which need to be encouraged at an early age.

As part of its mission to continuously develop the game, FIFA has created a special programme for goalkeepers and their coaches that comprises a wide range of training drills and match situations. The programme places particular emphasis on the technical, tactical and physical preparation of goalkeepers and the education of young goalkeepers.

This specialist publication contains a wealth of important information that will be useful in the field of goalkeeper coaching.

I hope that you will enjoy reading it and putting the lessons it provides into practice!

For the Game. For the World.

A handwritten signature in black ink, which appears to read 'Blatter'.

Joseph S. Blatter
President of FIFA



1. Introduction

Football is a sport that has been immensely enjoyed by players and spectators of all ages for many years. The sport evolved naturally from early ball games with improvements being gradually introduced. There were few rules in the earliest forms of the sport which resulted in spontaneity and brute force prevailing. The first signs of organisation began to appear in the games of football being played in English schools at the start of the 19th century. Gradually the game was taken up outside the school environment and clubs were formed. The cornerstone of football as we know it today was the foundation of the first football federation, the “Football Association”, in London on 26 October 1863. The development of football then gathered pace; rules were drawn up and progressively refined.

On **8 December 1863**, rules were introduced to prohibit players handling the ball. One player was exempt: the goalkeeper. This can be considered the **“date of birth of the goalkeeper”**. Initially the position of goalkeeper was allocated to a team member haphazardly. The sole criterion was the player’s height. The first reflections on the role of the goalkeeper appeared in 1871. But by the start of the 20th century, goalkeepers were still not differentiated from other players in terms of appearance or the way in which they played the game. Spectators also did not view goalkeepers in a different light. Innovations gradually appeared: in 1878, a cord was strung between the posts to serve as the forerunner to the crossbar, although it was not until 1893 that goal nets were used.

It was in this era that one goalkeeper stood out from the crowd. His innovative style made him an unforgettable figure for spectators and led to a decisive change in the behaviour of goalkeepers. This man was John Robinson, who introduced the concept of diving to save the ball. The development of the goalkeeper’s role was influenced by the development of the rules: the introduction of dead-ball situations (corner kicks, penalty kicks, etc.) as well as offside, throw-ins and restricting goalkeepers to handling the ball in their own penalty areas. The goalkeeper carries out not only a basic defensive role, but is also involved in the team’s attacking moves by rapidly returning the ball to play by long, accurate throws or kicks. The goalkeeper’s scope of action has increased as football has developed. Clearances by a high ball have become a natural part of the goalkeeper’s game. Goalkeepers are also much more likely to sprint outside their penalty areas to block attacks. There are now even goalkeepers who take penalties. And if a

team is losing towards the end of a match, the goalkeeper will often come up to challenge in the opponent’s penalty area. Some goalkeepers have even managed to score an equaliser. One of the goalkeeper’s fundamental roles is also to organise team-mates by shouting during defensive phases of play.

The most recent significant change of the regulations was the introduction of the “back pass” rule. This change imposed a new requirement on goalkeepers: it obliged them to develop their skill of controlling the ball with their feet. Many goalkeepers now have skills similar to outfield players in this respect.

The goalkeeper’s importance in the development of football is evident from times gone by as well as the more recent past. Some goalkeepers have contributed to the development of the game through their amazing accomplishments: the names of Yashin, Banks, Maier, Fillol, Zoff, N’Kono, Schmeichel, Barthez, Kahn, Buffon and Casillas are deeply etched in the memories of football fans. Despite the achievements of these excellent goalkeepers from the recent and more distant past, it is still relevant to ask:

“What are the expectations and demands that modern football places on the goalkeepers of today and tomorrow?”

Matches in recent European competitions and World Cups have caused the goalkeeper’s position to be reappraised. This can be clearly seen by the approach to the following factors:

Training

- the creation of the position of goalkeeping coach has been positive,
- the systematic development of all the goalkeeper’s qualities,
- an individual preparation plan for each goalkeeper is recommended and indeed even required,
- tests allow training to be highly personalised,
- training is adapted to the player’s age and performance level.

Technical aspects

- goalkeeping techniques have not changed over the last 20 years,

- the major change concerns playing the ball with feet, relating to:
 - the “back pass” rule,
 - playing as part of the defensive line with the goalkeeper taking the role of a libero.

Physical aspects

- clubs seek out very tall goalkeepers,
- the modern game means that all a player’s physical attributes have to be developed in individual coaching sessions,
- the excellent physical qualities of outfield players make the goalkeeper’s task more difficult, particularly when dealing with a high ball.

Psychological aspects

- handling the heavy training loads,
- coping with the enormous pressure due to the specific nature of the position (competition for places),
- accepting responsibility for results,
- coping with day-to-day pressure from the media and the management as well as due to the club’s financial situation.

Tactical preparation

- the goalkeeper takes an active part in attacking play and assumes the role previously occupied by a libero in defensive play,
- blocking opponents outside the penalty area has become more common.

Laws of the Game

- the “back pass” rule,
- releasing the ball after six seconds.

Equipment improvements

- *gloves*
 - adapted to the surface coatings of footballs and the weather conditions,
 - finger protection.
- *clothing*
 - lightweight clothing that keeps goalkeepers warm and protects them from rough pitches.
- *boots*
 - adapted to different pitch surfaces and weather conditions.

- *footballs*
 - the use of new materials makes life more difficult for goalkeepers,
 - the speed of the ball has doubled over the last 30 years while the goalkeeper’s reaction time has remained the same.
- *the pitch*
 - increasing use of artificial pitches (synthetic turf).

Taking into account all of the developments in football that have made the goalkeeper’s role much more difficult, it is very useful to offer methods and ideas that can assist goalkeepers in their daily training and help them cope with all eventualities.

When describing the progress a goalkeeper makes, from an inexperienced youngster to a proficient, confident goalkeeper, we use certain key words, words that will be developed in this book:

If a six-year-old **beginner goalkeeper** is to become a goalkeeper who can offer excellent **sporting performances**, then he or she must pass through various stages of **general preparation**. These stages are characterised by the player’s personal development (physical, psychological, social) as well as by an appropriate training load. The **coaching process** must be systematically **planned** and must take into consideration the specific requirements of the **age category** and **performance level**. The goalkeeper acquires new **skills** and improves existing skills through regular training. There must be appropriate **physical preparation** if the coaching process is to be effective. We can test the player’s physical capacities and systematically develop these during training. If a goalkeeper is to demonstrate in a match what has been learned during training, he or she must also benefit from **psychological preparation**. The progressive development of a goalkeeper’s performance also depends on their health. It is important to avoid injury. With this in mind, it is desirable for a goalkeeper to have a very healthy lifestyle.

This book targets a broad audience: both amateur and professional footballers, as well as coaches and instructors. We hope that there is something to help everyone improve and work towards excellent match performances, while offering options to improve training programmes and make

them more interesting. The text is accompanied by photos that greatly assist comprehension. Clubs often do not have the financial resources to hire a goalkeeping coach. For this reason it is important to provide all the knowledge and advice necessary to help goalkeepers and highlight the relevance of individually targeted work.

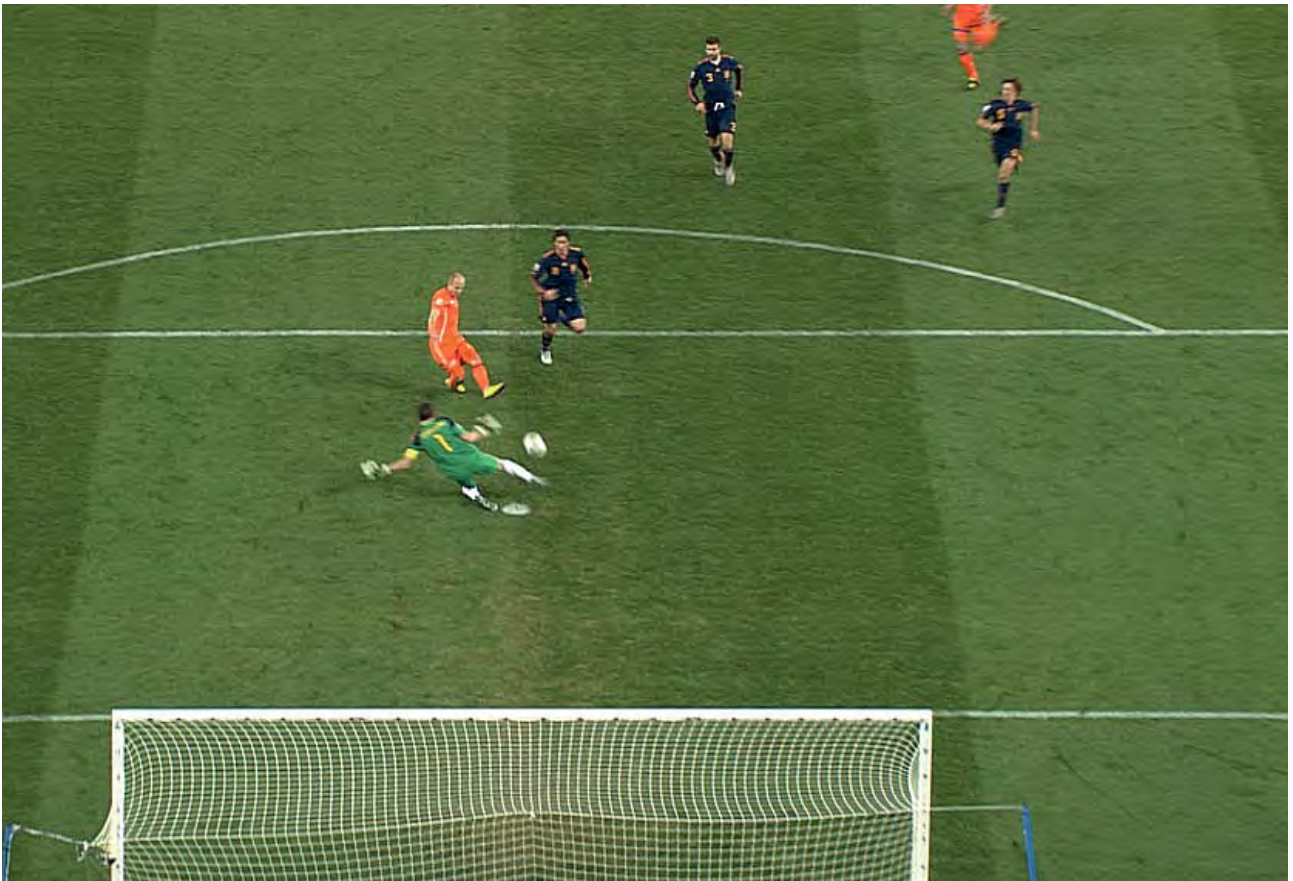
How do the book and DVDs work together?

The three DVDs demonstrate relatively “traditional” approaches to developing goalkeepers’ technical qualities and physical capacities. There is a wide choice of training

exercises, even for the youngest players, that present tasks ranging from the simple to the complex. These exercises can be combined and modified.

The book serves as a guide and user’s manual to allow optimal use of the materials provided. At the start of each chapter (physical preparation) there is a brief explanation of the issues dealt with, including definitions, explanatory notes and general application for the players. The concepts have been analysed from the goalkeeper’s point of view such that they are of practical assistance to the goalkeeper’s training.

Thus it is essential to work using both the DVDs and the book.







2. General preparation

For a goalkeeper to be successful during a match, not just on one occasion but as often as possible, and for him to be the one who brings the maximum number of points to his team during the season, he must go through a number of stages linked to his development.

This is a long-term process which begins in childhood and ends the day he hangs up his goalkeeping gloves for the last time.

This period may include many stages:

- starting out in goal,
- learning goalkeeping technique,
- developing sufficient physical fitness,
- acquiring mental strength to resist outside influences.

A goalkeeper's performance depends on **3 fundamental factors**, the sum of which represents the goalkeeper's sporting performance:

- **Technique, tactics and theory,**
- **The physical factor,**
- **The psychological factor.**

A goalkeeper's sporting performance is his ability to deal with situations which arise during a match or training, using all the skills learnt.



Fig. 1

Goalkeeping (technique, tactics and theory) is the goalkeeper's practical activity on the pitch. Defensive tasks can be distinguished in his play, as well as offensive ones. A goalkeeper's play is determined by his technical qualities, linked to his tactical behaviour (individual and group) and theoretical knowledge.

Physical fitness (physical factor) is the physical condition at a given moment, which is designed to help the goalkeeper master the training process effectively and contribute to rapid recovery after the workload. The amount of work carried out during the week is not at all relevant during a match itself. Its importance is connected to quality at certain decisive moments:

- where the goalkeeper is able to jump highest and furthest,
- winning the ball before the opponent,
- standing up to challenges.

Psychological condition (psychological factor) is reflected in the goalkeeper's positive reaction to the daily training load. During matches, it helps the goalkeeper cope with the pressure of the environment and handle responsibility for the result. It also refers to the goalkeeper's ability to perform successfully at any point in the match, even after he has been inactive for several minutes.

Goalkeeping is an invariable factor. The goalkeeper never forgets the skills learnt in training. Physical fitness and psychological condition are variable factors. They change often (influence of outside factors) and affect the goalkeeper's play (choices made).

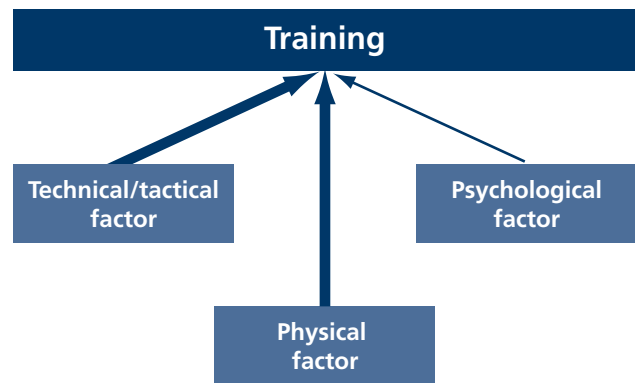


Fig. 2

The level of goalkeeping has the most important role because it determines performance both in training and in a match. Physical fitness, paradoxically, influences training. Psychological pressure, meanwhile, is greater during a match (Figures 2 and 3).

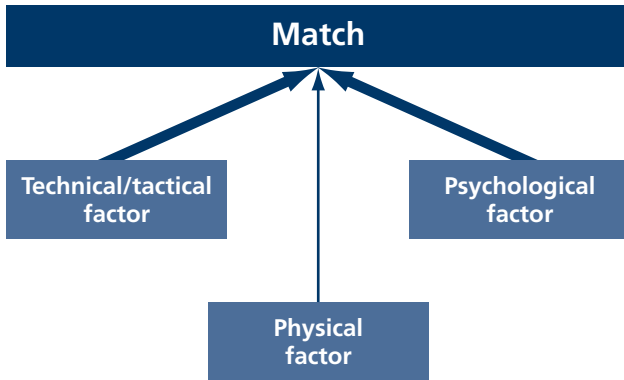


Fig. 3

These figures clearly show the importance of mastering goalkeeping play, with the result being seen in performance during a match. The goalkeeper may be able to run 100m in 10 seconds or lift 100kg weights in the gym, but this is useless if he is unable to catch the ball or read its trajectory correctly. If he masters the technical/tactical factor, the influence of the other two factors will be made easier and may have a decisive impact on his action on the pitch. The better the harmony between the factors, the more

competent the goalkeeper. This is what makes the difference between good, excellent and world-class goalkeepers.

A goalkeeper's good performance in a match is a reflection of his day-to-day work, which can be planned and organised. This is why we talk about the preparation of the goalkeeper.

The goalkeeper's **general preparation** is a long-term process, the aim of which is to get the goalkeeper's sporting performance to an appropriate level.

It comprises:

- **preparation in technique, tactics and theory** ... development of goalkeeping play,
- **physical preparation** ... development of the physical abilities,
- **psychological preparation** ... development of, amongst other things, mental strength.

The better prepared the goalkeeper is, the more his performance improves. Our objective is to help him to make that improvement continuous or maintain it at the highest level (for older goalkeepers).



2.1 General preparation for goalkeepers based on age and performance level

For a goalkeeper's general preparation to be effective and to lead to high-level sporting performance, it must be systematic, regular and ongoing. It is organised in several stages in accordance with the global development of the goalkeeper in biological, mental and social terms.

The goalkeeper's general preparation can be analysed from the point of view of:

- age (age category),
- the number of training units according to performance level.

2.1.1 General preparation of goalkeepers based on age

Each goalkeeper preparation period is characterised by certain determining factors.

6- to 18-year old category

Football school 6-10 years old

- Preparation in technique, tactics and theory
 - first contact with the ball, first steps "in goal",
 - progressive learning of goalkeeping technique,
 - initiation in playing with the ball at feet,
 - learning the rules of the game.
- Physical preparation
 - physical qualities (endurance, speed and coordination) are developed through a variety of games.
- Psychological preparation
 - children at this age always aim to win and finish first,
 - learning to accept defeat,
 - respecting the coach, other team members, the opponents and the referee,
 - introduction to the specific nature of the goalkeeper's position and responsibilities (it must not be forgotten

that, at that age, the result is not the most important thing).

Pre-training 11-14 years old

- Preparation in technique, tactics and theory
 - ongoing improvement of the goalkeeping techniques learnt during the previous period,
 - the move onto the big pitch sees the start of regular work on aerial balls (orientation in the penalty area with the help of the lines),
 - improving play with the ball at feet,
 - increasing the difficulty of specific exercises,
 - learning the goalkeeper's role in different formations.
- Physical preparation
 - development of endurance, speed, suppleness and reflexes,
 - coordination with and without the ball.
- Psychological preparation
 - listening to the coach and making own decisions,
 - earning the respect of peers,
 - understanding, recognising and getting to grips with emotions,
 - accepting criticism and comments (start of puberty).

Training 15-18 years old

- Preparation in technique, tactics and theory
 - continuing to improve goalkeeping technique,
 - the ability to work on more complicated exercises in goal.
- Physical preparation
 - beginning to develop strength,
 - development of speed, endurance, etc.
- Psychological preparation
 - being able to take decisions and be responsible,
 - learning to assess oneself (self-criticism),
 - becoming aware of a healthy lifestyle,
 - being ambitious, "being hungry for the game" (requesting extra training sessions).

Senior category

Transition period 19-22 years old

- Preparation in technique, tactics and theory
 - moving up to the senior category,
 - daily work on goalkeeping technique,
 - adaptation of play to the adult level:
 - the speed of the game increases and the goalkeeper has less time to analyse situations,
 - opponents are more experienced and crafty,
 - the impact in challenges with an opponent is more physical (aerial balls).
 - observing and learning from the experience of older players with whom the player trains every day,
 - taking all opportunities to play matches (reserve team).
- Physical preparation
 - adaptation to changes in the training content, the quantity of work carried out and its intensity,
 - the ability to perform all the exercises with or without the ball.
- Psychological preparation
 - moving up to the senior category:
 - it is rare to be first-choice straight away; the goalkeeper must show patience and continue to work in order to progress,
 - in amateur football, the player must find a balance between the different aspects of life: family, work and football,
 - for professionals:
 - football as a hobby becomes football as a job, with all its advantages and disadvantages,
 - learning to manage fame,
 - resisting pressure from the media,
 - managing personal wealth (surrounding himself with people he can trust).
 - the main objective: becoming the first-choice goalkeeper.

Period of maturity

- Preparation in technique, tactics and theory
 - complete mastery of all goalkeeping technique,
 - continuing to accumulate experience and, at the same time, knowing how to use it,
 - through good performances, a goalkeeper can earn the chance to make progress at the most prestigious clubs,
 - ambition to be selected for the national team.

- Physical preparation
 - the period of maximum development of physical abilities,
 - the ability to withstand heavy workloads, together with good recovery.
- Psychological preparation
 - self-criticism and acknowledgment of mistakes are necessary for progress,
 - maximum resistance to outside pressures (media, public, pressure of results),
 - knowing how to assimilate poor performances, developing powers of adaptation to cope with change of club, coach, etc.,
 - a stable family situation is an asset for good performances.

Goalkeepers after the age of 35

- Preparation in technique, tactics and theory
 - with daily work, a high level of performance is maintained,
 - using experience (reading the game, anticipation) to compensate for the reduction of certain physical qualities (speed, capacity to jump).
- Physical preparation
 - reduction in certain physical qualities (speed, capacity to jump),
 - learning to self-manage: the goalkeeper and his coach draw up a programme adapted to the emergence of certain physical limitations,
 - more than ever, listening to one's body and how it feels,
 - the difficulty of returning after a serious injury, which can have consequences for performance.
- Psychological preparation
 - savouring every moment spent on the pitch,
 - playing a leadership role in the group,
 - preparing for forthcoming retirement from the game (a retraining plan, life planning).

2.1.2 General preparation based on the number of training sessions

The model described in the previous section is generally recognised for all goalkeepers and concerns their general preparation from the point of view of age. What also has to be taken into account is the following model based on the number of training sessions, allowing theory to be adapted to day-to-day reality. The relationship between the different factors must be taken into consideration when drawing up a model of general preparation (Figure 4).

The more training sessions there are during the week, the easier it is to coherently address technical, physical and psychological preparation in daily work. Conversely, fewer training sessions mean we have to carefully select the content which will help the goalkeeper to progress.



Fig. 4



2.2 Planning

The quest for good performances implies a long-term vision. This requires work to be organised according to certain simple, yet fundamental, principles.

The aim of planning in training is to facilitate the conditions which will allow the goalkeeper's performance to improve.

The effectiveness of planning depends on the coach's ability to integrate parameters to improve performance into the construction of the training sessions in terms of composition and content. This makes it necessary to organise preparation in the form of longer and shorter cycles, entailing the organisation of training over different periods:

- **Career plan** (e.g. projection of the goalkeeper's sporting future at the training centre)
- **Annual plan**

At the start of the season, the coach must define the general and individual objectives, linked to the goalkeeper's status and age, which will be worked on in the annual plan (programme). This plan must include the club's objectives and calendar (training courses, matches) and must be consistent with the team's general plan.

The annual plan comprises:

- technical plan,
- tactical plan (the goalkeeper's role in different formations),
- theoretical plan,
- physical plan,
- mental plan.

The plan (programme) must be regularly monitored and adjusted depending on the results obtained and observations made during matches and training.

- **Macrocycles** (long cycles which may last up to several months)

We define macrocycles for:

- preparation (development of performance factors).
Depending on the country, the preparation may be:
 - summer and winter,
 - just summer (or just winter).

- competition (period of maximum performance),
 - 1 single competition period,
 - 2 periods of competition, autumn/spring or vice versa.
- transition, recovery (recovery period and transition to the next preparation macrocycle).
- **Mesocycles** (3-5 weeks with more specific objectives) – monthly plan.
- **Microcycles** (2-10 days around a very specific objective) – weekly plan.
- **Training unit or minicycle** (2 training sessions)
 - all the programming and planning is realised within a training session,
 - each training session has its own structure, which allows technical, tactical and physical objectives to be achieved.

2.2.1 The goalkeeper and planning

Planning the goalkeeper's general preparation is a complicated process.

Drawing up the preparation plan depends on certain factors, namely:

- the specific nature of the position of goalkeeper,
- adapting to team training,
- the limited time available,
- a lack of qualified goalkeeping coaches.

There is no problem in developing training macrocycles or mesocycles because we apply general objectivity in conjunction with the individual needs of each goalkeeper (information from tests and observations). The problem arises with the specific application of the plan in microcycles and training units. It is not enough just to correct the goalkeeper's faults; he must continue to develop the qualities already mastered and be available for the team at all times. In professional football, there are sufficient training sessions during a week with which the goalkeeping

coach can work. But if the team is amateur and only trains once or twice a week, you can imagine the difficulties in implementing a coherent programme to enable a goalkeeper to progress.

Planning training for goalkeepers clearly involves constant adaptation.

This is why we need to analyse the issue in greater depth and take into consideration external factors which exist at each level of the hierarchy. Methods, tools and advice can be put forward to improve goalkeepers' day-to-day work.

We need to ask ourselves the questions:

"WHO? WHEN? and WHAT?" is done with goalkeepers in training?

Young players

Amateur clubs

WHO?

- coach,
- another person (former goalkeeper at the club, current goalkeeper, volunteer),
- agreement with neighbouring clubs to implement specific goalkeeper training sessions.

If the person involved is a former goalkeeper, he will have knowledge of the position. Otherwise documentation or videos will have to be used rather than the person's imagination.

WHEN?

- one extra training session,
- before or after group training.

WHAT?

1 training session a week is not enough for a detailed general plan.

This is because:

- specific training must be limited to the technical aspect,
- the specific features of each age group must be taken into account,
- physical preparation is carried out as part of group training,
- we introduce the elements of speed and coordination into specific exercises,
- care must be taken in meting out efforts.

(Well-structured) amateur clubs, professional clubs and training centres

These benefit from better structures than basic amateur clubs, which allows:

- work with the goalkeepers in good conditions,
- sports and school schedules to be harmonised,
- medical support programmes,
- the best players to be discovered and recruited and progress made on a regional and then national level,
- preparation courses to be offered,
- participation in prestigious national and international tournaments,
- the door to be opened to the various national teams.

WHO?

- the goalkeeping coach.

WHEN?

- use the time when the goalkeeper is not involved in group work,
- additional training,
- before or after group training.

WHAT?

- *6-12 years old*
 - the specific nature of the general preparation of young goalkeepers in this age category must be taken into account,
 - it is essential to learn, repeat and perfect basic goalkeeping techniques,
 - this is the age when a young goalkeeper can acquire specific motor skills,
 - a lot of work on coordination, stability, movement, and suppleness with and without the ball.
- *13-18 years old*
 - the players must adapt to eleven-a-side football on a full-sized pitch (technical aspects: aerial balls, tactical aspects: goalkeeper's place in the formation),
 - the goalkeeper's potential must be carefully assessed, noting qualities and faults, to better focus individual work,
 - respecting the rules for each age category, we can work progressively on the four general preparation programmes (technical, physical, tactical and mental).

It may be a good idea to work in short cycles (2 weeks) where technical qualities can be associated with physical qualities (complementary elements):

- aerial balls, returning the ball to play + jumping,
- 1-on-1 challenges, reflex saves + speed,
- standing saves and diving + coordination.

This allows the coach to carry out more in-depth work on the same theme and gather a lot of information. The apprentice goalkeeper can fully concentrate on a chosen aspect of technique. This does not prevent us from continuing to build strength and develop other physical qualities.

Senior players

Amateur clubs (1 or 2 training sessions a week)

The factors which may restrict the planning of a goalkeeper's training are:

- age and performance level,
- knowledge and experience,
- the club's facilities,
- the goalkeeper's desire to make progress,
- the player's job (free time and possible fatigue).

WHO?

- the goalkeeping coach,
- the goalkeeper working in collaboration with another person (another goalkeeper, player),
- the team coach.

WHEN?

- additional training,
- before or after group training.

WHAT?

- during the preparation period, the player can carry out physical preparation with the team or during individual training by including physical exercises with the ball,
- during the competition period, time needs to be devoted to technical preparation and work on weak points; this can lead to improved performances on match day,
- in training, work on speed and coordination while respecting work and recovery times (exercises with the ball).

Amateur clubs (more than 2 training sessions a week)

WHO?

- the goalkeeping coach or team coach.

WHEN?

- additional training,
- before or after group training.

WHAT?

- during the preparation period, the player can carry out physical preparation with the team or during individual training by including physical exercises with the ball,
- during the competition period:
 - physical preparation,
 - development of physical qualities specific to the position at the start of the week (goalkeeper not required for team exercises),
 - gentle strength workout during the rest between two team exercises and after training,
 - work on speed and coordination at the end of the week.
 - technical, tactical and theoretical preparation,
 - work on improving individual technique by practising keeping the ball with the team,
 - participation in tactical work with the team (with the defenders),
 - regular work on aerial balls after training.

Professional clubs

The goalkeeper works under conditions which allow him to progress. He has enough time for specific training with his coach. The squad includes goalkeepers of different ages, performance levels and status (source of motivation, passing on experience, etc.). This needs to be taken into account in the planning.

WHO?

- the goalkeeping coach.

WHEN?

- a full specific training session at the same time as group training if the team coach does not need goalkeepers,
- during the time allocated to a group session, before or after training with the players,
- using the time when one of the goalkeepers is not "involved" in an exercise (e.g. game with 2 goals – work with the third goalkeeper),
- individual training during free time.

WHAT?

The following components of a professional club's general programme can be developed: technical, tactical, theoretical, physical and psychological preparation.

Technical preparation

1. The annual programme is developed taking into account each goalkeeper's personality, status and age. It is important to target faults properly to allow progressive improvement, without neglecting ongoing work on the strong points.

2. Macrocycles:

- *the preparation period*

The objective of this period is to quickly recover "the goalkeeper's instinct" that is partially lost during the holidays:

- handling the ball,
- reading the ball's trajectory,
- sense of orientation on the pitch.

This period is given over to the development of physical skills. Technical qualities are systematically developed during the competition period. The goalkeeper should be at 100% of current abilities by the time of the first league match.

- *the competition period*

The coach has enough time to work on the goalkeeper's progress in the technical domain. All of this is achieved through daily training.

3. The monthly programme (mesocycle)

Monthly planning of technical aspects is of no interest as the team's detailed programme is not known. Unlike an apprentice goalkeeper in training with whom we can only work on one particular aspect of technique (aerial balls, etc.) over a longer period (2 to 3 weeks), with a professional goalkeeper we can work on "all aspects of technique simultaneously" on a daily basis. This is why the planning of microcycles (weekly programme) and the establishment of training are much more important.

4. Weekly programme (microcycle) and the training unit

The time allocated to individual work in the group session can be used to make progress in different technical areas. The choice of exercises and the number of repetitions depends on our objective but also on the content of the training with the group.

Example:

If, during the session, we have 20 minutes of individual training before moving on to 1-on-1 challenges with the players, it is not a good idea

to work on aerial balls. A good preparation for challenges means the goalkeeper can make the most of the session with the team. If we really must work on aerial balls, it is preferable to associate this with a 1-on-1 challenge (e.g. centre, ball punched out, 1-on-1 challenge in the penalty area) or carry out a short additional session on crosses after training with the rest of the team.

Daily training with the group naturally enhances the goalkeeper's technical qualities:

- shooting session – making saves with and without diving,
- small-sided games – reflex saves, 1-on-1 challenges,
- keeping the ball – playing the ball with feet.

We do not experience enough aerial balls when working with the team. This is why we need to incorporate an aerial ball session at least once a week.

Physical preparation

1. The annual programme

In the two periods (preparation period and competition period), the various aspects of physical preparation must be developed taking into account each goalkeeper's profile, the results of respective tests, the calendar of matches, dates of training courses, etc. We must not overlook the transition period (holidays) in this development, as it gives the goalkeeper time to recover and prepare for the start of the new season.

2. Macrocycles – planning the 3 periods:

- *the transition period*

Goalkeepers are set an individual programme for their holidays which forms the basis of their work when they return. The programme contains some jogging, strength building (sit-ups, press-ups, core muscle work) and other sports (tennis, cycling, swimming, etc.).

- *the preparation period*

This period begins with tests, the results of which allow us to customise work during the training course and afterwards. A certain hierarchy must be respected when developing different physical abilities: endurance, strength exercises, speed and coordination.

There are more training sessions during the preparation period than the competition period, so we can devote more time to specific work with the goalkeepers.

If using split training sessions, the work focuses on

physical attributes in the morning and purely technical

work in the afternoon. The use of less traditional methods in the preparation period can greatly contribute to bonding and team spirit:

- orienteering,
- hiking in the mountains,
- mountain biking, canoeing, triathlon, etc.
- *competition period*
Each country organises this period in its own way. There is no break in the competition period in England, while in France the period is divided by a mini-winter break (one week). In other countries (Germany, Slovakia, etc.) there are two periods of competition divided by a transition period (holidays) and a preparation period of varying length. The competition period is also influenced by other parallel competitions (national and international cups) and also by the weather conditions. If we summarise the features of the calendar and add in each individual's needs, we can determine a general outline of physical preparation.

3. The monthly programme (mesocycle)

There are a number of approaches to monthly work:

- some coaches have a standard week, with certain days that focus on physical qualities, and they may follow this pattern for several months,
- other coaches have a specific objective for the development of a physical quality for each monthly programme.

Even if there is an overriding objective for a mesocycle, this does not prevent indirect work on other physical abilities at the same time. In the regular cycle of four matches a month, coaches work on the basis of three weeks of development and one week of recovery (work on technique alone). If, for one reason or another, there are more matches per month (TV match brought forward, Cup match), then the programme has to be changed or adapted.

4. The weekly plan and the training unit

This is the specific application of the monthly plan.

- classic weekly plan: application of a typical week,
- cyclical weekly plan: the exercises in 2 or 3 training sessions target the development of the physical abilities chosen in the monthly plan. Other abilities are developed indirectly. In general, the training session the day before a match concentrates on improving sharpness. All the exercises are carried out in goal with a ball.

Tactical preparation

A goalkeeper's tactical preparation takes two forms:

- group training with the team,
- individual:
 - preparation linked to the player's own game on the pitch,
 - adaptation to the next opponent's strengths.

Any problems arising during the match must be discussed the following week. These can even be watched on video and then rectified on the training pitch.

The weekly plan with 7 days (i.e. games on Saturdays)

- Physical work: Tuesday and Wednesday

The weekly plan with 3 days (i.e. games on Saturdays and Wednesdays)

- Physical work: Adapted for each goalkeeper

Theoretical preparation

Goalkeepers at this level are fully versed in theory, so preparation is only required if there are changes to the rules.

Psychological preparation

Psychological work is carried out in two complementary dimensions:

- professional work with a sports psychologist (if the club has one),
- practical work with the goalkeeping coach, consisting of observations, discussions and reactions to different subjects and everyday problems.

Weekly programme							Example of a professional club							
Week XX	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
MORNING	Free	Meet 9.30 Training 10.00 <ul style="list-style-type: none"> specific training related to planning the duration is set by the general coach according to the team's needs 	Meet 9.30 Training 10.00 <ul style="list-style-type: none"> specific training the duration is set by the general coach according to the team's needs 	Meet 9.30 Training 10.00 <ul style="list-style-type: none"> warm-up before joining group training 	Free	Preparation for the match	Free							
AFTERNOON	Meet 16.00 Training 16.30 <ul style="list-style-type: none"> specific training related to planning the duration is set by the general coach according to the team's needs 	Meet 16.00 Training 16.30 <ul style="list-style-type: none"> warm-up before joining group training 	Meet 16.30 Training 17.00 <ul style="list-style-type: none"> additional specific training for individual goalkeepers if required 	Free	Meet 16.00 Training 16.30 <ul style="list-style-type: none"> hotel stay to avoid distractions before match specific training (sharpness) the duration is set by the general coach according to the team's needs 	19.25 Warm-up 20.00 MATCH	Free							"B" team match (3rd goalkeeper)

The items in blue refer to the team as a whole; those in black refer specifically to the goalkeeper.



2.2.2 The training session

Sports training always affects the level of sports performance.

To fulfil training objectives, we need to propose and organise exercises which respond to these objectives.

When preparing a training session for goalkeepers, certain parameters need to be taken into account:

- the objectives need to be defined in reference to the previously-established preparation programme (technical preparation, physical preparation, etc.),
- if necessary, the content is adapted to the team training programme,
- it must be decided where the session will fit in the weekly programme:
 - after the match,
 - the day before the match, etc.
- we have to take into account:
 - the number of goalkeepers,
 - the duration of the training,
 - the choice of exercises,
 - the intensity of the work and the recovery time,
 - the equipment available (pitch, balls, cones, etc.)

Bearing in mind the number of training sessions, the performance level and the players' ages, we can implement different types of session:

- **Split sessions** (technical/tactical session or physical preparation),
- **Mixed sessions** (specific work and physical preparation in the same session),
 - alternated in phase (alternate periods of specific work and physical preparation),
 - alternated in a circuit (a series of specific and physical exercises as part of a course or circuit),
 - integrated (work on a specific situation bringing in physical parameters).

A session is always formed of three parts:

1. Goalkeeper's warm-up

- the warm-up must:
 - prepare the goalkeeper physically, technically and mentally,
 - avoid injuries to muscles or joints,
 - be adapted to the practice conditions, the goalkeeper concerned and the main theme of the session,

- gradually increase intensity.
- the warm-up may be:
 - individual, group or mixed,
- a mixed warm-up comprises three parts:
 - individual preparation of 2-3 minutes, where each goalkeeper does what he feels is right,
 - basic exercises such as catching the ball, exercises on the ground (dives),
 - specific exercises which allow a proper adaptation and transition towards the main physical and technical parts of the training.
- the warm-up can be performed:
 - without a ball (running, jumping, limbering up, sprints, etc.),
 - with a ball (running with the ball, juggling, catching, simple goalkeeping moves and saves, etc.),
 - in the form of a small-sided game.

2. The main part of the session

- gathers together all the exercises designed to develop the chosen objective.
- the following parameters must be defined:
 - adaptation of the exercises to the goalkeeper's abilities,
 - progressive increases of the level of complexity of the exercises,
 - the chosen intensity determines the duration, the number of repetitions, the number of sets, the recovery time and the nature of the recovery (passive/active).
- we can finish the main part with a game which remains within the theme of the session (game of clearances, shots on goal, etc.). This fosters a good atmosphere and friendly relations between the goalkeepers.

3. Cool-down

- this is the part of the session where the goalkeeper calms down using stretching or relaxation exercises. During this calm period we can go over the session and talk about the next scheduled training.

It is important to keep a note of training session statistics. This allows us to monitor the way in which the programme is being carried out, draw conclusions for the future and avoid repetition of exercises. All coaches should compile their own statistics in a manner suited to the way in which they work.



1. Goalkeeper's warm-up



2.1. The main part of the session



2.2. The main part of the session



3. Cool-down

2.2.3 Monitoring the work

Monitoring gathers together the most important information on the goalkeeper's general preparation conditions and content. It also records the methods used during the training sessions, the characteristics, volume and intensity of the work, information on the goalkeeper's impressions during the preparation and any other information about the training.

The coach highlights the information which is important to his work. Using this information, he organises the monitoring:

- in a traditional manner:
 - using (general) documents (widely used in football)

Comments:

 - making notes is quick and easy,
 - storage is complicated and requires a lot of space as the years go by.
- using information technology:
 - there are programmes specially designed for this purpose,
 - the coach can create his own tables and graphs, which requires computer skills. It takes time to set up the tool, but once finished it is easy to use,
 - the coach can record a whole year's information on a CD which is easy to consult when needed.

The coach can conduct monitoring and compile statistics on:

- **The goalkeepers**, through:
 - personal information,
 - test results,
 - medical results, etc.
- **Attendance**
- **The training unit:**
 - content, exercises, number of repetitions, equipment used, etc.
- **The different cycles:**
 - microcycles, weekly programme,
 - mesocycles, monthly programme, etc.,
 - macrocycles, preparation programme, etc.
- **The matches**

The monitoring fulfils the following functions:

- **Checking** (monitoring the programme),

- **Comparison** (comparing different data),
- **Planning** (source of information for future programming),
- **Information** (reflects the methods and means employed; variability of the exercises).

The text, diagrams and tables can be complemented by a commonly-used key in the form of arrows, symbols, etc. To make it easier to organise the work, the coach can give the exercises whatever name he wishes, create short cuts, etc.









- diving for a ball struck along the ground: "dive on ground" or "ball on ground",
- consecutive dives to the right and left: "right-left",
- strengthening the abdominal muscles: "sit-ups", "obliques".



There follows an example of annual statistics for a professional club.

ATTENDANCE

	Goalkeeper 1	Goalkeeper 2	Goalkeeper 3
Number of training sessions	Total 260 (222-32-6)	Total 259 (214-33-12)	Total 245 (202-35-8) + 39 B
Specific training	4	5	20
Absence or injury	10	9	6
Ligue 1 Match	38	36	2
First choice Ligue 1	38		
Substitute Ligue 1		36	2
Playing time	3070	50'	
Number of goals conceded	47	3	
Cup match	2 (substitute)	4	2 (substitute)
Friendly match	7 + 2 (substitute A)	8	4 + 6 (B)
B-team match (Ligue 4)		1	25 + 3 (substitute)
P.R. activities	8	7	6

	Training with the group
	Specific to the goalkeeper - same timetable but separate from the group
	Specific to the goalkeeper in free time
	Individual training - injury
	Absence
	Ligue 1 Match
	Cup match
	Friendly match

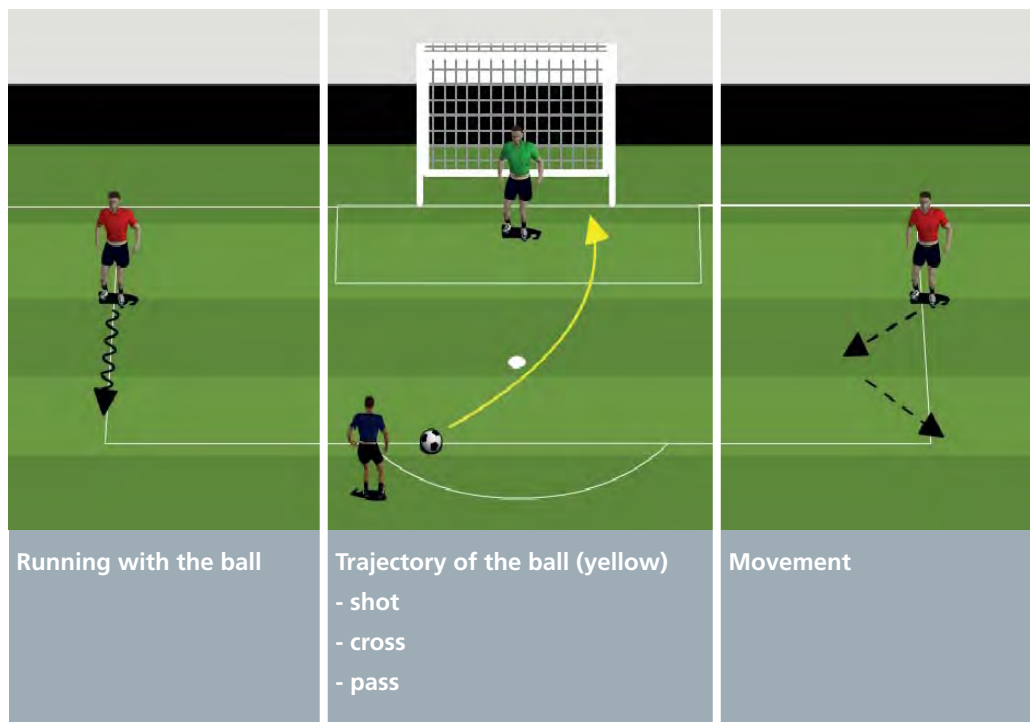
Month	Goalkeeper 1		Goalkeeper 2		Goalkeeper 3	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
1		90'		Substitute	B Team Training	
2						90' B
3						
4						
5						
6						
7		Substitute + 1		90'	B Team Training	
8						90' B
9						
10						
11						
12						
13						
14						
15		90'		Substitute	B Team Training	
16						90' B
17						
18						
19						
20						
21						
22		90'		Substitute + 1	B Team Training	
23				90' B		Substitute B
24						
25						
26		Substitute		90'		Entr. B
27						
28						
29					B Team Training	
30						90' B

Number of training sessions	Total 22 (18 - 3 - 1)	Total 22 (20 - 2)	Total 16 (15 - 1) + 6 B
Specific training	1	2	2
Absence or injury			3
Ligue 1 Match	3	3	
First choice Ligue 1	3		
Substitute Ligue 1		3	
Playing Time	270'		
Number of goals conceded	2		
Cup match	1 (Substitute)	1	
Friendly match	1 (Substitute)	1	
B-team match (CFA-L4)		1	4+1 (Substitute)



3. Technical preparation

Key:



Goalkeeping play is the goalkeeper’s activity on the pitch. The main components of goalkeeping are the defensive and offensive aspects. A goalkeeper’s play is determined by his technical qualities linked to his tactical behaviour (individual and group). In this section, we put tactical considerations to one side and concentrate on technique.

Examining this more closely, we can define **four basic techniques** that can be developed using components specific to the goalkeeper.

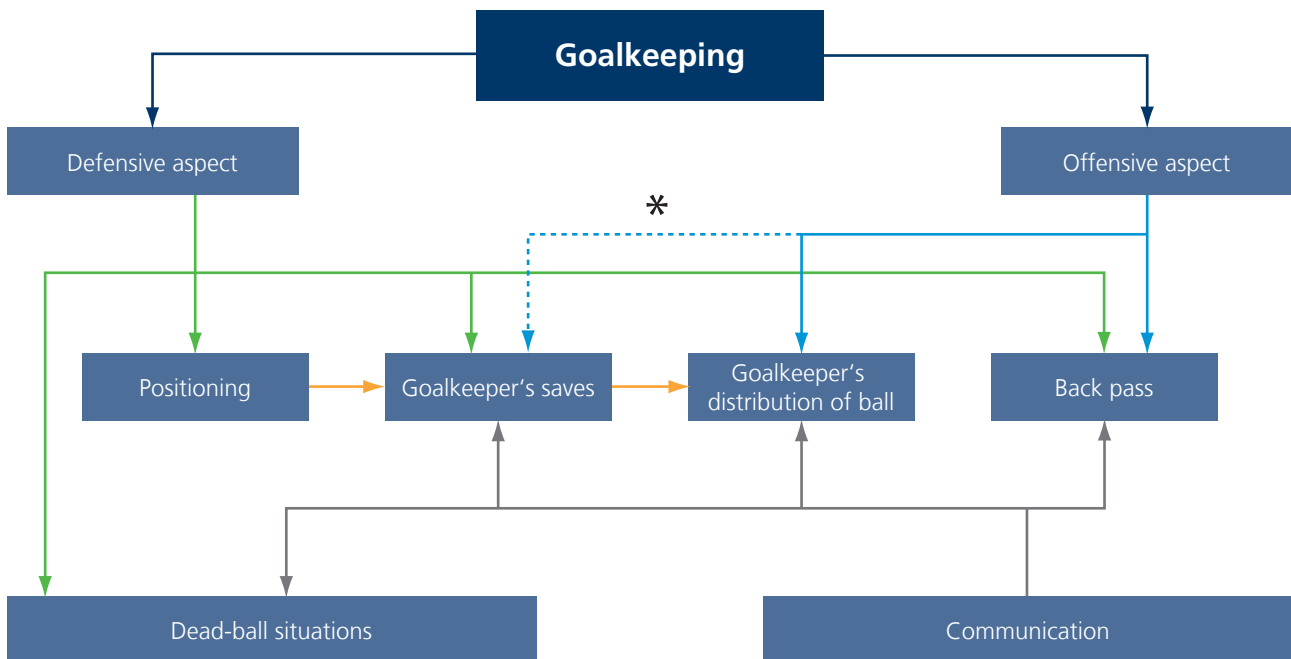
The four basic techniques are:

- **Positioning**
- **Saves**
- **Distributing the ball**
- **The back pass** – This last technique became relevant with the introduction of the rule that prohibits the goalkeeper from handling the ball in certain situations.

Discussing distributing the ball and the back pass separately seems a sensible approach and makes explanations easier rather than generally talking about playing the ball with feet.

A “special component” can be added to goalkeeping play. This relates to the basics described above (positioning, saves and distributing the ball) and concerns **defending dead-ball situations**.

All the goalkeeper’s actions on the pitch must be accompanied by communication with team-mates **verbally and through body language**.



* The goalkeeper’s saves are always defensive. However, in some cases they may go on to become offensive.

Example:

A crossed ball is punched away to an unmarked team-mate.

3.1 Positioning

Before making a save during play, the goalkeeper has to position and reposition himself several times. Two keywords can be defined here:

- **Movement**
 - this is the goalkeeper’s movement in space and time that allows positioning before making a save.
- **Positioning**
 - this is the position from which the goalkeeper can make a save,
 - how good the positioning is depends on how appropriate the previous movement has been.

The goalkeeper can make a save if poorly positioned, but the save is easier and more effective when he is well positioned.

To assist with movement, the goalkeeper can orientate himself using the pitch markings, the penalty spot, his peripheral vision of his own goal as well as his vision of the opponents’ goal.



3.1.1 Movement

As is the case for all other players, the goalkeeper moves considerably during a match. However, only a few of his movements serve to fulfil defensive and offensive duties. *According to research conducted during a French Ligue 1 match, goalkeeper Stéphane Cassard covered a distance of 5,193 m (walking and running); 2,606 m in the first half and 2,587 m in the second half.*

The goalkeeper moves in three different ways:

- **Passive movement**
 - this is the movement of the goalkeeper during a match and training when he is not directly involved in the action,
 - this movement usually consists of walking or jogging.

Example:

 - when the goalkeeper’s team is attacking from a corner, the goalkeeper moves up the pitch with the defensive unit,
 - this movement is anticipatory to respond to any counterattacks by the opponents.

- **Active movement**

- this is the goalkeeper’s movement on the pitch to ensure good positioning before making a save,
- the goalkeeper uses all types of movement in all directions.

- **Specific movement to make a save**

- 1. Movement before the save**

- this serves to slightly reduce the attacking player’s angle of shooting when he lowers his head just before striking the ball,
- it takes the form of a slight jump forward (see photos).



- 2. Movement that is part of the save**

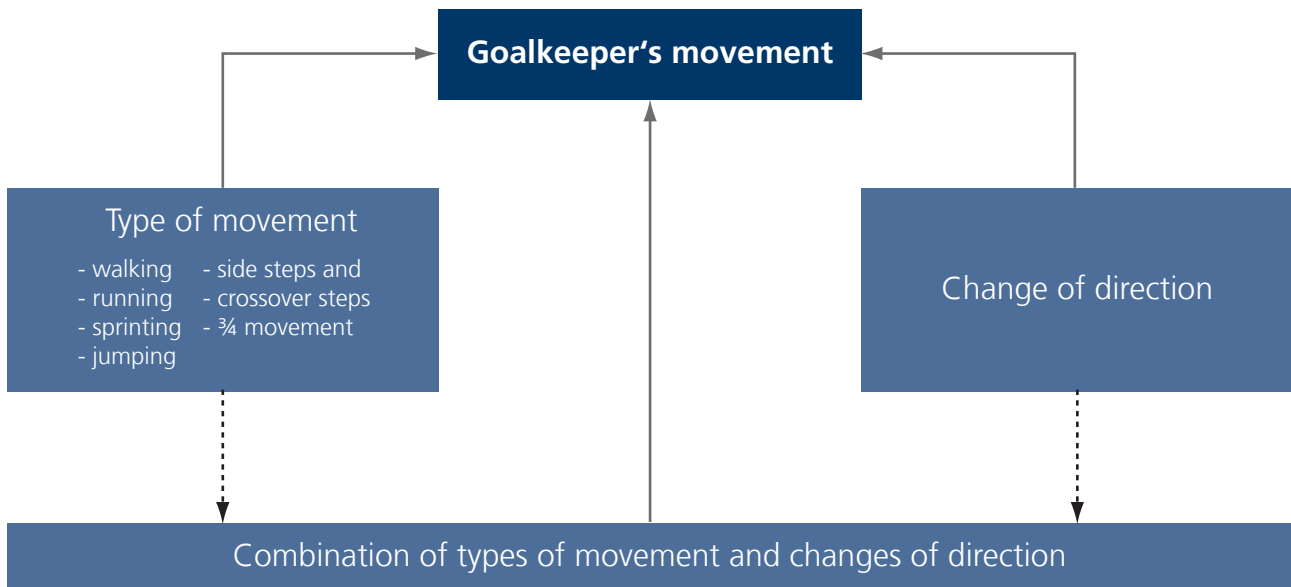
- when a shot is out of the goalkeeper’s reach, he has to take one or two steps before diving.



- 3. Movement after the save to regain stability**

- if the goalkeeper does not manage to control the ball, play continues. He must then rapidly recover to get back into position and make a further save.



Goalkeeper's movement:**Type of movement (description of some features):**1. *Walking*2. *Running*3. *Sprinting*

- the majority of the goalkeeper's sprints are over a short distance,
- long sprints are used for an intervention outside the penalty area,
- reaction speed and starting speed are essential components of the goalkeeper's play.

4. *Movement using side steps and crossover steps*

- side steps are used for a short movement and crossover steps for a longer movement,
- these movements should be mastered from as young an age as possible.

5. *$\frac{3}{4}$ movement*

"The goalkeeper should never turn his back on the ball"

In the following situations, the goalkeeper uses a $\frac{3}{4}$ movement (moves into the third quadrant of an imaginary circle - see image):

- cross over the goalkeeper's head,
- lob,
- return to goal after an intervention.



A $\frac{3}{4}$ movement is characterised by the goalkeeper's travel in the direction of the ball. However, the upper body and shoulders face the other direction and the goalkeeper does not take his eyes off the ball. A $\frac{3}{4}$ movement is conducted using crossover steps or side steps:

- crossover steps - movement over a longer distance at top speed,
- side steps movement over a short distance.

$\frac{3}{4}$ movement using crossover steps



The legs move in the direction of the ball. The upper body, shoulders and head face in the opposite direction to the movement.

$\frac{3}{4}$ movement using side steps



6. *Jump*: to assist in analysis, this movement can be divided into different components:

- support
 - jump from one foot,
 - jump from both feet.
- type of jump
 - direct take-off,
 - take-off after a run up.
- direction of jump
 - jump forward,
 - jump back,
 - jump to the side.

Change of direction – this requires:

- a change of the centre of gravity,
- shortening of strides,
- keeping eyes fixed on the ball.

Combination of types of movement and changes of direction

As the situation on the pitch is always changing, the goalkeeper does not use linear movements but instead combines different types of movements.

Remember!

- Mobility, coordination and skill are all important for good movement. The goalkeeper's movement can be tested and analysed to allow the customisation of work in training.
- Care must be taken with young goalkeepers going through puberty as their coordination skills are often reduced (rapid growth).
- Movement must be adapted to the pitch conditions (pitches may be dry, slippery or frozen).
- When returning to goal, the goalkeeper must never turn his back on play.

3.1.2 Positioning

The goalkeeper adopts specific positioning before each save. The question is whether the positioning is good or not. The goalkeeper can make a good save even with poor positioning, but clearly the task is easier if the positioning is appropriate. Every save requires specific positioning, whatever the situation on the pitch (this topic is also covered in other chapters). Here we will concentrate on the goalkeeper's positioning for saves, with or without diving.



Too far back



Goalkeeper well positioned



Too far to one side

The goalkeeper's positioning varies depending on the distance and angle to the attacking player (see images 1, 2a, 2b).



Goalkeeper well positioned



Too far to one side

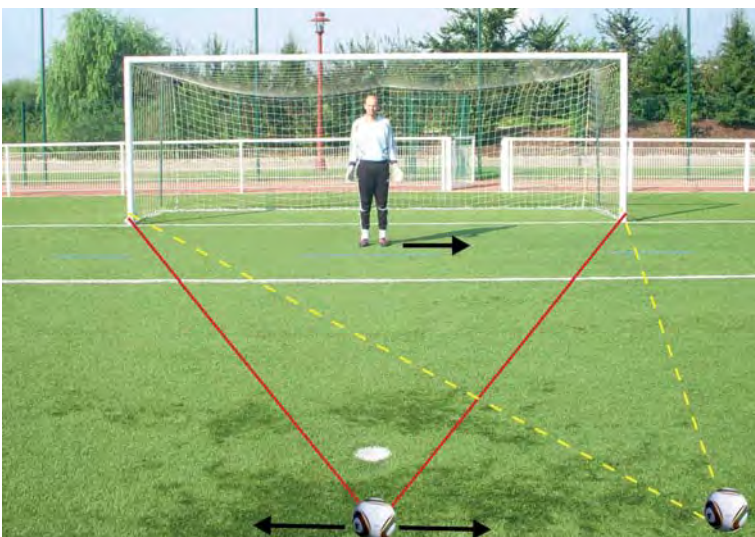


Goalkeeper well positioned



Too far forward

The goalkeeper must cover both sides of the goal and not give the opponent the opportunity to lob the ball over him.



For beginner goalkeepers, two tapes can be stretched between the posts and the ball to instruct on positioning. The goalkeeper's ideal positioning becomes apparent as the coach moves the tapes.

3.1.3 Set/ready position

As the game has developed over the years, speed of movement has become a key component. Players' actions are quicker and so is the football. As a consequence of this development, one of the key guiding principles of goalkeeping which has emerged and become of the utmost importance is, that the goalkeeper should be in a good set/ready position to either move or intercept the ball as quickly and efficiently as possible at any given moment during match play.

The goalkeeper's set/ready position will change depending on the position and situation of the ball on the pitch. However, there are key components which remain common in almost all situations: the head, hands and feet.

Many young goalkeepers struggle with balance; they fall back onto their heels and their head sways from side to side, backwards and forwards, restricting their ability to move or dive effectively and efficiently as the ball is being played.

The goalkeeper should always be on the balls of his feet (body weight forward) with both feet in contact with the ground a shoulder width apart to give stability. If the feet are too far apart movement is restricted and if they are too close balance is affected.



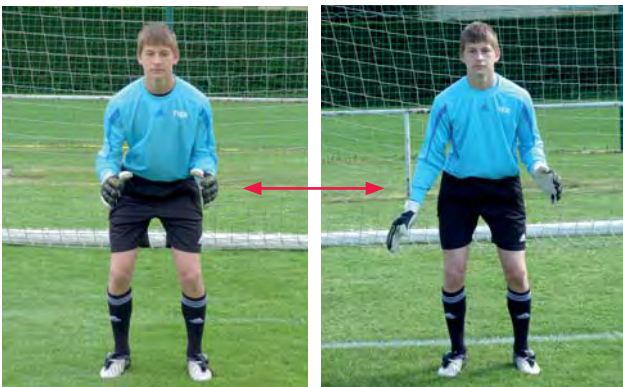
- The head is relatively heavy and should always be as steady as possible, in the middle of the body and slightly forward and with eyes fixed on the ball when possible



The following are key guidelines for other components of the set position and all goalkeepers will make adjustments depending on the situation, his height etc.

Hands

For shots within shooting range, the hands should be in the optimal position to make contact with the ball as quickly as possible, to either catch or deflect. By positioning the hands in the middle of the body, in an open relaxed manner, with arms bent at the elbow, the goalkeeper can quickly adjust to deal with all types of shots, low or high.



Adjustments to this are made when the ball is inside the penalty box and the distance between the ball and goalkeeper is reduced or a 1v1 situation is created between the goalkeeper and an attacker. As the distance between the goalkeeper and the ball reduces, the goalkeeper will drop and widen his hands to cover the area closer to the ground.



Knees

To intercept shots, the knees should be slightly bent (holding the body in an upright shape to fill as much of the goal as possible from an attacker's view point) but allowing the main leg muscles to operate effectively.

To make adjustments as the distance between the goalkeeper and the ball reduces or in a 1v1 situation the knees must bend further to allow the body and hands to drop appropriately.



The 'set/ready position' is adjusted when the ball is in different positions on the pitch.



The most important elements of the set/ready position for crosses from distance, are the body shape and the feet. The body shape should be upright and in an open position to allow the goalkeeper to see both the ball and the maximum area of the pitch. The feet should also be in an opened position with one slightly in front of the other to allow natural movement forward and backwards.

When the ball is in the opponent's area of the pitch and there is space between the goalkeeper and the rest of the players, the goalkeeper's role changes, to deal with the threat of through balls. Positioning within the penalty area will adjust according to the position of the ball and the changing situations. To create the maximum opportunity to intercept the ball as quickly as possible the goalkeeper has to remain alert, on the balls of his feet and continuously adjust his feet to be in a natural sprinting position.



The exercises

Exercise 1

1. Movement.
 2. Catch the ball (volley).
Change goalkeeper.
- 3 repetitions on each side**



Exercise 2

1. Movement.
 2. Catch the ball (half-volley).
Change goalkeeper.
- 3 repetitions on each side**



Exercise 3

1. Lateral slalom.
 2. Dive on the ground.
Change goalkeeper.
- 2 repetitions on each side**
- Same with forward and back slalom.



Exercise 4

1. Catch the ball.
 2. Movement.
 3. Catch the ball after correct positioning (focus on quality not on speed of execution).
 4. Movement.
- 3 circuits**
- Change goalkeeper.



3.2 The goalkeeper's saves

The goalkeeper's saves reflect his defensive work. This is what the supporters in the stands see. Can he stop the ball? The goalkeeper's saves are fundamental components of his play. They can be categorised into five types:

- **Standing save (catching on your feet)**
- **Diving save (catching on diving)**
- **Dealing with crosses (aerial ball)**
- **1-on-1 challenge**
- **Reflex save**

Standing and diving saves form the basis of the other saves described above. Young goalkeepers must learn these from the earliest age and improve upon them through daily repetition. Positioning is identical for the two types of save. Dealing with a cross (aerial ball), 1-on-1 challenges and reflex saves are developed from standing and diving saves and relate to the presence of external factors (see figure 1). They also require specific positioning.

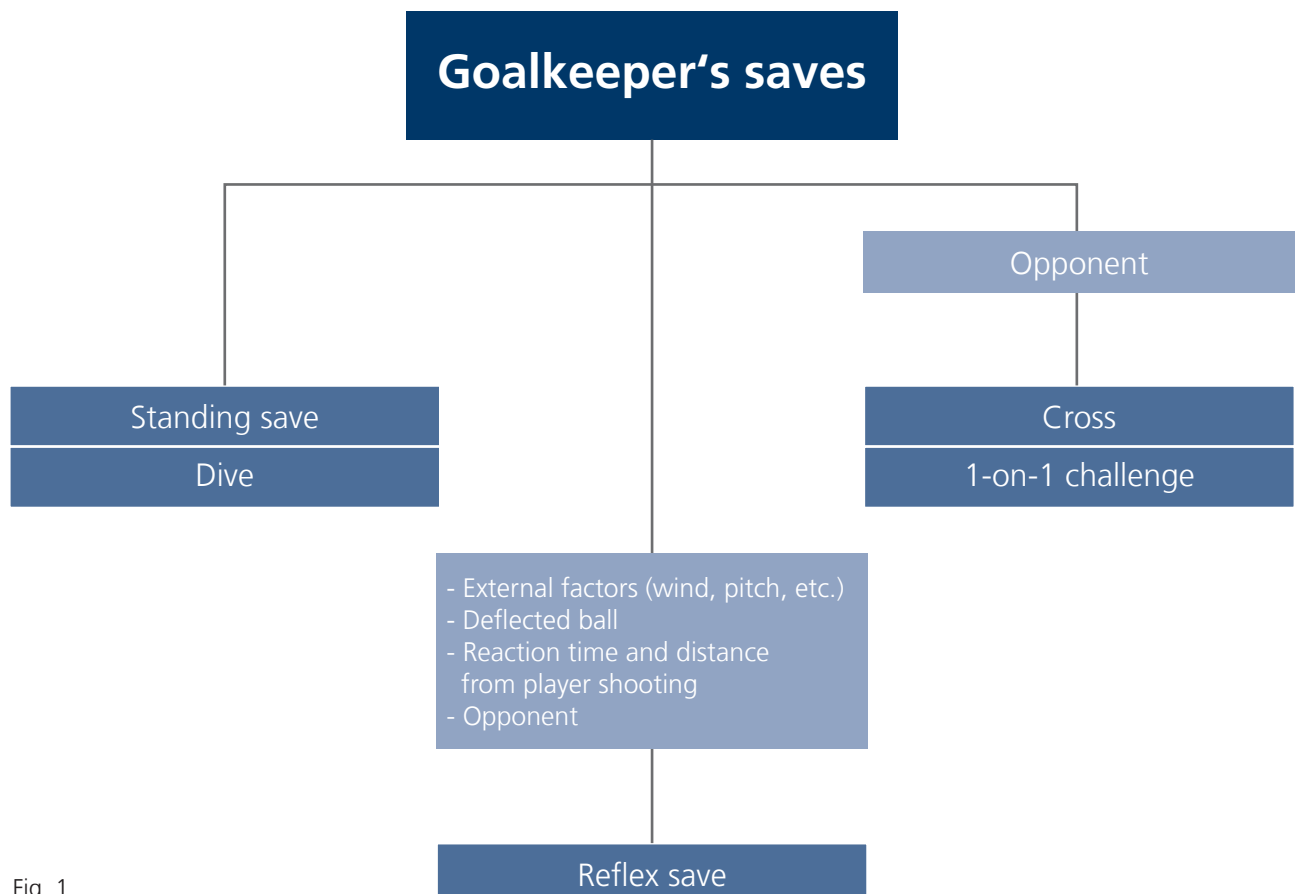


Fig. 1

3.2.1 Standing saves (Catching on your feet)

When the goalkeeper catches the ball, whether with or without movement, this is called a standing save. In this case the goalkeeper does not dive laterally.

The goalkeeper's save is determined by the trajectory of the ball:

- **Ball at medium height**
 - catching the ball in front of the head,
 - catching the ball at the midriff,

- **Ball on the ground**
 - catching the ball with “bent legs”,
- **Bouncing ball**
 - catching the ball after a bounce,
- **Aerial ball**
 - catching the ball with a vertical jump.

Catching the ball is the first thing that a goalkeeper learns. Once this manoeuvre has been mastered, goalkeepers can go on to develop other important techniques. The evolution of the modern football means that goalkeepers more often have to push the ball away than catch it.



Catching the ball
in front of head



Catching the ball at
the midriff



Catching the ball with “bent legs”



Catching the ball after a bounce



Catching the ball
with a vertical jump

Catching the ball at medium height

1. Catching the ball in front of the head



- the goalkeeper should have his arms apart (shoulder width) and have his weight slightly on his toes,
- he takes the ball with arms stretched, elbows in, at head height (if the ball passes through the goalkeeper's hands, his head will stop the ball going into the goal),
- the position of the hands and fingers is very important (see photo).



Remember!

The bad habit of some goalkeepers of catching the ball with "rounded arms" (elbows too wide during a dive or when catching an aerial ball) can have serious consequences:

- dive: the ball can pass between the goalkeeper's hands and head,
- aerial ball: the goalkeeper does not gather the ball at the "highest point".

2. Catching the ball at the midriff



- arms stretched out towards the ball,
- without touching the ball with hands, the goalkeeper clutches the ball between the forearms and the chest,
- the movement is completed by the ball being secured in place by the hands and chin.

This technique offers triple protection:

hands + arms ↔ chest ↔ chin

Remember!

- The goalkeeper's torso should not be straight during this save.
- If the ball is slightly to one side, the goalkeeper should not try to catch the ball laterally but instead take a small step to the side.



Catching the ball on the ground

Catching the ball with “bent legs”

Preparation for the save

- the goalkeeper bends his legs with the left leg diagonal to his body (the save cannot be made if the leg is forward),
- the right leg forms a right angle,
- the position of the legs provides extra protection,
- the shoulders are slightly forward,
- the goalkeeper can do the same on the other side by reversing the roles of his legs.

Gathering the ball

- the goalkeeper’s arms stretch out towards the ball,
- the goalkeeper lifts the ball, brings his hands in and gathers the ball to his chest,
- the chin offers further protection.



Contact with the ground (not always necessary)

- the goalkeeper pushes forward slightly and lands on his elbows while grasping the ball,
- this movement must be conducted carefully to make sure the ball is not spilled.

Remember!

The arms should be inside the knees (5a, 5b).



Catching the ball after a bounce

For the goalkeeper to catch the ball after a bounce, he needs to:

- analyse and react to the opponent's shot,
- analyse the situation after the bounce,
- choose an appropriate save.

The goalkeeper's save depends on the bounce:

- high bounce:
 - catch the ball in front of the head,
 - catch an aerial ball,



- bounce at medium height:
 - catch the ball in front of the head,
 - catch the ball at the midriff,
- very low bounce:
 - catch the ball with "bent legs",
- if the ball has an erratic bounce, the goalkeeper has to make a reflex save.

For example, the goalkeeper may **catch the ball at his midriff, with a dive forward**.



- the goalkeeper attacks the ball,
- he lifts the ball and gathers it between his hands, forearms and chest,
- the save is completed by diving forwards.



Remember!

- The elbows must be sufficiently tucked in to prevent the ball passing under the goalkeeper's chest and into the goal.
- If the goalkeeper does not have a sufficient grasp on the ball, it can spill forward as he dives.

The goalkeeper is advised to catch the ball as soon as possible after the bounce if he cannot intervene before the bounce. The goalkeeper must take into account the state of the pitch and the weather conditions. A ball will bounce higher on a dry pitch. On a damp pitch it will bounce lower and gather speed.

Catching an aerial ball

In some situations close to the goal, the goalkeeper has to catch an aerial ball.

- the save can be made by springing off one or both legs,
- the goalkeeper catches the ball with arms stretched out as high as possible:
 - “at the highest point”
- the position of the hands is very important when catching the ball.



«The highest point» means catching the ball with the arms stretched out by using an appropriate jump.

The exercises

Exercise 1

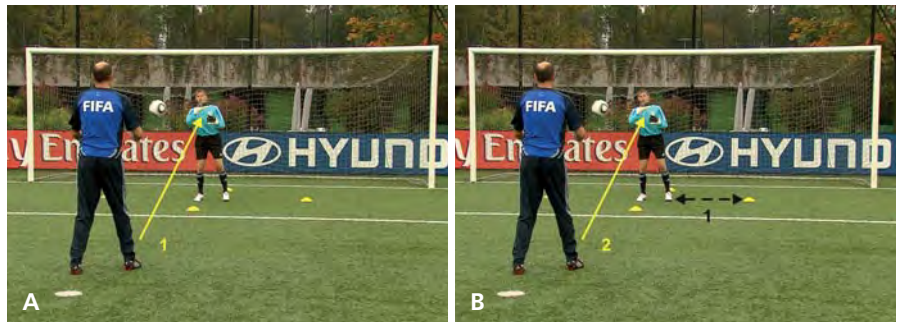
Catch the ball.

1. Catch the ball (volley).
 2. Catch the ball (half-volley).
- 10-14 catches for each goalkeeper**



Exercise 2

1. Catch the ball (10 balls).
 1. Movement:
 - directed,
 - goalkeeper decides.
 2. Catch the ball.
- 4-6 repetitions**



Exercise 3

1. Move forward.
 2. Catch the ball (in front of head, at midriff, after a bounce, aerial, etc.).
 3. Move back, change to second goalkeeper (then third, etc.).
- 8 repetitions for each goalkeeper**



Exercise 4

1. Catch the ball in front of head.
 2. Short movement.
 3. Catch the ball with "bent legs".
 4. Short movement.
- 4-5 repetitions on each side**



3.2.2 Diving saves (Catching on diving)

If the goalkeeper cannot catch the ball while standing (reach too short) or by moving a short distance, he dives for the ball.

The dive is the most attractive aspect of goalkeeping technique and is the skill which gives most pleasure when performed correctly. We can teach goalkeepers the technique from a very young age. There are some universal rules, but everyone's diving style is unique. It is linked to:

- the goalkeeper's body type,
- good and bad habits.

Every goalkeeper differs slightly from one side of the body to the other (and has a preference for one side).

The coach's role is to harmonise "diving theory" with each goalkeeper's particular features to achieve maximum efficiency. This working method is valid for all a goalkeeper's skills, but particularly for diving.

We can analyse a goalkeeper's dive using three criteria:

- **The trajectory of the ball**

- ball on the ground,
- ball at medium height,
- bouncing ball,
- ball over goalkeeper - lob.

- **The goalkeeper's jump**

- does not take off (the goalkeeper dives to the floor to make sure the ball is safely gathered, even if this is not strictly necessary),
- goalkeeper takes off,
 - direct jump (lack of time, see also reflex save),
 - jump after moving a short distance (ball rolling at a distance from the goalkeeper).

- **Completing the movement**

The goalkeeper makes a decision depending on the difficulty of the ball, the weather conditions, his state of mind, usual behaviour, and so on:

- to catch the ball,
- to deflect the ball.

To simplify, we can classify dives into four categories:

- **Balls caught or deflected on the ground,**
- **Balls caught or deflected at medium height,**
- **Balls caught or deflected after a bounce,**
- **Balls caught or deflected after a lob.**

In all cases, the movement and jump form an integral part of the goalkeeper's action. The goalkeeper's positioning and analysis of the ball's trajectory is discussed in other documents.

The different trajectories of the ball



Balls caught or deflected on the ground

1. Catching the ball

Preparing to dive

- the goalkeeper bends his legs, with the left leg beginning the movement,
- the body weight shifts to the right leg, which the goalkeeper uses to drive to the side.

Drive to the side

- the goalkeeper drives slightly forward,
- by simultaneously moving his arms towards the ball, the goalkeeper pulls his body in that direction and can go to ground as quickly as possible,
- it is important that he lands on his side rather than on his stomach.

Holding onto the ball

- the goalkeeper grasps the ball with his arms outstretched, using the ground as “a third hand”,
- the right hand is used as an opposing force to prevent the ball from passing,
- the left hand presses the ball against the ground,
- on completing the move, the goalkeeper’s body is between the goal and the ball, which provides extra assurance.



Remember!

The goalkeeper must:

- Dive to the ground quickly, with no interfering movements (which waste time).
- Dive forwards, not backwards (if the ball slips from his grasp, it will end up to the side of the goal rather than in the goal).



2. Deflecting the ball

The goalkeeper deflects the ball if he is not sure he can keep hold of it or if it is too far away from him.

Deflection with both hands

- the technique is identical to catching the ball, but the goalkeeper deflects it to the side with open hands.

Deflection with one hand

- the goalkeeper uses this technique for balls just inside the posts or crossbar, where a slight touch is enough to deflect the ball outside the goal.

Remember!

- When deflecting a ball with one hand, the goalkeeper must take care that it does not pass over his hand.
- A slight deflection with the fingertips may be sufficient.
- If possible the ball must be deflected to the side of the goal.



With this technique, the hand must be open but “strong”.



Balls caught or deflected at medium height

1. Catching the ball

Movement

The goalkeeper often has to move slightly before diving:

- using sidesteps for balls close to him,
- using crossover steps for balls further away.

If the goalkeeper springs directly, he does not move first.

Preparing to dive

- the goalkeeper adjusts his steps,
- the right leg is slightly forward of the left leg,
- body weight is transferred onto the right leg.

Jump

- the goalkeeper drives using his right leg,
- the left leg bends, complements and assists the drive,
- the hands move towards the ball.





Holding onto the ball

- after a horizontal dive (with body and legs extended), the goalkeeper grasps the ball with outstretched arms.
- the positioning of the fingers is of vital importance.

Landing

- the ball grasped in the hands is the first to touch the ground (the ground acts as the 3rd hand),
- the elbow bends behind the ball, ahead of the rest of the body,
- after landing, the body must regain its position.



Remember!

- The arms must always be outstretched at the moment the ball is stopped.
- If the arms are bent at the elbows, there is a risk of the ball passing between the hands and the head.
- On frozen ground, the goalkeeper must take care when “pinning” the ball to the ground because it may slip away.



2. Deflecting the ball

The technical description is similar to that for catching the ball (see previous pages). The differences are in the position and role of the hands in the landing of the dive.



The goalkeeper can deflect the ball:

- with both hands (open hands or fists),
- with one hand,
 - the hand on the same side as the dive (dive to the right, right hand),
 - the hand on the opposite side to the dive (dive to the right, left hand).

From experience, we know that in the part of the goal indicated in the picture, the use of the opposite hand is more effective. By using this technique, the goalkeeper can reach around 20 cm further than if he uses his hand on the same side as the dive.

Deflection using the hand on the same side (dive to the right – right hand)



- the goalkeeper deflects the ball with his hand open and held firm,
- the same hand helps to cushion his fall when landing,
- the opposite hand plays no part in the manoeuvre.

**Deflection with the opposite hand
(dive to the right – left hand)**

These are the most attractive saves made by a goalkeeper from both the spectators' and his own point of view, because the goalkeeper has plenty of time to savour the manoeuvre.

- the goalkeeper uses his outstretched arm to turn the ball behind the goal,
- the other hand cushions his fall on landing.



Catching or deflecting the ball after a bounce

Analysis of the situation and anticipation of the bounce are vitally important for this save.

The bounce determines the type of save the goalkeeper will use:

- normal bounce: "dive at medium height",
- no bounce (ball skids along the ground): "dive on the ground",
- surprise bounce: reflex save.

The decision whether to catch or push away the ball is up to the goalkeeper.

A special situation is when the ball is not far from the goalkeeper. He catches **the ball in his midriff while falling to his side.**

- the goalkeeper's outstretched arms move towards the ball,
- his hands envelop the ball and clutch it to his chest,
- the goalkeeper falls lengthways on his side (leg to shoulder in contact with the ground),
- after landing, the goalkeeper's body must be between the ball and the goal.

Remember!

The goalkeeper must keep his elbows tucked into his body to prevent the ball from passing between his arms and body.



Certain balls can be caught with a “diagonal” dive

(angle of 45°)

- the goalkeeper catches the ball immediately after the bounce,
- he clasps the ball between his chest, forearms, hands and chin,
- holding the ball, he falls onto his elbows diagonally from his starting position.



Remember!

The goalkeeper must remain alert because his body is not providing protection between ball and goal.

Catching or deflecting the ball after a lob

Before beginning to describe this save, it is important to note that catching the ball in this situation entails certain risks:

- if the ball is released, it can end up in the goal,
- on landing, the goalkeeper may find himself in the goal.

1. Deflecting the ball

The goalkeeper can deflect the ball with the “same” or “opposite” hand.

Deflection with the opposite hand

(dive to the right – left hand)

Return towards the goal (movement)

- the goalkeeper uses a $\frac{3}{4}$ movement with side steps (for short distances) and/or crossover steps (longer and faster movement),
- he moves in the direction of the ball but his torso and shoulders are facing in the opposite direction,
- he does not take his eyes off the ball,
- he adjusts his last step to optimise his jump.

Jump

- the goalkeeper drives with his right leg (or left leg if diving to the left),
- he pushes at the same time, upwards and lengthways,
- the left leg and the hands help with the drive.





Deflection of the ball

- with his left arm outstretched, he pushes the ball over the crossbar,
- contact should be "at the highest point" possible.

Landing

- the outstretched right arm moves towards the ground,
- the goalkeeper bends his right elbow to cushion his fall,
- his bent right leg assists landing.



Deflection with the hand on the same side

(dive to the right – right hand)

The objective of this save is to prevent the ball entering the goal (last resort) if the goalkeeper is too late to make the save with the opposite hand.

- the goalkeeper deflects the ball to the side of the goal with his right hand,
- he cushions his fall with the same hand.



Comparison

With repetition in training, the goalkeeper can master the three possible saves after a lob. It is very interesting to

compare “the highest point” (where the goalkeeper touches the ball) in the three situations.



Opposite hand



Same hand



Catching the ball

2. Catching the ball



Catching the ball

- the goalkeeper attempts to catch the ball at the “highest point”,
- if the goalkeeper makes the save as the ball is dropping, he will find it more difficult to hold onto.

Landing

The ball is clasped in the hands and touches the ground first (the ground acts as the 3rd hand).

Remember!

Care must be taken when landing on a slippery or frozen surface.



The exercises

Exercise 1

1. Dive for a ball on the ground, left side.
2. Dive for a ball on the ground, right side.

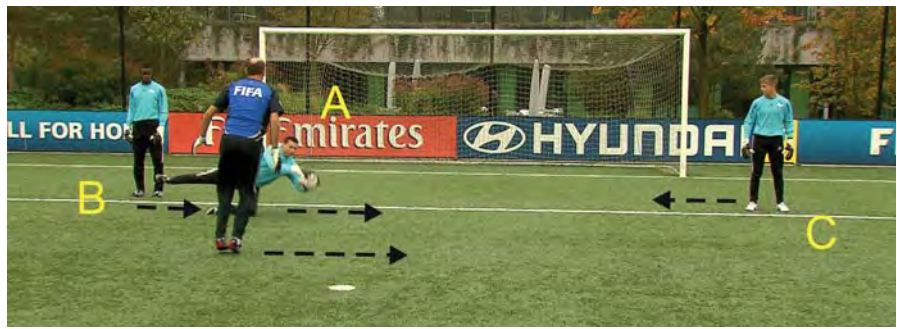
6 dives

The same at medium height or with a bouncing ball.



Exercise 2

A series of dives for three goalkeepers in the form of a relay. Each goalkeeper completes three quick dives on each side.



Exercise 3

1. Jump.
 2. Dive under the hurdle to save ball on the ground.
- Change to next goalkeeper.

8 balls each side



Exercise 4

1. Dive in front of the obstacle (goalkeeper).

4 balls each side

The same but without knowing which side the dive will be.

4 balls



3.2.3 Crosses

Crosses are balls that arrive in the penalty area at different heights. How well the goalkeeper responds may be influenced by how many players there are around him. The goalkeeper must quickly read the ball's trajectory and make a decision to come out or remain on his goal line.

Three types of cross can be defined:

- **aerial ball dropping into the penalty area,**
- **cross cut back in front of goal,**
- **cross hit hard and low or at medium height between the goalkeeper and his defence.**

The goalkeeper's response to a cross comprises two phases, namely:

- movement towards the ball,
- save (ball caught or punched).

Before analysing these two phases, we should devote a few lines to the goalkeeper's positioning for a cross.

The goalkeeper's positioning

The position of the attacker with the ball determines the goalkeeper's positioning. The parameters which the goalkeeper must take into account are:

- how far away the attacker is,
- what part of the pitch the attacker is on,
- the direction of the ball (moving towards or away from the goal).

1. The attacker's movement across the width of the pitch

To follow the movement of the attacker, the goalkeeper moves in parallel to the goal line (at an outstretched arm's distance away: see photo).



The goalkeeper moves according to the attacker's movement:

- the closer the crosser is to the goal, the closer the goalkeeper moves towards the near post,
- in contrast, the further away the crosser moves, the further the goalkeeper moves towards a point 2/3 back from the near post.



2. The attacker's movement up and down the pitch

The further away the crosser moves from the goal, the

further forward the goalkeeper must move, without giving the player a chance to lob him.



3. The attacker's movement across and up and down the pitch

The goalkeeper adapts his position using the explanations given above.



Not all wing play results in a cross. The goalkeeper must take up a number of positions before making a move for the ball. With an outswinging cross, the goalkeeper can anticipate the ball's trajectory and gain a little time before making a successful intervention.

The goalkeeper's movement towards the ball

The goalkeeper analyses the ball's trajectory and reacts by moving accordingly to make a save at the right time and in the right place. The goalkeeper uses the following

movements depending on the height and direction of the ball:



1. sprint

Ball crossed to the near post.

2. side steps and crossover steps

3. $\frac{3}{4}$ movement (in the form of side steps and/or crossover steps)

Ball crossed to the far post.

The choice of movement between side steps and crossover steps depends on the speed of the ball and the distance the goalkeeper has to cover (very short movement – side steps, otherwise crossover steps).

While moving, the goalkeeper decides whether to catch or punch the ball. This decision may be influenced by:

- the ball's trajectory,
- the presence of other players,
- the weather conditions,
- the goalkeeper's mental state (if he has dropped the previous two balls, he will probably choose to punch or even stay on his goal-line for the next ball).

Remember!

- It is very important for the goalkeeper never to take his eyes off the ball.
- If the trajectory changes (wind, deflected ball, etc.), the goalkeeper must quickly adjust his movement.



Preparing to jump

This is the goalkeeper's action between the movement and the save. To take off correctly, he must adjust his weight

according to the driving leg. The photos below demonstrate this.

1. $\frac{3}{4}$ movement using side steps (left-hand side)



Take-off from the left foot

- the drive is an extension of the movement,
- the vertical jump is not as high and the goalkeeper cannot protect himself with his knee,
- the goalkeeper can dive in this situation.



Take-off from the right foot

- the final step must be a crossover step,
- the drive with the right leg allows the goalkeeper to climb very high, protecting himself with his knee,
- it is difficult to dive in this situation.



2. ¾ movement using crossover steps (left-hand side)



Jumping from the left foot

- on the last step, the goalkeeper does not cross his legs,
- he does not jump as high but he can dive.



Jumping from the right foot

- the take-off is an extension of the movement,
- he can catch the ball at its highest point,
- he cannot dive.



Catching the ball



Every goalkeeper has a dominant foot, from which his spring is better. Training can reduce the difference between the feet, allowing the goalkeeper to feel more comfortable in the many situations that arise in the penalty area.

We will now analyse a situation involving a cross coming in from the goalkeeper's right (the situation is identical for the left-hand side, just the supporting leg changes)

- the goalkeeper moves into a position where he can intercept the ball,
- he pushes off from his right leg,
- he moves his arms and left leg to complement his leap, enabling him to jump higher,
- his left knee also provides protection against a possible onrushing attacker,
- with outstretched arms, he catches the ball at its highest point,
- good positioning of the hands is vitally important,
- he lands on his supporting leg (right leg).

The goalkeeper can catch the ball coming in from the same side (right) by pushing off from his left leg, but in this case he cannot protect himself.

As the goalkeeper comes out, he shouts:

- "LEAVE IT!"
- "MINE!"

Conversely, a team-mate can warn the goalkeeper if opponents are near as he makes his intervention:

- "TIME!"
- "MAN ON!"

Remember!

- If the goalkeeper drops the ball, he must react quickly to the new situation.
- He must never stop halfway; if he decides to come out, he must follow it through.
- He must take external factors into account (wind, sun, floodlights, slippery ball, etc.).
- When the ball is falling behind the goalkeeper, he can catch it behind his head with his fingertips. There is always a risk of the ball slipping from his grasp (see photo), so it is preferable to catch or deflect the ball with a backwards dive.



Clearing the ball

The goalkeeper clears the ball in difficult situations when he is not sure he can catch it.

The choice of clearance to be made depends on where the goalkeeper intervenes and the direction of the ball..



1. Two-fisted clearance



2. One-fisted clearance



3. Ball turned away with one hand



4. Ball tipped over the crossbar



1. Two-fisted clearance

The two-fisted clearance is used for crosses to the near post and straight-on and high balls into the penalty area.

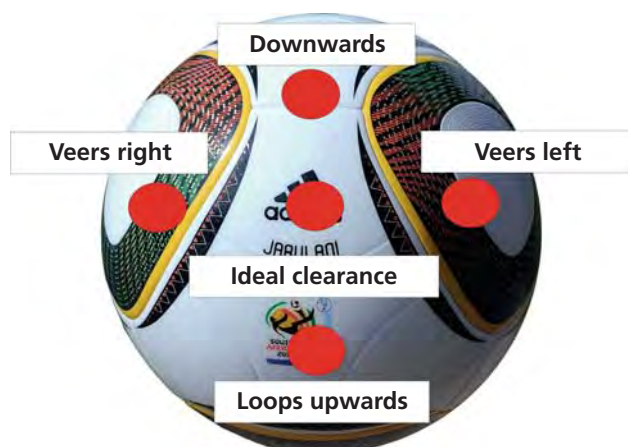
Ball from the goalkeeper's right:

- the goalkeeper pushes off from his right leg,
- he can protect himself by raising his left leg,
- with arms outstretched, he clears the ball with two clenched fists in front of his face.



Remember!

- After making the clearance, the goalkeeper must reposition himself face on to the game.
- He shouts to team-mates to warn them he is coming out.



The direction of the clearance depends on where the goalkeeper makes contact with the ball.

2. One-fisted clearance

The example of a right-handed goalkeeper is used in the following description.

One-fisted clearance with the ball arriving from the goalkeeper's right

- the goalkeeper pushes off from his left leg,
- his torso is facing the ball,
- he can use his left hand for protection and stability in the air,
- he moves his bent right arm sideways towards the ball; his shoulders and torso complement the movement,
- the goalkeeper punches the ball with his fist clenched in front of him,
- he extends his arm to direct the ball,
- he lands on his supporting leg,
- on completion of the movement, his whole body is facing the direction of the ball.

Remember!

- With this type of clearance, it is important to use the speed of the ball and not force the action.
- The ball should preferably be cleared to the wing.
- After making the clearance, the goalkeeper needs to reposition himself face on to the game.

The goalkeeper can clear the ball easily with his "good" hand (right-handed goalkeeper punches a cross from his right, left-handed from the left). However, it is much more difficult with the "bad" hand (right-handed goalkeeper punching a cross with the left hand – cross from the left). With training we can address this awkwardness. The goalkeeper can learn to punch the ball away just as well with either right or left fist, which can be very useful in a match.

If the goalkeeper cannot use this technique, he can use the solution shown on the next page.



Punched clearance of a ball coming from the goalkeeper's left

The goalkeeper's action is identical to when catching the ball, except that at the end of the movement, he clears the

ball with his right fist while extending his arm. The situation is the same for a left-handed goalkeeper with a cross from the right.



3. Ball turned away with one hand

The goalkeeper dives and turns the ball away with one hand in the following situations:

- when the ball is hit to the far post,
- when he is lobbed.

In these cases, it is usually sufficient for the goalkeeper to deflect the ball away from his opponent with his fingertips. We can consider this action a "last resort" save.



4. Ball tipped over the crossbar

When a ball is crossed near the goal, if the goalkeeper is not sure of his positioning or if an opponent is near, he can tip the ball over the crossbar. Why do this?

- because, in his attempt to hold onto the ball, the goalkeeper could fall over the goal line or touch the crossbar and drop the ball,
- because turning the ball away in front of goal in the presence of opponents could be risky.



If, after moving, the goalkeeper finds himself facing the goal, he tips the ball over the crossbar with the opposite hand.

If, during his movement, the goalkeeper finds himself with his back to goal:

- he can change his direction of movement by changing his supporting leg,
- he can twist in the air as he takes off (see photos 4, 5, 6, 7).

In both cases he is able to tip the ball over the crossbar with the opposite hand.



The cut-back cross

A cut-back cross is one possible outcome when an attacker is heading towards goal at a tight angle.

Certain factors may influence the decision of the player with the ball:

- whether a defender is coming back to challenge him,
- whether he looks up at the position of the goalkeeper and other players in the penalty area,
- the foot he is using to control the ball.

What situations might the goalkeeper be faced with?

(Presuming a right-footed player cutting in from the right).



- The cut-back cross: on the ground, at medium height, with a bounce (1),
- Other possible situations:
 - A curled ball to the far post (open side) (2),
 - If the player pushes the ball too far ahead of him, the goalkeeper can dive at his feet (3),
 - A power shot to the near post (closed side) (4).

The goalkeeper must find a compromise between his own positioning, an analysis of how the opponent is running with the ball and the positioning of other players (opponents and team-mates).

The goalkeeper positions himself according to the opponent's movement and reacts to a cut-back cross.

The ideal way to deal with a cut-back cross is to hold onto the ball, because a deflected ball may end up at an opponent's feet. This is a paradoxical situation because even a technically well-performed deflection can result in a goal whereas an unremarkable save may be effective. After making a save, the goalkeeper must reposition himself quickly.

If the goalkeeper cannot deal with the cross, he must react quickly to a new situation in which he is unaware of the position of opponents behind him. This means that he has to react more instinctively.

The goalkeeper can:

- dive at the opponent's feet,
- dive early to cover as much space in the goal as possible,
- make a reflex save if he is caught on the wrong foot.

Communication with the defence is difficult. At the beginning of the move, the goalkeeper can warn his team-mates of the opponent's presence in the penalty area. After that, he must concentrate on making a save, or perhaps give instructions to defenders who are in his field of vision..



A power cross on the ground or at medium height between the goalkeeper and his defence

This is often the conclusion of a quick attack. It is a cross into the space between the goalkeeper and defenders running back towards goal.

The goalkeeper intercepts the ball's trajectory before intervening, with or without a dive. The goalkeeper must

read the trajectory perfectly if he is not to be beaten to the ball by an opponent. He must shout to his defenders that he is coming out to avoid any misunderstanding.



The exercises

Exercise 1

1. Ball thrown out.
 2. Forward movement.
 3. Backward movement.
 4. Aerial ball.
- Change of goalkeeper.
5 repetitions each side



Exercise 2

1. Aerial ball thrown in.
 2. Two-fisted clearance.
- Change of goalkeeper.
8-10 repetitions per goalkeeper each side



Exercise 3

- Crosses (with opposition) from different positions.
10 balls from each side, with variation

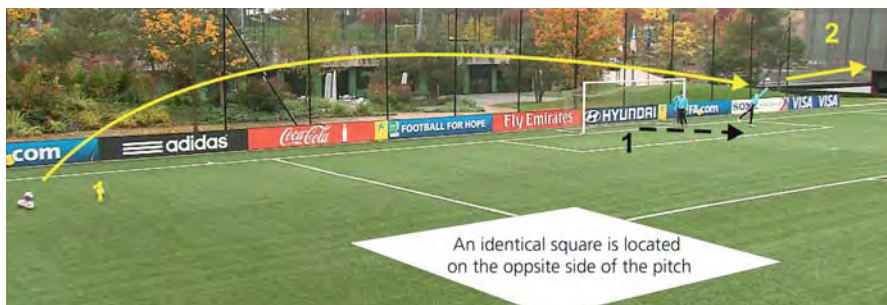
Exercise 4

1. Movement of coach with the ball – goalkeeper takes up position.
 2. Cross.
 3. High ball.
- 4 repetitions one after the other on each side



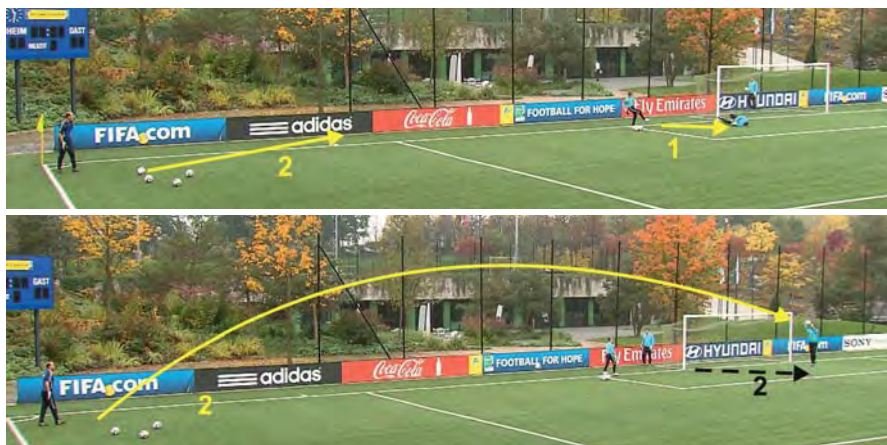
Exercise 5

1. Cross.
 2. Punched ball (1 or 2 fists) to the side, aiming at one of the highlighted squares.
- 6 balls from each side, with variation**



Exercise 6

1. Cut back pass.
 2. Cross.
- Change of goalkeeper
4 repetitions each side



Exercise 7

1. Cross.
 2. Movement.
 3. Shot.
- 2 sequences**
Change of goalkeeper
2 repetitions from each side



Exercise 8

1. Cross.
 2. Clearance.
- 10 balls from each side, with variation**



3.2.4 1-on-1 situations

1-on-1 situations are analysed depending on where they take place.

The goalkeeper may face a 1-on-1 situation:

- inside the penalty area,
- outside the penalty area.

1-on-1 situation in the penalty area

1. The goalkeeper is faced by a 1-on-1 situation after a pass into the penalty area

- there is little time to analyse the situation, the goalkeeper must get to the right place at the right time,
- after a sprint, he attempts to gather the ball without diving or dives in at the opponent's feet.

He can dive in at the opponent's feet in two different ways:

- **by sliding in (the example shown is for a dive to the right)**

The goalkeeper utilises the speed of his sprint. At the appropriate moment, he bends his right leg under him and slides in to gather the ball.



sliding in at the opponent's feet

- **by jumping towards the ball**

The goalkeeper uses his speed. At the appropriate moment he pushes off from his right leg and “flies” horizontally to intercept the ball.

Remember!

The goalkeeper must dive quickly to the ground rather than upwards because this wastes time and can have serious consequences if contact is made with an opponent (penalty, red card).



Jumping towards the ball

2. An opponent enters the penalty area with the ball at feet

The goalkeeper's positioning depends on the opponent's trajectory. The goalkeeper reduces the shooting angle by coming out to the opponent while watching his position and analysing his intention (dribbling or shooting). If the opponent pushes the ball too far ahead, the goalkeeper dives in at his feet.

Dribbling in the penalty area

The goalkeeper slows his movement before intervening. He is on his toes with knees bent and shoulders forward (see photo). At the right moment, he tries to win the ball from the opponent.

Remember!

- At the time of the confrontation, the goalkeeper should not be moving.
- If the opponent dribbles the ball close to the goalkeeper, he can intervene with his feet.
- The goalkeeper can use his movement to try to unsettle his opponent and direct him to where he wants.
- The goalkeeper can slow down his opponent's progress to allow the defenders to get back.
- He must pay special care to fouls in the penalty area as these are sanctioned by a penalty and a yellow or red card.



Shot on goal

A few tips:

- because the opponent is so close, the goalkeeper has to make a reflex save,
- at the time of the shot, the goalkeeper should not be moving,
- some attackers will feint to try to put the goalkeeper off balance,



- the goalkeeper can also feint,
- watch out for a lob (don't go to ground too early),
- strikers may opt to hit the ball between the goalkeeper's legs as he cannot keep his feet together,
- if the attacker is not looking at the goalkeeper, the goalkeeper can commit himself to diving in against the shot, closing down as much space as possible.



1-on-1 situation outside the penalty area

Modern football requires goalkeepers to participate more actively in the game and fulfil the role of a libero. The goalkeeper moves up the field with his defence and is often obliged to intercept a ball played between the defence and his goal. He has a few fractions of a second to decide whether to come out or not. If he is not sure, it is better to stay in the penalty area and attempt to intercept the ball using his hands. If the goalkeeper rushes out of the penalty area indiscriminately, the attacker's task may be made easier or the goalkeeper may be sent off for a foul. A good outcome when the goalkeeper comes out is a long clearance, a clearance to touch (if necessary), a header or a sliding tackle to recover the ball (without fouling the opponent). If the goalkeeper has enough time, he can find a team-mate with a short pass. Trying to resolve the situation by dribbling is too risky. The goalkeeper should shout to his team-mates when he is coming out of the area. After intervening, he must get back to position in goal as soon as possible as play may continue. He should take into account

the weather and other conditions that may have a bearing on how successful his intervention is likely to be (wind, puddles, bumpy pitch, etc.).



The exercises

Exercise 1

The goalkeeper follows the coach's movement and then blocks the ball.

4-6 repetitions



Exercise 2

1. Pass along the ground.
2. Dive at feet.

4 repetitions on each side



Exercise 3

1. Shot with a bounce.
2. Ball along ground.
3. 1-on-1

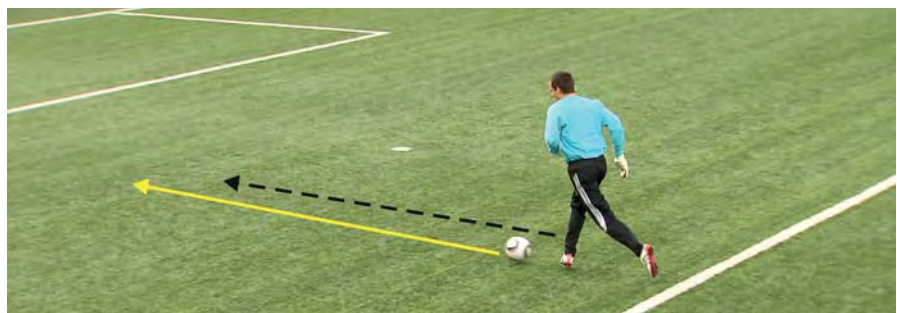
4 repetitions



Exercise 4

1. The coach intentionally pushes the ball too far ahead.
2. The goalkeeper dives at feet.

4 repetitions for each goalkeeper



3.2.5 Reflex saves

The reflex saves that a goalkeeper makes are characterised by the lack of time he has to analyse and resolve the situation. The goalkeeper may not always be well positioned. These are atypical saves where any method of stopping the ball is valid (with the feet, body, head, etc.). Reflex saves stick in the memory of the goalkeeper as well as the supporters.

There are two categories of reflex save: when there is little time to react and when the goalkeeper has to change positioning.

1. Goalkeeper reacts even though positioning not ideal

Examples:

deflected ball; multiple saves; recovery after poor judgement; misunderstanding with a team-mate; goalmouth scramble; goalkeeper blocked or slips; ball takes a bad bounce and other external factors (ball hanging in the air, floodlights, sun, wind, etc.).

Every reflex save is different. The success of a save often depends on the goalkeeper's instant response. Practising these situations in training can assist the goalkeeper during matches and reduce the element of surprise.

2. Goalkeeper well placed

There are situations in a match or training when the goalkeeper is well placed but has to make a save very quickly because the attacker is so close (a close shot or header). This differentiates the reflex save from other saves.

Save with the hands

The goalkeeper's position is as follows (see photo 1):

- weight on the balls of the feet,
- knees slightly bent,
- shoulders forward,
- arms bent and forward.

From this position, the goalkeeper can make a save from a shot at medium height or along the ground.

If the goalkeeper's weight is on his heels (see photo 2), he can react to a ball at medium height, intercepting it by diving backwards. He can't dive for a ball along the ground from this position but he can make a save using his feet.

Remember!

If the goalkeeper's knees are too bent before the save, he will find it difficult to react to a shot at head height.



If the ball comes in near the goalkeeper's feet then he will not be able to react by a standard dive.

Diving by "throwing" the foot technique

Diving to the right:

- transfer body weight from the right leg (which is usually the leg to push off from) onto the left leg,
- the goalkeeper "throws" his right leg over to the left side,
- the left leg follows the movement of the right leg,
- the rest of the body very quickly falls to the ground at the starting point.

Remember!

The movement must be performed quickly and laterally rather than vertically (wastes time).



In some exceptional cases, the goalkeeper can clear the ball using a "strong hand".

Save with the feet

Saves with the feet are similar to those made by goalkeepers in handball and ice hockey. Not all goalkeepers have the skill and ability to make a save with their feet. This situation is accentuated by some coaches who do not like the manoeuvre. This is a shame because in some situations the goalkeeper can move more quickly when saving with the feet than by performing a dive.

- in order to carry out a save with the feet, the body weight must be on the opposite leg to that blocking the ball,

- the goalkeeper is slightly back on his heels with shoulders back (to compensate for the outstretched leg),
- the goalkeeper blocks the ball with his leg,
- the goalkeeper falls backwards, landing on his buttocks or back; he uses his hands to break his fall.

Remember!

The goalkeeper has to be ready before making a save with feet (the leg has to be tensed) as there is a risk of injury.



The exercises

Exercise 1

Ball thrown at the goalkeeper's back. Reaction and dive on the ball.

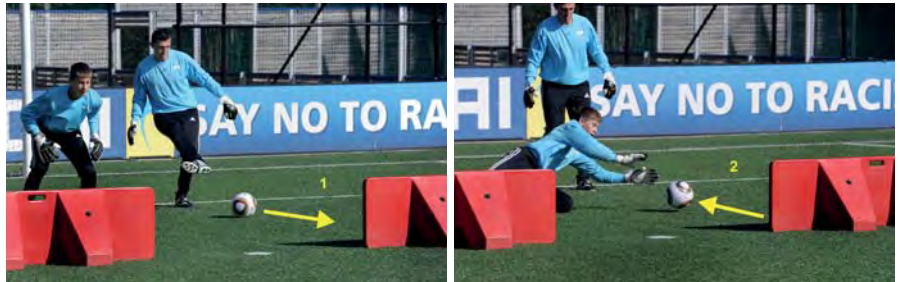
10 balls per goalkeeper



Exercise 2

1. Shot along the ground against a board.
2. Dive (reflex).

4-5 balls on each side



Exercise 3

1. Coach delivers any one of 3 balls.
2. Reflex save.

6 balls



Exercise 4

1. Thrown pass.
2. Hard shot.

6-8 balls



Exercise 5

1. Shot with a bounce among other balls.
2. Reflex save.

10 balls with varied delivery



3.3 Distributing the ball (Build-ups)

The goalkeeper's distribution of the ball represents his contribution to offensive play. In this way the goalkeeper becomes the team's first attacker. He can influence the team's rhythm of play and tactical choices. Goalkeepers become involved in attacking play in two ways:

1. The dead ball

- goal kick,
- free kick near the goal.

The ball can be played short or otherwise the team can move back up the pitch and an attacking move launched by a long kick.

2. Ball in play

- launch a quick attack:
 - seeking out a player or open space,

- launch a gradual attack:
 - short ball out,
 - long ball looking for a good second ball,
 - slowing things down (while respecting the 6 seconds rule) before distributing the ball to relieve the opponents' pressure.

The goalkeeper has two choices when distributing the ball:

- a kicked clearance,
- a throw-out.

Remember!

- The defence must remain alert in case the goalkeeper slips.
- Seek out a good header of the ball (launch the ball directly to the player or into space).



Goal kick



3.3.1 The kicked clearance

The objective of a kicked clearance is:

- a rapid change of play, targeting either a player or an open space where a player can run on to the ball,
- switching the play to the opponent's half and looking for a good second ball.

The different techniques are:

- **Clearances along the ground,**
- **Volleys,**
- **Half-volleys.**

The change of the rules allows the goalkeeper to move freely inside his penalty area providing the ball is released within 6 seconds. The choice between the different clearance techniques depends on:

- how much time is left in the match or the score,
- whether an opponent is close by,
- the desired tactics,
- the positioning of the opposition team (whether the team is compact and in position or has lost its shape),
- the goalkeeper's preferences,
- the weather conditions:
 - a half-volley or clearance along the ground is preferable when kicking into the wind,
 - a volleyed clearance is recommended for a slippery pitch.

Clearance along the ground

Clearances along the ground have become increasingly frequent in modern football. If a goalkeeper is not being pressed, he can move the ball out of the penalty area with his feet before dispatching it far into the opponent's half.

The advantages of this manoeuvre are:

- the goalkeeper gets around the 6 second rule,
- the defence can get back up the pitch,
- the goalkeeper gains ground and, in particular, improves accuracy.

The low trajectory of the kick makes it easier for an attacker to control the ball or flick it on accurately.



Volleyed clearance

1. "Classic" volley

Technical description of the manoeuvre:

- 3-4 run-up steps,
- toss the ball up with one or both hands (usually the hand opposite to the kicking foot),

- open the shoulders,
- stretch one arm ahead and one behind to increase stability and range of movement, quickly bringing the striking foot through,
- upon impact (through the axis of the ball) hold the striking foot firm and bring it upwards,
- complete the manoeuvre by forward follow-through.



2. Front volley

- the goalkeeper faces the direction of the clearance and tosses the ball forward after a short run-up,
- the kick is straight, with the shoulders facing forward and the body leaning well back,
- the trajectory of the ball is often very high.



3. The side volley

This style of clearance is often used in South America. The goalkeeper may even use it over a short distance instead of a throw-out. It is quite a difficult manoeuvre to carry out.

Technical description of the manoeuvre:

- the goalkeeper tosses the ball up from one hand without a run-up,

- the starting position is very open,
- the goalkeeper opens the hips by tilting the body laterally,
- the ball is kicked from underneath,
- the kicking leg does not follow the direction of the ball but tilts to the side.

The trajectory of the ball is a lot lower than a classic volley.



Half-volley clearance

When distributing the ball, it is essential not to rush the manoeuvre. It is preferable to have quality, rather than speed, of execution.

It is important to:

- keep the body balanced and maintain good positioning of the supporting leg,
- aim for good coordination when synchronising tossing and kicking the ball,
- never take your eyes off the ball,
- pay particular attention to the moment of impact (ball/foot) after the bounce,

- do not use this type of clearance on a pitch that is greasy, bumpy or frozen.

1. The front half-volley

Technical description of the manoeuvre:

- shoulders facing forward in starting position,
- ball dropped from both hands,
- make contact with the centre of the ball to avoid spin,
- follow through with the kicking foot in the direction of the ball.



2. The side half-volley: medium to long distance (directly to a team-mate)

Technical description of the manoeuvre:

- not a large range of movement,
- drop the ball laterally,
- for a short kick (small bounce) hold the ankle firm,
- no follow-through with the leg,
- low trajectory of 30-40 metres.



3. The side half-volley: long (for a team-mate to run on to)

Technical description of the manoeuvre:

- attack the ball with a longer run-up and preparation, leading to a more expansive manoeuvre,
- toss the ball from one or both hands,
- the foot is held firm while kicking through the ball,
- follow through.



3.3.2 The throw-out

A throw-out keeps the game flowing and encourages the development of a move. A throw is accurate over short and long distances. The goalkeeper can throw the ball:

- directly to a team-mate,
- into the path of a player who is running.

The goalkeeper can decide whether to launch a quick or gradual attack.

There are three types of throw-out:

- **Rolling the ball out,**
- **Overarm throw,**
- **Other forms of short throw.**



1. Rolling the ball out

The advantage of this type of throw is that it allows the outfield player to run with the ball or pass without having to control the ball first.

Run-up

- this throw can be carried out with or without a run-up.

Bend the legs and throw

- the right arm reaches back while holding the ball like a pendulum,
- the knees are bent (see photo),
- the goalkeeper's arm moves through at the required speed to roll the ball out along the ground.



2. Overarm throw

The advantage of this movement is that its great accuracy can eliminate several opponents.



Assess the situation and required run-up

- consider the distance to the team-mate,
- determine how hard to throw the ball,
- use a few run-up steps for a longer throw.

Preparing to throw

- keep a good hold of the ball,
- tilt the body backwards in a lateral position,
- transfer body weight onto the right leg when throwing with the right hand,
- use the left hand to maintain balance.

Throw

- keep the right arm well extended and move in a circular motion above the head,
- at the same time, transfer the body weight on to the left leg,
- throw the ball:
 - from the highest point – long throw,
 - from just before this point – high ball,
 - beyond this point – strong throw towards the ground,
- follow through in the direction of the ball.



3. Other forms of short throw

These types of throw are used when the goalkeeper wants to distribute the ball quickly or to avoid an opponent immediately in front of him.



Quick throw from hip



Throw-in style



Bent arm throw

Remember!

- For rapid distribution, the goalkeeper must observe and anticipate the positioning of his team-mates.
- Before considering distribution, the goalkeeper must, above all, concentrate on stopping the ball (carry out the actions one after another).
- After a cross from the wing, it is generally advisable to distribute to the opposite wing.
- The team-mate receiving the ball should not have any problem in controlling it.

The exercises

Exercise 1

Improving individual technique.

1. Pass.
2. Kicked return, inside of foot.

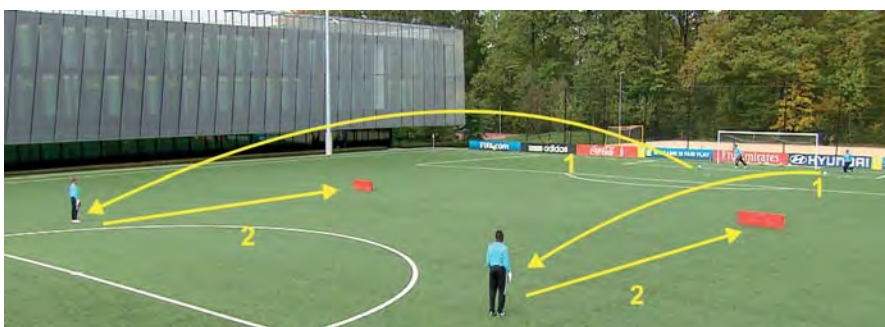
20 repetitions



Exercise 2

1. Clearances (goal kicks).
2. Control, accurate pass.

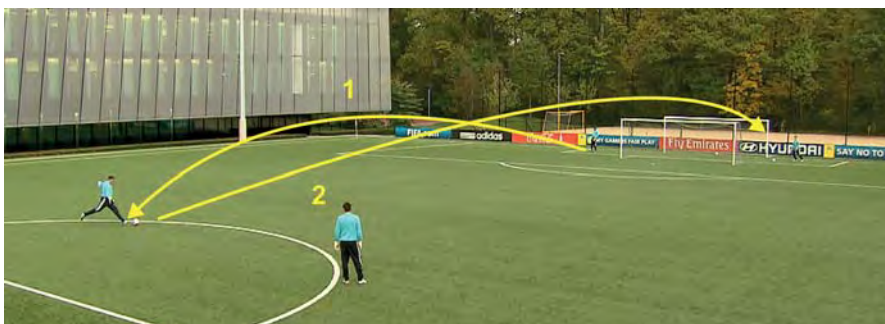
4 balls per goalkeeper



Exercise 3

1. Clearance from goal area.
2. Directed control and kick over the goal placed 11 m in front of the standard goal.

4 balls on each side



Exercise 4

Series of distributed balls

- Throws.
- Volleys.
- Half-volleys.
- Along ground.

12 balls per goalkeeper



3.4 Back passes

The major change to the “back pass” rule revolutionised how goalkeepers play the game with their feet. Football is now faster and more fluid and the goalkeeper’s individual technique must be on a par with that of the outfield players. The goalkeeper is frequently involved in play using his feet which leads to situations that previously would have easily been resolved by picking the ball up.

The back pass is a match situation when a team-mate under pressure opts to pass the ball back to the goalkeeper who is facing play. (An exception is a back pass made to use up time).

There are five different possibilities depending on the goalkeeper’s situation:

- goalkeeper under pressure from an opponent
 1. clearance to touch,
 2. control and pass (short or long),
 3. dribble,
- goalkeeper not under pressure
 4. control and distribution,
- in both cases, the following possibility must be considered:
 5. handle the ball (as far as the rules allow, e.g. from a defender’s header).

All back passes made with the foot (including the ankle) that are handled by the goalkeeper are penalised by an indirect free kick at the place of the infringement.

If the goalkeeper does not actively attempt to start an attacking move by his distribution of the ball, his action is considered to be part of his defensive duties.

Examples:

Clearance to touch, long clearance forward, clearance by tackling the opponent (if the back pass is too weak).

The goalkeeper’s success in dealing with a back pass depends on certain factors that must be taken into account:

- reading of the game and anticipation,
- the quality of the back pass,
- the proximity of opponents,
- the state of the pitch and the weather conditions,
- communication with team-mates.

Regular training can improve the goalkeeper’s individual technique with feet. This can be conducted as an individual or group session. Care must be taken to ensure work on both feet.

There are a few general rules that the goalkeeper and team-mate making the back pass should observe:

- as far as possible, the ball should be played to the goalkeeper’s preferred foot,
- the back pass should always be played to one side of the goal (otherwise a slip by the goalkeeper or unexpected bounce of the ball could be dangerous),
- the team-mate decides the direction and strength of the back pass; the goalkeeper reacts and intervenes as appropriate,
- after the back pass, the goalkeeper’s team-mates must take up useful positions to give the goalkeeper options.

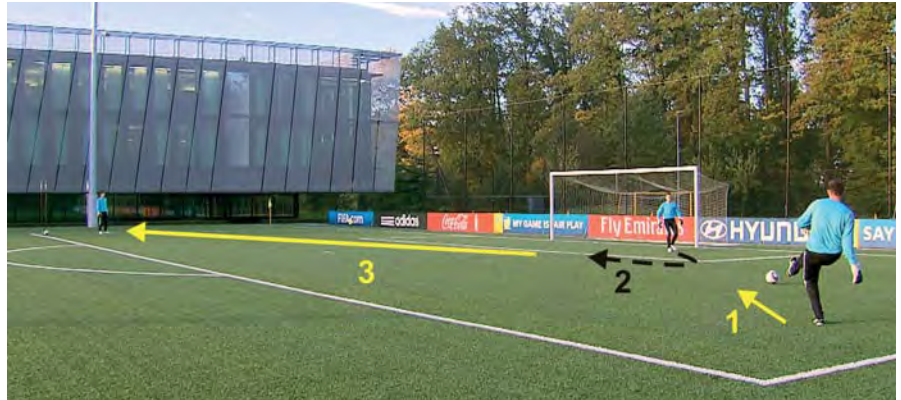
The exercises

Exercise 1

1. Pass.
2. Directed control.
3. Pass.
4. Same on the other side.

3 repetitions

(using both feet)



Exercise 2

1. Pass back.
2. Movement.
3. Clearance after 1 or 2 touches.

4-5 repetitions on each side



Exercise 3

1. Pass back.
2. Pressure on the goalkeeper.
3. Clearance after 1 or 2 touches.

Change goalkeeper.

3 repetitions on each side



Exercise 4

1. Pass back - along the ground, with a bounce, in the air. Goalkeeper moves towards ball.
2. Clearance after 1 or 2 touches.

10 balls on each side

Variation: same exercise with opponent pressuring the goalkeeper.







4. The young goalkeeper

By the time children take their first steps they are curious, insightful creatures who want nothing more than to be constantly playing. Their world is full of imaginary games and toys. And what child has not been given a ball to play with? It doesn't matter what kind of ball – small, large, leather, rubber, inflatable, printed with pretty pictures – whatever it is, the child will kick, throw, roll and grab it. Clearly every child is a potential goalkeeper. For many of us as we grow up, ball games become a major part of our lives; there is a huge range of sports using balls of different sizes with different rules. But let's get back to our child. Initially, the child plays alone, but soon wants a parent or family member to play too. Then the child starts to play ball with the boys and girls of the neighbourhood. Gradually this play evolves into a team game and children develop their own

“specialisations”. Some children hang back to stop the ball going in their own goal, others rush forward trying to score. Children also receive a lot of exposure to ball games through the media and video games. What they see on the screen one day, they try to imitate with a ball the next.

Eventually the time comes when the child wants to play the sport in an organised format. This is when parents seek out the local football club and take their children along, their young minds full of dreams of becoming the next Buffon, Barthez, Casillas or N'Kono.

Organised sport is beneficial to a child's health and physical development. It is also significant for social development as it keeps them off the streets. Sport also distracts them, for a while at least, from the overwhelming phenomenon of modern society: the video game.



4.1 First steps in goal

A problem for some clubs, particularly smaller, rural clubs, is that few children actually want to be goalkeepers. As a consequence, the biggest child is often put in goal or perhaps a child who doesn't want to run about. Even if, later on, potential goalkeepers do get good quality, targeted work, this does not entirely resolve the problem. But some boys (and progressively more girls) get a taste for this very specific role and are increasingly being encouraged to carry on in the position as long as possible. Stopping the ball going into the goal can be as exciting as scoring. Clinging on to the ball like a magnet, launching into a dive without hurting oneself - these are all revelatory discoveries to the future goalkeeper. It may sound a little naive or idealistic to say it, but every extra goalkeeper represents a victory for the youth coach or volunteer who often works under difficult conditions. Of course the situation is different at bigger clubs which benefit from better structures. These larger clubs may be based in a more populous town or city where there are more children who dream of being goalkeepers. And what's more, there is targeted scouting for young talent (discussed later on).

Before starting to teach the young goalkeeper, certain ideas and thoughts relating to the position of goalkeeper must be conveyed, as well as attitudes to training, the coach, etc.:

- the goalkeeper must not be scared of the ball and must not shy away from it but rather should always attack the ball,
- the goalkeeper must learn to move around the pitch, read the trajectory of the ball and observe the movement of the other players,
- the goalkeeper must be able to use both hands and both feet,
- the youth coach must transform a young goalkeeper's natural desire to throw himself around into effective diving techniques,
- it is important to select exercises that are appropriate to the players' ages and to properly dose efforts and recovery (diving to save a stationary ball can be repeated several times while goalkeepers should be alternated for repetitions of an exercise involving significant movement),
- the youth coach must correct faults but recognise the importance of always encouraging the young goalkeepers,
- the coach must throw the ball in exercises because the children are not capable of doing this for each other at a young age,
- work can be carried out on dives to save stationary balls with several goalkeepers at the same time with the coach moving between them and rectifying any problems,
- furthermore, exercises using a stationary ball can be carried out by a goalkeeper during breaks in group training,
- it is not necessary to always work in goal:
 - the young players are not conscious of the goal behind them,
 - there are no lines for the players to get their bearings,
 - the pitch is often in a poor condition in the goal area (except for synthetic pitches),
 - if work is conducted in goal at the end of the session then the goalkeeper can get the feeling of being able to stop a goal being scored – source of motivation.
- care must be taken over the equipment used:
 - make sure the size of the ball is appropriate for the age,
 - the plastic coating of modern footballs means that the impact hurts so it is desirable to use gloves (it is essential the correct size is used),
 - appropriate clothing should be worn for protection on bad pitches (tracksuit bottoms, etc.)
- finally, the most important thing is: **“stage-by-stage progression”**, this is the key to success.

There is no point in designing very complicated exercises for young goalkeepers (even if they are high quality) if the goalkeeper is scared of the ball or cannot dive to one side.

In order to achieve the sound technical foundation that is vital for the future, simple manoeuvres are repeated frequently together with good explanations and demonstrations to assist comprehension (the demonstrations can be carried out by the coach or an older goalkeeper). If the work with the young goalkeepers is carried out with enthusiasm, then the progress made gradually becomes apparent. The explanations that follow all use the same principle of stage-by-stage progress.

Who works with the goalkeeper and when?

The quantity and quality of work depends on each club's situation:

- if there is a goalkeeping coach, this will help progress considerably,
- otherwise, the goalkeepers' training needs have to be met in another way.

Even short sessions of 20-30 minutes a week, before, during or after a coaching session can have a positive effect on the goalkeeper.

What is the content of the work carried out with the goalkeeper?

Individual training teaches goalkeepers specific manoeuvres. After skills are acquired, they are continuously repeated, improved and complemented by other manoeuvres. If we want to work effectively with a novice goalkeeper then there must be a particular focus on the basic manoeuvres:

- **Standing saves**
 - catching the ball in front of the head,
 - catching the ball at the midriff,
 - catching the ball with "bent legs",
 - catching an aerial ball,
- **Dives**
 - diving for a ball on the ground,
 - diving for a ball at medium height,
- **Playing the ball with feet**
 - control and pass,
 - juggling the ball,
 - running with the ball.

Different types of movement must be introduced because they form an integral part of the goalkeeper's manoeuvres

and are also included in the simple exercises subsequently carried out.

Learning how to move without the ball leads on to moving towards the ball which allows saves to be made in many situations.

Mastery of these movements allows more complicated movements to subsequently be introduced:

- diving to the ground leads to the technique of diving at feet,
- dives at medium height can be used for lobs and deflections with the opposite hand,
- a simple catch of an aerial ball can be transformed into a complex intervention for a cross,
- the basic movements are important in order to take control of the penalty area.

Ways of learning the goalkeeper's range of skills

There are two ways of learning manoeuvres:

- in the form of specific training for the position of goalkeeper:
 - learning specific manoeuvres,
- in the form of group training with the team:
 - physical development adapted to age,
 - the individual technique of outfield players.



These two forms of learning must coexist and be linked together. The result is the positive, permanent improvement of the goalkeeper's abilities.

The specific manoeuvres learned by the goalkeeper during individual training are applied during the group training sessions. Conversely, the physical development (speed and coordination) and individual technique (playing the ball with feet) resulting from group training are used during specific training. An absence of specific training (and lack of explanations, corrections and repetitions of manoeuvres) can lead to unstructured learning and the acquisition of bad habits that will subsequently require a lot of effort to rectify. This illustrates the need for specific training with young goalkeepers.

It is very important to distinguish two phases of work for the novice goalkeeper:

- **Acquisition of a manoeuvre,**
- **Improvement of a manoeuvre.**

The principle of working stage-by-stage to acquire basic manoeuvres

The acquisition of manoeuvres should be conducted on a stage-by-stage basis. The stages should be linked and follow on from each other. The manoeuvres do not all take the same amount of time to acquire, but they are of equal importance to the goalkeeper. The word "stage" means a variable period of time during which a particular goalkeeping manoeuvre is the main theme of sessions. Why do we work in this way?

- separating work into stages allows better understanding of a manoeuvre that has been explained and the young goalkeeper is not overwhelmed by too much information on different subjects,
- concentration on one manoeuvre allows many repetitions,
- the time needed to acquire a manoeuvre varies depending on the goalkeeper (estimates are given in the summary table),
- the coach decides when to move on to the subsequent stage depending on the progress made,
- once the basic acquisition has been achieved (this may take several weeks or months), we can then move on to improving acquired manoeuvres by using more complicated exercises.

The acquisition of the basic manoeuvres can be conducted in three main stages:

- *stage 1* – mastery of the ball and standing saves,
- *stage 2* – dives.

Playing the ball with feet and distribution accompanies the first two stages.

- *stage 3* – transition, (moving on to improvements of manoeuvres with more complicated exercises).

Some practical information is provided below. For more technical explanations, please consult Chapter 3 Technical Preparation, which applies to all categories, and also watch the DVD.

Stage 1 – Mastery of the ball and standing saves

Two or three sessions are sufficient for the novice goalkeeper to become familiarised with the ball. It is very important to use the right size of ball for the age category. The task is to properly explain (demonstrate) the first manoeuvre to be learned by goalkeepers, namely standing saves. These will later become an essential part of warm-ups with exercises based on ball skills. All these exercises must be conducted in the form of games in a relaxed environment with plenty of encouragement.

- catching the ball in front of the head:
 - initially, it is preferable to throw the ball towards the novice goalkeeper because most young players are



scared of the ball (it is usually possible to move on to kicking the ball quite quickly),

- if a goalkeeper continues to be scared of the ball, this will cause problems in the future,
- good positioning of the fingers and elbows is essential.
- catching the ball at the midriff:
 - there is triple protection in this manoeuvre: hands + arms ↔ chest ↔ chin
- catching the ball with “bent legs”:
 - it is preferable to start with a stationary ball, later introducing moving balls,
 - the speed of execution must be mastered otherwise the ball may slip out of the goalkeeper’s grasp.
- catching an aerial ball:
 - this technique is taught by throwing the ball to the goalkeeper,
 - the focus should be the technical side of this manoeuvre, in other words catching the ball with arms extended and good positioning of the fingers,
 - goalkeepers hardly jump when young. The work conducted with left and right feet is more concerned with coordination, motor skills and making the goalkeeper feel at ease in certain situations,
 - there is no point in using crosses of the ball as the young goalkeepers are not yet able to read the trajectory of a cross, move accordingly or intervene successfully.

Stage 2 – Dives

This stage must be sufficiently long for the principles of diving to be understood. Novice goalkeepers aged 7-9 are ready to learn this manoeuvre and so we can dedicate the necessary time to working on the technical aspects:

- diving to the side rather than to the front or back,
- pushing off laterally from correct leg (the same leg as side of the dive),
- arms extended,
- the role of the hands and the positioning of the fingers,
- always attacking the ball.

The difficulty is gradually increased: without a ball, with a stationary ball and with the ball in movement. The ball should be thrown so that the goalkeeper can dive without any additional concerns about the trajectory (it is more accurate to throw the ball than kick it).

Playing the ball with feet and distribution

The goalkeeper is introduced to the basics of playing the ball with feet during group training. He learns to juggle, control and run with the ball and pass. The coach’s job during specific training is to introduce the goalkeeper to the different types of distribution:

- kicked clearance (volley, half-volley, clearance along the ground),
- throw-out (all types).

This is important because the goalkeeper has to distribute the ball when playing with the team and during specific training sessions when returning the ball to the coach.

These exercises are easily integrated with exercises on diving and catching the ball.

The manoeuvres learned by the young goalkeeper in the stages above are used as the basis for the subsequent period of development.

Stage 3 – Transition to more complex exercises (coordination, movement and manoeuvre)

Before starting to improve upon these manoeuvres, it is necessary to explain to the goalkeeper, in a direct session on the pitch, the role that coordination and movement (speed) play in the more complicated exercises. The young goalkeeper can try a short drill that ends with a dive. Most youngsters will try to complete the drill as quickly as possible, often to the detriment of quality. It is important



Individual training			Group training
The acquisition of manoeuvres			
Stage 1	Stage 2	Stage 3	
Mastery of the ball and standing saves Duration: 2-3 training sessions	Dives Duration: until manoeuvre mastered	Transition to more complex exercises Duration: 1 training session	Acquisition of manoeuvres <ul style="list-style-type: none"> goalkeeper (natural, not organised), outfield players (passes, juggling, games). Speed <ul style="list-style-type: none"> various playground games. Coordination <ul style="list-style-type: none"> hoops, small hurdles, skipping rope, etc. Endurance <ul style="list-style-type: none"> development with the contents of the session.
Typical session <ul style="list-style-type: none"> Warm-up: <ul style="list-style-type: none"> mastery of the ball, Core of the session: <ul style="list-style-type: none"> standing saves. 	Typical session <ul style="list-style-type: none"> Warm-up: <ul style="list-style-type: none"> mastery of the ball, standing saves, Core of the session: <ul style="list-style-type: none"> dives. 	Typical session <ul style="list-style-type: none"> Warm-up: <ul style="list-style-type: none"> coordination, standing saves, Core of the session: <ul style="list-style-type: none"> coordination exercises with dives (in slow motion – explanation). 	
Playing the ball with feet and distribution Interspersed in sessions <ul style="list-style-type: none"> juggling, range of different passes, etc., distribution by throwing and kicking. 			
Improvement of manoeuvres			
Session type <i>Warm-up:</i> <ul style="list-style-type: none"> mastery of the ball, standing saves, preparation for the chosen theme (e.g. improving dives – simple going to ground exercise), <i>Core of the session:</i> <ul style="list-style-type: none"> drill (hoops) + different dives (ground, medium height, bounce), movement (forwards, backwards, etc.) + dive, <i>Cool-down:</i> <ul style="list-style-type: none"> review of the session, start of work on suppleness (stretching). 			

to correct mistakes, explain and demonstrate if necessary. Nearly all the exercises that the goalkeeper practises in specific training sessions throughout his career are a mixture of coordination, speed and a specific goalkeeping manoeuvre.

A good level of coordination and mastery of movement helps fulfil the following two functions:

- the ease of completing the first part of the exercise (drill with hoops, hurdles, etc.),
- good positioning (adjusting or reducing steps taken) in order to carry out a save (second part).

For exercises involving movement, the goalkeeper must be swapped after each repetition. If diving is being practised, no more than three dives in a row should be performed.

Improving basic manoeuvres that have already been acquired

Improving manoeuvres is a process that continues almost until the end of a goalkeeper's career. It is the difficulty of the exercises that changes over the years. If our young goalkeeper is ready to cope with more complex exercises, his development can continue. Obstacles (hoops, small hurdles, marker discs, etc.) are used in these exercises to make the situation more difficult for the goalkeeper before conducting the specific manoeuvre to stop the ball. This improves motor skills. If the goalkeeper has a good foundation, we can invent thousands of exercises based on the basic manoeuvres.

4.2 What next?

We must continually develop the basic manoeuvres that have already been acquired but we can gradually introduce other more complex manoeuvres (deflecting the ball with the opposite hand, reflex saves, dealing with crosses, etc.). Once we reach this stage, we are no longer considering a novice goalkeeper, but rather a goalkeeper with a solid base upon which to build.

The training sessions become increasingly complex. The young goalkeeper extends his range of difficult interventions and improves in all areas. He can also cope with the training load. So what should we work on?

Technical, tactical and theoretical preparation

- learning new manoeuvres,
- moving on to the “big pitch” – reading trajectories; controlling the penalty area; positioning in the large goal – orientation in relation to pitch markings, penalty spot, opponents’ goal,
- improving playing the ball with feet,
- tactical work:
 - the goalkeeper’s role in different formations,

- resolving tactical situations on the “big pitch” for 11-a-side,
- the options for dead-ball situations,
- theoretical work:
 - the laws of the game.

Physical preparation

- developing physical qualities with suitable resources for each age range.

Psychological preparation

- it must not be forgotten that the young goalkeeper should enjoy training,
- encouragement is important during periods of doubt (lack of confidence, poor performance, identity crisis during adolescence),
- the goalkeeper’s role in the team.

For more information, please consult other sections of this manual where we deal with young goalkeepers (2.1. General preparation for goalkeepers and 2.2. Planning).



4.3 Spotting young talent

A player with sporting talent has an above-average predisposition to produce good sporting performances. Talent spotting consists of all the actions carried out by people who are competent in the domain of discovering sporting talent.

Listed below are some of the considerations to take into account when seeking out talented individuals:

- anthropometric information: weight, height, etc.,
- physical condition: endurance, strength, speed (specific to goalkeeper), etc.,
- technical/motor characteristics: the capacity to control the ball, balance, skill in judging distances, etc.,
- predisposition to performance: training potential, application, etc.,
- aptitude for learning: facility for acquisition, capacity to observe and analyse, etc.,
- cognitive skills: concentration, motor intelligence, creativity, sense of touch,
- emotional factors: resistance to external influences, psychological stability, etc.

The talented goalkeeper

Modern football is marked by incredible competition between the top clubs. The obsession with winning as many trophies as possible impels clubs to invest colossal sums in transfer fees. Of course, not all clubs can afford to behave like this and instead promote the coaching and sale of players as a means of operation.

In order to develop talent, it is necessary to be effective in talent spotting and recruitment. There are different methods of talent spotting:

- organising talent-spotting days within the club's structure,
- through the various talent spotting, selection procedures and centres of excellence organised by football leagues,

- cooperation with partner clubs at regional, national and international levels,
- club employees continuously seeking out talent at a wide range of competitions.

When considering young talent, the problem of spotting and training players with potential must be viewed from different points of view:

- what are a modern goalkeeper's qualities and skills (taking into consideration the desired level of performance)?
- who detects this talent and how?
- how are players developed?

It is very important to determine the qualities that a goalkeeper should already have in relation to his age as well as the factors that influence the discovery of a player.

Young players aged 7-10

- talent spotting is solely conducted in the children's towns and within familiar environments because at this stage it is not possible for the children to leave the family setting,
- the most appropriate form is a talent-spotting day,
- the children's physical predispositions, skills and manner of movement are observed as well as the commitment and behaviour of those children who dream about playing as a goalkeeper. Technical skills can be considered later,
- if the club is interested in a talented young goalkeeper but it is not possible for them to attend daily training, there is still the option to invite them to regular specific training. They can continue to play their usual matches at the weekends. There can be active participation in the player's development in this way.

Young players aged 11-14

- it is possible to discover talented young players at regional level through league talent spotting, centres of excellence and school sports classes,

- changing to the 11-a-side game on the big pitch is the first hurdle with which a young goalkeeper is faced,
- the goalkeeper's technical foundations can be assessed and potential for development estimated. The club scout's judgment and observation skills are very important, determining factors.

Young players aged 15-18

- talent spotting is conducted within the framework of the requirements of the category in question,
- the range of scouting expands to national and international levels,
- technical qualities can be observed, as well as bad habits and the goalkeeper's capacity to rectify these,
- physical potential is very important, in particular for a goalkeeper who may play at a high level,
- observations can be made:
 - during a match (the presence of a scout may or may not be announced and any changes in the goalkeeper's behaviour observed),
 - at training sessions (for a more complete assessment),

- visiting and talking to the player's family can be an important source of information as the family influence on the player can be assessed.

Being spotted by a scout can be the first step of a long development process for a goalkeeper. To fully develop a young goalkeeper's talent, a programme of preparation tailored to the player's age must be drawn up and suitable training conditions put in place. Care must be taken to watch out for any significant changes in the goalkeeper's life. Adapting to new circumstances can be difficult and have consequences for the goalkeeper's performance. Examples of changes that may affect young players include: new training routines, additional demands on the goalkeeper, difficult relationships with other players, problems with schoolwork and homesickness (if at a coaching centre). The goalkeeping coach must be sufficiently close to the young player in order to help him or her overcome any difficult phases.







5. Tactical preparation

Each goalkeeper's degree of tactical knowledge influences his behaviour on the pitch. The more advanced and complete this tactical knowledge, the more a player can express his physical and technical qualities. It is also an indicator of his status (amateur, professional, international). This tactical knowledge can be divided into 3 components:

- tactical behaviour relating to the role of goalkeeper (specific manoeuvres, etc),
- tactical behaviour regarding team-mates (dead-ball situations, back passes, etc.),
- tactical behaviour regarding the team formation and during the match (goalkeeper's position in a formation and during phases of play, etc.).

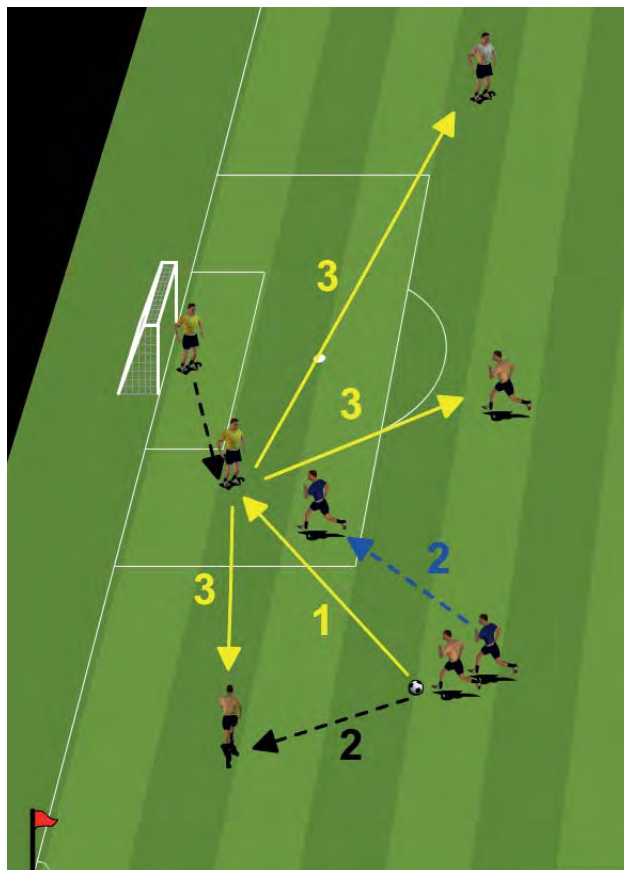
Tactical behaviour relating to the role of goalkeeper

- this behaviour is characterised by the series of decisions the goalkeeper makes to constantly adapt to the situation in order to implement an effective technical manoeuvre,
 - the goalkeeper takes up a position depending on the match situation, intervenes in accordance with the trajectory of the ball and then distributes the ball depending on his team-mates' positions,
 - the goalkeeper can of course improve through the repetition of situations in training and also by assimilating the coach's comments,
 - the goalkeeper improves with experience and maturity (difficult situations are handled better over time).
- The goalkeeper's tactical behaviour is illustrated through his reading of the game, knowledge of the trajectories of the ball, observation of opponents, communication with and positioning of team-mates, anticipation, choice of save and positioning.

Tactical behaviour regarding team-mates

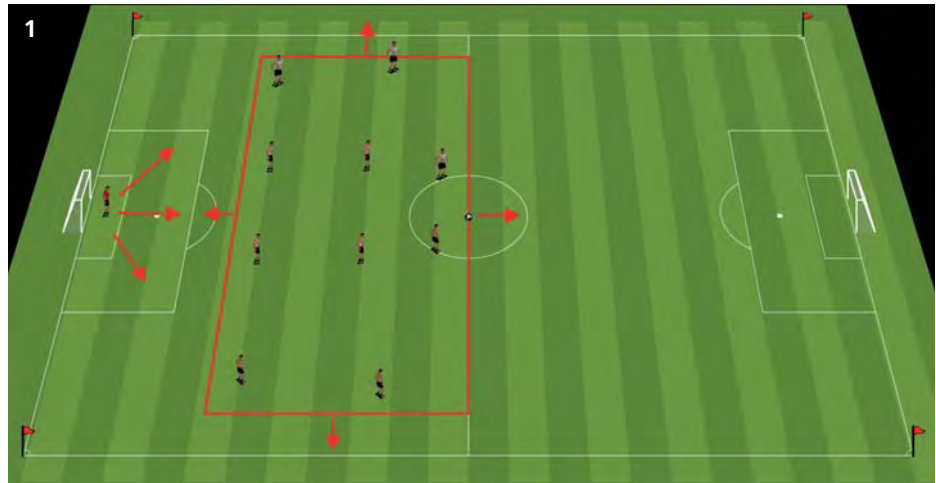
- dead-ball situations
 - the goalkeeper's behaviour relates to the tactical choices made during these phases of play,
 - in modern football some 20-30% of goals are scored from dead-ball situations,
- goalkeeper's behaviour:*
- the goalkeeper must know his correct position and how to intervene and how and when to communicate,
 - the goalkeeper must know what tactical option has been applied (zonal, individual or mixed marking) and know each player's role and positioning,

- back passes
 - this situation requires a good understanding with team-mates,
- goalkeeper's behaviour:*
- requests the ball (by calling or movement),
 - chooses the most appropriate distribution,
- outfield player's behaviour:*
- always passes the ball to one side of the goal or to where the goalkeeper requests it,
 - gives the goalkeeper options after a back pass (pressure from opponents).

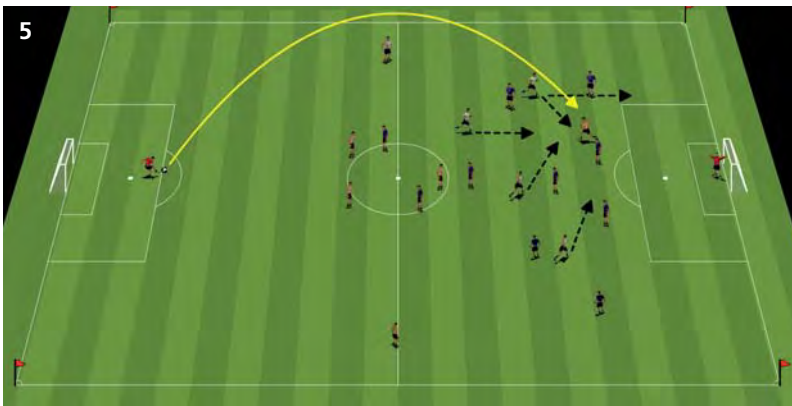
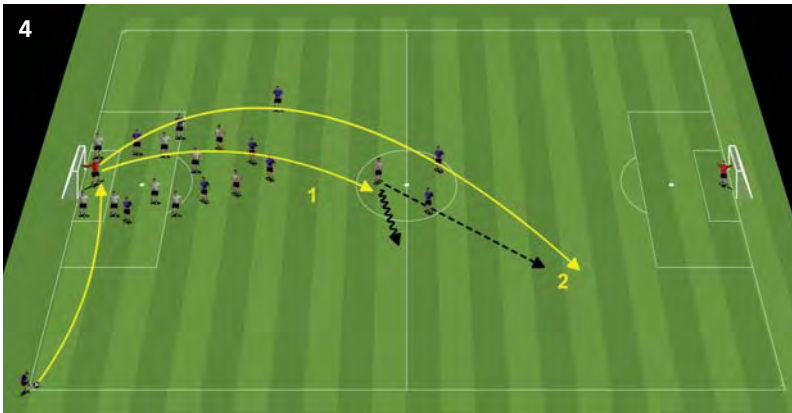


Tactical behaviour regarding the formation and during the match

- the choice of formation (flat back four (1), using a sweeper (2)) and the tactical options (defending deep (1, 2) or pushing up (3)) require appropriate behaviour (role and positioning) by the goalkeeper,



- the choice of a quick attack (4), gradual attack (5) or long ball (6) also requires the goalkeeper to select the type of distribution,



A goalkeeper's tactical development starts when he first steps onto a pitch, takes on a new dimension when moving up to 11-a-side and is constantly improving until the end of his career.

Development is achieved through:

- matches and training sessions (on the pitch),
- theoretical work (blackboard),
- review of matches (video analysis, discussion, etc.).

A good knowledge of the laws of the game also allows the goalkeeper to make certain tactical decisions during a match.

Example:

If the goalkeeper does not touch an indirect free kick hit straight into his goal, he knows he will be awarded a goal kick

5.1 Communication on the pitch

One of the goalkeeper's roles on the pitch is to supervise his team-mates, taking advantage of his position facing play. The goalkeeper can anticipate situations and react quickly. The goalkeeper has two methods of communication on the pitch to fulfil this role: calling and gesturing.

Verbal communication

The goalkeeper reacts verbally in the following situations:

- directing team-mates during play

Examples:

- indicating unmarked opponents,
- providing team-mates with information when involved in 1-on-1 situations: "TIME!", "MAN ON!", "CLEAR IT!" "MAN TO THE RIGHT!",
- communicating to team-mates for back passes: "TO ME!",
- making sure that the game plan is respected,
- calling when he comes for the ball: "MINE", "LEAVE IT!".

- organising the defence in dead-ball situations,

Examples:

- directing and positioning the defence before the ball is struck,
- the goalkeeper must be fully aware of each player's role,
- calling when he comes for the ball: "MINE", "LEAVE IT!",
- if the goalkeeper does not come out, he still directs his team-mates: "CLEAR IT!", "AWAY!"

- warning his team-mates when he is going to intervene,

Examples:

- calling when he comes for the ball: "MINE", "LEAVE IT!"

Every verbal intervention that the goalkeeper makes should be short, precise and forceful.

Communication on the pitch should flow in both directions. Outfield players should also warn their goalkeeper of the presence of an opponent as he intervenes.

Communication by gesture

In some situations (if there is a lot of noise in the stadium), shouts may not be heard and gestures have to be used:

- dead-ball situation – positioning of the wall,
- back pass – the goalkeeper indicates where he wants to receive the ball,
- getting the defensive line back up the pitch,
- using the whole width of the pitch,
- changing the rhythm of play.

Remember!

- If the goalkeeper shouts that he is coming out, he must not collide with a team-mate.
- He can alert the player to whom he will distribute the ball.



5.2 Dead-ball situations

In modern football, dead-ball situations account for some 20-30% of all goals scored. This is why it is important not to overlook any details when confronted by this significant match situation.

Dead-ball situations:

- **Offensive (taken by the goalkeeper)**
 - goal kicks,
 - direct and indirect free kicks,
 - penalty kicks,
- **Defensive (taken by the opponents)**
 - corner kicks,
 - direct and indirect free kicks from a central position,
 - direct and indirect free kicks from a wide position,
 - penalty kicks.

The capacity of some players to deliver a dangerous ball into the penalty area from a **throw-in** must also be considered.

From the goalkeeper's point of view, every dead-ball situation (with the exception of a penalty) is characterised by four phases:

- 1. Analysis of the situation and positioning the defence,**
- 2. The goalkeeper's positioning,**
- 3. The goalkeeper's save,**
- 4. The goalkeeper's distribution.**

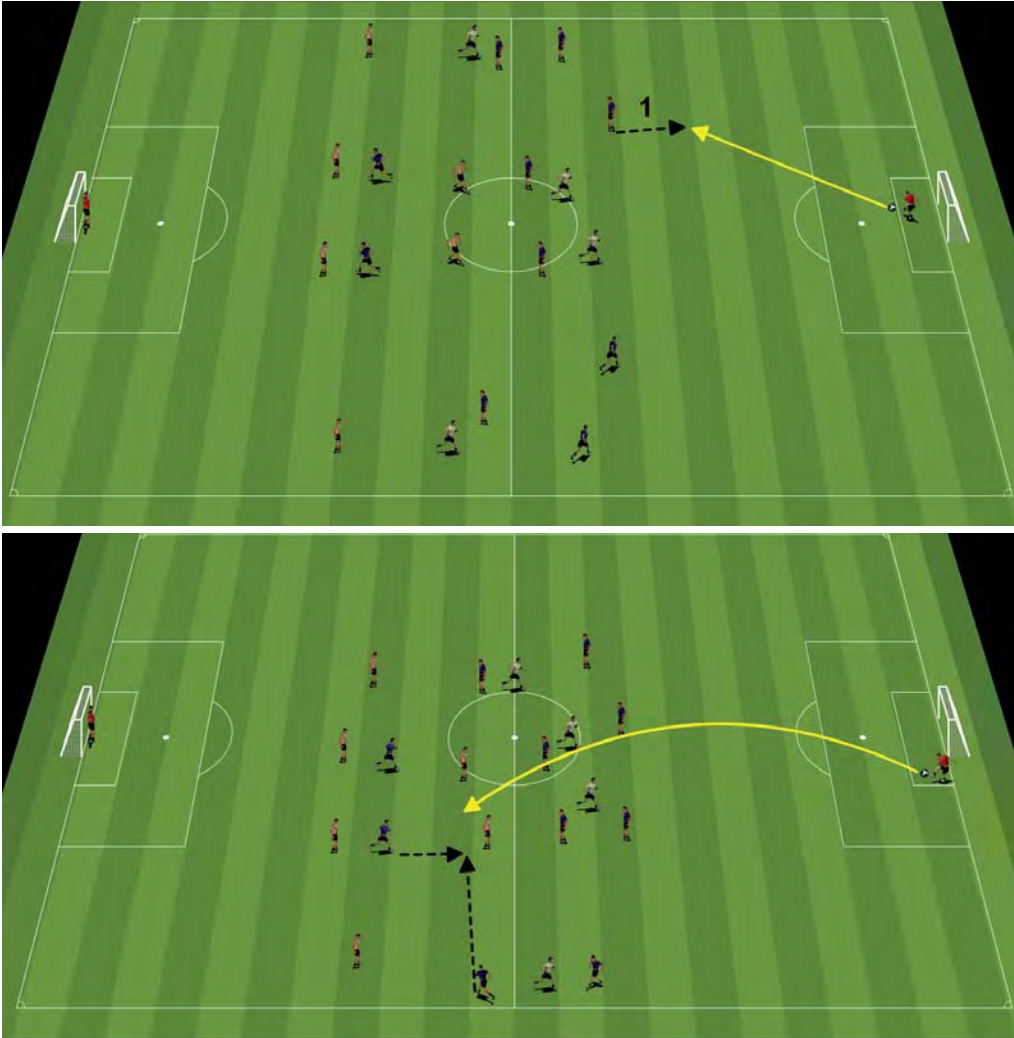
These four phases require good communication between the goalkeeper and the defence.

5.2.1 Offensive dead-ball situations

In research conducted at 43 matches between September 2004 and May 2005, it was discovered that goalkeepers had 3,150 contacts with the ball. Goalkeepers were responsible for striking the ball in 1,011 offensive dead-ball situations,

in particular goal kicks and direct and indirect free kicks in and around their penalty area. A short ball out to a player in space or a long clearance to a player who is good in the air can start an attacking move for the goalkeeper's team.





5.2.2 Defensive dead-ball situations

Corner kicks

The goalkeeper's effectiveness at corners depends on the quality of his intervention and the crowding of the penalty area both by team-mates and opponents. Before analysing this type of dead-ball situation, we must list the different possibilities that the goalkeeper may face at a corner:

- outswinging ball,
- inswinging ball,
- ball played to the near post,

- ball played to the far post,
- short corner.

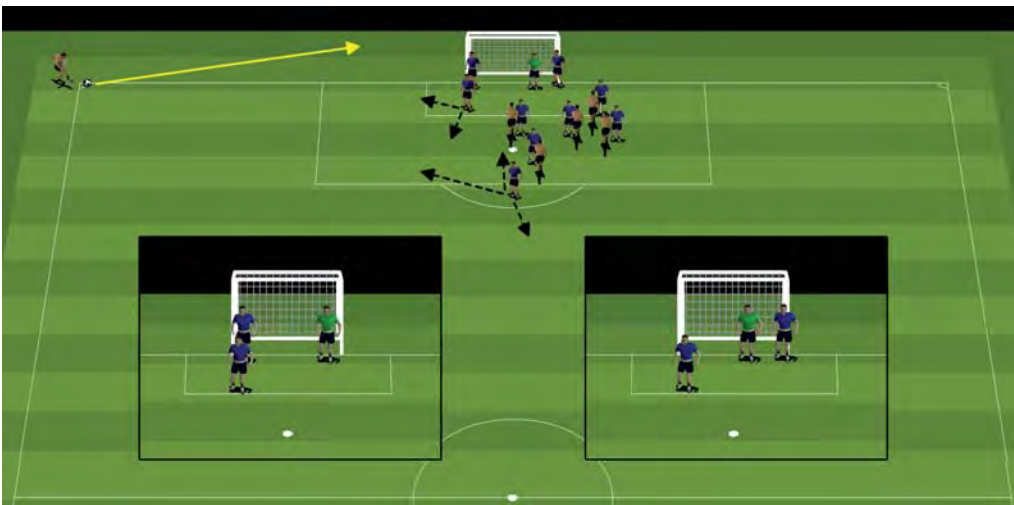
The team's tactical options

In defensive terms, the team has a range of possible tactical options to cope with the danger from a corner. The option selected depends on the coach's preferences and the characteristics of the players available. This decision is relevant to the goalkeeper as he is in charge of the defence and must organise it.

Defending using individual marking

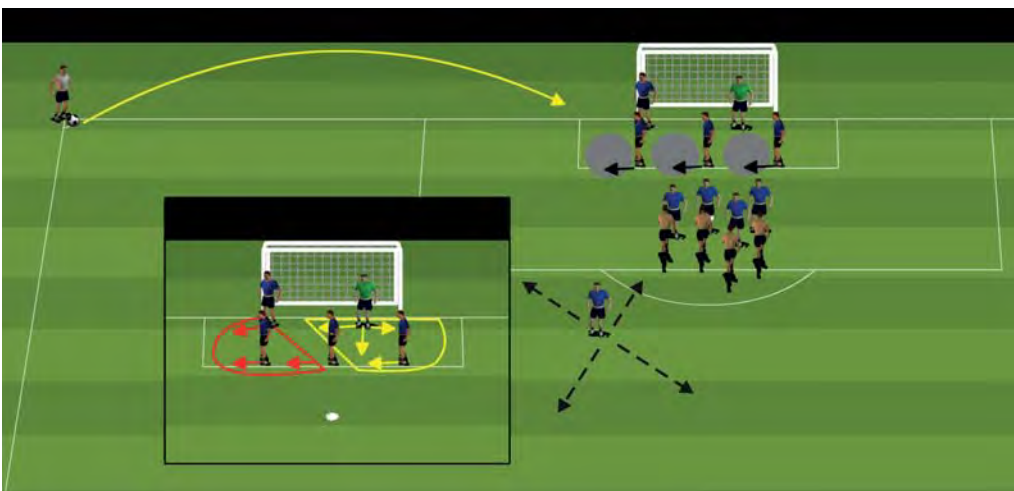
The players have different roles:

- one or two players protect the goal,
 - their role is not just to hold the post but to be ready to intervene,
 - the player(s) can keep the goalkeeper informed as he intervenes: "TIME!", "MAN ON",
- a player closes down space at the near post,
- a player is positioned further out to pick up the second ball,
- other players carry out individual marking (decided before the match).



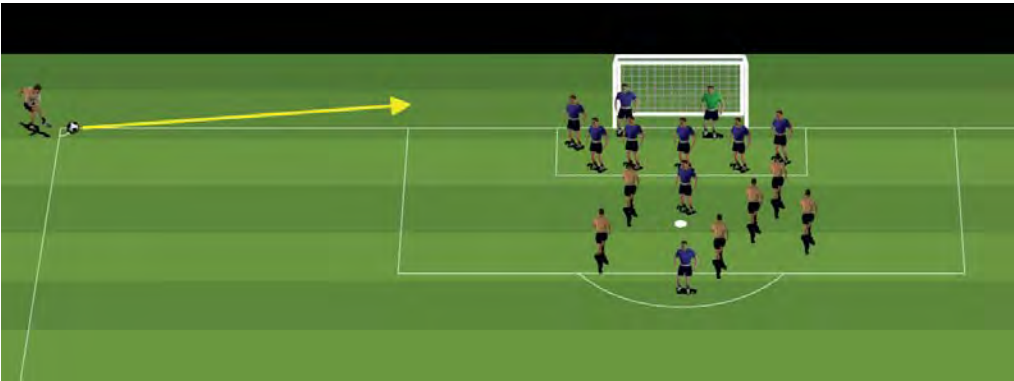
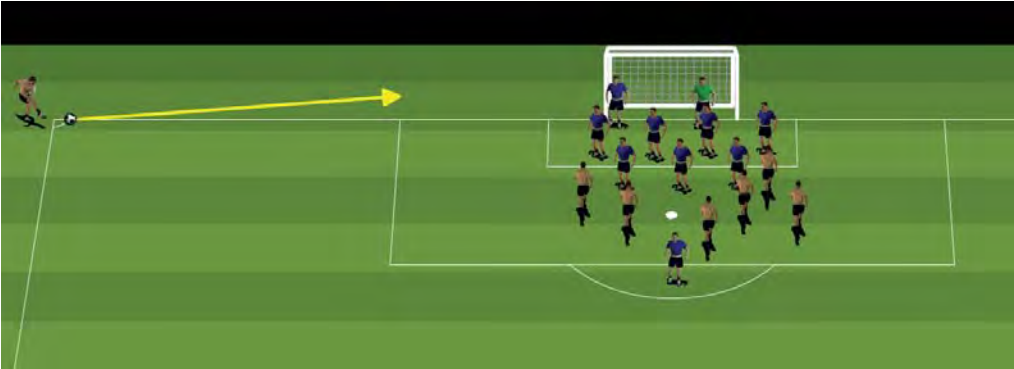
Mixed defence: individual and zonal marking

- one or two players protect the goal,
- three players protect the space in front of the goal,
- one player picks up the loose ball,
- other players carry out individual marking.



Zonal defence: zonal marking

- one or two players protect the goal (on the post),
- other players are responsible for specific zones of the penalty area, decided before the match. They do not mark individual opponents.



Short corners

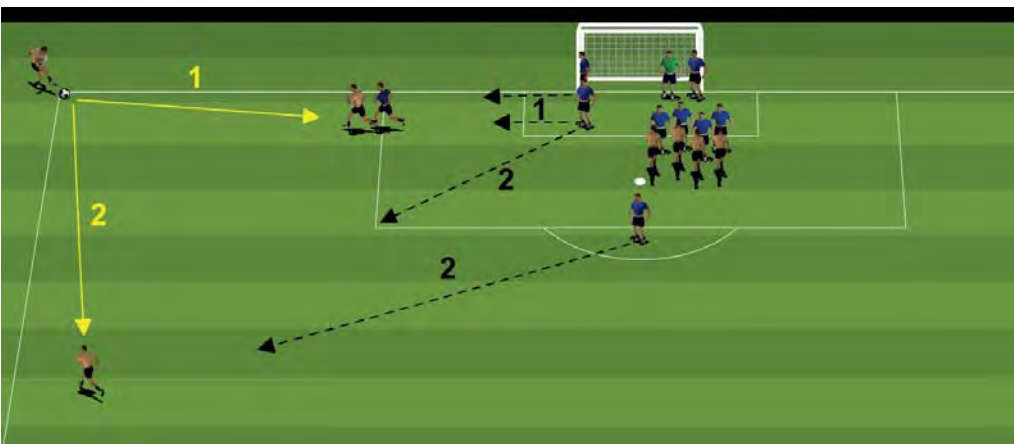
Short corners can take the defence by surprise and a strategy must be defined on how to react.

Situation 1 - the opponents are in a two against one situation. It must be decided which player will go out to restore parity (two against two).

Situation 2 - one or two players come out to counter the opponent coming up from deep.

Remember!

All substitutes must be aware of their positions and duties at dead-ball situations.



The goalkeeper's role for a corner

In order to make an effective intervention, the goalkeeper must respond to the four phases described above in the best way possible.

1. Analysis of the situation and positioning the defence

The goalkeeper must quickly analyse and anticipate the opponents' intentions. At the highest levels of the game, knowledge of the opponents' preferences and typical interactions can make the goalkeeper's task a little easier. The goalkeeper directs the defenders by calling. It is the goalkeeper's task to make sure that the instructions issued before the match are respected. Orders and warnings should be short, simple and timely. The goalkeeper must also quickly react to any change of the situation (e.g. short corner).

2. The goalkeeper's positioning

The goalkeeper's positioning depends on the ball's trajectory,

- inswinging ball – protect the goal (danger at near post or coming out for the ball is difficult),
- outswinging ball – anticipating the ball's trajectory.

3. The goalkeeper's save

Once the corner has been taken, the goalkeeper has to decide whether to come out or not. His intervention may be impeded by other players. The goalkeeper must take all considerations into account. If the goalkeeper comes out for the ball successfully, this takes the pressure off the defence.

Remember!

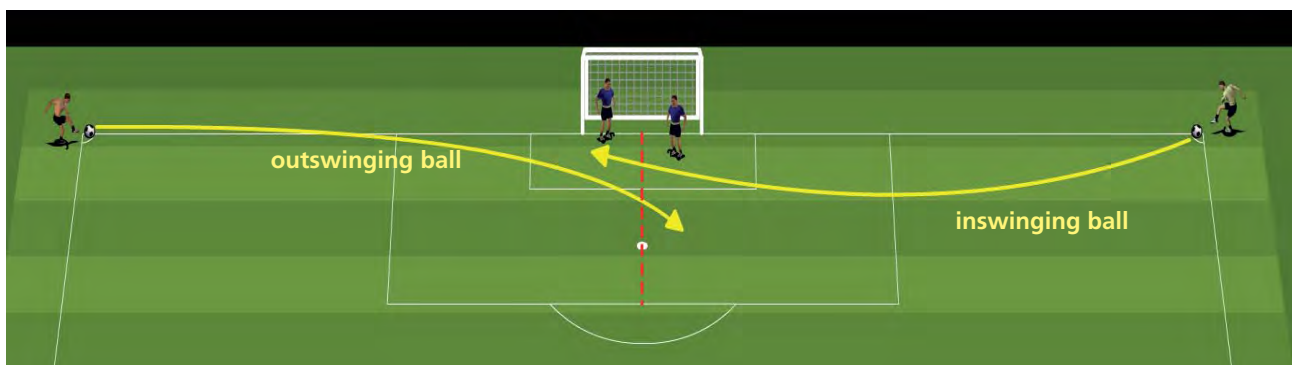
- If the goalkeeper comes out, he must call to his teammates so that he is not impeded: "MINE", "LEAVE IT".

- When reading the trajectory of the ball, the goalkeeper must also take into consideration external factors (wind, sun, floodlights, etc.).
- After an intervention (punched ball) the goalkeeper must quickly get back to goal as play continues.
- If the goalkeeper does not come out, he directs the defence as the move continues.

4. The goalkeeper's distribution

After a successful intervention, the goalkeeper decides whether to distribute the ball quickly or hold it to allow the defence to get back up the pitch,

- throw-out,
- kicked clearance:
 - seeking out a player,
 - seeking out space.



The goalkeeper's positioning

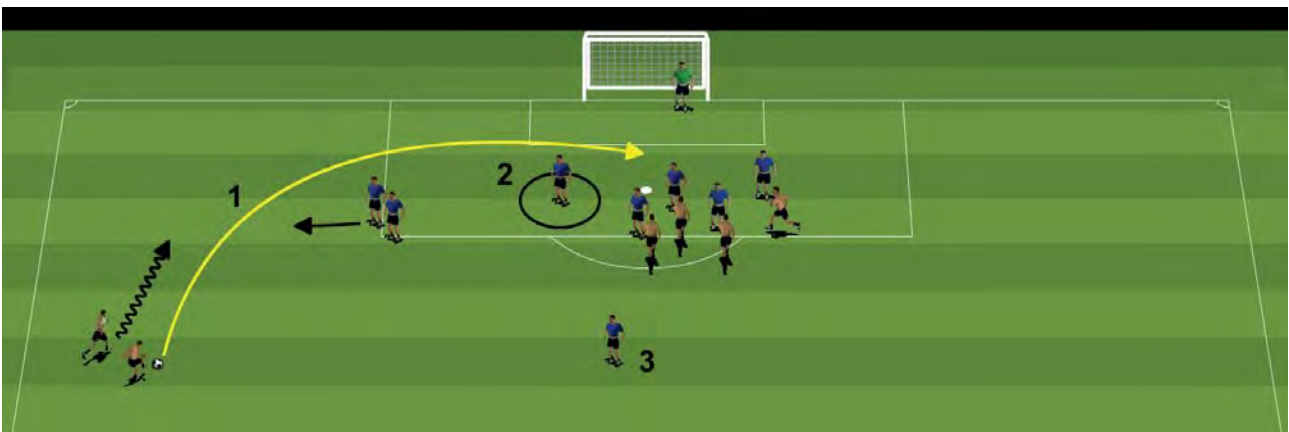
Direct and indirect free kicks from a wide position

It is difficult for the goalkeeper to make a good intervention if several players go for the ball at the same time, or if the ball is hit hard, with swerve or too low for the goalkeeper to come out.

The team's tactical options

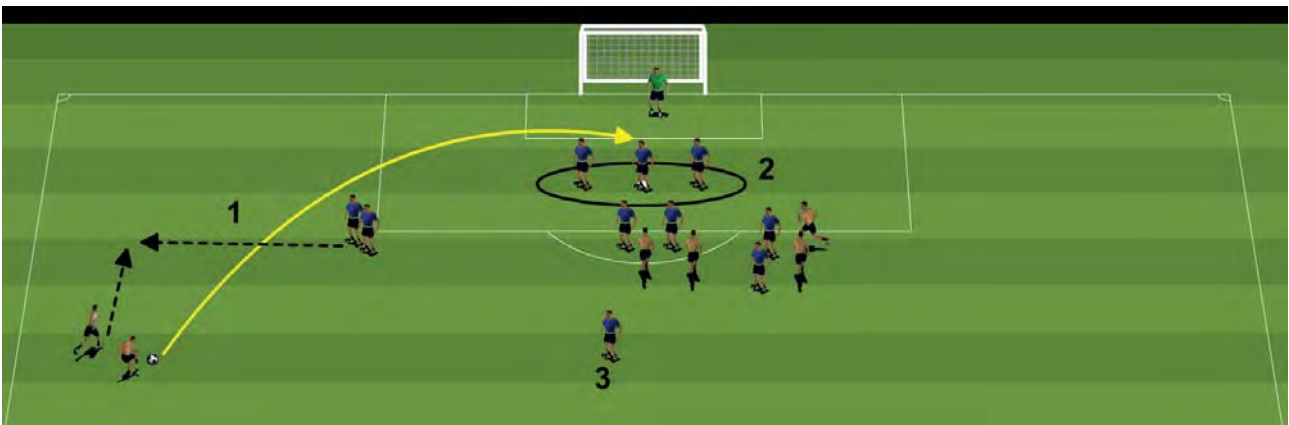
Defence using individual marking

- wall (one or two players) (1),
 - acts as a barrier to a direct shot,
 - a player must intervene if the ball is played short,
- a player in line with the post who can intercept a low shot (2),
- a player ready to pick up the loose ball (3),
- the other players carry out individual marking (decided before the match).



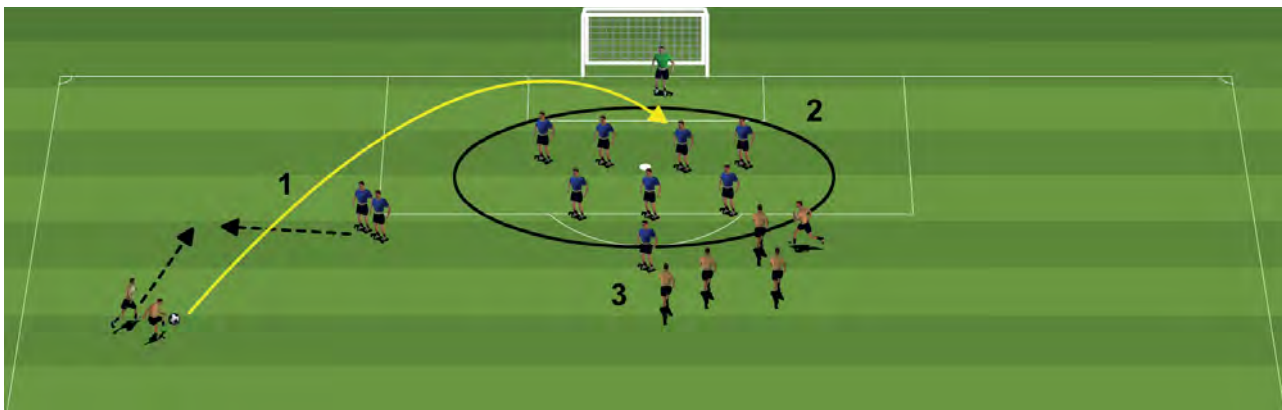
Mixed defence: individual and zonal marking

- wall (one or two players) (1),
- players defend the allocated zone (2),
- a player ready to pick up the loose ball (3),
- the other players carry out individual marking.



Zonal defence: zonal marking

- players are responsible for specific zones in the penalty area. They do not mark individual opponents.

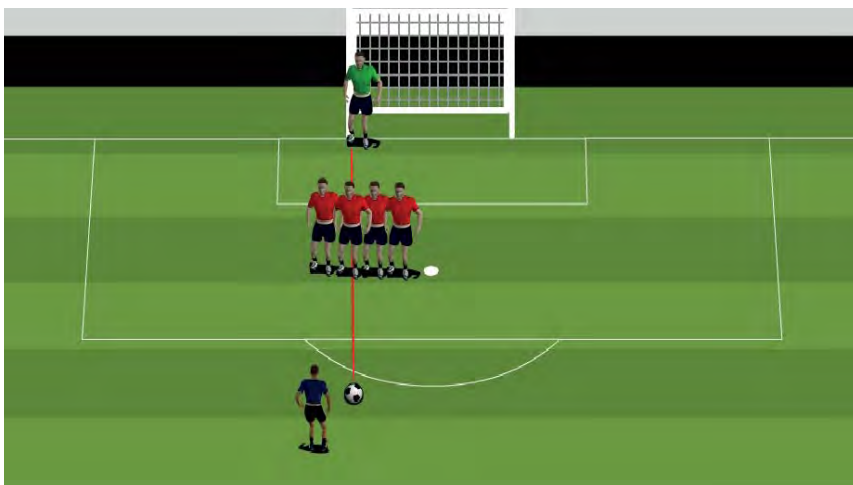


The goalkeeper's role for a free kick from a wide position

The four phases described for a corner kick also apply in this situation. If the free kick is sufficiently far out, the goalkeeper can take up a position that anticipates his coming out while not affording the opponent an opportunity to lob.

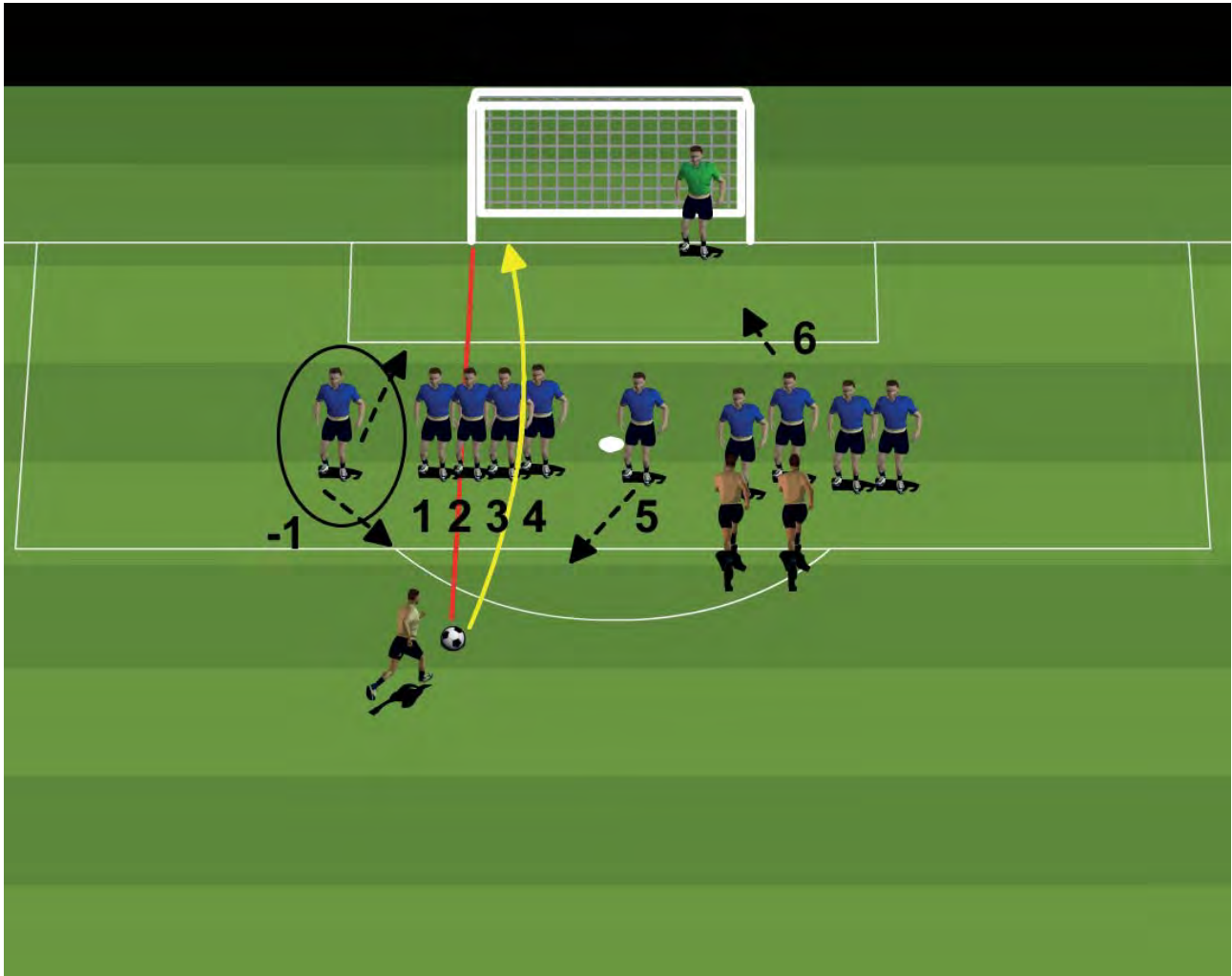
Direct free kicks from a central position

To deal with this situation successfully the goalkeeper needs good defensive organisation, improvisation and confidence in his own abilities. Each player must be assigned a role before the match starts. The wall should consist of between two and five players. Any more players than this could hinder the goalkeeper by obscuring his view of the kick being taken.



The goalkeeper positions the wall but remains vigilant and ready to act if the opponents play the ball quickly.





The team's tactical options

The players have the following roles:

- 1 player outside the wall (the right back; or the left back for a free kick on the other side):
 - this player charges out if the ball is played to the wing,
 - he can prevent an interchange of passes outside the wall,
 - he runs in to clear the ball if the goalkeeper spills it,
- 1 first man in wall:
 - responsible for the positioning of the wall,
 - he looks at the goalkeeper and takes instructions until just before the kick is taken,
- 2 second man:
 - takes up a position directly between the ball and the post (this means the wall is properly positioned),

- 3 third man:
 - we know from experience that the ball often passes over the third player. This is why it is a good idea to put the tallest player in this position,
- 4 fourth man:
 - has no special duties,
- 5 blocking player:
 - runs out to try to block the shot if the ball is touched on from one opponent to another ,
- 6 player who follows the ball in to make a clearance if the goalkeeper spills the ball (left back):
 - this player marks an opponent at the start of the move.

Remember!

The players in the wall must always face the ball and never turn round!

The goalkeeper's role for a central free kick

1. Analysis of the situation and positioning of the defence

- The goalkeeper positions the wall depending on:
 - the distance to the free kick,
 - the position of the free kick.

2. The goalkeeper's position

- the goalkeeper takes a position in the unprotected side of the goal,
- he must find a solution so that he can see the ball being struck (it may be masked by an opponent standing alongside the wall) without changing his positioning.

3. The goalkeeper's save

- he must never concede a goal on the side he is covering, this is a bad mistake! (see photos 1 and 2)

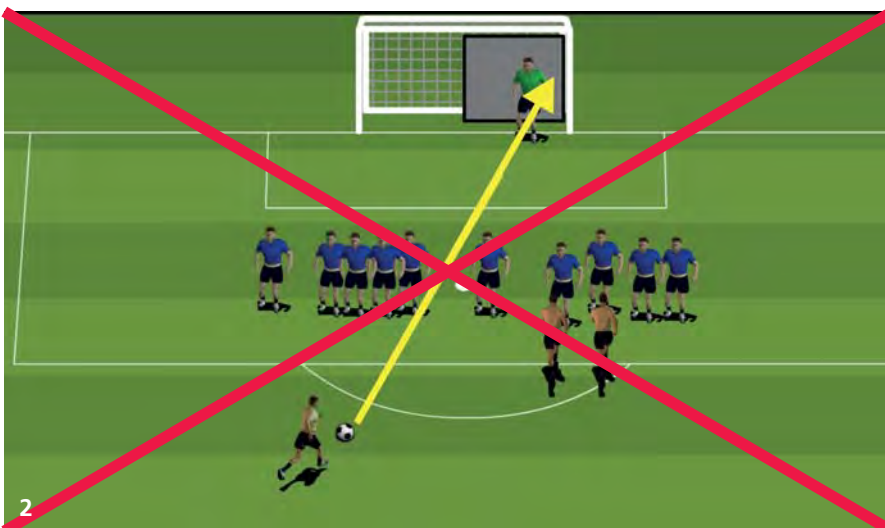
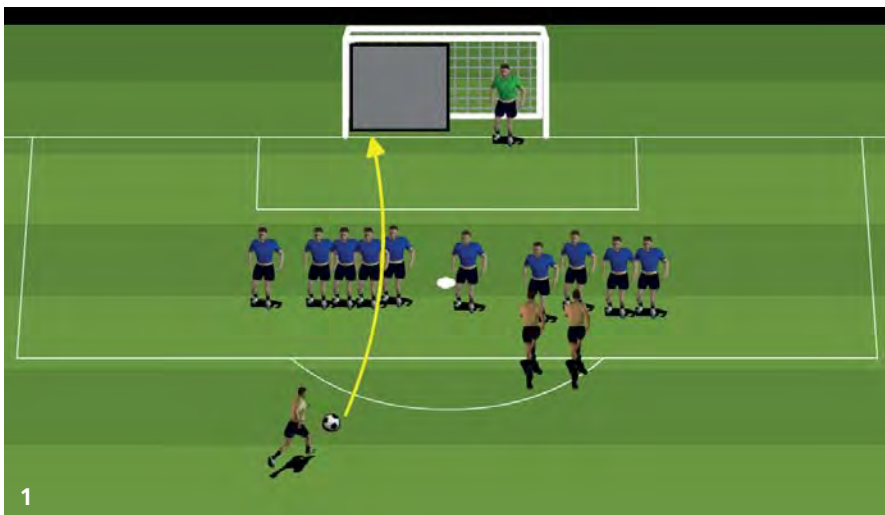
- the goalkeeper may find it difficult to intervene especially if he cannot see the ball being struck,
- if he cannot catch the ball, he must deflect it to the side.

4. The goalkeeper's distribution

- All the players come back to defend a central free kick. In this case it is unusual to subsequently launch a quick attack.

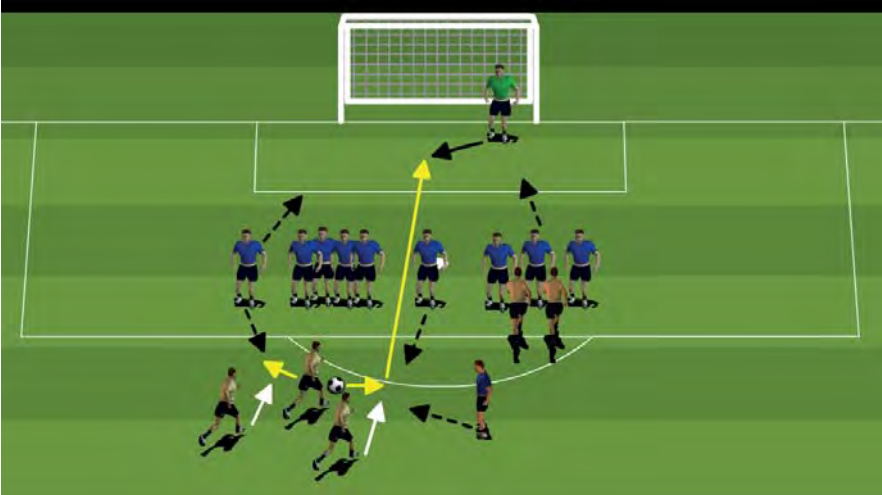
Remember!

The goalkeeper must be ready for a quick free kick or ask the referee to blow the whistle when the set piece can start.



Indirect free kicks from a central position

The role of the player who rushes out to block the ball is very important. Above all, he must not be afraid of the ball. His positioning should not block the goalkeeper's view. If the opponent taking the free kick touches it on to a team-mate, the goalkeeper must adjust his positioning.



Remember!

If the ball is hit directly, the goalkeeper can let the ball go straight into the goal. He must check (with the referee before the kick is taken) that it is actually an indirect free kick and must be certain that no one has touched the ball on the way through to the goal!

Indirect free kick in the penalty area

It is very difficult give advice for indirect free kicks in the penalty area, because it is such an unpredictable situation. If the ball is less than 9.15 m from the goal, the goalkeeper himself is part of the wall on the goal line but runs out to try to stop the incoming shot. All players come back to defend and any means of stopping the goal is valid.



Penalty kicks

There is no magic formula for stopping a penalty: it is a mixture of luck, instinct, etc. Some goalkeepers resort to statistics or study videos before a match while others try to get the upper hand on the penalty taker by encouraging him to shoot to a specific side. A penalty kick is the only time in a match when the goalkeeper has nothing to lose!

Remember!

The defenders should run in after the ball in case it rebounds.

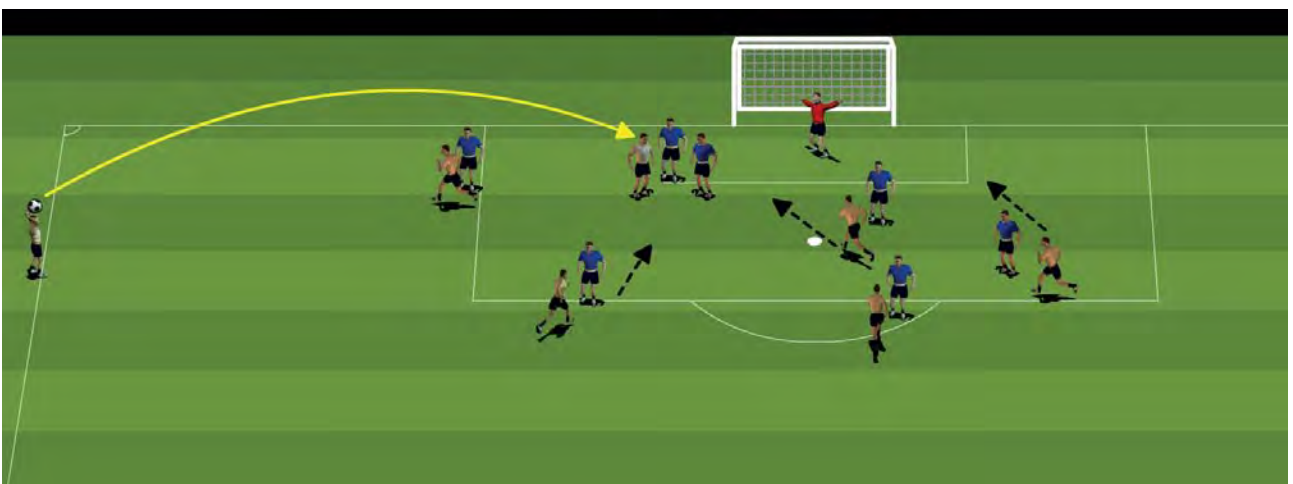


Throw-ins

Some players have the ability to launch the ball into the penalty area from a throw-in. It is often very difficult for the goalkeeper to come out because of the crowd of players in front of him. If he does decide to come out, he must make absolutely sure that his intervention is successful.

Remember!

- When the goalkeeper comes out, a defender can take his place in goal.
- An opponent who is a good header of the ball and is a likely target can be marked by two defenders.
- The goalkeeper shouts if he decides to come out.







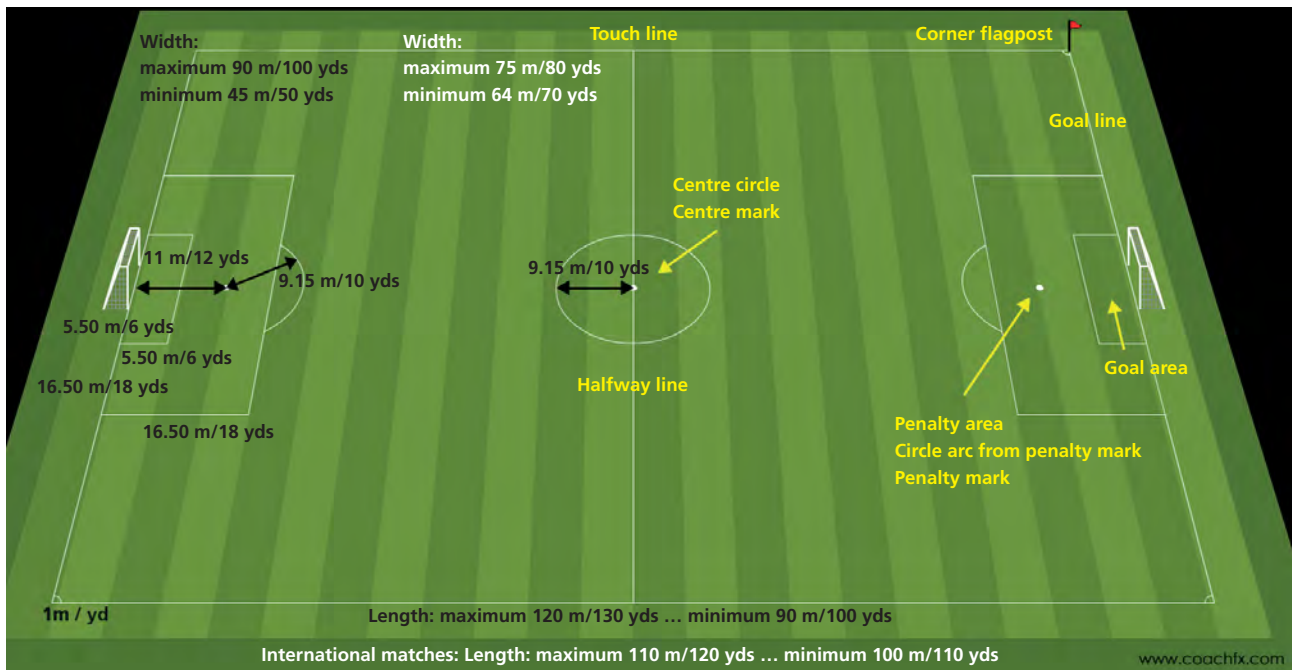
6. Theoretical preparation

We can analyse every save that a goalkeeper makes by describing it or studying it on video; every physical ability can be defined; tactical behaviour can be explained on the blackboard; physical preparation can be conducted in a group or individually. All of these considerations are examined in the chapters of this manual. But there is still another important component – the laws of the game, laws that have evolved as football has developed. Every goalkeeper must have a thorough knowledge of these

laws. The laws are absorbed from the youngest age from explanations by coaches at training sessions and matches, by watching games on TV and also through theory sessions on the laws (especially if there is a change to an important law). As this manual is dedicated to goalkeepers, we will concentrate on explanations of the laws that directly affect the goalkeeper. In some cases knowledge of these laws will allow the goalkeeper to use them to his advantage.

Law 1 The field of play

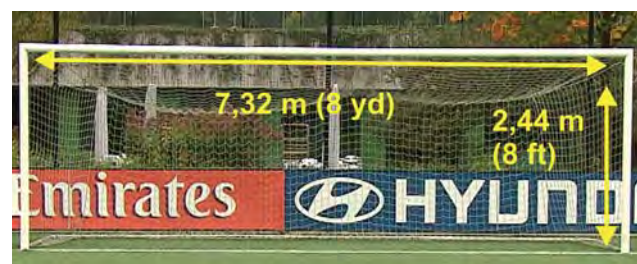
The field of play must be rectangular. The length of the touchlines must exceed the length of the goal lines.



Goals, placed on the centre of each goal line:

- two upright posts equidistant from the corner flagposts and joined at the top by a horizontal crossbar,
- goalposts and crossbars must be white,
- goalposts: white, same width and depth, same width as the goal line, without exceeding 12 cm,
- nets may be attached to the goals and the ground behind the goal, provided that they do not interfere with the goalkeeper.

The goals must be securely fixed to the ground. Movable goals can only be used if they meet these requirements.



Law II The ball

Materials

The ball is spherical and the external layer is made out of leather or another approved material. The materials must not constitute any danger.

Characteristics

- circumference: 68-70 cm,
- weight at the start of the match: 410-450 g,
- pressure: 0.6 to 1.1 atmosphere (600-1,100 g/cm²).

Replacement of a defective ball:

- If the ball bursts or becomes defective during the course of a match:
 - the match is stopped,
 - the match is restarted by dropping the replacement ball at the place where the original ball became defective.



- If the ball bursts or becomes defective whilst not in play at a kick-off, goal kick, corner kick, free kick, penalty kick or throw-in:
 - the match is restarted accordingly.

The ball may not be changed during the match without the authority of the referee.

Law III The number of players

A match is played by two teams, each consisting of not more than eleven players, one of whom is the goalkeeper. A match may not start if either team consists of fewer than seven players.

Any of the other players may change places with the goalkeeper, provided that the referee is informed before the change is made; the change is made during a stoppage in the match.

If a player changes places with the goalkeeper without the referee's permission before the change is made: play continues, the referee cautions the players concerned (yellow card) when the ball is next out of play.

Law IV The players' equipment

Each goalkeeper must wear colours that distinguish him from the other players, the referee and the assistant referees.

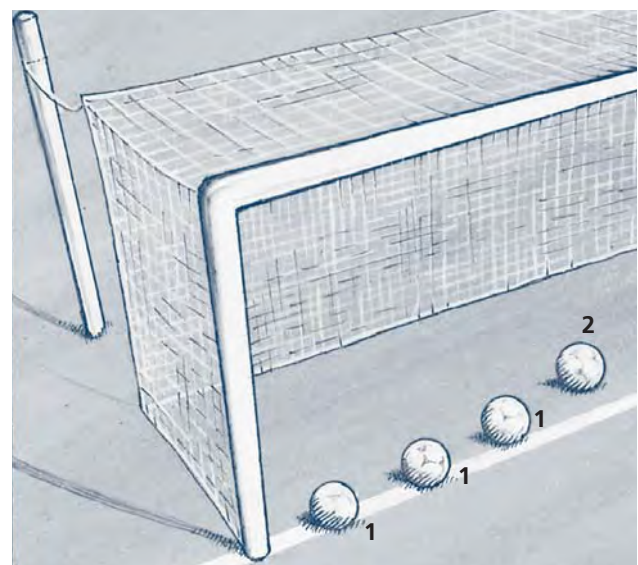
Law VIII The start and restart of play (Kick-off)

All players must be in their own half of the field of play. The opponents of the team taking the kick-off are at least 9.15 m from the ball until it is in play. The ball must be stationary on the centre mark. The referee gives a signal. The ball is in play when it is kicked and moves forward. The kicker must not touch the ball again until it has touched another player. A goal may be scored directly from the kick-off.

Law X Goal scored

A goal is scored when the whole of the ball passes over the goal line, between the goalposts and under the crossbar, provided that no infringement of the Laws of the Game has been committed previously by the team scoring the goal.

1: no goal. **2:** goal



Starts and restarts of play from which a goal can be scored directly:

- kick-off
- penalty kick
- goal kick (into opponents' goal)
- direct free kick (into opponents' goal)
- corner kick (into opponents' goal)

Restarts of play from which a goal cannot be scored directly:

- indirect free kick
- direct free kick (into own goal)
- throw-in
- dropped ball

- corner kick (into own goal)
- goal kick (into own goal)

A goalkeeper, in his penalty area, catches the ball and then kicks (or throws) the ball out and it goes directly into the opponents' goal – the goal is awarded.

The ball deflates before entering the goal – goal not allowed (dropped ball).

If a spectator comes onto the pitch trying to kick the ball (before the ball has crossed the goal line), the referee awards the goal if the spectator has not touched the ball. If the spectator touches the ball or has an influence on play (by hindering the goalkeeper or a defender) the referee stops play and restarts by means of a dropped ball.

Law XII
Fouls and misconduct

An **indirect free kick** is awarded to the opposing team if a goalkeeper, inside his own penalty area, commits any of the following four offences:

- controls the ball with his hands for more than six seconds before releasing it from his possession,
- touches the ball again with his hands after he has released it from his possession and before it has touched another player,
- touches the ball with his hands after it has been deliberately kicked to him by a team-mate,

- touches the ball with his hands after he has received it directly from a throw-in taken by a team-mate.

Offences committed against goalkeepers

- it is an offence for a player to prevent a goalkeeper from releasing the ball from his hand,
- a player must be penalised for playing in a dangerous manner if he kicks or attempts to kick the ball when the goalkeeper is in the process of releasing it,

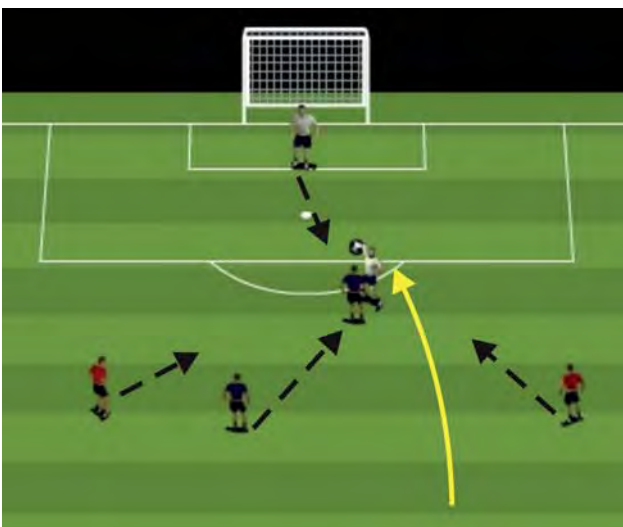


Figure 1

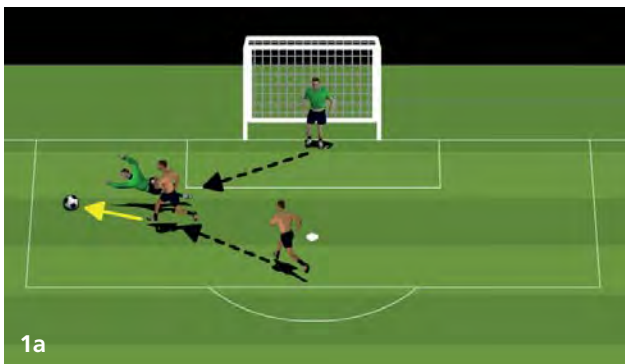


Figure 2

- it is an offence to restrict the movement of the goalkeeper by unfairly impeding him, e.g. at the taking of a corner kick.

What are the essential elements that the referee should take into account before sending off a goalkeeper for “denying an obvious goalscoring opportunity”?

1. The attacker is heading for goal when he is fouled by the goalkeeper (outside the penalty area) or the goalkeeper deliberately handles the ball (outside the penalty area). The goalkeeper has denied an obvious goalscoring opportunity – he is sent off and a direct free kick awarded (Figure 1).
2. The goalkeeper intentionally handles the ball outside the penalty area when it is played long to the wing

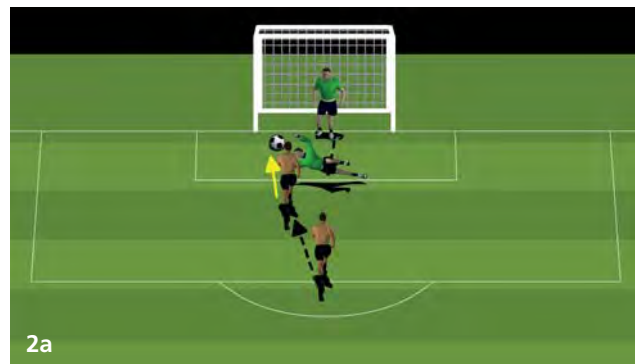


Yellow card

before the attacker has a chance to control it. In this case, the goalkeeper has not denied an obvious goalscoring opportunity because the ball was not heading towards the goal. He is cautioned for unsporting behaviour. Direct free kick (Figure 2).

An attacker is fouled by the goalkeeper inside the penalty area:

1. if the attacker was not heading towards the goal, the goalkeeper is not sent off because he has not denied an obvious goalscoring opportunity - caution and penalty kick (Photos 1a-1c),
2. if the attacker was heading towards goal, the referee sends the goalkeeper off if he has denied an obvious goalscoring opportunity. Play restarts by a penalty kick (Photos 2a-2c).



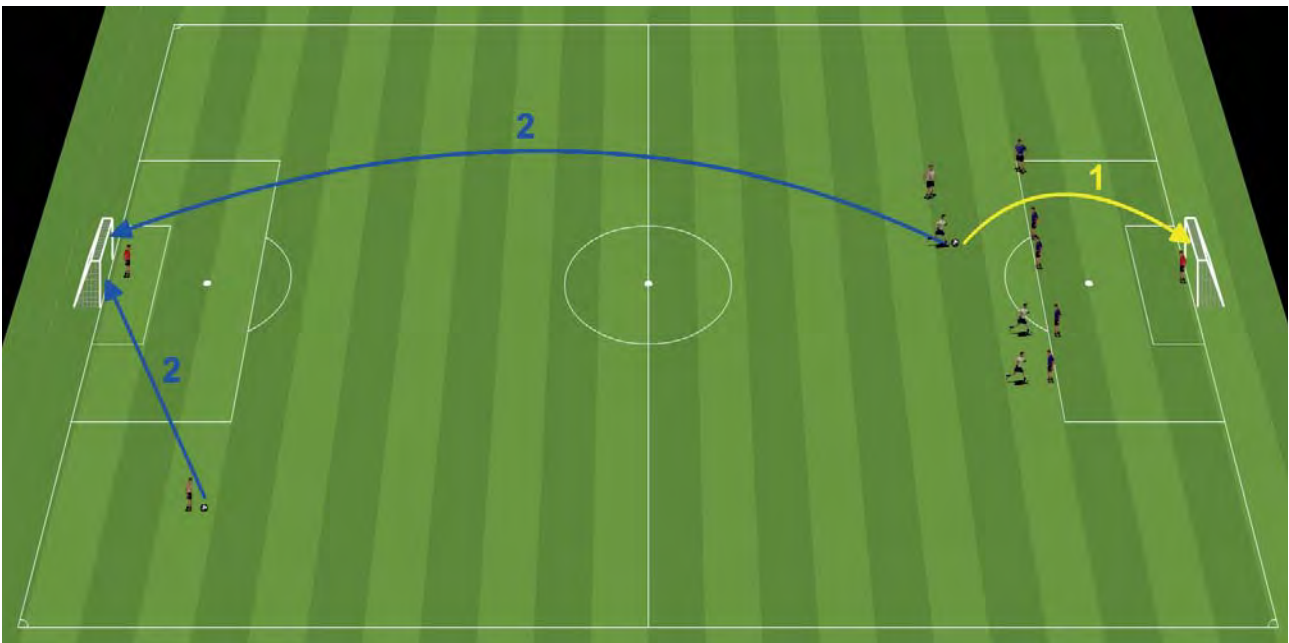
Red card

Law XIII Free kicks

Free kicks are either direct or indirect. the ball must be stationary when the kick is taken and the kicker must not touch the ball again until it has touched another player.

Direct free kick

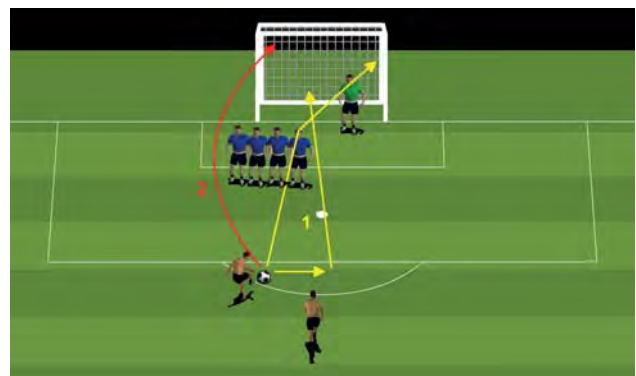
- 1 If the ball is kicked directly into the opponents' goal, a goal is awarded,
- 2 If the ball is kicked directly into the team's own goal, a corner kick is awarded to the opposing team.



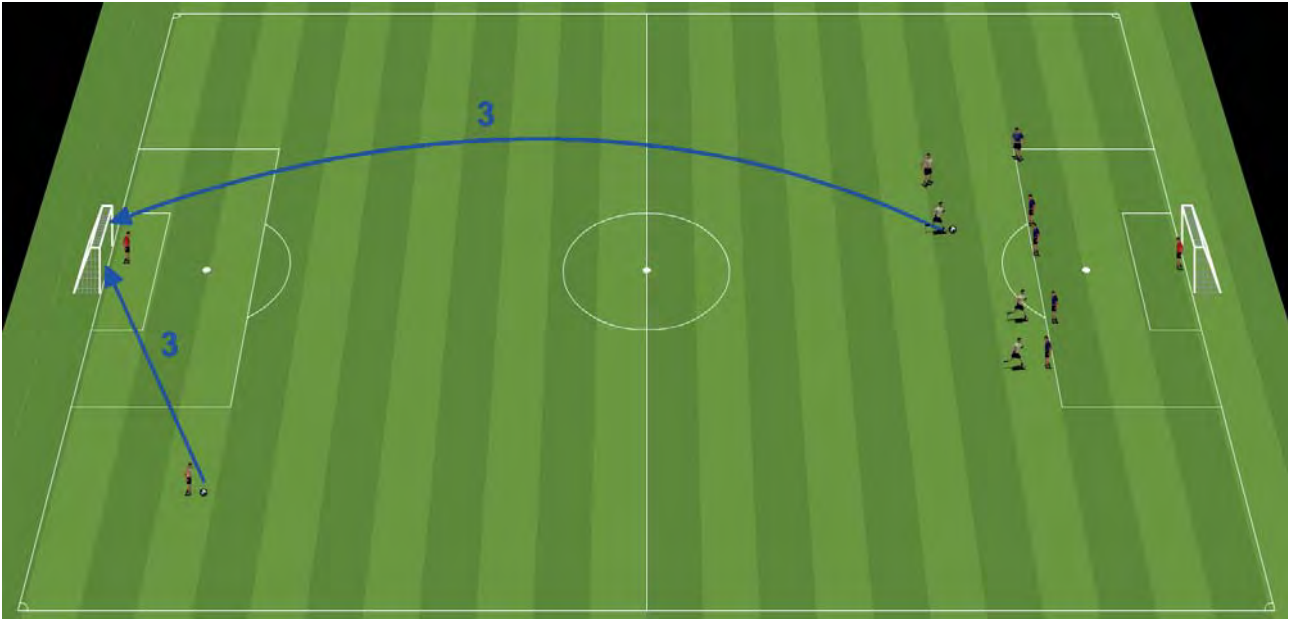
Indirect free kick

The referee indicates an indirect free kick by raising his arm above his head. He maintains his arm in that position until the kick has been taken and the ball has touched another player or goes out of play.

- 1 A goal is only awarded if the ball enters the goal after having touched another player,
- 2 If the ball goes directly into the defending team's goal, a goal kick is awarded.



- 3 If the ball is kicked directly into the goal of the team taking the free kick, a corner is awarded to the opposing team.



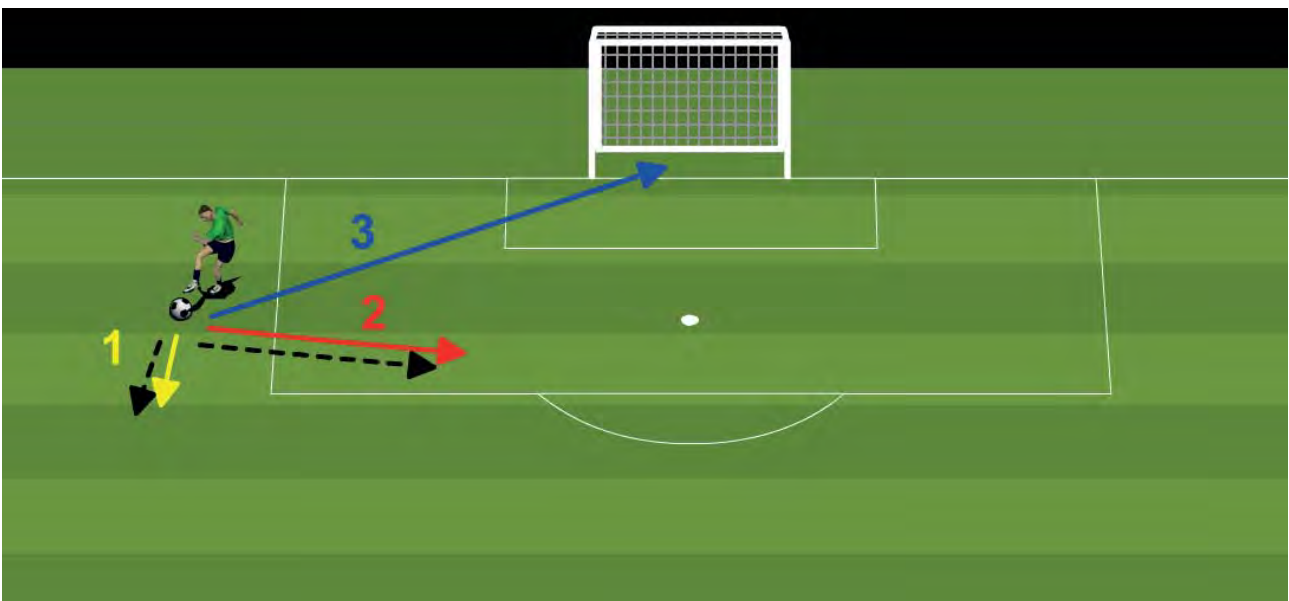
Free kick taken by the goalkeeper

If, after the ball is in play, the goalkeeper touches the ball again (except with his hands), before it has touched another player:

- an indirect free kick is awarded to the opposing team, to be taken from the place where the infringement occurred,

If, after the ball is in play, the goalkeeper deliberately handles the ball before it has touched another player:

- 1 A direct free kick is awarded to the opposing team if the infringement occurred outside the goalkeeper's penalty area, to be taken from the place where the infringement occurred,
- 2 An indirect free kick is awarded to the opposing team if the infringement occurred inside the goalkeeper's penalty area, to be taken from the place where the infringement occurred,
- 3 If, after the ball is in play, it directly enters the goal of the goalkeeper taking the free kick, a corner is awarded to the opposing team

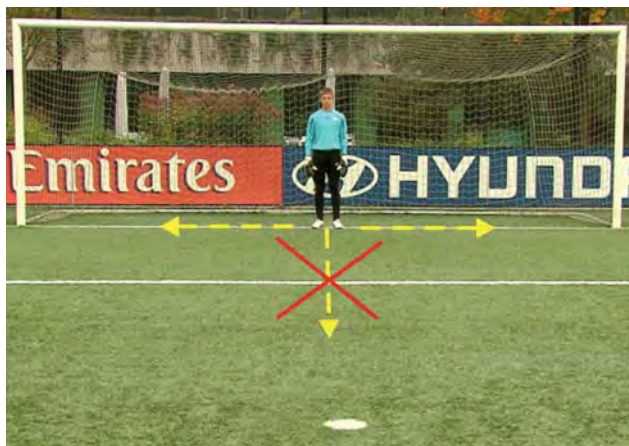


Law XIV The penalty kick

A penalty kick is awarded against a team whose player commits one of the ten offences for which a direct free kick is awarded, inside his own penalty area and while the ball is in play:

- a) kicks or attempts to kick an opponent
- b) trips or attempts to trip an opponent
- c) jumps at an opponent
- d) charges an opponent
- e) strikes or attempts to strike an opponent
- f) pushes an opponent
- g) tackles an opponent
- h) holds an opponent
- i) spits at an opponent
- j) handles the ball deliberately (except for the goalkeeper within his own penalty area)

The ball must be placed on the penalty mark. The players other than the kicker must be located inside the field of play, outside the penalty area, behind the penalty mark, at least 9.15 m from the penalty mark. The referee gives a signal for the penalty kick to be taken if there is a goalkeeper in the goal and he is correctly placed (and if the other players are also correctly placed).

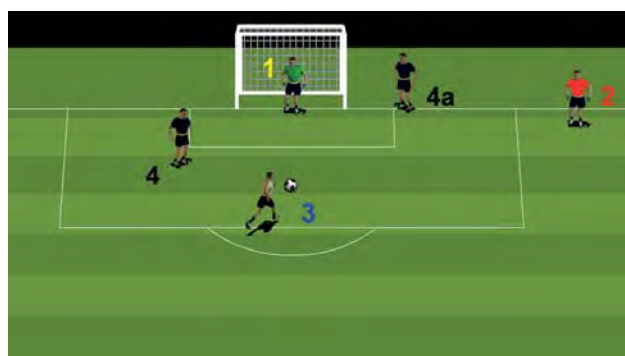


The goalkeeper must remain on his goal line, facing the kicker. The goalkeeper is allowed to move on his line between the goalposts (but may not touch them). Lateral and vertical movement (jumping) is allowed. The goalkeeper may only move forward once the ball has been struck.

If the ball is touched by an outside agent as it moves forward, then the penalty kick must be retaken. If the ball rebounds into the field of play from the goalkeeper, the crossbar or the goalposts and is then touched by an outside agent, then the referee stops play. Play is restarted with a dropped ball at the place where the ball was located when play was stopped.

Additional time is allowed for a penalty kick to be taken at the end of each half or at the end of periods of extra time.

Kicks from the penalty mark are a method for determining the winning team.



Positioning:

- 1 Goalkeeper
- 2 Opposing team goalkeeper
- 3 Penalty taker
- 4 Referee
- 4a Assistant referee

A goalkeeper who is injured while kicks are being taken from the penalty mark and is unable to continue as goalkeeper may be replaced by a named substitute provided his team has not used the maximum number of substitutes permitted under the competition rules. An eligible player may change places with the goalkeeper at any time when kicks from the penalty mark are being taken. If the goalkeeper is sent off during the taking of kicks from the penalty mark, he must be replaced by a player who finished the match on the pitch.

Law XV The throw-in

A throw-in is awarded:

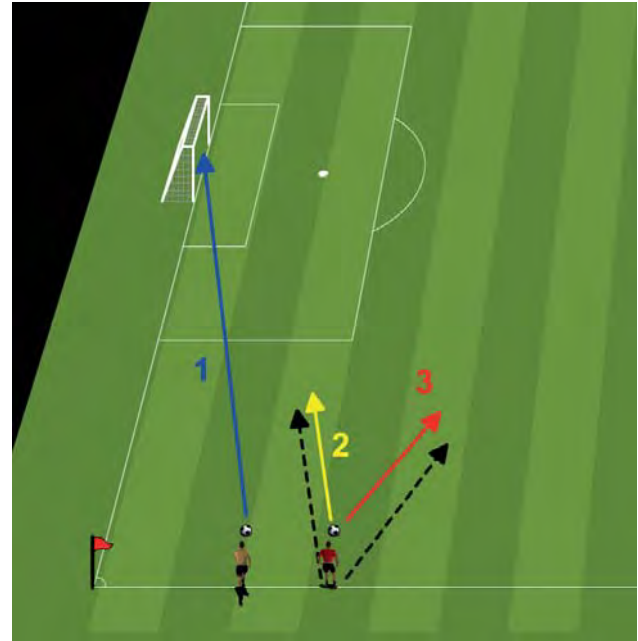
- when the whole of the ball crosses the touch line, either on the ground or in the air,
- at the point where the ball left the field of play,
- to the opponents of the player who last touched the ball.

- 1** A goal cannot be scored directly from a throw-in:
- if the ball enters the opponents' goal directly from a throw-in, the referee must award a goal kick.
 - if the ball enters the thrower's own goal directly from a throw-in, the referee must award a corner kick.

If the goalkeeper takes a throw in and then plays the ball again before it has touched another player:

- 2** An indirect free kick is awarded to the opposing team at the place where the infringement occurred,

- 3** A direct free kick is awarded if the goalkeeper handles the ball outside his penalty area

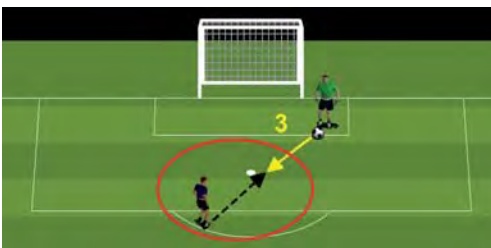
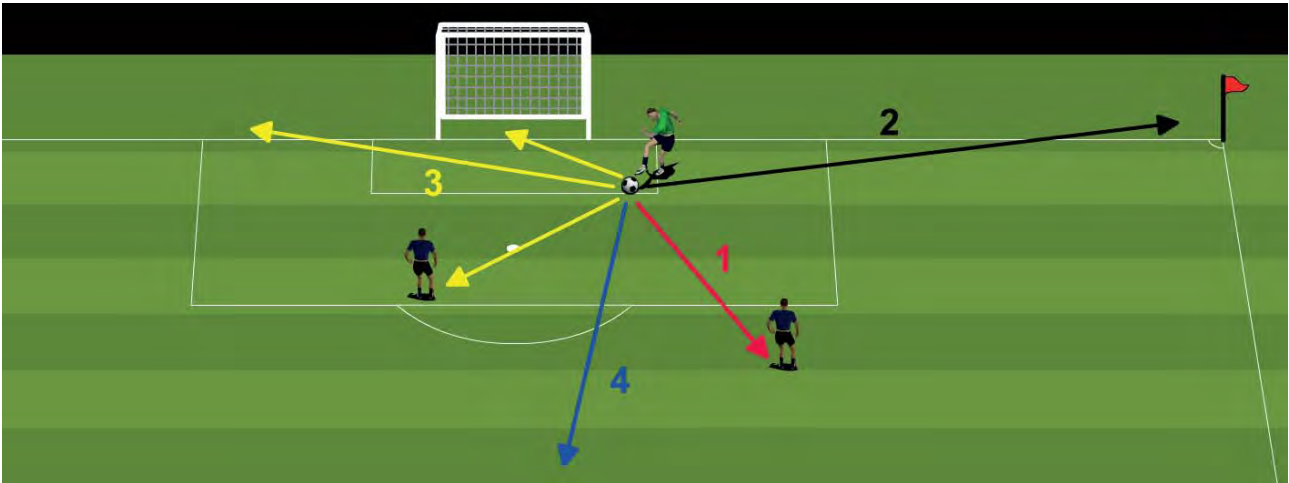


Law XVI The goal kick

A goal kick is awarded when the whole of the ball passes over the goal line, either on the ground or in the air, having last touched a player of the attacking team, and a goal is not scored. The ball is kicked from any point within the goal area

by a player of the defending team. If the ball is not kicked directly out of the penalty area from a goal kick, the kick is retaken. A goal may be scored directly from a goal kick, but only against the opposing team.

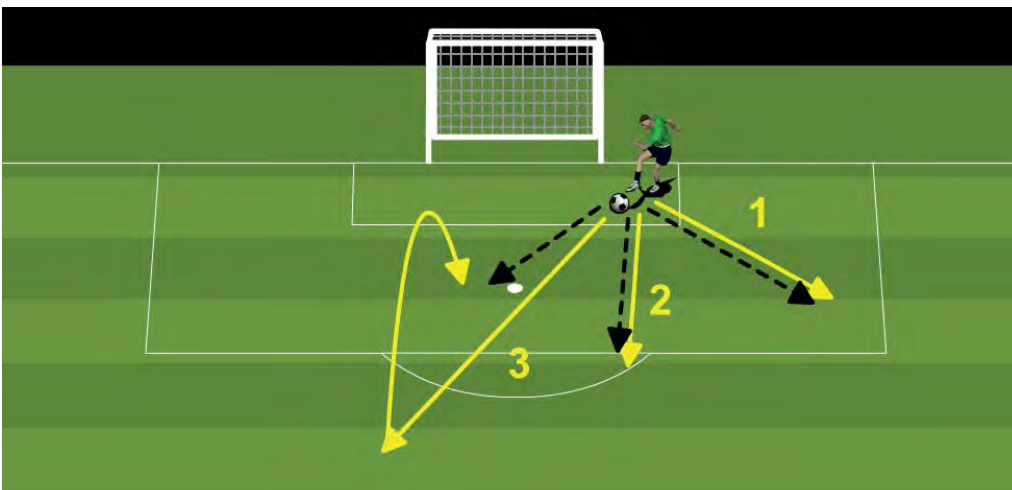




- 1 Correct execution
- 2 Corner kick
- 3 Kick must be retaken
- 4 Goalkeeper can score directly

- 1 If the ball is not kicked directly out of the penalty area and the kicker touches the ball again, the kick must be retaken.
- 2 If, after the ball is in play (outside the penalty area) the kicker touches the ball again (except with his hands) before it has touched another player, an indirect free kick is awarded to the opposing team, to be taken from the place where the infringement occurred. If, after the ball is in play, the kicker deliberately handles the ball before it has touched another player, a direct free kick is awarded to the opposing team, to be taken from the place where the infringement occurred.

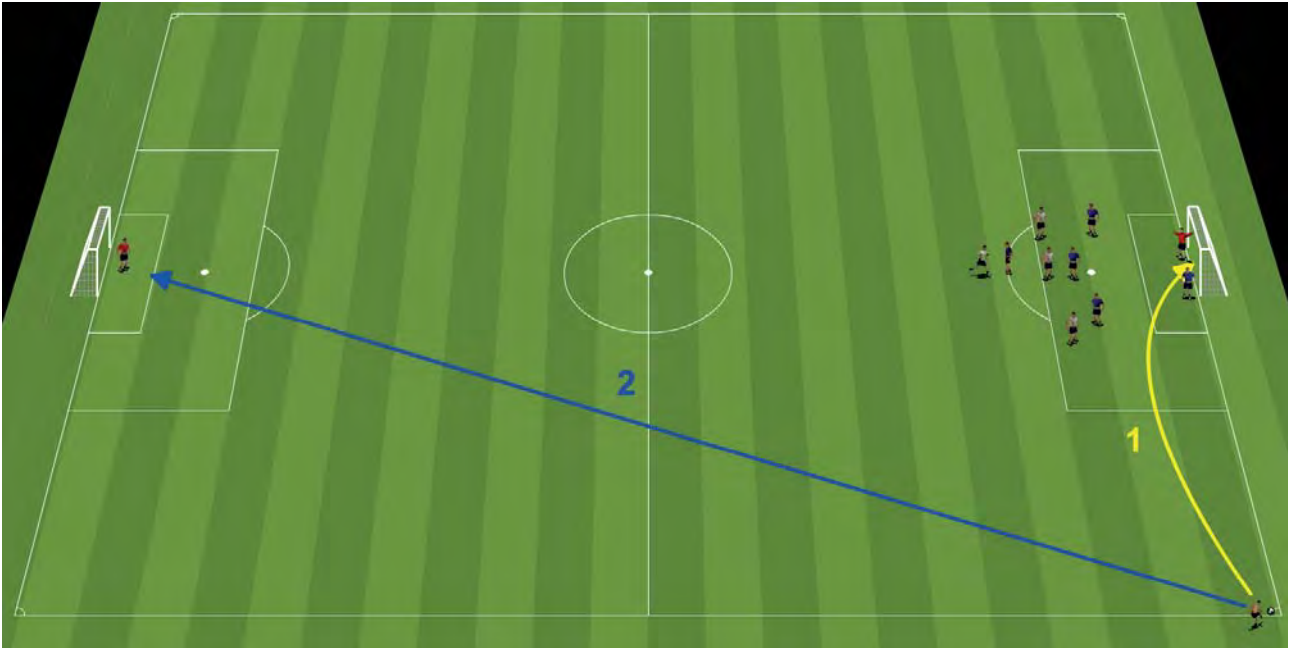
- 3 If, from a goal kick, the ball leaves the penalty area but is blown back into the area by a strong wind:
 - a) if the goalkeeper touches the ball again (with hands or feet), then an indirect free kick is awarded to the opposing team. This indirect free kick is taken from the place where the infringement occurred.
 - b) if the kicker (outfield player) touches the ball again (except with his hands), an indirect free kick is awarded to the opposing team,
 - c) if the kicker (outfield player) deliberately handles the ball, a penalty kick is awarded to the opposing team.



Law XVII Corner kick

A corner kick is awarded when the whole of the ball passes over the goal line, either on the ground or in the air, having last touched a player of the defending team, and a goal is

not scored. A goal may be scored directly from a corner kick, but only against the opposing team. 1, 2





7. Physical preparation

A player's physical condition – the ability to carry out a physical effort – comprises several factors (physical, psychological and social).

The main forms of motor ability, namely endurance, strength, speed and mobility, together with coordination skills, are the fundamental factors in learning sports motor actions and in performance (Weineck, 2005). These factors can be divided into:

- physical condition capacities, mainly concerning energy processes (speed, strength, endurance, suppleness (mobility)),
- coordination capacities, mainly concerning central command processes and nervous system control.

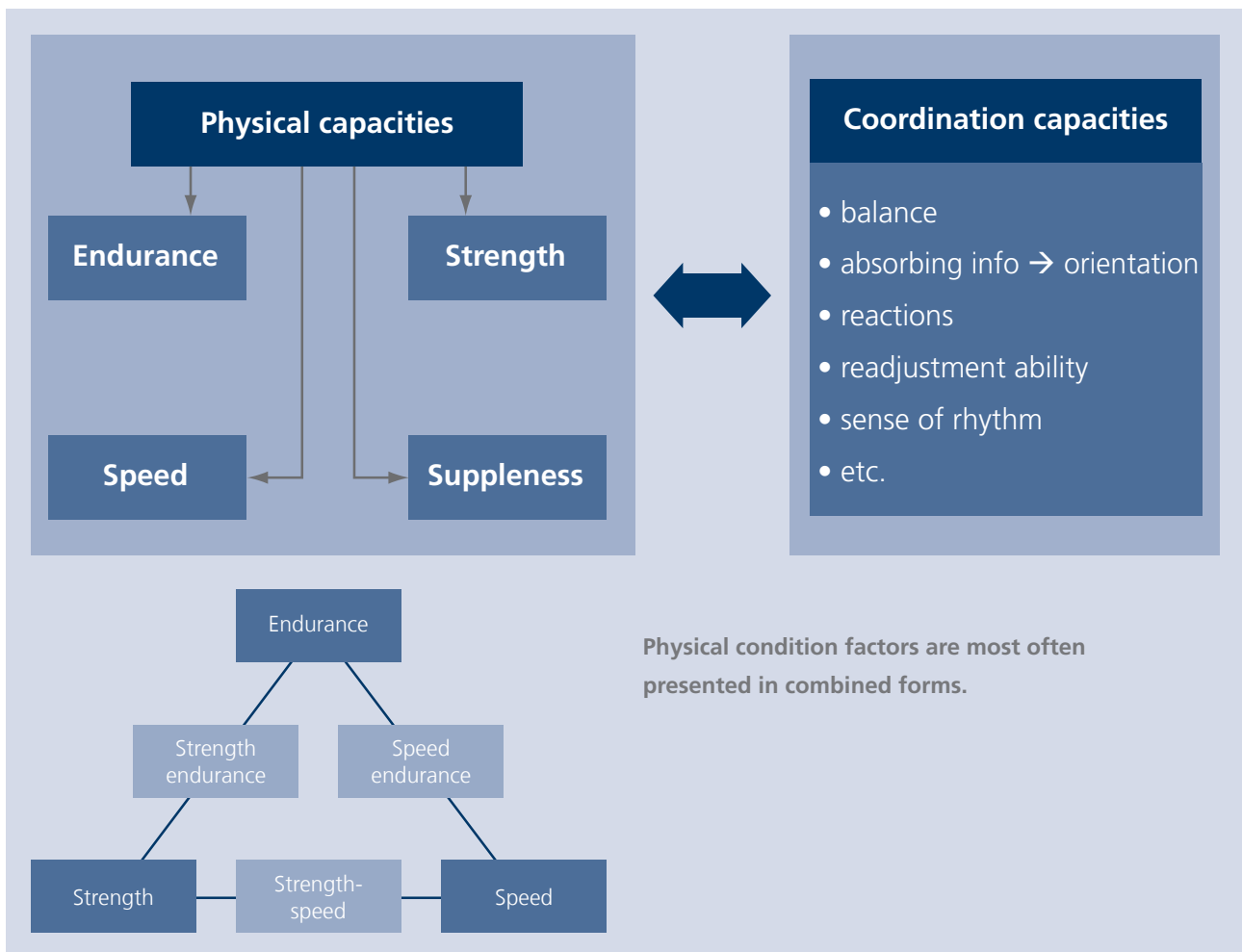
It should be understood that the classification in the diagram below is a simplification. No ability is exclusively an energy process nor, conversely, is it exclusively a central command or nervous control process. There is, rather, a predominance of one category of factors or the other.

Muscles

The human body has over 650 muscles. The size of each muscle varies depending on its function. Muscles represent 40-50% of total body weight. Muscles are either striated or smooth muscles (Dyon, Gaden, 2005).

• Striated muscles

- striated skeletal muscles
 - are used for walking, standing, grasping objects or looking in a particular direction,
 - ensure mobility,
 - are under the control of the central nervous system,
 - control of these muscles is voluntary,
- striated cardiac muscles
 - are responsible for distributing blood around the body,
 - contractions are involuntary.



- **Smooth muscles**

- participate in regulating circulation by means of blood vessels and carry out functions in various organs,
- these muscles, like the heart, are under the control of the neurovegetative system,
- contractions are involuntary.

Skeletal muscles are made up of different types of fibre (Weineck, 2005):

- **Type I fibres – finer, red fibres that have a “slow” contraction** (ST: slow twitch)

- these are mostly involved in slower muscular effort over longer periods of time at a relatively low intensity,
- they use an aerobic metabolism and have a high resistance to fatigue.

- **Type II fibres – white fibres of larger diameter, “fast” contraction** (FT: fast twitch)

these are mostly used for rapid, intense efforts,

- type II a fibres
 - mixed fibres, between aerobic and anaerobic,
 - medium resistance to fatigue,
- type II b fibres
 - purely fast fibres for anaerobic use,
 - poor resistance to fatigue,
- type II c fibres
 - also known as intermediate fibres.

The availability and proportion of the different types of muscular fibres is determined genetically. Appropriate training can transform FT fibres into ST fibres; however the contrary is only possible to a very limited degree.

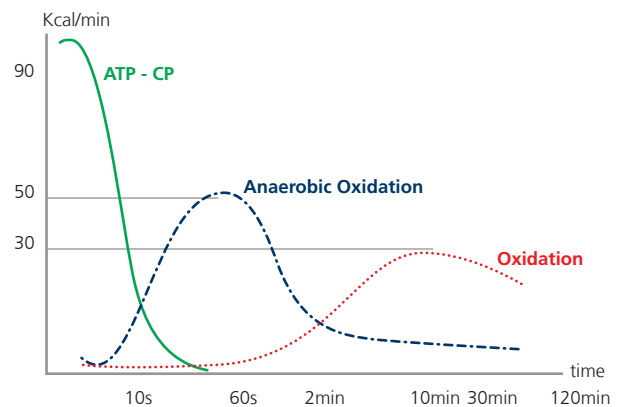
The energy system

Muscular functioning is achieved by the provision of an energy substrate from sources of dietary energy and a natural oxidising agent, oxygen (O₂), to produce the necessary fuel: adenosine triphosphate (ATP).

ATP is synthesised (manufactured) by means of three energy pathways:

- The ATP-CP pathway (rich in energy for explosive muscular contraction of a short duration),
- The glycolytic pathway (breaking down glucose/ carbohydrates),
- The oxidative pathway (process of breaking down substrates with oxygen).

The ATP-CP and glycolytic pathways are the main sources of energy in the first minutes of intensive exercise. For longer efforts, the provision of a considerable amount of energy is required and the oxidative pathway represents the basic form of energy (aerobic metabolism).



(Howald, 1974)

This system of reproduction functions by processing organic capacities through two energy routes: the aerobic and anaerobic systems.

Physical preparation – this is all the organised, hierarchical procedures of training that have the objective of the development and use of the sportsperson’s physical qualities. Physical preparation must be a constant feature of the different levels of sports training and must facilitate the activity’s priority technical and tactical aspects (Pradet, 1996). Physical preparation is conducted through two approaches:

- general physical preparation
 - generally improves the basic motor skills of the goalkeeper (player),
- specific physical preparation
 - develops motor actions that are specific to the position of goalkeeper.

The content of the physical preparation must meet the needs of each age category and also be appropriate in terms of the performance of the individual and the team.

Physical preparation can be organised in three different ways:

- group training: during which the goalkeeper works with the rest of the team.
 - various running exercises, strength-building circuits, small-sided games and shooting practice as well as a variety of other sports activities (orienteering, cycling, etc.),
- “goalkeepers’ section” training: involves specific training, where there are several goalkeepers in the squad (of the same age and performance level) who work together in the same manner.
- individual training: in which the work is adapted to the goalkeeper’s needs.

Physical preparation continues throughout the annual programme. It is not sufficient to just work on the physical aspect during the preparation period (summer and/or winter). It is actually necessary to maintain and improve the goalkeeper’s performance in physical terms during the competition period.

- preparation period:
 - the maintenance programme carried out during the transition period (holidays), in particular by professional players, allows the new season to start with certain foundations in place,
 - the goalkeeping coach has sufficient time to allow intensive physical work (general and specific physical preparation),
 - the three forms of work organisation are utilised,
 - there are few goalkeeping coaches for amateur players. As a result, goalkeepers are often obliged to carry out preparation work together with the other players.
- competition period:
 - specific physical preparation predominates during this period,
 - specific training (section or individual) better meets the goalkeepers’ needs for continuing progress.

It is very important to plan physical preparation in the form of different cycles comprising customised sessions.

The objective of **training** is to develop the changes required in the body to be able to produce an appropriate effort for the relevant sports speciality.

It is possible to associate physical training with specific training. The option to associate and dissociate the two types of work means we can talk about:

- dissociated physical preparation:
 - e.g. physical work in the morning and technical/tactical session in the afternoon,
- associated physical preparation:
 - alternating phases of physical work with phases of specific work,
 - e.g. alternating strength building with technical work in goal,
- integrated physical preparation:
 - both parameters are addressed simultaneously,
 - e.g. strength-building exercises (abdominals) finishing with the goalkeeper making a dive.

Recovery is defined as the time required for physiological parameters to return to rest values.

Recovery is an integral part of training. It can be achieved naturally and/or by being scheduled:

- during a session (in an exercise):
 - recovery during effort,
 - recovery immediately after the effort has finished (between two repetitions, between sets),
 - recovery between different exercises,
- between sessions:
 - delayed recovery after effort,
- after the match,
- after work cycles:
 - recovery after a severe load.

The methods of recovery (*Weineck, 2005*):

- educational methods (the customisation of training),
 - customisation of training
 - well-defined pace of life and training,
 - optimal relationship between effort and recovery at all levels of training, etc.
- medical/biological methods (food, hydration, physiotherapy techniques),
- psychological methods (mental imaging, internal dialogue, etc.)

Sleep is a decisive factor for recovery and restoring the body’s balances.

Before we conclude this brief explanation of the issue of recovery, we should define some terms that are used on a daily basis on the training pitch.

Recovery between two repetitions or two sets can be considered:

- in relation to the activity:
 - active recovery (walking, jogging, juggling the ball, catching the ball),
 - passive recovery (standing, sitting, lying down),
- in relation to heart rate:
 - complete recovery (heart rate returns to 100-110 beats per minute),
 - incomplete recovery (heart rate returns to 130-140 beats per minute).

The presence of a goalkeeping coach and the option to conduct an increasing number of specific coaching sessions allows the ball to be used and technical manoeuvres to be practised in virtually all the goalkeeper's physical preparation (except for those few sessions during the year when this association would be unnecessary, e.g. programme of strength building in the weights room, running at the beginning of the season). Mixed sessions (alternated

or integrated) are also very useful to the goalkeeper.

A spectacular dive can help the goalkeeper forget the exhausting series of jumps that precedes it. It is for this reason that we have decided to show you how to associate using the ball with endurance training, how to work on abdominals together with diving, etc. In this way, even the most difficult forms of training become bearable. If the goalkeeper has his gloves on and is standing in goal, he is ready for anything.

In the following pages, we will offer combinations for all the main forms of motor abilities, allowing us to:

- define them rapidly,
- characterise the abilities from the goalkeeper's point of view,
- show the means for development without and, above all, with the ball.

There follow relevant explanations concerning:

- **Endurance**
- **Strength**
- **Speed**
- **Coordination**
- **Suppleness**



7.1 Endurance

Endurance is the sportsperson's capacity to resist fatigue for long periods of activity without reducing performance or efficiency.

We can consider endurance in different ways depending on (Weineck, 2005):

- the discipline:
 - general endurance (sportsperson's capacity to resist fatigue),
 - specific endurance (related to the specific nature of the position and the capacity to repeat a particular manoeuvre over time without losing quality),
- the production of muscular energy: aerobic endurance and anaerobic endurance.
 - *aerobic endurance*: this is the capacity of the body to withstand efforts for as long as possible without interruption. This type of endurance requires sufficient quantities of oxygen (O_2) for "combustion". This factor assists the capacity to recover between efforts.
 - *anaerobic endurance*: anaerobic endurance is the capacity to withstand intense efforts without the consumption of oxygen (O_2). In this type of very high-intensity endurance, the anaerobic process produces lactic acid that leads to the excessive acidification of the muscle, often reducing the intensity of the effort, indeed even leading to the movement stopping altogether, and with it the sports manoeuvre.
- the duration: short, medium or long.
- the different types of motor ability: strength endurance, strength/speed endurance and speed endurance.

Maximal oxygen consumption (VO_2 max)

VO_2 max is an indicator of the aerobic aptitude and cardio-respiratory endurance of an athlete and is defined as: the maximum volume of oxygen that can be consumed during a continuous and progressively intense effort, essentially using aerobic processes. It is calculated in ml/kg/min by specific effort tests conducted in the laboratory or the field (see tests).

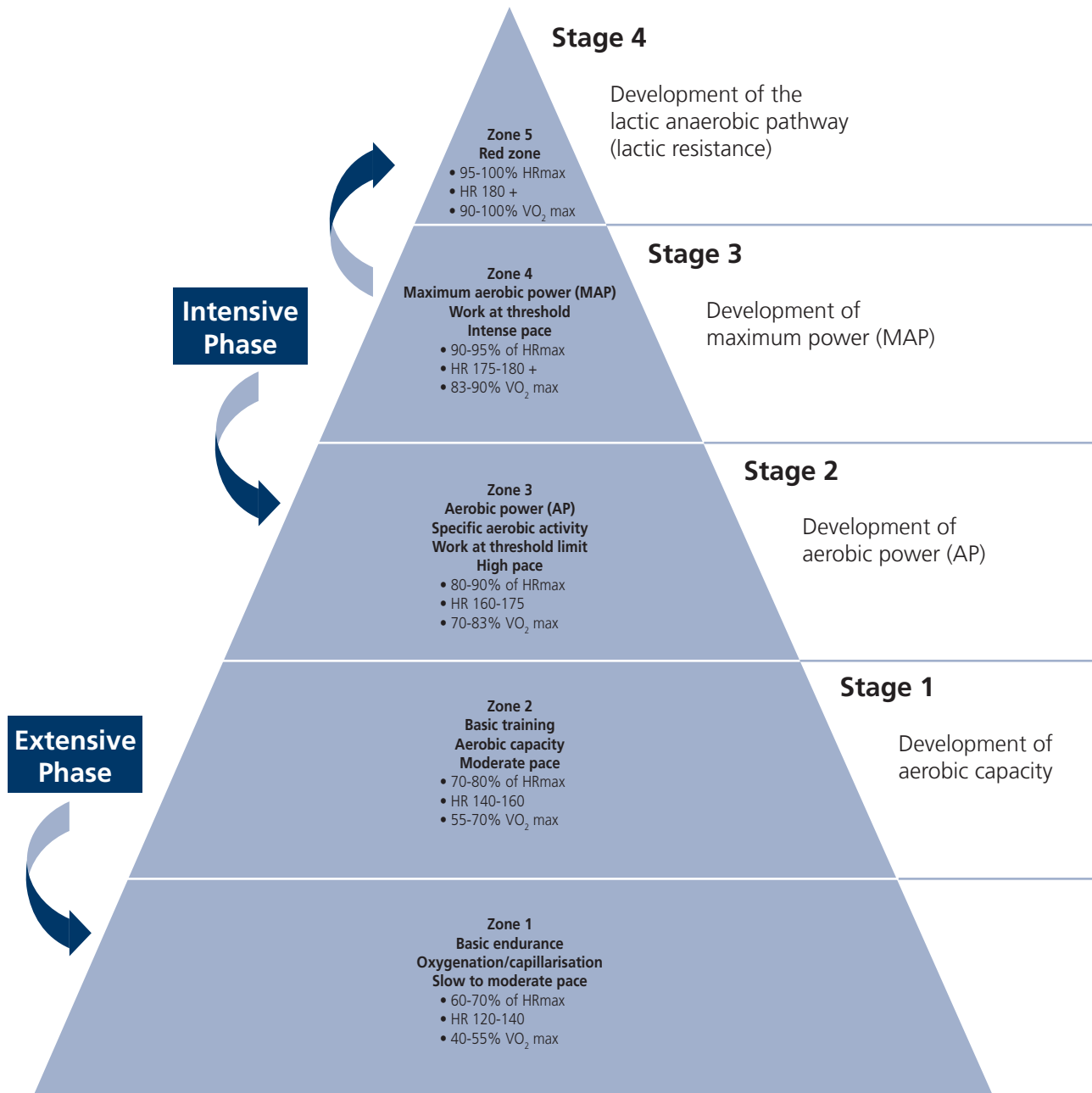
Anaerobic threshold

This is an individual value and can vary greatly. It indicates the concentration of lactate (lactic acid) in the blood for a certain intensity of effort. Energy is essentially produced aerobically with the presence of oxygen up to a concentration of lactic acid of 4 mmol/l in the blood. Above this threshold (anaerobic threshold), the lactic anaerobic process intervenes. The athlete enters into a critical anaerobic resistance zone, known as the "red zone".

vVO_2 max

Velocity at Maximal Oxygen Uptake is the running speed achieved at maximum consumption of oxygen. It represents an important index of physiological capacity at a given time. Knowledge of the anaerobic threshold and the velocity at maximal oxygen uptake (vVO_2 max) provides significant reference information on the quality of endurance training. Thermal regulation (the production of heat) and the loss of liquids (water) can reduce endurance performance and even psychomotor performance (sensation of thirst, increased heart rate, cramp, weakness, over-aggressiveness, etc.). Encouraging drinking during training sessions, particularly during hot weather, reduces these risks. Health, diet, age and mental status are also factors that can affect a player's endurance capacity.

The diagram on the next page shows the different endurance training zones and the pyramid of development stages for metabolic capacities, aerobic and anaerobic endurance.



In the extensive phase, in terms of aerobic capacity, work focuses on the quantitative aspect (long duration). In the intensive phase, in terms of aerobic power, the work is on the qualitative aspect and intensity of effort (shorter duration).

Depending on the objective of the training, we can define "target" training zones that correspond to known levels of intensity as a percentage of the maximum heart rate (HR_{max}) for basic endurance, endurance capacity and even endurance power. The training methods for aerobic and anaerobic endurance are the following:

- continuous or long interval training method (Zones 1 and 2)
 - this involves working without a break in the intensity zone appropriate to the desired objective,
 - exercises:
 - slow to moderate running: jogging (cross-country, in the woods),
 - running with the ball: technical exchanges between two or three players, etc.,
 - technical and technical/tactical exercises in movement,
 - uninterrupted games (7 v 7 / 8 v 8 / 9 v 9 / etc.).

- fartlek type training method (Zones 2, 3, (4))
 - continuous running with changes of pace (a series of accelerations followed by easy phases to allow recovery),
 - this is sometimes called variable pace training in football. Some football exercises are also similar to the fartlek method,
 - exercises:
 - varied running or running over a varied route, with or without the ball; running on the pitch, cross-country, with changes of pace.
- interval training method (splits) (Zones 2, 3, (4))
 - alternated periods of work at a fixed intensity and active recovery phases,
 - exercises:
 - interval running (medium and short),
 - pyramid running (e.g.: 600 m-500 m-400 m-300 m-200 m-300 m-400 m, etc.),
 - games on reduced-size pitches (5 v 5 / 4 v 4 / 3 v 3 / 5 v 4, etc.),
 - games with different numbers on each side, games with a limited amount of touches.
- intermittent training method (Zones 3, 4)
 - 15"-15" / 10"-20" / 15"-30" / 5"-25",
 - a variant of interval training, alternating intense efforts with easier efforts, but in which the resting heart rate does not drop below 150/160 beats per minute between each repetition of the intense effort,
 - exercises:
 - running intermittent training,
 - technical intermittent training (running and technique),
 - mixed intermittent training (jumping, running and technique).
- lactic anaerobic training (volume resistance) (Zone 3, 4):
 - interval method (short and medium, from 20" to 2'),
 - exercises:
 - running, sprints, relays,
 - technical or technical/tactical exercises "under pressure",
 - 1 v 1 / 2 v 2 / 4 v 4 games (individual marking).

The objectives of endurance training

- increasing the maximal consumption of O₂, i.e. VO₂ max,
- developing the oxygen reservoir (aerobic capacity),
- improving cardiac output, the player's "turbo" (maximum aerobic power = MAP)
- improving the anaerobic threshold,
- developing the heart and the general metabolisms of the cardiovascular and respiratory systems,
- improving the functioning of the aerobic and anaerobic energy systems,
- facilitating the recovery process.

7.1.1 Endurance and the goalkeeper

A goalkeeper requires quite well-developed basic endurance in order to be able to carry out training both in terms of volume and intensity. Taking into account the specific nature of the goalkeeper's role and the marked differences between a training session and a match, we can conclude that the goalkeeper's needs in this respect are completely different to those of outfield players. General endurance (long duration endurance) is important for the goalkeeper. Endurance for short durations (45" to 2') and medium durations (2-8') do not correspond to the goalkeeper's profile and so running for 300, 400, 800 m or for 1, 3 or 6 minutes is not useful. Carrying out this kind of work is a waste of time, time that

could be better spent improving other skills more specific to the role of goalkeeper.

We can conduct tests that provide accurate results and use these to customise training at all performance levels. The question is always: "What is needed and what is useful?" Even an amateur goalkeeper who trains once a week must have a certain level of endurance. It is advised that he should do some jogging sessions (cross-country or on the pitch) for 20 minutes at a moderate pace in the preparation period (summer and winter). His heart rate should range between 130 and 160 beats per minute. The rest of the time should be dedicated to specific work. If we have more

training sessions available, a programme must be drawn up, particularly in the preparation period. Depending on the choice of appropriate methods and exercises, an improvement in endurance should be noticeable after three weeks.

Long duration endurance

With goalkeepers, work is conducted on this kind of endurance in the following ways:

- without a ball - running, fartlek,
- with a ball - "goalkeeper's fartlek", games,
- by using other methods.

In order to work using HRmax (maximum heart rate) or $v\text{VO}_2$ max, the goalkeeper must undergo tests (see the Chapter on "Tests"). This allows work to be customised.

1. Continuous training method

Continuous work at a specific percentage of HRmax

A player's work intensity during a training activity is usually expressed as a percentage of HRmax. Here we present the formula that is most frequently used to select training target zones from the known HRmax.

Example: running to develop aerobic endurance, intensity – 80% of HRmax

- HRmax determined from a test is 190 bpm (the theoretical equation of $\text{HRmax} = 220 - \text{age} \pm 10$ beats should not be used for higher player categories),
- Training heart rate: $190 \times 0.80 = 152$ bpm

Other methods and formulae are also used to define training intensities in football. In particular, maximum heart rate reserve (MHRR), anaerobic threshold and $v\text{VO}_2$ max (velocity at maximal oxygen uptake) are used. Which of these are used depends on the experience and preference of the coach and training staff.

Continuous work at a specific percentage of $v\text{VO}_2$ max

Example: running to develop aerobic endurance

- intensity – 70% of $v\text{VO}_2$ max, duration – 20 minutes
- $v\text{VO}_2$ max established by testing (VAMEVAL or TUB II tests) - 16 km/h

COMPLETION TIMES – $v\text{VO}_2$ max: 16.0 km/h							
% $v\text{VO}_2$ max	100 m	200 m	300 m	400 m	800 m	1200 m	1600 m
65	0'34"6	1'09"2	1'43"8	2'18"4	4'36"9	6'55"3	9'13"8
70	0'32"1	1'04"2	1'36"4	2'08"5	4'17"1	6'25"7	8'34"2
75	0'30"0	1'00"0	1'30"0	2'00"0	4'00"0	6'00"0	8'00"0
80	0'28"1	0'56"2	1'24"3	1'52"5	3'45"0	5'37"5	7'30"0
85	0'26"4	0'52"9	1'19"4	1'45"8	3'31"7	5'17"6	7'03"5

(Extract of table from Cazorla – Léger, 1993)

Conclusion: the goalkeeper should run 3,730 metres in 20 minutes.

Running according to maximum heart rate reserve

Example: intensity – 80% based on maximum heart rate reserve rather than HRmax.

- HRmax determined by testing is 190 bpm,
- measurement of resting heart rate: 60 bpm,
- calculation of maximum heart rate reserve:
(HRmax – HRrest) $190 - 60 = 130$
- multiply this number by the percentage of the player's maximum: $130 \times 80\% = 104$
- add the resting heart rate: $104 + 60 = 164$.

The value used for running is 164 bpm

The use of a heart rate monitor allows:

- heart rate to be checked during the exercise so that speed can be constantly adjusted to match the objective for the session,
- observation of cardiac recovery,
- analysis of the heart rate curve on a chart.

Without a heart rate monitor, we can only check the heart rate at the end of the running session, which is too late to correct the intensity.

Continuous work in relation to time or distance

- above a certain performance level, it is not sufficient just to specify running 20 minutes or 5 km without providing additional information,
- the goalkeeper completes the run, but we cannot determine the influence of the work conducted (whether positive or negative).

Alternative methods

In order to provide interest for the players and introduce variety into the preparation programme, activities and sports that are considered very different to football can be introduced:

- summer – orienteering, cycling, triathlon, canoeing, mountain walking,
- winter – cross-country skiing, skating, ice hockey.

There are several advantages and effects of this work:

- players get to know each other better,
- improved team spirit.

Working on endurance with the team (using a ball)

Games:

- various games involving possession of the ball on a sufficiently large pitch with the participation of the goalkeepers (as outfield players),
- this work allows improvement of:
 - endurance (the goalkeeper is constantly involved in a natural way),
 - the technical/tactical aspect (playing the ball with feet, an alternative view of the game).

Indirect development:

In some situations, the goalkeeper is subject to an exhausting workload without the main coach realising it:

- shooting practice
 - the goalkeeper is alone in the goal facing eight outfield players,
 - in order to give the outfield players sufficient practice, they each take 10 shots at goal,
 - while each player takes 10 shots, the goalkeeper has to save 80 balls (he has to dive and raise his XX kg body weight each time),
 - there are several other exercises of this type in addition to shooting practice,
- small-sided games:
 - these are 2 v 2, 3 v 3, 4 v 4 games,
 - all moves begin and end with the goalkeeper,
 - the goalkeeper participates actively in the game (playing the ball with feet),
 - groups of outfield players change, but the goalkeepers stay in place.

2. Fartlek

This type of exercise is categorised between continuous and interval training. It allows us to work on both endurance and maximum aerobic power. The duration of the fartlek session can vary between 15-20 minutes. This method can be practised on the pitch or during a run in the country.

“Goalkeeper’s fartlek”

Experience shows us that goalkeepers do not like running too much. By using the fartlek principle, we can construct exercises that approximate the goalkeeper’s main activities. We can associate running with technical manoeuvres, strength building or coordination exercises. This is called the “goalkeeper’s fartlek”:

- the goalkeeper is constantly in movement for 15-30 minutes and alternates the exercises,
- the exercises correspond to the intensive phase (the goalkeeper conducts them in a dynamic way, but not at 100%),
- slow running is used for recovery.

Different content can provide:

- goalkeeper’s fartlek with warm-up exercises (endurance in the warm-up),
- goalkeeper’s fartlek with technical manoeuvres (endurance for manoeuvres),
- goalkeeper’s fartlek with strength building, coordination, etc.



Example of an endurance fartlek – warm-up



Example of an endurance fartlek – strength building

- Preparation period
One training session:
 - 15-20 minutes,
 - 4-5 minutes recovery between the sets,
 - 3 sets,
 - 150 HR.
- Competition period
One training session:
 - start of the week (Monday),
 - 20 minutes or 2 x 15 minutes (with technical manoeuvres),
 - completed with technical work.

3. Intermittent exercises (intervals)

Without a ball

- these are exercises interspersed with recovery periods,
- the intervals used are 30"-30", 15"-15", 10"-10" or 5"-5" (exercises using long intervals are not useful to goalkeepers),
- intensity can vary from 105-130% of $\dot{V}O_2$ max,
- the Cazorla-Léger tables show the distance that the goalkeeper should run,
- most appropriate for goalkeepers is to carry out 3 x 6 minutes of:
 - 15"-15" at 110% of $\dot{V}O_2$ max
 - 10"-10" at **120%** of $\dot{V}O_2$ max

DISTANCES – $\dot{V}O_2$ max: 16.0 km/h							
% $\dot{V}O_2$ max	10"	12"	14"	15"	16"	18"	20"
100	44.4	53.3	62.2	66.7	71.1	80.0	88.9
110	48.9	58.7	68.4	73.3	78.2	88.0	97.8
120	53.3	64.0	74.7	80.0	85.3	96.0	106.7

(Extract from table, Cazorla – Léger, 1993)

With a ball

- the exercises described above can be carried out with a ball,
- in the work interval, coordination elements or jumps can be added, finishing with a dive,
- the goalkeeper must complete the distance in the specified time at the appropriate speed (no sprinting),
- the exercise lasts 4-8 minutes with 10" – 10" intervals,
- 2-3 sets are conducted with 5 minutes recovery.

Circuit training with strength building

- the number of stations can vary (10-16) depending on the required workload (circuit for upper body or general circuit),
- the most commonly used interval is 30"-30",
- 2-3 sets with 5 minutes recovery.

Intermittent exercises of 5"-25", 5"-20"

- various stations are used (jumps, movements, diving on a stationary ball, etc.)
- effort is conducted at maximum speed (sprint, $\dot{V}O_2$ max not taken into account)
- 3-4 sets, each of a duration of 6-8 minutes.

Speed endurance, strength endurance and strength/speed endurance

It should be noted that the repetitions of movements during a training session require a certain endurance by the goalkeeper, in line with his level of performance. The majority of exercises conducted with the goalkeeper in a specific training session contain several movements and technical manoeuvres (except for exercises based purely on speed). The goalkeeper has to move quickly (speed), with efficiency (coordination) and must spring into a dive, then raising his body weight of XX kg to return to the start (strength). Furthermore, he must be able to repeat this sequence (endurance). The conclusion is quite simple: there is a specific manoeuvre endurance related to the position of goalkeeper which can be described as "**strength/speed/coordination endurance**".

- Series of balls
Example training session:
 - 6 balls (15-20 seconds) at maximum speed,
 - recovery (1 unit of work to 2-3 units of recovery),
 - maximum 10 sets of balls (full training for high-level goalkeeper) after warm-up.
- In the preparation period: conducted in the 3rd and 4th week (example for a 6-week preparation period).
- In the competition period: conducted on Tuesday or Wednesday.

Example training session (below): development of specific endurance using three professional goalkeepers (one goalkeeper works while the other two recover).

Specific goalkeeper training

Equipment: balls, medicine ball, heart rate monitor.

Warming up and preparing for the session:

- individual warm-up without the ball (5 minutes)

Exercises

1-2



Catching the ball, standing

- 10 balls from a volley
- 10 balls from a half-volley



Goalkeeper sitting down, catches the ball to left and right

- 8 balls on the ground (kicked)
- 8 balls at medium height (thrown)

Exercises

3-4



Dives (to the same side)

- ball on ground
- 4 balls on each side



Dives (left/right)

- ball on ground
- 4 balls on each side, alternating sides

Exercises

5-6



Dives at medium height in the form of a relay (A – goalkeeper 1, B – g. 2, C – g. 3)

- 6 balls on each side



Move along the goal and dive for the medicine ball thrown to the goalkeeper.

- total of 10 dives

Exercise 7

6 dive repetitions to left and right.

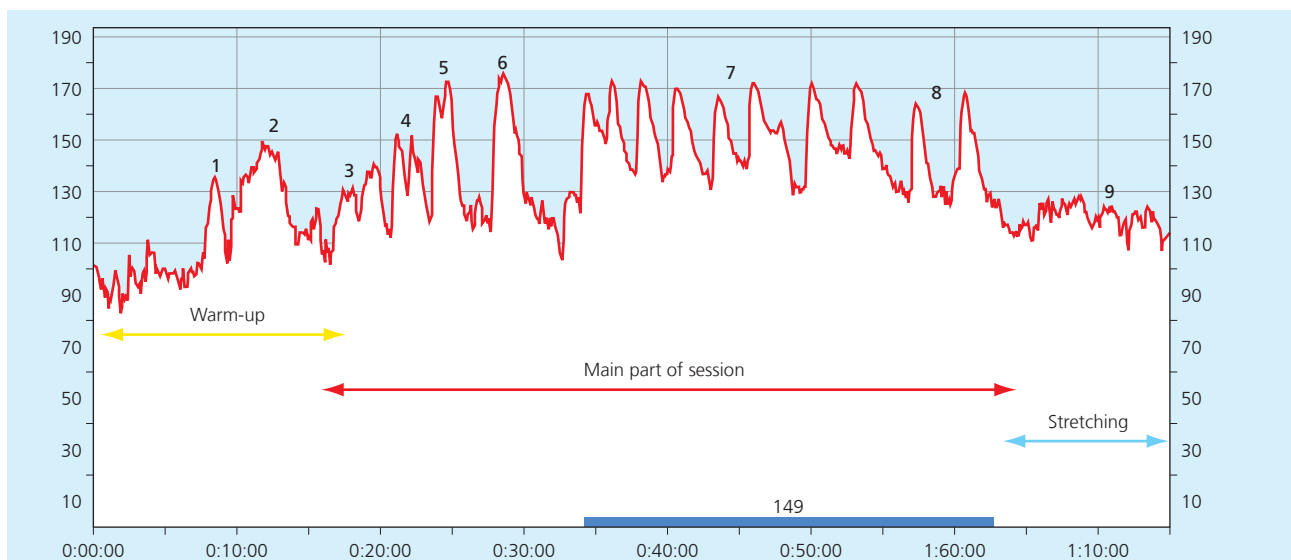
8 sets:

- ball on ground ... 2 sets,
- ball at medium height ... 2 sets,
- ball with bounce ... 2 sets,
- ball deflected with opposite hand ... 2 sets.

**Exercise 8**

Dives at the feet of the coach for stationary balls (distance between the balls, 2-5 metres)

- 2 sets of 6 balls

**Exercise 9 - Stretching***Goalkeeper A*

- training duration: 75 minutes,
- HRmax – 172, HR average – 149 in the main part of the session (29'),
- the HR curve and how it changes can be examined in relation to the exercises conducted.

7.1.2 Endurance training for children and adolescents

There is no particular age at which to start working on the aerobic capacities of children and adolescents.

Endurance training for children and adolescents must in all cases take into account the relative weakness of their aerobic capacities: the choice of methods and the training content, as well as the frequency of the workloads, must be adapted to their level of physiological development (Weineck, 2005).

Football school, ages 6-10

- group training:
 - children aged under 10 develop endurance in a natural way by playing outside, playing games at school and in the street (including mini-pitches), by other sports (cycling, skating, rollerblading, etc.), as well as, of course, through football training.
- specific training:
 - the time allocated to specific work is dedicated solely to technical pre-preparation (learning the goalkeeper's manoeuvres).

Pre-training, ages 11-14

- group training:
 - various games, technical circuits (aerobic, 20-30 minutes),
- specific training:
 - broadening the repertoire of specific manoeuvres; this allows work on sequences of simple exercises and combinations of manoeuvres to develop the goalkeeper's specific endurance,
 - 11-a-side matches,
 - goalkeeper's fartlek (10', 15'), low intensity.

Training, ages 15-18

- group training:
 - developing endurance with the team: in the preparation period work is on endurance capacity, whereas in the competition period, work is in the form of intermittent exercises (5" -20" is useful for goalkeepers),
 - all forms of practice on retaining possession of the ball,
 - small-sided games,
 - shooting practice.

- specific training:
 - from the age of 16, we can use the development methods described for adults, gradually increasing the intensity (goalkeeper's fartlek, interval exercises: 10"-10"),
 - more complex exercises (jumping, various dives after movement) characterise the strength/speed endurance work that goalkeepers' need, in particular during the training process,
 - care must be taken to observe how a goalkeeper adapts to changes of work intensities as well as taking into account the goalkeeper's feedback and any problems he may have.



7.2 Strength

Strength is the capacity of an individual to overcome or oppose a load by muscle contractions.

Strength should be developed and trained in footballers in a qualitative and specific manner in order to improve:

- speed,
- starting strength,
- jumping and power,
- kicking strength,
- strength in 1-on-1 challenge,
- self-confidence,
- prevention of injury to joints, muscles and ligaments.

Strength depends on several parameters (Cayla, Lacrampe, 2007), including:

- the type of muscle fibres making up the muscle:
 - slow twitch fibres, fast twitch fibres, intermediate fibres,
- the number of myofibrils making up the muscle fibre,
- intramuscular coordination
 - intramuscular coordination is the sportsperson's capacity to recruit a significant number of motor units during an action and to synchronise their contraction,
- intermuscular coordination
 - optimising muscular contraction also depends on the sportsperson's capacity to simultaneously contract synergistic muscles while relaxing antagonistic muscles.

Types of muscle contraction

The contraction of a muscle depends on its composition. A muscle features two types of muscle fibre, classified by the chemical characteristics of the tissue that detects certain aerobic or anaerobic enzymes. Muscles can carry out work in three different ways depending on the system of muscular contraction (Weineck, 2005):

- isometric contraction
 - a static contraction in which the length of the muscle remains constant. Muscular tension varies depending on the load,
- anisometric contraction (isotonic)

- by dynamic movement, tension is constant while the muscle length varies,

- auxotonic contraction
 - the muscular contraction represents a combination of isometric and isotonic/anisometric stresses,

"Types of muscular work, systems of contraction, mode of muscular contraction" – these are all synonyms used by various authors to characterise the following contractions:

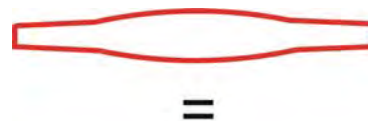
- isometric
- concentric
- eccentric
- plyometric

Isometric contraction

is characterised by a muscular contraction in which the muscles do not shorten

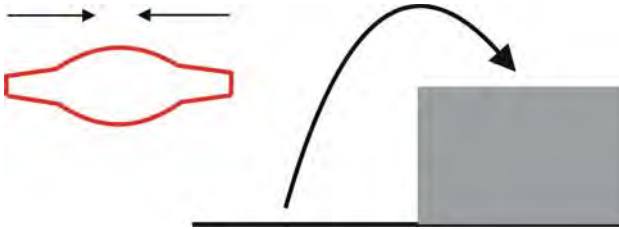
Example:

"chair" position (see image)



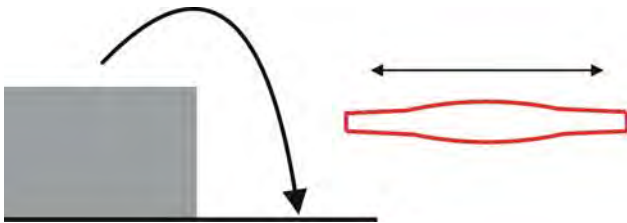
Concentric contraction

- the muscle shortens (insertion points get closer together)
- Example: throwing a medicine ball, moving the body weight in a particular direction



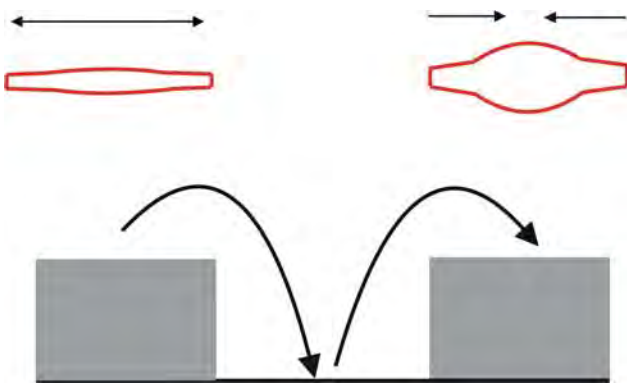
Eccentric contraction

- this is characterised by an increase in the length of the muscle (stretching)
- Example: cushioning a jump



Plyometric contraction

- this is known as the “stretching/shortening” cycle,
- there is no pause between the two phases,
- Example: a series of jumps



Strength

- general strength is the manifestation of the strength of all the muscle groups, irrespective of the sports discipline,
- specific strength is the typical manifestation of the strength of the muscles or muscle groups directly involved in the sports discipline concerned.

Strength never manifests itself in a “pure” form, but rather through a combination of physical factors that condition performance. The following forms can be defined (Weineck, 2005):

- **maximal strength**
 - the greatest force that a player can produce in a dynamic or static form to overcome a resistance,
- **speed-strength**
 - capacity to mobilise the body, parts of the body or objects, with the greatest speed possible,
 - starting strength means the capacity to generate the development of maximal strength at the start of the muscular contraction,
 - explosive strength means the capacity to realise the greatest increase in strength in the shortest time possible,
- **strength endurance**
 - the capacity to resist muscle fatigue over long duration strength efforts. A specific form of strength endurance is speed-strength endurance. This is a determining factor in the quality of performance for sports in which many movements are conducted using speed-strength and/or in which explosive movements of the limbs are repeated. It is important for goalkeepers, particularly in training.

Different training methods (Cayla, Lacrampe, 2007)

- concentric methods:
 - natural concentric: working using the body weight (steps, push-ups),
 - variable loads: the load is altered (increasing or decreasing load, pyramid form),
 - contrasting load method: the type of work consists of alternating a heavy load with a light load (bench presses and throw-outs),
 - composite method: this method consists of the player conducting an analytical movement before (pre-fatigue) or after (post-fatigue) a global exercise,
- eccentric methods:
 - natural eccentric (going downstairs, jumping down),
- isometric methods:
 - work at maximal isometric strength (maximum constraint which the sportsperson can withstand),
 - isometric endurance work (maintaining an isometric contraction for as long as possible),

- combined methods:
 - static/dynamic: carrying out a dynamic movement in which there is a phase of isometric maintenance,
 - plyometrics (jumping hurdles, clap push-ups),
 - Pletnev: a series of 3-4 contraction methods for the same exercise.

7.2.1 Strength and the goalkeeper

Virtually all the goalkeeper's actions on the pitch involve strength in its various modes and manifestations (maximal strength, speed-strength, strength endurance). The goalkeeper's interventions are generally very short but very forceful. These interventions are repeated many times in training, whereas in a match the goalkeeper may intervene after a period of "inactivity". This is the paradox of the position of goalkeeper, that the player must be able to intervene repeatedly or occasionally without losing efficiency, determination or aggressiveness. It is very important to work on a goalkeeper's strength, but this certainly must not be to the detriment of other physical capacities or technical skills. The goalkeeper must be strong but not a bodybuilder.

Strength building is an integral part of physical preparation and can be conducted in all types of session (dissociated or mixed). However, the need to adapt to the team's programme may influence the choice of exercises, number of repetitions, recovery, timing of the strength exercise, etc. We have more time to work during the preparation period than the competition period. Annual planning should be carried out to establish the various strength-building programmes (several sessions) because isolated sessions do not offer satisfactory, durable results.

The different options for strength building are as follows:

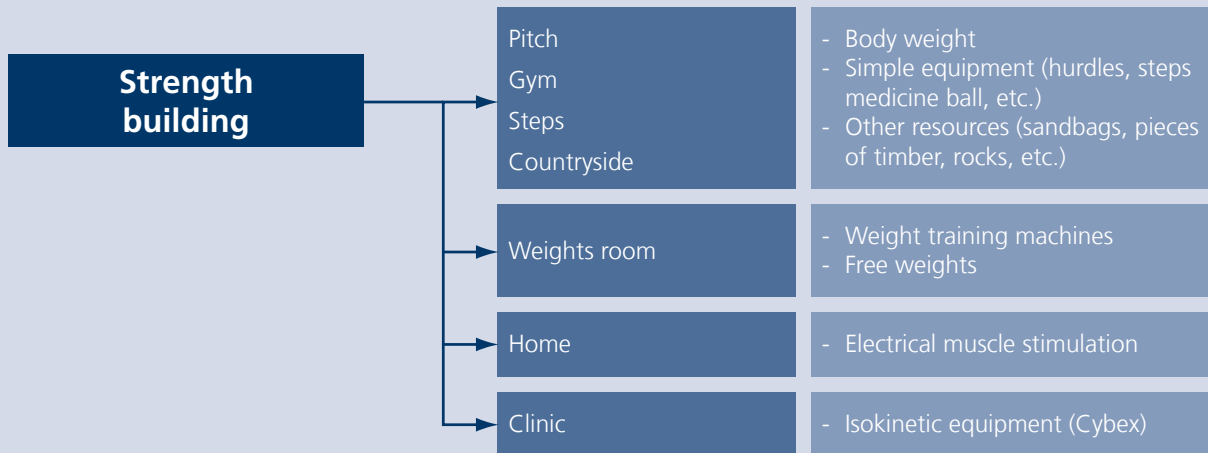
- following a programme that is conducted through:
 - dissociated physical sessions (weights room, steps, on pitch, etc.)
 - mixed sessions:
 - alternated phases (e.g. strengthening abdominals, technical work - alternated several times),
 - alternated circuits (e.g. series of abdominal stations and technical stations),
 - integrated (e.g. series of crunches finishing with a dive),
- short strengthening exercises at the end of a session (especially crunches, oblique exercises and upper body),
- indirect reinforcement:
 - Example:**
 - technical work on aerial balls (4 sets of 10 repetitions),
 - the physical aspect is not targeted; walk back to position in goal,
 - taking into account all the jumps that the goalkeeper has to make to catch the ball "at the highest point" (often maximal), he works indirectly on jumping strength,
- strength building by fun activities in the form of competition:
 - objectives can be set, whatever the technical work,
 - if a manoeuvre is not successful, this can be "paid" for by a strength-building set:
 - Example:**
 - technical work on dives,
 - the goalkeeper does five push-ups for every dropped ball.

Remember!

- Strength building should be carried out on a continuous basis.
- The maximum loads need to be defined so that work can be customised (tests).
- A good warm-up is vital.
- Stretching should be carried out during and at the end of the session.
- Strength-building programmes must be regularly evaluated and adapted in order to ensure their effectiveness and to draw appropriate benefits.



Where can we work on the goalkeeper's strength?



In practical terms, we can consider:

- strength building on the pitch,
- strength building in the weights room,
- other means of strength building.

7.2.2 Strength building on the pitch

There are several advantages to strength building on the pitch:

- easy to organise,
- few requirements in terms of equipment or special resources,
- easy to manage several goalkeepers at the same time.

The most salient advantage is the option to associate the goalkeeper's strength building with technical work. We can create exercises of varying difficulty. The physical impact on a muscle group, as well as on the goalkeeper's body as a whole, can be influenced by modifying the number of repetitions, number of sets and recovery time. There follow some explanations on how to formulate exercises.

Strength building without a ball

- the type of sessions (see previous page) must meet the strength-building objectives,
- the exercises and their basic characteristics:
 - 1 goalkeeper working alone, 2 goalkeepers, 3 goalkeepers, etc.
 - without equipment (body weight) or with equipment (medicine ball, steps, hurdles, etc.),

- number of repetitions, number of sets and recovery time.

- example exercises:

- strength-building circuit with a certain number of stations (10, 12, etc.)

- alternating muscle groups at the stations,

- working method: intermittent work (e.g. 30" work + 30" recovery) repetition method (number of repetitions and the recovery time determined in advance),

- reinforcement block (using repetition method)

- work concentrated on a particular muscle group,

- short strength-building sets (crunches, upper body, oblique exercises, improving core stability) in the same block.

Strength building with a ball (association with a technical manoeuvre)

- simple exercises:

- strength building + technical manoeuvre (10 crunches + dive),

- complex exercises:

- a sequence of several simple exercises (crunches + dive + push-ups + dive),

- exercises with movement (crunches + sprint + dive).

In the exercises described above, the following two working methods are used:

- repetition method (the most frequently used):
10 crunches + dive,
- interval method: 30" crunches + dive.

Strengthening the abdominal muscles

The abdominal muscle group is made up of four distinct muscles, namely the rectus abdominis, external oblique, internal oblique and transversus abdominis.

- these protect the intestines and organs of the abdomen from external forces,
- they assist the diaphragm muscles in respiration,
- they stabilise the torso, balance the pelvis and maintain posture,
- they are the connection between the upper and lower parts of the body, allowing transmission of force, (see also "core stability" further on).

Abdominal muscles mostly consist of slow twitch fibres. It is not appropriate to introduce any exercises that attempt an explosive movement as this represents a dysfunctional load. The player should hold his breath during the execution of the exercise. The retroverted position of the pelvis has the effect of "disconnecting" the psoas muscles. Many people still incorrectly conduct crunches by hooking their feet under a support, legs semi-bent, thus giving a strong point of support to the psoas that pulls the torso upwards by exercising an extreme force on the lumbar part of the spine (thus risking back pain).

Exercises without a ball (traditional strength building)

The abdominal muscles can be trained dynamically, statically and statically/dynamically:

- dynamic method:

Example:

strengthening the rectus abdominis muscle

- repetition method:
 - 5 x 20 repetitions,
 - 1:1 recovery time,
 - 2-3 sets,
 - 3' between sets,

– interval method (intermittent work):

- working time 30" – 5 times,
- 1:1 recovery time,
- 2-3 sets,
- 3' between sets,

(Same exercise used for oblique muscles of the abdomen).

- static method:

– intervals of 20" to 40" used,

- static/dynamic method (alternating dynamic and static phases):

Example:

strengthening the rectus abdominis muscles

- dynamic repetitions + 5" in static mode,
- repeat 6 times,

When working on the oblique muscles, it is preferable to first work on one side and then the other.

- exercise of a sequence of repetitions (considerable impact on the strength endurance of the abdominal muscles),

Example:

the 3 sets of crunches are carried out one after the other:

1. 10 repetitions (straight) + 10 repetitions (right side oblique) + 10 repetitions (left oblique),
2. 20 repetitions (straight) + 20 repetitions (right side oblique) + 20 repetitions (left oblique),
3. 30 repetitions (straight) + 30 repetitions (right side oblique) + 30 repetitions (left oblique).



Exercises with a ball (association with a technical manoeuvre)

- exercises without movement (conducted on the spot)
 - a technical manoeuvre is added after a certain number of repetitions,
 - as the example below demonstrates, the choice of method, mode of working, number of repetitions, number of sets and recovery time are all determining factors.

Example:

- the objective of the exercise is to complete a total of 80 crunch repetitions (rectus abdominus muscles),
- each set finishes with a dive,
- there are several variants of the exercise, (sets with different numbers of repetitions)



1	2	3
<ul style="list-style-type: none"> • 10 repetitions + dive • change goalkeeper • 1:1 recovery time • 8 sets 	<ul style="list-style-type: none"> • 20 repetitions + dive • change goalkeeper • 1:1 recovery time • 4 sets 	<ul style="list-style-type: none"> • 40 repetitions + dive • change goalkeeper • 1:1 recovery time • 2 sets
impact on muscles: low	impact on muscles: medium	impact on muscles: medium/high
impact on the goalkeeper's body at the end of the exercise: low		

This form of exercise allows us to observe the change of the impact on the abdominal muscles. However, the exercise remains easy overall with a low impact on the goalkeeper's body. If we want to increase the load on the abdominal muscles and adjust the impact on the body, the exercise should take the following format:

1	2	3
<ul style="list-style-type: none"> • 10 repetitions + dive • 8 sets 	<ul style="list-style-type: none"> • 20 repetitions + dive • 4 sets 	<ul style="list-style-type: none"> • 40 repetitions + dive • 2 sets
continuous method (no rest)		
impact on muscles high		
impact on the body at the end of the exercise • very high	impact on the body at the end of the exercise • medium	impact on the body at the end of the exercise • low

If you want to considerably increase the impact on the goalkeeper's body, then in Variant 3 above the goalkeeper should dive several times consecutively (additional leap and having to raise XX kg bodyweight).

exercises with movement

- after a certain number of repetitions, we add in movement and a technical manoeuvre,
- the explanations given above also apply to exercises with movement. The movement should be considered as an additional effort.

Example:

1. 10 crunches
 2. sprint
 3. dive for a ball
 4. repeat on other side
- Sequence of 6 dives



Strengthening the back muscles

Rapid movements of the torso and continuous compensation for torso movements are only possible by the complex interaction of all the muscles of the torso and pelvis (abdominal muscles, hip extensor muscles, back muscles). This highlights the need to strengthen the back muscles, an issue that is often overlooked – we more frequently work on the abdominal muscles.

The following exercises can be used to reinforce the back muscles:

- **core stability exercises** (Photos 1a, 1b)



1a



1b

- **exercise to flex the upper body and shoulders**

backwards: (Photos 2a, 2b)

- **without a ball**

- 10-20 repetitions,
- 3 sets,
- if the goalkeeper is not used to these exercises, build them up gradually.



2a



2b

- **with a ball or medicine ball** (Photos 3a, 3b)

- pass the ball to the coach or between two goalkeepers lying on their fronts, face-to-face,
- 10-20 repetitions without touching the ground with the hands,
- 3 sets.

The exercise can also finish with a specific manoeuvre (aerial ball, dive). A greater number (8-10) of shorter sets can also be used (5 repetitions of flexing back and shoulders + manoeuvre).



3a



3b

Strengthening the upper body

There exists the impression that the arms and hands are used for push-ups or throwing a medicine ball, and that these exercises “strengthen the arms”. Taking the example of push-ups, this is not entirely true because push-ups use abdominal, pectoral and triceps muscles. The movement as a whole must always be taken into account.

The strengthening of the upper body entails working on the abdominal muscles, back muscles, pectorals, shoulders, upper arms and forearms. We have already examined strengthening abdominal and back muscles in the preceding pages. For the other muscle groups described, the principles for formulating exercises are identical to those for abdominal muscles. There is also the option to combine the strengthening of several muscle groups into one exercise.

Strengthening exercises using a medicine ball are an essential part of a goalkeeper’s training. This can take several forms: catching an aerial ball or a ball in front of the head, diving with the ball, etc. the size and weight of the medicine ball should be appropriate. It is advisable for the medicine ball to be the same size as the football used. The goalkeeper



should be fully focused to avoid unnecessary injury and should never attempt an overarm throw with a medicine ball. The simultaneous or alternating use of a medicine ball and a standard football requires the goalkeeper to be alert, careful and, above all, adaptable.

Strengthening the lower body

If a goalkeeper wants to be able to jump to stop a ball going into the top corner of the goal, he must have “good legs”. The strength-building exercises scheduled for the muscle groups of the legs must give the goalkeeper sufficient strength so that he can jump effectively. The exercises must also help the goalkeeper to be quick, not just once but whenever required. This demonstrates the need to carry out regular work on strengthening the legs.

Exercises without a ball (traditional strength building)

There are many ways of working on strength on the pitch using simple equipment (hurdles, steps, etc.), with the aid of a team-mate (pushing, carrying, etc.) or simply using the goalkeeper’s body weight. Training sessions can comprise the following:

- strength-building circuit:
 - 10-16 stations,
 - 30” working time and 30” recovery time (passive or active),
 - alternate muscle groups,
 - 2-3 sets with 3 minutes recovery between sets,
- stations using repetition method:
 - various jumps over hurdles (6-10),
 - using plyometric contraction (sequence of jumps without stopping),
 - using concentric contraction (jumps interspersed with rest),
 - 4-6 sets of 4 completions – 3 minutes recovery (passive or active) between sets,
- skipping:
 - in the warm-up – 50 or 100 repetitions on the spot (both feet, one foot, forwards, backwards),
 - in movement (to the middle of the pitch).

Exercises with a ball (association with a technical manoeuvre)

What exercises are drawn up depends on the coach’s imagination. The repetition method is the most suitable.



Exercises can be conducted:

1. on the spot (image 1):
 - step + dive,
 - isometric position + catching the ball in front of the head (aerial ball, etc.),
2. with movement in the strength-building phase (image 2):
 - jumps over hurdles + dive
3. as a more complex combination (image 3):
 - strength building + movement + technical manoeuvre,
 - jumps + get to position in goal + dive

Example:

- plyometric exercise for 3 goalkeepers (1 goalkeeper working, 2 resting),
- 6 jumps forward over hurdles + dive for a ball at medium height,
- total of 120 jumps and 20 dives.

Exercise variants		
<p>Variant 1</p> <ul style="list-style-type: none"> • 6 jumps + dive • change goalkeeper • 1:2 recovery time (completions by two other goalkeepers) • 10 completions on each side • 4 minutes recovery between sides 	<p>Variant 2</p> <ul style="list-style-type: none"> • 6 jumps + dive repeated twice • change goalkeeper • 1:2 recovery time • 10 completions 	<p>Variant 3</p> <ul style="list-style-type: none"> • 6 jumps + dive repeated 4 times • change goalkeeper • 1:2 recovery time • 5 completions
Speed-strength	Speed-strength endurance	
Physical impact at the end of the exercise • medium	Physical impact at the end of the exercise • high	Physical impact at the end of the exercise • very high
Quality of execution • good	Quality of execution • medium	Quality of execution • poor

If we work with 2-4 goalkeepers, the recovery time is determined by the completions by the other goalkeepers. A slow walk behind the goal back to the start position generally corresponds to the desired recovery time. Make sure the correct recovery time is implemented for a

goalkeeper working alone. Organising exercises for several goalkeepers (6-10) requires further consideration. If all the goalkeepers have to work together, the exercise may either last too long or not offer sufficient repetitions. In this case, the goalkeepers can be divided into two groups. The

first group works with the coach while the second group does the same exercise without a ball or with a dive onto a stationary ball. We can change the complexity of the exercises on the pitch, in this way varying the difficulty. A particular muscle group can be worked on several times during the exercise and then worked on again with a specific action. This builds the specific strength required for the position of goalkeeper.

Example:

- quadriceps
 - groups of jumps with feet together over hurdles (4-6 jumps),
 - push a team-mate (over 10 metres),
 - sprint 5-8 metres (to take up a suitable position),
 - dive for a ball at medium height,
- calves:
 - up and down on tips of toes with Powerbag on shoulders (or same exercise in isometric form)
 - jump over hurdles with legs straight (6-8 times),
 - deal with a ball crossed in.

A loaded weight bar can also be used (contrasted method), but transporting it on to the pitch may be a problem. In order to carry out exercises of this type, we must know the maximum load and work at a percentage of this maximum.

Example:

- quadriceps:
 - half squat (weight bar)
 - jumps (4-6)
 - dive for a ball at medium height (aerial ball)

Core stability (Stabilisation)

Core stability involves improving strength around the pelvis. The utility of this technique is universally recognised in terms of optimising performance as well as for maintaining health. The core region is an important transfer point allowing force to be transmitted between the upper and lower body. The correct positioning of the pelvis must be learned in order to build strength. This helps, in particular, in taking up a strong position and avoiding niggling injuries. Core stability is often considered to be just strengthening of abdominal and lumbar muscles. However, there are four sides to the body, and the role of the abductors that ensure lateral stability should not be overlooked. Furthermore, the adductors stabilise posture,

particularly when the weight is on one leg, and assist with changes of direction (Pauly, 2005).

Working on core stability means strengthening the muscles that stabilise the torso, balance the pelvis and maintain posture. For core stability, the emphasis is on:

- anterior muscle group – rectus abdominis and transversus abdominis,
- posterior muscle group – lumbar muscles,
- lateral muscle group – internal and external obliques,
- abductors and adductors.

Core stability exercises can influence the strength building of one or more muscle groups (complete core stability training). The exercises can vary in difficulty and may be static or have a certain degree of movement. Accessories can also be used (Powerbag, medicine ball, Fit Ball, etc.)

Core stability exercises are used:

- during warm-ups,
- in physical training sessions (in blocks of exercises),
- in a strength-building circuit.

The most commonly used method is the interval method (from 20" to 1'30"). Typically this consists of 30" effort and 30" recovery or 40" effort and 20" recovery. If the exercise is too easy, more complicated sequences can be added.

There is also the option to associate a specific goalkeeping manoeuvre. Good organisation is required if working with several goalkeepers to make sure that the session flows properly and that the scheduled content of the training session is conducted.



7.2.3 Weight training room

The weight training room is an ideal environment for strength building. It is a good place to train if the weather conditions prevent work being conducted outdoors. A whole session can be scheduled or work can be part of a mixed training session:

- pitch – technical part,
- weights room – strength building.

The goalkeeper can work on strength individually during his free time (general session or focusing on weaker muscle groups). However, the goalkeeping coach, fitness coach or other specialist must be consulted if a player visits an external weights room because:

- one-off, spontaneous strength-building sessions are not useful,
- the work already conducted and the work remaining to be done in the weekly programme must be taken into consideration,
- the most suitable time for this type of work must be determined.

For strength building to be effective, the following must be determined:

- the maximum loads for the goalkeeper (tests),
- a strength-building programme that fulfils each goalkeeper's needs, followed by a suitable maintenance programme.

Every strength-building programme must answer certain questions:

- what is the objective? (increasing strength, explosiveness, etc.),
- what duration, number of sessions, frequency of sessions?
- where and with what equipment?

The criteria for drawing up a session must also be defined:

- what muscle group is the focus?
- what type of contraction?
- what parameters? (load, number of repetitions, number of sets, recovery time)

Strength-building circuit

The circuit comprises a certain number of stations where the main muscle groups are worked upon in a different

order. The work time is generally 15-40 seconds (longer for endurance circuits). The rest between the different stations is a 1:1 ratio with work time for high-performance sportspeople and 1:2 for lower levels. Training circuits for maximum strength and speed-strength are based on the high intensity or even maximum intensity method. Endurance strength training circuits emphasise the maximum number of repetitions.

Example:

general strength endurance:

- 8-16 stations,
- equipment (medicine ball, dumbbells, step, skipping rope, Powerbag, etc.),
- load duration of 30-60 seconds,
- 1:1 recovery time (including changing stations),
- 2-3 sets,
- recovery time between sets: 3 minutes.



Strength building using weights equipment, weight bars and dumbbells

- all the work on one muscle group can be conducted before moving to another muscle group,
- work can be conducted on several muscle groups in alternation,



- ensure proper positioning, use of equipment and breathing and observe safety instructions (avoiding accidents and unnecessary injury).

Example:

- a maximum strength improvement programme (pectorals) during the competition period for three professional goalkeepers:
 - maximum load is determined by tests,
 - programme duration: 4 weeks with 6 training sessions in total,
 - type of contraction of pectorals: concentric during the extension of the arms,
 - load: 80% of maximum load,
 - speed of execution: explosive (maximum)
 - recovery time between sets: 5 minutes
- maintenance programme:
 - 1 x week ... 85-90% of max ... 4 repetitions ...
 - 4 sets ... 4' recovery

Pectorals – bench presses								
	Test 1 kg	Load (kg) – Repetitions – Sets						Test 2 kg
Goalkeeper 1	65	52-7-5	52-7-6	55-7-5	55-7-6	57-7-6	57-7-6	73
Goalkeeper 2	65	52-7-5	52-7-6	55-7-5	55-7-6	57-7-6	57-7-6	75
Goalkeeper 3	68	52-7-5	52-7-6	55-7-5	55-7-6	57-7-6	57-7-6	77

7.2.4 Other means of developing strength

Gym

Strength building can be carried out in a gym in four different ways:

- strength-building circuits (see weight training room),
 - working on strength building in blocks (same muscle group or alternating different muscle groups),
- Example:** block on strengthening abdominal muscles
- rectus abdominis:
 - 5 x 20 repetitions in 2-3 sets with 2' recovery between sets,
 - same for oblique muscles.

- work on jumping strength:
 - using gym equipment:
 - trampoline, mats, stairways,
 - this type of work can be associated with a technical manoeuvre:
 - trampoline + jump + dive + landing on a mat.
 this works simultaneously on coordination (orientation in space and time) and the gymnastic features that are important for goalkeepers.
- strength building through fun activities
 - climbing a rope,
 - wheelbarrows, walking on all fours, etc.

Steps

Exercises on steps are an effective but tiring method of building leg strength.

- movements
 - going up steps by running forwards or laterally (crossover steps),
 - running down steps (extreme caution required),
 - jumping up steps,
 - jumping down steps,
- types of strength-building work
 - plyometric (continuous climbing without stopping),
 - concentric (climbing (jumps) with rests),
 - eccentric (descending).
- instructions
 - 5-6 sets of 6 completions,
 - 1:2 recovery between completions and 4 minutes between sets (speed work requires more time between 2 completions),
 - a warm-up is very important (to avoid injury),
 - suitable shoes must be used to cushion the hard surface,
 - always look forwards,
 - tread lightly, try to make as little sound as possible.



Training in the countryside

Training in the countryside (mountains, forests, around lakes, etc.) offers many interesting options for strength building.

- using a slope
 - ascending by running forwards (quadriceps – concentric),
 - descending by running forwards (quadriceps – eccentric, hamstrings – concentric),
 - descending by running backwards (hamstrings – eccentric).

Care must be taken on all descents. Eccentric muscle work can cause stiffness.

- strength building through fun activities
 - fitness trails (jumps, obstacles, throwing objects),
 - treetop adventure courses,
 - climbing.

Training by electrical muscle stimulation

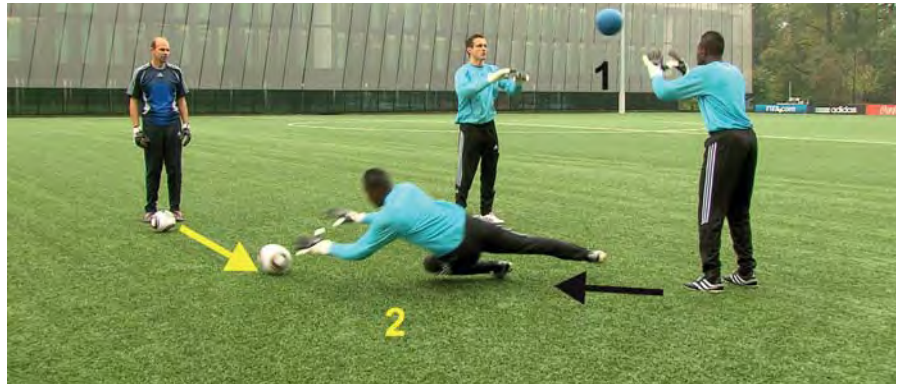
This modern method consists of working muscles by using electrical stimulation produced by special apparatus. The equipment produces currents that specifically stimulate a muscle or muscle group.

Although considered an interesting method that can partially replace other strength-building techniques, it should only be used as a complementary method. It can assist the maintenance of muscle qualities during a period of inactivity (due to injury or illness) or recovery.

The exercises

Exercise 1

1. Goalkeepers throw medicine ball to each other x 10.
 2. Dive (ball on ground).
Change goalkeeper.
- 3 repetitions on each side**



Exercise 2

1. Crunches (10 repetitions).
 2. Ball on ground and dive.
Change goalkeeper.
- 3 repetitions on each side**



Exercise 3

1. Triceps dips (6 repetitions).
 2. Ball at medium height and dive.
 3. Ball at medium height and dive
on opposite side.
- Change goalkeeper.
3 repetitions



Exercise 4

1. Step (calves – 20 repetitions).
 2. Ball on ground and dive.
Change goalkeeper.
- 2 repetitions on each side**

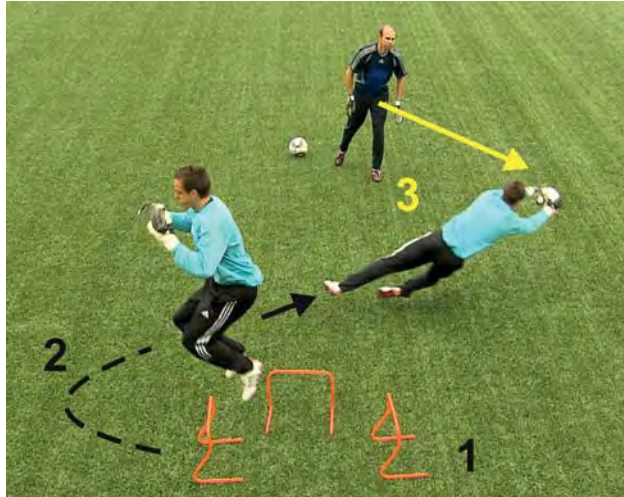


Exercise 5

1. Jumps.
2. Movement.
3. Ball at medium height and dive.

Change goalkeeper.

2 repetitions on each side

**Exercise 6**

1. 20 crunches and 20 obliques.
2. Movement.
3. Shot.
4. Repeat on other side.

Change goalkeeper.

2 repetitions

**Exercise 7**

1. 6 jumps on step (laterals).
2. Jumps.
3. Movement.
4. Dive.

Change goalkeeper.

2 repetitions on each side

**Exercise 8**

1. Pull against team-mate.
2. Sprint.
3. Shot.

Change goalkeeper.

2 repetitions on each side



7.2.5 Strength training for children and adolescents

Strength building does not in itself pose any problems for young players, it is rather the methods applied that can be unsuitable. Fun exercises in the form of games are the basis of strength building. Exercises using body weight and basic equipment (skipping rope, hurdles, medicine ball) predominate before the final stage of growth when we can introduce strength building using dumbbells and weight bars.

Group training

- goalkeepers work on developing their strength together with the other players:
 - games (ages 6-10),
 - start of strengthening abdominal muscles, upper body, core stability (age 13),
 - initiation in the basics of strength building using weights (learning the correct movements using wooden poles) (age 14),
 - start of strength-building programme (ages 15-16).

If a goalkeeping coach is available, additional work can be done on developing strength. The programme must be adapted to the goalkeeper's age and the team schedule (workload already carried out).

Specific training

- Football school, ages 6-10
 - the time allocated to specific work is solely dedicated to technical pre-preparation (learning the goalkeeper's manoeuvres),
 - if skipping or jumps over small hurdles are introduced, the objective is mostly coordination and regulating speed of execution.
- Pre-training, ages 11-14
 - plyometric exercises,
 - skipping,
 - a few short exercises on the abdominal muscles and core stability at the end of a training session.
- Training, ages 15-18
 - for players aged 15-16:
 - strength-building exercises just with the weight bar (no weights attached) and subsequently with 20-50% of body weight,
 - exercises: plyometrics, core stability and strengthening the upper body,
 - same exercises associated with a ball and a specific goalkeeping manoeuvre,
 - for players aged 17-18:
 - the work is identical to that for adults.

If a player experiences any persistent pain at the insertions of any tendons, he should immediately rest. The most sensitive areas are: kneecap, tendon from quadriceps to tibia, tendon from calf to heel. The work must be of a progressive nature in order to avoid such problems, starting with exercises using the body weight or a medicine ball and then moving on to dumbbells and weight bars, etc.



7.3 Speed

Speed is the capacity to carry out motor actions with the greatest rapidity possible on the bases of the processes of the neuro-muscular system and strength.

Speed is influenced by the following anatomical and physiological factors:

- muscle type: FT (fast twitch) fibres,
- strength and muscular elasticity,
- the availability of energy: the energy-rich phosphate system (from 0-20"); anaerobic glycolysis (20" to 50"),
- neuro-muscular processes and coordination capacities,
- anthropometric factors (height, weight, morphology),
- mental status, fatigue, warm-up condition.

When we talk about a footballer's speed we are talking about a capacity that has many facets. Speed is not only the ability to act and react quickly, it is also rapidity "out of the blocks", the pace at which a player can run, the speed at which the ball can be controlled and the capacity to sprint and stop. In addition to this, speed is also the rapidity of analysis and exploitation at any given moment. To avoid going too deeply into the complicated issue of speed, we can simply describe some of its component parts:

Speed of perception, anticipation and decision

- the cognitive bases that allow one to act and react before making choices or embarking on actions.

Reaction speed

The capacity to react in the shortest time possible to a given signal:

- simple – movements of a single part of the body (finger, foot),
- complex – movements of the whole body or a complete part of the body (the quick movements required to start off from different positions, etc.).

There are two forms of reaction speed:

- simple reaction speed
 - concerns an easily-identifiable signal that requires a single response,
- complex reaction speed
 - concerns a signal that comprises several items of simultaneous information for which there are several possible responses; the most suitable of these must be chosen taking into account the situation.

Speed of manoeuvre (speed of action)

This is the speed required to carry out a motor action. The speed of manoeuvre can be categorised as:

- acyclic: carrying out a single movement at maximum speed against a low resistance (jump, throw, kick, dive, etc.)
- cyclic: carrying out repeated movements at maximum speed against a low resistance (running, cycling).

Maximum intensity must be achieved to develop these two forms of speed of manoeuvre, which requires:

- the body to be rested,
- an extended, intense warm-up,
- stopping training at the first sign of fatigue,
- allowing one minute of rest for every 10 metres distance run (one unit of work – up to 15-20 units of recovery),
- varying the types of work conducted to avoid a plateauing of speed development.

Speed strength

This is the capacity to push back against resistances with maximal speed over a given time.

Speed endurance

This is the capacity to maintain maximal speed over a long distance.

Training structure for speed		
	Alactic anaerobic speed	Lactic anaerobic speed (speed endurance)
Method	Repeated short interval	Repeated short and medium interval
Intensity	- 100% of maximum speed - Maximal / Supramaximal	- 95-100% of maximum speed - Submaximal / Maximal
Repetitions	- 4-8 per set	- 3-5 per set
Duration of the effort	- 2-8" (maximum 10") - 10-50 m	- 10-30" - 60-200 m
Sets	- 3-5	- 2-4
Volume	- 300-600 m (depending on training session)	- 600-1200 m (depending on training session)
Rest	- semi-active /active - 1:10 to 1:20 (1-3') between repetitions - 5-8' between sets	- active (constant) - 1:3 to 1:5 between repetitions - 10' between sets

As the distances for maximal speed in a football match are 10-40 metres, the main source of energy is the alactic anaerobic pathway. Over longer distances, between 60 and 100 metres, the lactic anaerobic pathway is increasingly used as the source of energy.

The following methods can be employed for training improvements in speed:

- **repetition method:** each repetition of a run or initial acceleration only occurs after an optimal recovery,
- **competition method:** the competition aspect increases the players' concentration, motivation, spirit and application,
- **game method:** working on speed by means of various games,
- **controlled-effort method:** this method is especially useful for young players; the speed of execution is regulated to avoid the quality of the manoeuvre being affected (complementary method),
- **variable method:** alternating exercises of reduced or increased difficulty with exercises under normal conditions,
- **easy conditions method:** allows higher speeds to be achieved than the maximum voluntary running speed (running downhill, running while being pulled).

Speed is often coached separately for young players (running practice, speed coordination, work on maximum initial acceleration and sprinting), particularly when players are learning the game. This approach promotes

maximum intensity work as well as working on muscular and mental strength. This is the basis for work on the speed of execution and reaction. However, integrated formats (speed + technique, speed + technical/tactical) that emphasise coordination quality are also essential to training. These sessions allow maximum speed to be transposed into individual actions and team moves.

We work on speed by exercises in the following forms:

- column – the players follow one another,
- parallel – competition between different groups,
- rotating – exercise with repeated changes of place.

7.3.1 The goalkeeper and speed

The goalkeeper's most important interventions in a match are all very short and forceful. The effectiveness of every save depends on the optimum use of all aspects of speed. The logical conclusion is that the goalkeeper works on his speed every time he makes a save or clears the ball. Of course, developing speed in this natural way is insufficient; regular training sessions and additional exercises are required to work on speed. A goalkeeper's speed can be improved through exercises with and without a ball. We can associate goalkeeper's exercises on speed and sharpness with technical qualities (catching the ball, diving, etc.).

Reaction speed

Reaction speed can only be trained to a certain degree. It should be developed in conjunction with work on acceleration.

Exercises without a ball

Initial accelerations can be combined in many different ways.

- initial accelerations from various positions and postures (lying on back, seated, etc.),
- initial accelerations after different exercises (jumping, running backwards),
- initial accelerations upon different signals (acoustic, visual, tactile),
- initial accelerations using different running techniques (high knees, side steps),
- initial accelerations with increased difficulty (sled, resistance of a team-mate, etc.),
- consecutive initial accelerations interspersed by the “release” of a sprint

Jumps, series of jumps (short and long jumps) and the systematic training of speed strength all play an important role in improving a player’s acceleration.

Exercises with a ball

All the exercises described above can be easily adapted by adding a ball and a specific goalkeeping manoeuvre.

Example 1

1. Initial acceleration from a specific position (seated, dive, etc.).
2. Sprint.

This type of exercise it can be conducted on any part of the pitch at the end of the warm-up.

However, more complex exercises are used in the main part of the session. It is important to work in the penalty area to approximate a match situation. The goalkeeper orientates himself in relation to the goal and the pitch markings.

Example 2

1. Upon a signal, the goalkeeper touches the post.
2. Sprint.
3. Dive.

Example 3

Reflex saves are a reaction to an unexpected situation. Practicing reflex saves improves reaction speed and the speed of manoeuvre.



Example 1



Example 2



Example 3

Speed of manoeuvre

Exercises without a ball

The following exercises can be used to improve running speed:

- technical running exercises,
- sprints over different distances with changes of direction,
- progressive runs,
- going up and down steps,
- running with increased resistance alternated with normal running.

The distance run in these sessions is 300-400 metres, divided into 3-5 sets of 4-6 repetitions, with full recovery between completions (1:20). A 5-minute rest between sets can be passive (stretching) or active (juggling or catching the ball).

Exercises with a ball

Improving speed while using a ball is the method of working that most closely resembles the specific nature of the goalkeeper's position and can take a variety of forms. Associating a sprint with a dive or jump for a cross is similar to an actual match situation.

Designing exercises – some advice:

- when planning the exercises, make sure the goalkeeper stays close to the goal:
 - 5-10 metre sprints (staying in the penalty area),

- 15-20 metre sprints (simulating coming out of the area),
- the total distance run is very short for this type of work (approx. 200 m),
- the goalkeeper's additional efforts must also be taken into account, namely jumping and landing from dives, as well as the fact that the goalkeeper has to raise his body weight of XXkg each time,
- 3-4 exercises with 3-6 repetitions on each side is sufficient,
- recovery time between completions can be shorter (1:15) to prevent the exercise becoming too long and boring,
- if working with three goalkeepers, the completions of the two others (including changing places, positioning of goalkeeper and coach preparing before kick) is sufficient time for recovery,
- the time taken setting up, changing the exercise and explaining it to the goalkeeper can also be included in the recovery between exercises.

Transition speed (speed of cooperation with a team-mate)

Catching a high ball followed by a quick clearance is one of the situations in a goalkeeper's play in which transition speed is a relevant factor. The goalkeeper fulfils his defensive role by catching the ball. He then reacts to the movement of

Distance	Total distance	Repetitions	Sets	Recovery	Recovery between sets
5 m	100-120 m	5-6	4	15-20x units of recovery	3-5 min
10 m	120-150 m	4-5	3	15-20x units of recovery	3-5 min
20 m	180-240 m	3-4	3	15-20x units of recovery	3-5 min

a team-mate with a rapid, accurate clearance. This sequence of two phases requires an optimal speed of execution without being hurried and without detriment to the quality of the clearance.

Speed endurance

Improving speed endurance allows a player to extend the periods of speed coordination and maximal speed in a sustainable way.

Exercises without a ball

Running uphill, running against resistance, wearing a weighted vest, sprints up steps, etc.

Exercises with a ball

Exercises involving the repetition of several dives and different movements come under the category of speed endurance (see photo).

Example:

1. Dive.
2. Sprint.
3. Dive.

- if there are just 2 dives, this is a speed of manoeuvre exercise (concerning the goalkeeper's specific speed),
- if there are 6 consecutive dives, then this is a speed/strength/coordination endurance exercise (see explanations in the "Endurance" chapter).

An appropriate warm-up is required for speed work to be effective and to reduce the risk of injury. If the speed session is based on exercises without a ball, the goalkeeper warms up alone or under the direction of the coach. The warm-up includes:

- running,
- limbering up (active/dynamic),
- technical running work (high knees, heel flicks, etc.),
- accelerations (with and without changing direction),

No special warm-up is required for speed work with a ball in goal; the goalkeeper's usual preparation for a specific session is sufficient. However, there should be a progressive increase of the difficulty of the warm-up exercises. The warm-up can be concluded by simple speed exercises (sprint and specific manoeuvre). We can then move on to more complex exercises in goal.

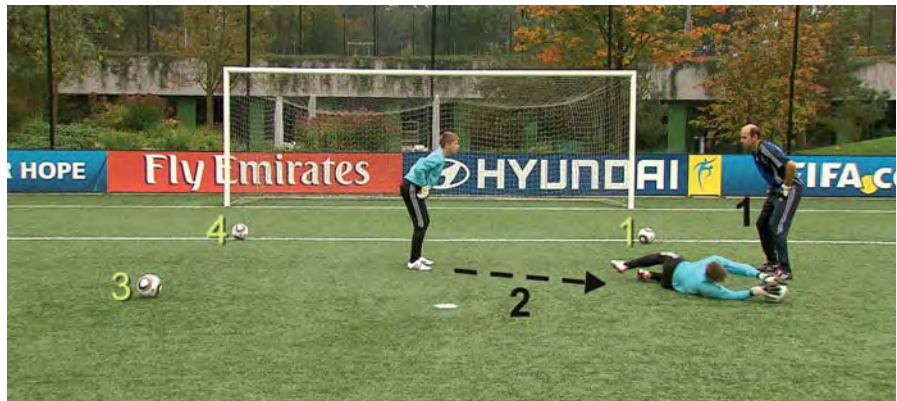


The exercises

The number of repetitions is suited to adults.

Exercise 1

1. Coach's signal (number).
 2. Dive to the appropriate number.
- 3 sprints on each side**



Exercise 2

1. Coach's signal (sound), half-turn.
 2. Sprint and dive to a stationary ball.
- Change goalkeeper.
- 4 repetitions**



Exercise 3

1. Dive for a ball on the ground, at medium height or with a bounce.
 2. Sprint.
- Change goalkeeper.
- 3 sprints on each side**



Exercise 4

1. Sprint and dive.
- The goalkeeper must stop the ball going into the goal.
- 3 repetitions on each side**



Exercise 5

1. On the coach's signal (visual), the goalkeeper sprints and touches the post corresponding to the colour indicated.
 2. Sprint.
 3. Dive for a ball on the opposite side.
- Change goalkeeper.
4 repetitions

**Exercise 6**

1. Goalkeeper starts in standing position – on the coach's signal (sound), changes position (seated, lying on front, etc.).
 2. Sprint and dive for a ball on the opposite side.
- Change goalkeeper.
4 repetitions

**Exercise 7**

1. Dive.
 2. Sprint.
 3. Dive.
- Change goalkeeper.
4 repetitions

**Exercise 8**

1. Slalom.
 2. Aerial ball.
 3. Sprint and save by goalkeeper.
- Change goalkeeper.
2 repetitions on each side



7.3.2 Speed training for children and adolescents

The 8-16 year-old age range is perfectly suited to developing speed capacities.

A wide range of exercises can be used to work on basic speed qualities:

- games involving running speed,
- exercises to improve running technique,
- development of maximum frequency in running and sprinting exercises (skipping and dribbling),
- movement with changes of direction,
- exercises with light resistance (steps, etc.).

Fun exercises are used to develop reaction capacities.

A virtually unlimited range of exercises can be devised by changing the conditions:

- varying the execution of the movement (start from sitting position, change of direction, etc.),
- varying the start signals (shout, whistle, etc.)
- varying the number of participants (individual game, group running, etc.)

We can work with adolescents on physical condition and coordination related to speed without restriction. The training methods and content are similar to those for adults and only differ in terms of quantity.

Training the young goalkeeper

Group training

- the goalkeeper works on developing speed in conjunction with other players.

Specific training

- Football school, ages 6-10
 - the time allocated to specific work is solely dedicated to technical preparation (learning the goalkeeper's manoeuvres),
 - despite this emphasis in the training, the coach should talk about speed because children tend to do everything as quickly as possible, often to the detriment of the quality of the manoeuvre. Good control of the speed of execution makes learning easier.

- Pre-training, ages 11-14
 - in contrast to the previous period, we encourage the goalkeeper to gradually carry out the manoeuvres more quickly,
 - the more complex exercises require movements to be carried out at an appropriate speed,
 - exercises on the reaction speed and acceleration associated with a specific goalkeeping manoeuvre can take place in front of the goal,
 - coordination work, an essential component, is conducted in parallel with speed training.
- Training, ages 15-18
 - we can work on all the components of speed using all the resources at our disposal.



7.4 Coordination skills

Coordination skills are determined, above all, by processes that control and regulate movement. These skills allow the sportsperson to control actions in both predictable and unpredictable situations and to carry these actions out in an economic manner.

Motor coordination is the capacity to carry out a well-defined, accurate manoeuvre through the combined action of the central nervous system and the skeletal musculature.

This manoeuvre should be conducted with a maximum of:

- effectiveness: the targeted objective is achieved,
- efficiency: the result is achieved at a controlled cost,
- reliability: high success rate.

Coordination skills are:

- **General;** the result of polyvalent motor learning,
- **Specific;** development takes place within the framework of the individual sports discipline.

Coordination factors:

- **Differentiation** – this is the capacity to process the information received from the sensory organs in different ways. (Carrying out partial manoeuvres of an overall movement),
- **Balance** – the capacity to maintain stability during an action or manoeuvre,
- **Orientation** – the capacity to locate oneself in space and time, change the body position according to perceptions and then reorientate,
- **Rhythm** – the capacity to construct a movement using rhythm,
- **Reaction** – the capacity to react very quickly to signals in match situations, and then carry out the correct technical manoeuvre, also very quickly.

Coordination can be developed by repeating motor actions while also:

- reducing the time of execution of the actions,
- modifying the external constraints on the action.

A distinction can be made between general and specific training in terms of method and content.

There are several learning methods by which coordination skills can be improved (*Weineck, 2005*):

- representation of manoeuvres:
 - visual information method (for novices),
 - verbal information method (specify and describe the manoeuvre to be conducted),
- variation of exercises
 - varying the initial position (starting by lying on front, on back, etc.),
 - varying the dynamics of the movement (faster or slower execution),
 - varying the spatial structure (reducing the pitch size),
 - varying the external conditions (playing in wet or windy conditions),
 - varying the receipt of information (goalkeeper turns his back on the player passing the ball; he must turn around and catch the ball upon a shout).

The improvement of physical capacities facilitates better coordination.

- **Endurance:** a better success rate for an effective manoeuvre,
- **Strength:** intermuscular coordination; agonist-antagonist relationship,
- **Speed:** increased speed of execution,
- **Suppleness:** range of joint movement and relaxing antagonist muscles.

Proprioception

Proprioception is an internal sense by which an individual is aware, at all times, of his position in his environment. Sensitive sensors inside muscles, tendons and articular capsules transmit information to the central nervous system which reacts by balancing and stabilising the body in relation to the current and impending situations (www.e-s-c.fr). Proprioception is used in rehabilitation and it also plays an important role in preventing injury and improving a sportsperson's coordination.

Work on proprioception facilitates (*Miroux*):

- the development of muscular strength,
- the improvement of expressions of reactive force by muscles,
- the development of agility and coordination,
- the protection of vulnerable joints (ankles and knees),
- corporal perception and concentration,
- winding down and relaxing the muscles.

Proprioception plays an important role in the control of the joints, in particular during the mechanical absorption reflex after jumps.

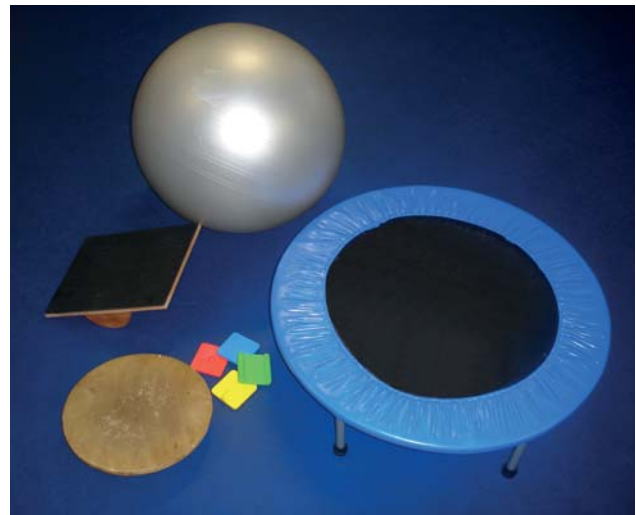
Remember!

It is important:

- To be properly warmed up.
- To observe symmetry in the work conducted.
- For the legs to be straight in order to put the stress on the ankles and bent to work the knees.
- To perform a good landing after jumps (no noise).

Work can be conducted on proprioception by, for example, exercises conducted with eyes open and then with eyes closed; balancing on one foot and then carrying out movements in a slow, controlled manner (balancing, flexing, extending); stepping up and stepping down with a pause and time to stabilise during the different phases. We can also associate proprioception with a ball and carry out exercises such as catching the ball or individual technical work with feet.

Accessories such as: mini-trampoline, Fit Ball, hurdles and low benches are very useful to diversify and improve the quality of the work conducted.



7.4.1 The goalkeeper and coordination

In everyday language, if a goalkeeper has good coordination he knows how to:

- move
 - the lower body must work in harmony with the upper body,
 - the goalkeeper must be able to adapt to all types of pitch,
- not be afraid of the ball and handle it with ease,
- dive and quickly regain position,
- read the trajectory of the ball,
- dive equally well to both sides,
- use both feet,
- jump from the left leg equally as well as from the right leg,
- react to team-mates' movements by supplying them with an accurate ball.

There are many more examples but clearly all these descriptions relate to the various aspects of coordination skills.

There are aspects of coordination in all the exercises used on the pitch.

These can be exercises:

- with or without a ball,
- with or without equipment.

Coordination and proprioception exercises are used:

- during the warm-up in the form of:
 - limbering up using a ball,

- skipping with a rope,
- gymnastics (see below)
- circuits using various items of equipment (hoops, ladders, etc.),
- running practice (heel flicks, high knees, etc.),
- in the main part of the session by:
 - associating the exercises described above with the goalkeeper's technical manoeuvres in goal.

The repetition method is the most appropriate for exercises that end with a technical manoeuvre in goal. Each exercise comprises 4-6 repetitions with maximum quality of execution (in terms of speed and jumping). A full recovery is allowed. Working with three goalkeepers, the completions by the other two goalkeepers are sufficient for the recovery of the first. This type of exercise is perfectly suited to training amateurs and young players when there are an insufficient number of training sessions, as a way of establishing a preparation programme for the goalkeeper. Work should not be conducted on coordination skills if the goalkeeper is tired, as the control processes cannot be improved in an optimal manner. In general, goalkeepers do not correctly perform gymnastic manoeuvres such as rolls, cartwheels and balancing, let alone more complicated exercises. Mastering these manoeuvres can be beneficial for orientation in space/ time and can assist the goalkeeper in situations where he is sliding, falling, barged by an opponent or hindered by a team-mate. Simple exercises on the pitch or more complicated exercises in the gym using large mats can allow this deficiency to be addressed and these skills to be improved.



The exercises

Exercise 1

1. Goalkeeper throws the ball in the air.
 2. Change of position (seated, lying, etc.).
 3. Catches the ball in the air.
Change goalkeeper.
- 4 repetitions on each side**



Exercise 2

1. Roll to the side.
 2. Dive to the opposite side.
Change goalkeeper.
- 3-4 repetitions on each side**



Exercise 3

1. Jump and then forward under hurdle.
 2. Ball on ground and dive.
Change goalkeeper.
- 4 repetitions on each side**



Exercise 4

1. Movement.
 2. Ball on ground and dive.
 3. Movement.
Change goalkeeper.
- 2 circuits**



7.4.2 Training coordination skills with children and adolescents

As our ways of life have changed, specialist coaches have noted a decline in the physical conditions of youngsters, in particular their motor coordination abilities. The increasing amounts of time that children spend playing video games and in front of the television (perhaps the consequence of relative insecurity) are to the detriment of time spent playing football with friends and other outdoor activities such as climbing trees, running and jumping, as previous generations used to do. Recognising this phenomenon in society, we, as coaches and educators, must make sure that exercises that develop motor skills are introduced from an increasingly early age in training programmes for young players. It is difficult to set out precise age categories for the development of coordination skills because the differences between individual children and adolescents can be vast. Boys and girls do not go through puberty at the same age and there are also major differences in maturity within each gender. It seems a reasonable approach then to classify young players in accordance with their individual maturity. In terms of motor skills, bad habits acquired during this period will require a lot of corrective work later on.

Developing coordination skills should start very early in childhood, as many motor skills and manoeuvres are acquired before the age of 10. At this stage, the child should be stimulated by a large number of diverse motor exercises to improve general motor skills as much as possible. Manoeuvres and accuracy are refined from age 10 to puberty. The stimulation should be achieved through learning based on solid skills (i.e. established skills of which the movements can be repeated in a variety of situations). This is a period of sports orientation, although in a multi-disciplinary perspective.

Growth and weight changes during puberty can affect coordination. For this reason, the focus should be to maintain previously acquired skills and have the youngster specialise in some specific techniques. During this period, the youth or goalkeeping coach must have plenty of patience and know how to encourage players.

After this period, when the young player is more stable in terms of growth and physical qualities such as strength are being developed, training can become more specific and focus on improvement.

Coordination skills can only be developed in terms of their complexity, variability and continuity. Care must be taken to ensure that the training is suitable for the children's ages, in particular by using short games in the group sessions.



There are two general approaches for learning and developing coordination skills in young goalkeepers during specific training:

without a ball

- work can be conducted by:
 - exercises on the placement of feet, completing circuits with or without simple equipment (hurdles, hoops, etc.),
 - skipping with ropes, using all the different options (one person, two people, on the spot, with movement, forwards, backwards, etc.),



- using gymnastic manoeuvres (rolls, cartwheels, crawling, etc.).

These types of exercise are used in warm-ups in particular.

with a ball

- exercises involving:
 - controlling the ball (warm-up),
 - completing circuits with simple equipment (hurdles, hoops, etc.) finishing with a specific manoeuvre (catching the ball or dive),
 - keeping the ball (if more than one goalkeeper at the training session),
 - short games (at the end of the session),
 - accuracy skills (touching the crossbar; stopping the ball on the line).



7.5 Suppleness

A goalkeeper must have good suppleness (mobility) in order to be able to carry out the specific manoeuvres associated with the position. Goalkeepers generally have no major problems in this respect. There are no significant differences in suppleness training in relation to the outfield players (the differences for the other motor capacities of endurance, strength, speed and, to a degree, coordination have been explained in previous sections).

Goalkeepers can follow a programme designed to improve suppleness together with outfield players during group training or alternatively use different types of stretching during specific training. What is important is that the sessions take place at the correct time. Some authors use the term suppleness, whereas others prefer to talk of flexibility or mobility.

Suppleness is a factor that is relatively autonomous of sporting performance capacity and, among the main forms of motor abilities, occupies an intermediate position between physical condition and coordination. Mobility is the only form of motor ability that reaches a peak in childhood and then subsequently deteriorates if not specifically trained (*Weineck, 2005*).

Suppleness is the capacity to accomplish movements with ease and with the greatest amplitude possible. It is conditioned by two factors:

- articular mobility
 - this concerns the joints and the intervertebral discs,
- stretching capacity
 - concerns the muscles, tendons, ligaments and articular capsules.

According to *Weineck (2005)*, a distinction can be made between:

- general suppleness
 - this is when the mobility of the main articular systems is sufficiently developed. It is a relative measure, as general mobility is developed to different degrees depending on the sporting level,

- specific suppleness
 - this is the mobility of a specific articulation,
- active suppleness
 - this is the maximum amplitude that an articulation can achieve by the contraction of agonist muscles and stretching of antagonist muscles,
- passive suppleness
 - this is the maximal segmental amplitude that the sports person can achieve through the effect of external forces, due to stretching capacity and the relaxation of antagonist muscles,
- static suppleness
 - this is holding a stretched position for a certain amount of time.

Suppleness is much more important to a sport such as gymnastics than to football. Although suppleness is a factor when shooting, controlling the ball, turning and feinting, a large amplitude of movement is not required in these cases. Suppleness is, above all, an important consideration for footballers in terms of injury prevention, improvements of elasticity of muscular tissue and the appropriate preparation of the body for performance.

Different stretching techniques (*Geoffroy, 2008*)

Passive techniques

- short-duration passive stretching
 - this is global or specific stretching for a short time (15-20 seconds) carried out slowly in the elastic phase (easily borne without trembling or pain), with the objective of increasing amplitude that has been restricted by physical exertion or inactivity,
- long-duration passive stretching or posture
 - this is stretching for a longer time (1-5 minutes) conducted at slow speed, initially in the elastic phase then in the plastic phase (“The extension may be slightly painful at first, accompanied by trembling or sensations of ‘electricity’. It is vital to relax the muscles

that are defending (by contracting) in order to be able to improve amplitude”),

- significant amplitude is sought in order to counteract the feeling of stiffness of muscular or articular origin (“Stiffness is reduction of mobility to a greater or lesser degree. It means a reduction of amplitude of movement in relation to the opposite (unaffected) side. The stiffness can be transitory if counteracted or longer lasting if you do nothing”).
- the action of gravity is most often combined with an external force.

Active techniques

- active stretching and active/dynamic stretching
 - active stretching is a combination of an extension with static (isometric) or slightly eccentric work on a muscle group,
 - when this active stretching is complemented, after relaxation, by dynamic work on the same muscle group (jumping, hopping) this is known as active/dynamic stretching,
- ballistic movements
 - these are dynamic stretches,
 - a limb is swung, a little like a pendulum, and the movement occurs solely through the weight of the limb. There should be no friction against this limb and muscular relaxation must be complete. A ballistic movement is useful if these conditions are achieved. It allows the joints to be warmed up and muscles to be relaxed.

Active/passive techniques

- active/passive stretching or contract/relax/stretch
 - this is the combination of active stretching followed by passive stretching: the contracting, relaxing and stretching of the same muscle group,
- active/passive stretching or contract/relax/stretch by electrical stimulation
 - the difference to the previous technique is that the action of muscle contraction is not voluntary but instead induced by electrical stimulation,
- postural stretching
 - this technique involves all the musculature by adopting postures with the different parts of the body taking up different positions, with stretching and contraction at the same time. A session comprises tonic stretching and deep stretching with specific breathing.

Children should be taught about suppleness from the earliest age and stretching should be regularly practised throughout the player’s sporting career and even beyond.

- even though children aged 8-10 are naturally very supple, commencing muscular stretching has important objectives: introducing different suppleness techniques and understanding the need to always accompany physical exertion with stretching exercises either before, during or after the training session,
- from the age of 12, children develop muscle both qualitatively and quantitatively and experience growth spurts with all the accompanying issues that this brings. Daily suppleness routines (5-8 minutes) led by adults with some experience (parents or youth coach) will bring beneficial results.
- stretching should be part of the goalkeeper’s regular activities before and after exertion, as well as outside training sessions, after muscle injury and in the event of stiffness or morphological issues.



TECHNIQUES	OBJECTIVES	CHARACTERISTICS	WHEN?	ACTING ON WHAT?	DURATION
PASSIVE TECHNIQUES	PASSIVE STRETCHING	Maintenance of suppleness. Elastic phase	Slow, progressive extension allowing lost amplitude to be regained	Every day and after exertion	Muscle, connective membrane, blood vessels Each position = 15-20 seconds
	PASSIVE POSTURES	Increasing suppleness, allows recovering and increasing amplitude	Slow extension over a long duration, allowing significant amplitude to be achieved	3 times a week	Muscle, connective membrane, tendon, articular tissue Each position = 1-5 minutes
PASSIVE TECHNIQUES	ACTIVE/PASSIVE STRETCHING	Increasing suppleness or keeping muscle in tension between two exertions	Extension (as far as possible) associated with muscular contraction (static), followed by extension rather than relaxation	twice a week or between 2 exertions	Muscle, connective membrane, tendon - Extension-contraction = 10-15 seconds - Then extension = 20 seconds
	POSTURAL STRETCHING	Improving muscle tone, reducing tension	Tonic stretch (TS): stressing several muscle groups by extension and contraction in order to achieve desired postures. Deep stretch (DS): global extension posture without contraction, using the action of gravity	1-2 sessions of 45 minutes per week	TS: Muscle when shortening and extending DS: Muscle, connective membrane, tendon, nerve tissue - Tonic stretch = 12-15 seconds - Deep stretch = 2 minutes
ACTIVE TECHNIQUES	ACTIVE / DYNAMIC STRETCHING	Preparation - warm-up. Muscles / tendons / nerve receptors	(Non-maximal) extension associated with a muscular contraction (static or eccentric) followed by dynamic movements after relaxation	Before exertion at the end of the warm-up	Myotendinous zone when extending, muscle when shortening - Extension-contraction = 8 seconds - Dynamic phase = 8 seconds
	BALLISTIC MOVEMENTS	Warming up joints Preparing the body for exertion	Movement like a pendulum with only the body weight acting. Relaxation is essential, otherwise the myotactic reflex intervenes	Before exertion at the start of the warm-up	Articular tissue Each movement = 20 seconds

(Geoffroy, 2008)



8. Psychological preparation

Psychological preparation can support the goalkeeper in several ways: by better dealing with the psychological pressures relating to the position; by helping resist the persistent influence of external factors and also by assisting the goalkeeper to develop a balanced nature and be happy in himself.

The position of goalkeeper has specific features:

- only one place is available in the team even if there are several goalkeepers,
- the goalkeeper bears a major responsibility for the results,
- he is left to his own devices in difficult situations,
- he is subject to external pressures,
- the disappointment of being left on the substitutes' bench.

There are many positive factors that influence the goalkeeper's development and performance, but unfortunately the goalkeeper is also constantly exposed to factors that can have negative effects.

External factors (potential negative influences) that change with age and performance level (some examples):

For young goalkeepers

- family:
 - the realisation of unaccomplished dreams (pressure on the child),
 - possible source of income,
- team-mates:
 - relationships within the team and the goalkeeper's role in the group,
- youth coach:
 - influence on the children (does he want to instruct the children or achieve results?),
- opponents:
 - unsettling the goalkeeper by any means possible.

For senior goalkeepers

- family:
 - amateur (playing during free time, how does family react?),
 - professional (extra pressure as the family breadwinner),
- club:
 - working conditions,
 - responsibility related to the position,
- club executives:
 - pressure for results,
- match officials:
 - incorrect decisions (goalkeeper can lose concentration),

- supporters:
 - insults,
 - throwing objects,
- media:
 - criticism, probing for sensitive information,
- dealing with success:
 - fair-weather friends,
 - managing financial resources,
- weather conditions:
 - adapting to conditions without affecting performance.

The goalkeeper's personality and character can have a direct impact on his mental status and performance. The most important features are:

- motivational capacity,
- self-esteem,
- emotional management skills.

Psychological preparation is a continuous process that takes the following forms:

- natural: the goalkeeper sorts, analyses and memorises the flood of information and daily events, transforming this into experience,
- organised: the coach or other person exerts a direct, positive influence on the goalkeeper.

The goalkeeper's performance on the pitch during a match is conditioned by his mental status and capacity to take advantage of his personality traits.

When working with a goalkeeper on a daily basis, information can be compiled by:

- empirical observation of the goalkeeper (habits and reactions in training and matches),
- simple analyses of his personality,
- talking to him,
- observation of the influence of the environment and other external factors.

This information helps us identify the resources needed to assist the goalkeeper's work and shows us how and when to react for the goalkeeper concerned. It is essential to have an individual approach for each goalkeeper. A good coach or educator must know and sense when to criticise, encourage, raise their voice or close their eyes. The goalkeeper's expression, reactions and performances can indicate many things. Each goalkeeper prepares differently

for a training session or match, so care must be taken when offering assistance to the goalkeeper. He may benefit from support before the match or at half-time, in the knowledge that during the match itself, everything is down to him and his prior preparation.

Psychological problems may hinder the goalkeeper's performance but these can be overcome with the assistance of a specialist. This is a process that unfolds over the long term and is not a quick fix. Major clubs systematically offer their players, including goalkeepers, methods of psychological preparation in order to optimise performance. It was 30 years ago that the first dedicated goalkeeping coaches were hired. Now, with ever-increasing pressure on players, it is specialists in the field of psychology who are entering the playing staff. The goalkeepers of the future will show us the fruits of this work.

Psychological preparation

- this concerns the person, his experience, life history and beliefs.

Mental preparation

- this focuses on learning techniques and strategies aimed at optimising manoeuvres and performance.

Some of the most commonly-used techniques for goalkeepers (*Traverse, 2008*) are:

Visualisation

- 2 types of visualisation:
 - external visualisation
 - the goalkeeper visualises himself conducting a movement as if he were watching a film; he is an observer of himself,
 - internal visualisation
 - the goalkeeper imagines the manoeuvre from his own point of view, he is the actor of himself,
- the goalkeeper develops the capacity to generate precise, clear and controllable images,
- use of visualisation:
 - match situation visualisation (relating to situations on the pitch – saving a penalty, etc.),
 - correction visualisation (visualisation in order to optimise the work conducted),
 - relaxation visualisation (managing emotions),

- activation visualisation (to counteract fatigue, exhaustion or a lack of alertness or excitement),
- visualisation and stress management.

Internal monologue

- 3 types of monologue:
 - monologue related to the task or technique: "Stretch out my hand",
 - monologue related to encouragement and effort: "Come on!",
 - monologue related to mood: "Stay calm",
- example tools used for internal monologues:
 - words and expressions,
 - identification of thoughts
 - reformulating thoughts,
 - interrupting unhelpful thoughts.

Setting objectives

- if objectives are to be effective, they must be clear, accurate, realistic and assessable.

Breathing exercises, relaxation

- Autogenic training, relaxation therapies and yoga are very widely used methods of relaxation in high-level sport and are recommended for individual use.

Psychological preparation can only bear fruit if the goalkeeper has a genuine interest in it.

"Psychological and mental preparation made me understand that it was my approach to the event and not the event itself that was the most important thing. For this reason, tools such as visualisation and internal monologue are essential in order to approach a match in the most positive manner possible."

Nicolas Puydebois, goalkeeper for Lyon and Strasbourg.





9. Tests

The objective of training is to improve performance. The more information we have, the better we can adapt (customise) training to allow the goalkeeper to progress effectively. We can discover the goalkeeper's strong and weak points if we conduct a wide range of tests.

Test

"An examination conducted in order to evaluate an individual's mental or intellectual status or the progress of certain faculties (physical, moral, emotional) or aptitudes (natural or acquired) or to establish a profile of his personality."

Certain criteria must be respected if tests are to be relevant and usable:

- **Simplicity:** easy to conduct without a complicated protocol,
- **Validity:** the test should actually measure what it is being used for,
- **Objectivity:** the test must meet a genuine need, there is no point in conducting tests for which the result has no purpose,
- **Reliability, accuracy:** the test should not vary if the circumstances change or a different examiner is used.

Every test must fulfil its functions in terms of measurement, comparison (of a player with himself and with others) and motivation (to do better than others).

Five kinds of test can be used in football:

- **Biological,**
- **Biometrical,**
- **Physical,**
- **Technical,**
- **Psychological.**

The sporting level and the financial resources available (for sophisticated tests) determine the choice of tests and how often they are repeated in a season. The objectives are as follows:

- start of season:
 - better knowledge of the goalkeeper (especially if a new recruit),
 - to customise preparation,
- after preparation:
 - to observe the effect of preparation,
- 2/3 of the way through the league season (more important for outfield players than the goalkeeper):

- checking the players' conditions before the final phase of the league season,
- adjusting training according to needs.

Remember!

- The player must be rested and well warmed up before the test (for physical tests).
- The player must be aware of the protocol and objective of the test.
- If the results of two sets of different tests are to be compared, they must be conducted under the same conditions (pitch or indoors, footwear, weather conditions).

Biological tests

At present, the primary objective of the biological monitoring of a sports person is to ensure the maintenance of health. But biological testing can have additional objectives depending on the sporting level and the intensity of the competition:

- to establish if the sports person has good general health (for example a medical check-up of a professional sports person who is a potential recruit),
- to monitor the effectiveness of training,
- to detect the appearance of signs of fatigue,
- to confirm if an athlete is overtrained,
- to reveal any cases of doping.

Furthermore, as is the case for any other person, a sports person may become ill. In this case biological testing can be used to assist an accurate medical diagnosis. However, the measurement of blood and urine parameters, as well as any other complementary examinations, do have limits and represent only one strand of appropriate medical care. It is true though that, in certain domains, so much progress has been made that it seems difficult to conceive of high-level sport without biological monitoring (e.g., longitudinal biological monitoring carried out by federations to prevent doping in high-level athletes). Without providing an exhaustive list of all the parameters investigated, the main blood measurements conducted in high-level sportspeople are as follows:

- **Biochemical,** allowing:
 - checks on the proper functioning of the body's main organs, muscle parameters, etc.
 - investigation of inflammatory processes,
 - checking the body's cleansing functions,
 - measurements of vitamin and mineral levels, etc.

- **Haematological**, allowing: checks of blood values, checking iron levels.
- **Hormonological**, allowing the proper operation of some organs to be checked: pituitary, thyroid, pancreas, testicles, ovaries, etc.
- **Immunological**: these tests are very important, in particular for checking the body's defence system against infections and other attacks on the body.
- **Biochemical and urinary hormonological**: these tests are very useful for detecting doping products.

All of these measurements allow a biological profile of the sportsperson to be built up that can be monitored over the season, and indeed from one season to the next. There is no one simple measurement that when examined will provide information on the optimal operating status of the sportsperson as if by "magic".

Biometrical tests

In terms of biometrics and biometrical monitoring, an important consideration is the player's weight and, more particularly, changes of percentages of fat mass and lean mass (total weight without fat). Regarding fat, a player should have some – but not too much.

All athletes should seek to reduce their fat mass to reasonable levels, taking into consideration their anthropometric statistics, and improve their lean mass. If the fat mass is too high, the team doctor should be consulted in order to draw up a diet that does not harm physical conditioning.

Weight

- weight should be measured once a week, on the same day and under the same conditions (same time, same weighing machine),
- a significant weight change (increase or decrease) should be a cause for concern.

Height

- height does not vary in adults (measured at the start of the season),
- for youngsters, height should be measured three times a season,
- the player must be barefoot when height is measured!

Determining fat mass

The most commonly used method to determine fat mass is the skinfold test. Measurements are conducted using pincers, known as Harpenden calipers. Mass can be unevenly distributed between the upper and lower body in some players. As a result, an average of five skinfold measurements gives a more accurate result for calculating fat mass.



The five skinfold measurements taken are:

- upper body
 - umbilical (A)
 - supra-iliac (B)
 - sub-scapular (C)
 - sacral (D)
- lower body
 - quadriceps (E)



Formula

$$\% \text{ fat mass} = \frac{A+B+C+D+E}{\sqrt{\frac{\text{Weight (kg)}}{\text{Height (dm)}}}} \times 2.22$$

Three categories can be defined from the results:

< 7%	risk of injury
8-12%	optimal level
> 12%	high

Physical tests

Physiological capacities

MAP – Maximal Aerobic Power is the maximal quantity of oxygen that a person's body can use per unit of time during intense, long-duration muscular exercise. It is also defined as maximal oxygen consumption – $VO_2\max$ (ml/min/kg)

$vVO_2\max$ – Maximal Aerobic Speed is the speed achieved at maximal oxygen consumption. It is an important index of current physiological capacity.

Determining HRmax (simple test on the pitch):

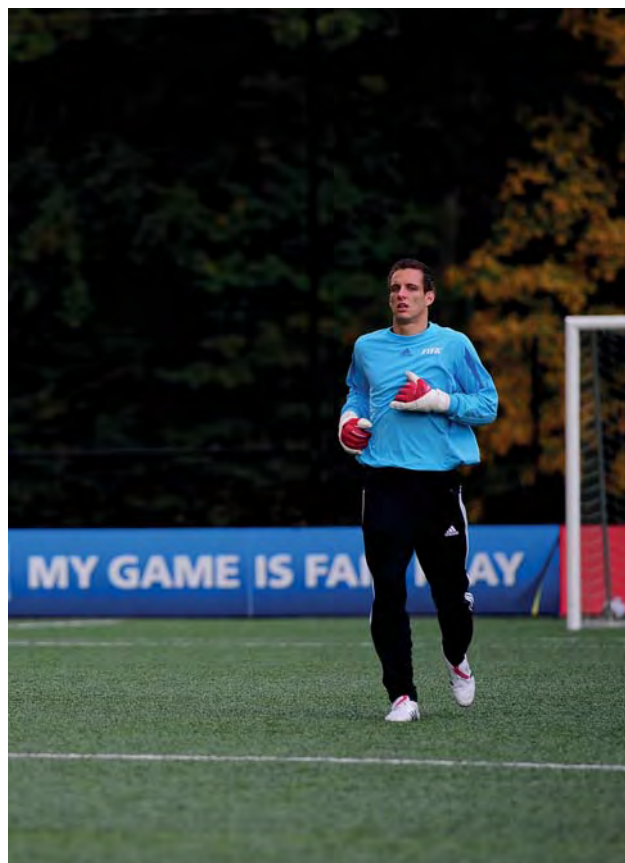
- warm-up for 4 laps of the pitch (1 lap – 2 minutes), then 1 quick lap (90 seconds), then ½ lap very quickly (40 seconds) and the last ½ lap finishing in a sprint,
- the HR value considered is that monitored when crossing the finish line.

Determining $VO_2\max$, $vVO_2\max$, anaerobic threshold, (HRmax):

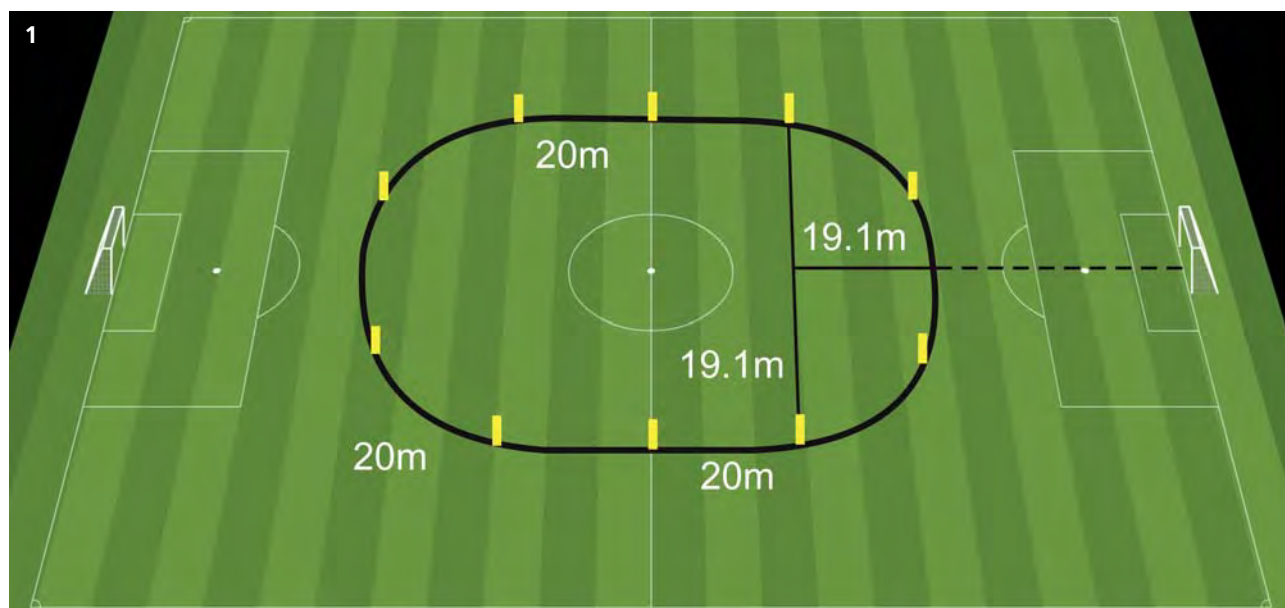
- in the laboratory on a treadmill or ergometric bicycle,
- on the pitch. The most common tests used on the pitch are:
 - continuous or triangular, progressive tests: VAMEVAL, TUB II,
 - Léger "shuttle" test, Conconi test, Bangsbo test,
 - Cooper test, etc.

VAMEVAL test (Cazorla, 1990)

This test takes place on a symmetrical track (see photo 1) based on multiples of 20 metres (athletics stadium, football pitch – turf or synthetic). The running speed is governed by



audible signal ("peep" every 20 m) and the speed increases by 0.5km/h every minute. The test finishes when the subject can no longer follow the imposed pace. The number of the last stage reached is noted as well as the time taken during the last stage. A reference table gives the $VO_2\max$ and the $vVO_2\max$.



TUB II (University of Bordeaux 2, Cazorla, 1992)

This test consists of progressive stages of 3' running + 1' rest. The speed is increased by 2 km/h each stage up to 12 km/h and after that it increases by 1 km/h per stage. If the players have genuinely tried to reach their maximum limit, the speed at the end of the test corresponds to their maximal aerobic speed (vVO₂max).

Expressed in km/h, this speed is an excellent reference for establishing running speeds for basic training.

The aerobic and anaerobic limit speeds and corresponding heart rates provide markers which are useful for effective basic training, in particular for aerobic endurance work.

Maximal aerobic speed also allows the extrapolation of maximal oxygen consumption, VO₂max.

VO₂max (ml/min/kg) = vVO₂max (km/h) x 3.5

The VO₂max can be considered to equate to the player's "engine size".

It allows an assessment of the player's potential with regards to his capacity to:

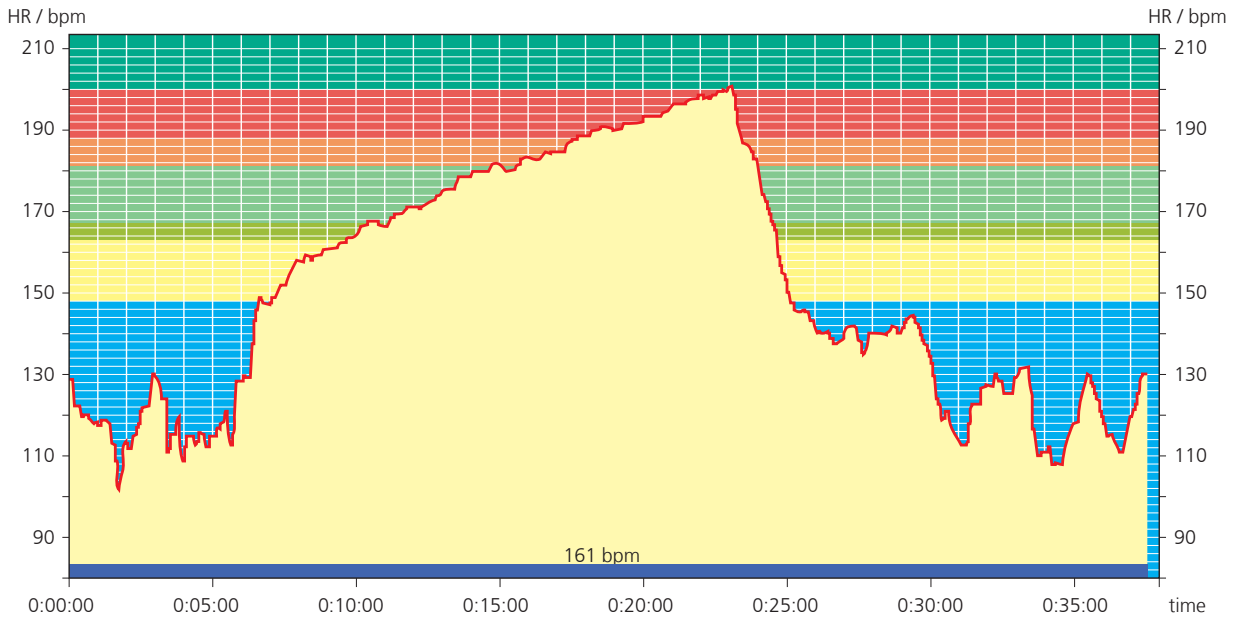
- withstand daily training, including high intensity training,
- cope with a match played at a high pace (although this is less relevant to the goalkeeper due to the specific nature of his position),
- avoid reductions in form and avoid exhaustion during the season.

For your guidance, the VO₂max of professional footballers is on average approximately 59 ml/min/kg at the start of the season and over 64 ml/min/kg for high-level players who have been well trained. Taking into account the specific nature of the goalkeeper's position, a VO₂max of 56 ml/min/kg is sufficient.

Extract from table for VAMEVAL – CAZORLA test (1990)

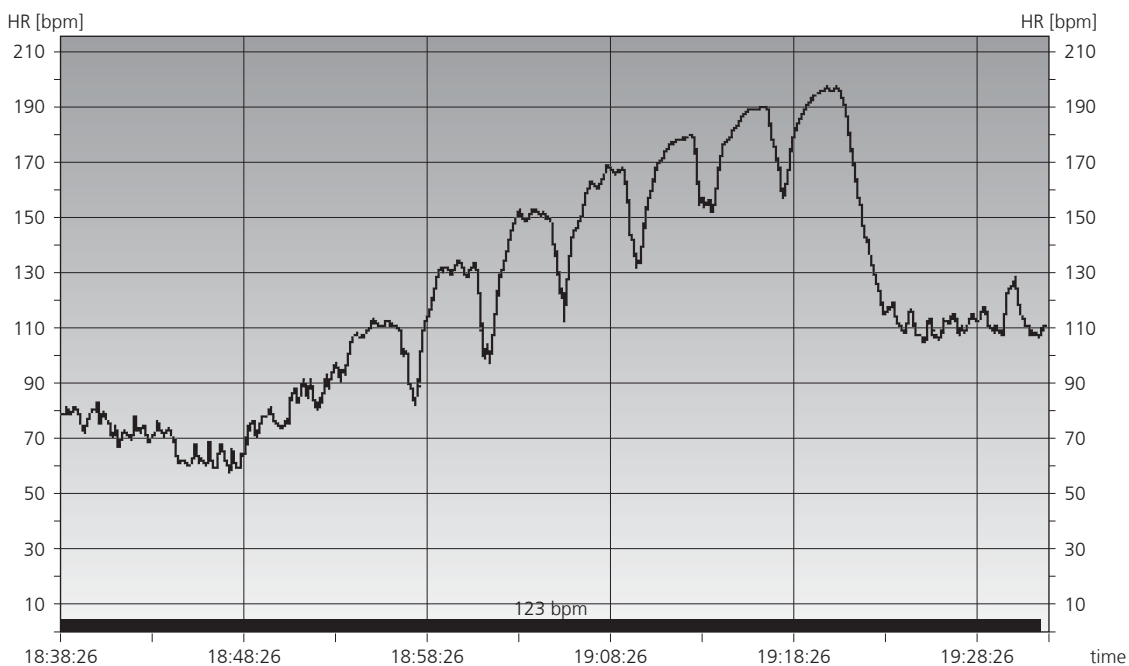
Stage and time	vVO ₂ max km/h	Duration of interval between each 20 m (s,1/1000)	Age and VO ₂ max						
			12	13	14	15	16	17	18 +
Stage 16	16.0 km/h	4.364	62.7	61.6	60.5	59.4	58.2	57.1	56.0
15 s	16.1		63.2	62.1	61.0	59.8	58.7	57.6	56.4
30 s	16.3		63.7	62.6	61.4	60.3	59.2	58.0	56.9
45 s	16.4		64.2	63.0	61.9	60.8	59.6	58.5	57.3
Stage 17	16.5 km/h	4.235	64.7	63.5	62.4	61.2	60.1	58.9	57.8
15 s	16.6		65.2	64.0	62.8	61.7	60.5	59.4	58.2
30 s	16.8		65.7	64.5	63.3	62.1	61.0	59.8	58.6
45 s	16.9		66.2	65.0	63.8	62.6	61.4	60.2	59.1
Stage 18	17.0 km/h	4.114	66.6	65.5	64.3	63.1	61.9	60.7	59.5
15 s	17.1		67.1	65.9	64.7	63.5	62.3	61.1	59.9
30 s	17.3		67.6	66.4	65.2	64.0	62.8	61.6	60.4
45 s	17.4		68.1	66.9	65.7	64.5	63.2	62.0	60.8
Stage 19	17.5 km/h	4.000	68.6	67.4	66.2	64.9	63.7	62.5	61.3
15 s	17.6		69.1	67.9	66.6	65.4	64.2	62.9	61.7
30 s	17.8		69.6	68.3	67.1	65.9	64.6	63.4	62.1
45 s	17.9		70.1	68.6	67.6	66.3	65.1	63.8	62.5

Example results from a VAMEVAL test and TUB II test for a professional goalkeeper.



	vVO ₂ max (km/h)	VO ₂ max (ml/min/kg)	HRmax (bpm)
Year x (VAMEVAL)	16.4	57.3	194
Year x +1 (TUB II)	16	56	198

TUB II test results					
VO ₂ max	HRmax	AEROBIC	AEROBIC HR	ANAEROBIC	ANAEROBIC HR
Km/h	bpm	Km/h	bpm	Km/h	bpm
16	198	12	156	13.6	174



Physical capacities

A range of tests can be used to evaluate speed (explosiveness, sharpness), the different components of speed (acceleration, amplitude, frequency, etc.), jumping, leg power, muscle strength and suppleness.

Speed

It is essential to have accurate results for short distance sprints. Recommendations:

- the use of photoelectric cells is preferable (results more objective),
- if a stopwatch is used, the examiner should not be changed,
- the start procedure must be identical for all tests,
- the weather conditions must be taken into account,
- in order to allow the results of two tests to be compared, they should take place on the same surface using the same type of footwear.

Tests used:

- start, explosive strength – 10-metre speed,
- sharpness – 20-metre speed..... (T1),
- coordination speed – looped circuit (20m with changes of direction) (T2),
- the skill index is the relationship between the time taken for 20 m in a straight line and 20 m in the looped circuit (good result > 50%).

Skill index % = T1/T2×100

A slight difference can be observed between the results for 10 m (synthetic surface – football boots) and 10 m Optojump (sprint between 2 rails providing analysis of speed components) (indoor, concrete floor – trainers) which confirms the importance of respecting the test protocol (see above).

Reaction speed

This is the time that elapses between the start signal (visual or audible) and the player springing into action. A special system is required to assess this quality (for example a very accurate measurement system that uses a start plate or cells to calculate the time between the signal and the player's first response).

Analysis of the components of speed

Speed is improved by carrying out qualitative work (improving sprinting). The Optojump system measures and analyses several speed parameters (subject sprints between 2 rails fitted with photoelectric cells linked to a computer) The analysis gives objective information on the various parameters of the sprint:

- length of stride,
- contact time,
- time in air,
- speed,
- acceleration.



	Test				Skill index
	10 m (s)	10 m (s) Optojump	20 m (s)	20 m (s) looped circuit	
	2.09	2.10	3.45	6.00	57.39%
	1.86	1.91	3.17	5.66	56.00%
	1.89	1.99	3.30	5.97	55.31%
Average	1.94	2	3.31	5.87	56.23%

Example result of tests on 3 professional goalkeepers

Jumping tests

A range of tests can be used to measure jumping:

- horizontal jump:
 - long jump without run-up (feet together),
 - triple jump,
 - 5 strides.
- vertical jump:
 - Sargent test,
 - Bosco test.

A vertical jump indirectly relates to the muscle power of the legs. Associated with height, intelligent positioning, anticipation and the famous skill of timing, jumping is the basic physical quality that affords the goalkeeper optimum effectiveness in dealing with an aerial ball.

Sargent test

This is a simple vertical test that does not need any special equipment. Requirements:

- a sufficiently high wall, chalk, ruler.

Test protocol:

- the subject stands side on against the wall,
- he raises his arm to the maximum extension – mark A,
- the subject jumps as high as possible without a run-up,
- the extended arm makes a new mark – B,
- the vertical jump is the distance between the two marks.

Jump = B – A



Sargent test

Bosco test

For this test a Bosco mat is used (mat with sensors) or an Optojump system (two rails fitted with photoelectric cells) linked to a computer. The vertical jump can be calculated from the time the subject is in the air.



Three types of jump are conducted for the analysis:

Squat Jump (SJ)

- this evaluates the explosive force of the legs, that is to say the potential to produce high maximal power. A good performance (over 40 cm) bears witness to a good capacity for nerve recruitment and a high proportion of fast-twitch muscle fibres.

Counter Movement Jump (CMJ)

- this also evaluates explosive strength. The pre-stretching brings the myotactic reflex into play and allows a more global recruitment of all fast- and slow-twitch fibres. Good performance in the CMJ (>42 cm) may indicate a good balance in strength building work between heavy loads that stress both fast- and slow-twitch fibres and lighter loads (dynamic loads) that increase the strength of fast-twitch fibres.



Squat Jump (SJ)



Counter Movement Jump (CMJ)



Vertical jump, hands free (CMJ hands free)

Vertical jump, hands free (CMJ hands free)

- this allows assessment of the coordination between the arms and legs. This jump also allows the overall muscular power to be calculated.

CMJ/SJ ratio

- this indicates coordination in the recruitment of all muscle fibres and the good use of the stretch reflex (improvement through impacts and plyometrics). A good result is >104%.

	SJ	CMJ	CMJ hands free	CMJ / SJ
	37.6 cm	38.4 cm	49.3 cm	102.13 %
	37.6 cm	39.1 cm	47.4 cm	103.99 %
	36.7 cm	36.8 cm	44.6 cm	100.27 %
Average	37.3 cm	38.1 cm	47.1 cm	102.13 %

Example results of tests on 3 professional goalkeepers

Leg power

- this is calculated by taking into account weight and vertical jump. Expressed in relation to body weight in kilogrammes, this is a good indicator of muscular quality.

	Power	
	W	W / kg
	1279.18	14.93
	1077.21	14.48
	1210.19	15.22
Average	1188.86	14.87

Example results of tests on 3 professional goalkeepers

Strength-building tests

The goalkeeper’s maximal strength must be determined in order to customise strength-building work for each muscle group. The maximal load is the load which can be lifted once. This is determined by:

- apparatus measuring muscular performance,
- direct method:
 - lifting weights until failure,
- indirect method:
 - the subject lifts a weight that is close to the maximal load several times,
 - the value of the load and the number of repetitions are noted,
 - the maximum load is calculated using:

the Brzycki formula:

$$\text{Maximum strength} = \frac{\text{Load lifted}}{1.0278 - (0.0278 \times \text{No. of repetitions})}$$

the Lombardi table:

Maximum strength = Load lifted x Coefficient

Number of repetitions	Coefficient
1	1
2	1.07
3	1.10
4	1.13
5	1.16
6	1.20
7	1.23
8	1.27
9	1.32
10	1.35



Example of the development of maximal strength following tests conducted on three professional goalkeepers

Goalkeeper 1	Goalkeeper 2	Goalkeeper 3	
June Bench press			Average of 3 goalkeepers
65 kg	65 kg	68 kg	66 kg
November Bench press			Average of 3 goalkeepers
73 kg	75 kg	78 kg	75 kg
February (next year) Bench press			Average of 3 goalkeepers
74 kg	94 kg	87 kg	85 kg

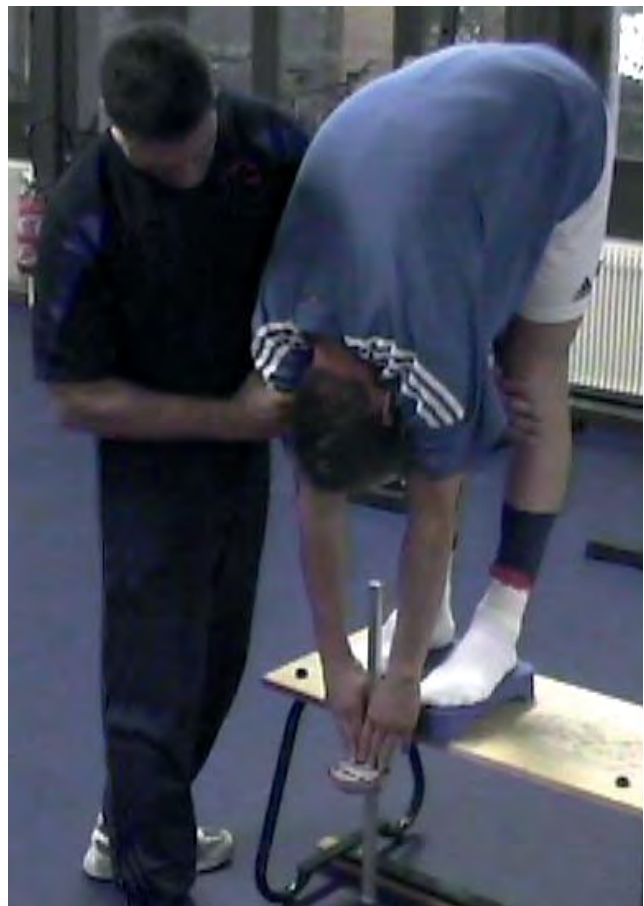
Suppleness

Suppleness not only allows the effectiveness of technical manoeuvres to be improved, but also reduces the number of muscle, tendon and joint injuries.

Some authors have developed tests that combine a physical quality with a football activity. These consist of different skills circuits, with or without a ball, (slalom, passing, roll, etc.) in which the goalkeeper participates along with the other players. These can also be adapted such that, for example, the goalkeeper dives for a stationary ball. If the goalkeeper has problems with coordination, the goalkeeping coach will already have detected this. In general, tests of this kind are not particularly helpful because they do not provide any information that is useful for making improvements.

Suppleness	
Goalkeeper 1	32.0 cm
Goalkeeper 2	38.2 cm
Goalkeeper 3	37.3 cm
Average of 3 goalkeepers	35.83 cm

Example results of tests on 3 professional goalkeepers



Psychological tests

Any psychological tests must be carried out by a specialist.

Technical tests

The goalkeeper can participate in technical tests with the outfield players (juggling the ball, skills, etc.).

Technical tests for the goalkeeper

Clearances are the only technical manoeuvres by goalkeepers that can be tested. However, the results are very subjective because a test of this type depends on the conditions under which it is conducted (wind, rain, etc.). This test can be used as a competition between goalkeepers rather than the results being a source of reference information.

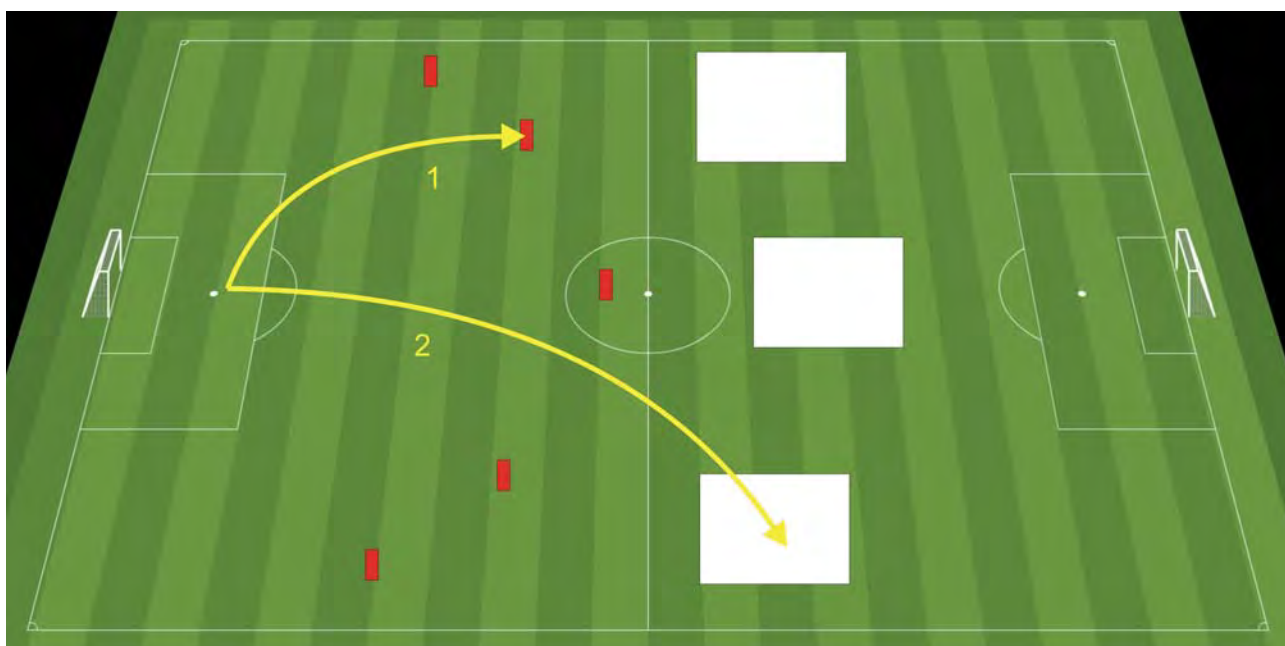
It is difficult to test the goalkeeper's other specific movements. Considering diving, for example, it is impossible to strike the ball in exactly the same position for each goalkeeper. Furthermore, what would be the purpose of these tests?!

We consider that the best assessment of the goalkeeper's technical qualities is achieved through observation by the coach.

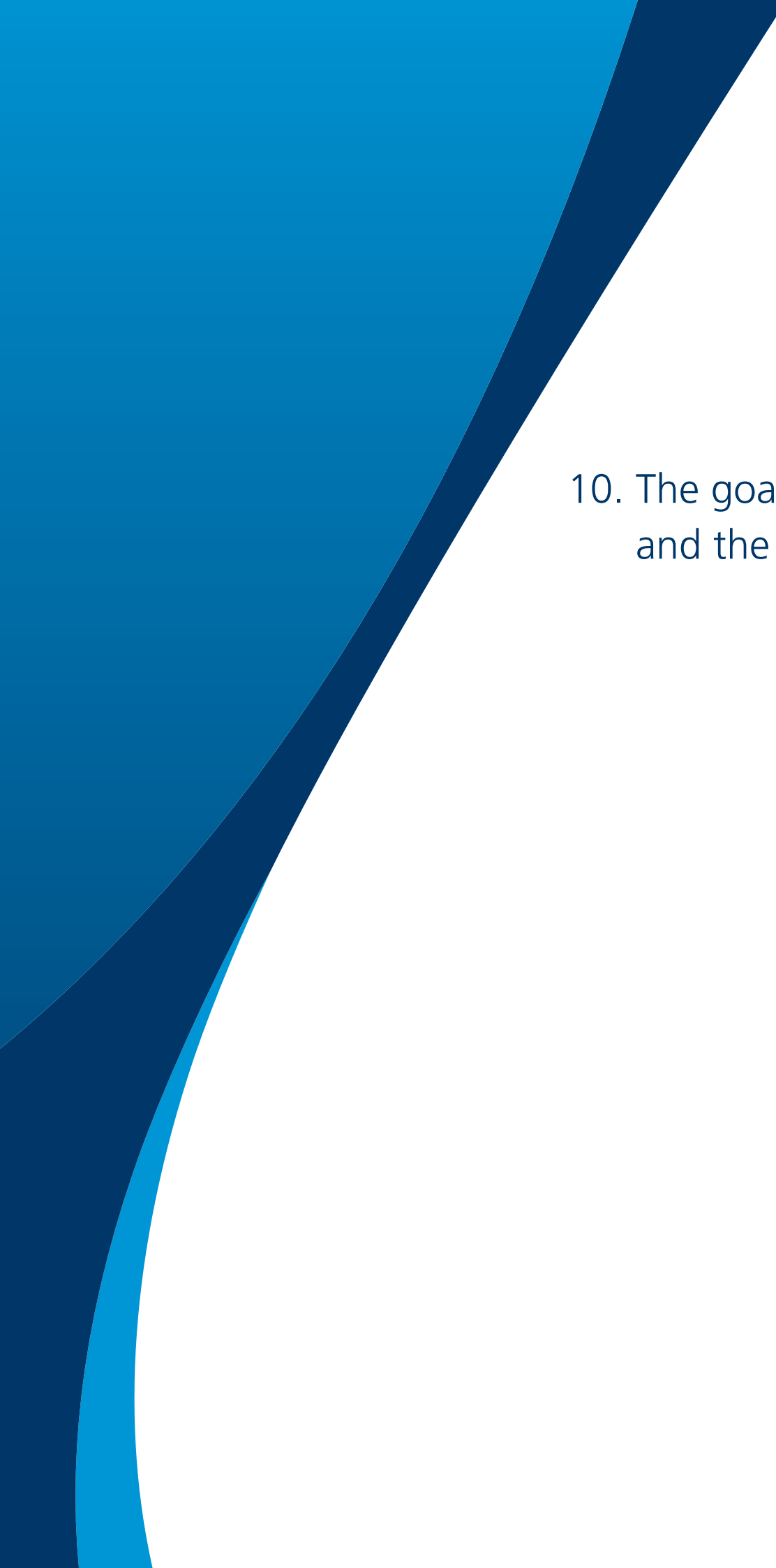
Goalkeeper's clearance (accuracy)

- throw-out,
- kicked, volley,
- kicked, half-volley.

10 repetitions of each







10. The goalkeeper and the match

In order to examine the goalkeeper and the match, we must identify the goalkeeper's place, role and position in everything relating to the match:

- the match microcycle (competition period microcycle),
- preparation for the match,
- the warm-up before the match,
- observation and evaluation of the match,
- recovery after the match.

Before analysing individual relationships, the issue of a team squad having two or three goalkeepers must be discussed.

The goalkeeping duet

The match represents the culmination of the goalkeeper's preparation. When a squad has two goalkeepers, it is precisely at this time that one of them cannot show what he has learned during all those exhausting training sessions. At the start of this manual, we described how the goalkeeper's sporting performance was characterised by goalkeeping play (technical, tactical and theoretical preparation) and by physical and psychological preparation, but we intentionally did not mention a secondary factor: "luck". More simply "being in the right place at the right time". This consideration is entirely valid for goalkeepers. An individual save, a missed match, the injury of a team-mate, etc. – these events can all have a considerable influence on a goalkeeper's career. Many talented, high-quality goalkeepers find that their careers grind to a halt whereas others have excellent careers, even if they are less skilful.

Why do we only talk about the first goalkeeper, while the second goalkeeper is seen as a substitute? The reasons for this relate to the specific nature of the position:

- there is only one place available (outfield players have 10),
- the goalkeeper cannot be changed every other match (youth teams are an exception) because the stability of the team must be maintained,
- clearly if the team achieves good results, the choice of goalkeeper is consistent,
- the first goalkeeper enjoys the coach's trust even if he makes a mistake,
- tactical manoeuvres (substituting a player or players to use up time at the end of a match) do not apply to the position of goalkeeper.

Everyone has heard of Čech, Casillas and Enyeama, but we can ask:

"Do you know the names of the team-mate goalkeepers who work with these famous players every day?"

Of course, at very big clubs, there are several good goalkeepers. But at ordinary clubs, we only know the regular first-team choice. Each "substitute" may play many fewer matches than a first-choice goalkeeper at another club even though his sporting performance may be superior:

- is the goalkeeper happy with this situation?
- what are the goalkeeper's ambitions?
- what about his career?
- what is his relationship with the first-choice goalkeeper?

The composition, functioning and relationships of the goalkeeping duet (or trio) are extremely important for the stability of the position. There can be positive or negative consequences for the team. For this reason, the criteria and parameters of choosing the goalkeeper must be considered with great care.

The goalkeeper and the competition microcycle

Each head coach has a different philosophy that is expressed through the various parameters of the microcycle such as the number of group training sessions, the content and duration of the training units, recovery time, days off, etc. The goalkeeping coach's programme is conducted in parallel.

The schedule of the competition microcycle (weekly programme) depends on the match calendar:

1. All junior categories and senior amateur categories

- regular competition cycle over 7-14 days (Saturday to Saturday, etc.). The fixtures are set at the start of the season and only changed due to postponements for bad weather or a good run in a cup competition (for adults).

2. Professional clubs

- irregular competition cycle over 3-14 days.

This is for a variety of reasons:

- TV requirements,
- national team commitments,
- various national and international cup competitions,
- weather conditions.

The variations cause a consequent adjustment of the team's weekly schedule. This inevitably has an effect on the goalkeeper's training programme.

If there is enough time in the microcycle for specific work with the goalkeepers, then it is easy to implement their preparation programme. If this is not the case, we can add training sessions in the goalkeeper's free time or work before or after group sessions. This additional training content must take into account the work already conducted with the group, particularly in physical terms. The content of the goalkeeper's training in the competition (match) microcycle depends on:

- the goalkeeper's preparation programme,
- the team's programme (requiring continuous adaptation by the goalkeeping coach),
- variable elements:
 - modification of the training programme to address failings noted in matches (e.g. problem with high balls, etc.),
 - the goalkeeper's health,
 - weather conditions (icy pitch),
 - preparation in relation to the next opponent's strong points.

Match preparation

Two types of match preparation apply (to all age and sporting performance levels):

- group,
- individual.

The goalkeeper is an integral part of the team but also has the specific individual considerations of his position. The number of parameters influencing the goalkeeper's match preparation increases as the importance of the match increases (amateurs → professionals, children → adults).

- **group match preparation includes:**
 - analysis and evaluation of the previous match; this also represents the initial preparation for the subsequent match,
 - observation of the opponents,
 - video,
 - hotel stay or meal before the match,
 - pre-match talk.
- **individual match preparation:**
 - this form of preparation is highly personal as each goalkeeper is different, with his own habits, rituals, beliefs, etc.

- a good knowledge of the goalkeeper's personality allows the coach to better assist him in his preparation,
- observation of the opponents and analysis of their qualities makes the goalkeeper's task on the pitch easier,
- some goalkeepers compile their own statistics on other teams' attackers (penalties, free kicks, etc.).

In practical terms, it can be said that the goalkeeper's match preparation takes place both:

- **on the pitch:**
 - group and individual training (during the week),
 - warm-up before the match,
- **off the pitch:**
 - analysis of the previous match,
 - mental preparation (group and individual sessions, relaxation, etc.),
 - the day before and the day of the match (group obligations and individual habits),
 - in the changing room before the match (changing, massage, focus, suppleness exercises, stretching, last pieces of advice, etc.).

Warm-up before the match

The aim of the warm-up is, on the one hand, for the goalkeeper to prepare his body for the match (injury prevention), and on the other hand to quickly review technical manoeuvres that have already been acquired.

The goalkeeper's warm-up before the match is, above all, a kind of psychological preparation for the match carried out directly on the pitch.

Catching a few balls and being complimented by the coach and confidently dealing with a few crosses reassures the goalkeeper. Anything that the goalkeeper has not yet learned, he will certainly not acquire during these exercises. When the coach observes a problem, he must react in a very sensitive way, taking into account the goalkeeper's character (calm him down, encourage, say nothing, raise his voice, etc.).

How to warm up

It is important for young goalkeepers to learn how to be independent when warming up. This may provide the answer to the two main questions which arise:

- **what should be done during the warm-up?**

The warm-up must be simple and useful and revise the basic manoeuvres:

- catching the ball (10-12 repetitions),
- diving practice (on ground and medium height ... 3 or 4 dives on each side),
- catching an aerial ball thrown in (in 11-a-side matches, crosses should be kicked in, 4 or 5 on each side),
- some medium-distance shots,
- playing the ball with feet (short passing and various clearances).

The exercises conducted should not be excessive and take the goalkeeper's age into account.

- **who should do the warm-up with the goalkeeper?**

For younger children, the coach should initially conduct the warm-up with the goalkeeper. However, when the goalkeeper knows the warm-up procedures, he can be assisted by another goalkeeper, outfield player, assistant coach, etc.

The warm-up for older goalkeepers can introduce suitable elements to give the goalkeeper confidence. If you watch a top-level goalkeeper before a match, you'll notice that the warm-up is a very individual, personalised affair. The goalkeeping coach is there simply to throw and kick the ball in, give some last-minute instructions and answer any questions that the goalkeeper may have. This is a good approach because it respects the goalkeeper's personality and obliges him to take responsibility for his performance right from the warm-up.

The paradox is that the goalkeeper is more active during the warm-up than during the match.

Observation, analysis and evaluation of the match

There is no universally-used form for observations of the goalkeeper's activities during a match. Each coach draws up his own form, adapted to what he wants to concentrate on:

- observation of a specific activity:
 - goalkeeper's movements,
 - playing the ball with feet,
 - a specific save.
- analysis of all the match situations in which the goalkeeper is in contact with the ball:

- this conveys an overall image of the goalkeeper during the match,
- it provides sufficient information to determine any faults in the goalkeeper's play,
- we can determine in which game situations goals are most frequently scored (also an interesting statistic for the head coach regarding the play of the team as a whole),
- the information obtained can be used in the preparation of a new cycle and indicates the direction in which work should be carried out.

In professional football it is very important to make observations so that the goalkeeper can consistently improve his performance. Observation is also essential in youth football at higher levels (from U15, 11-a-side on a full-sized pitch). But there remains the issue of who should carry out these observations in youth football. Even if the club has a goalkeeping coach, this coach cannot be expected to attend all matches of all categories. The mission could be carried out by the second goalkeeper, who would be obliged to closely monitor and analyse important match situations, which could also be a useful exercise for him.

Comprehensive observations are not useful for younger players. The performance of teams of players of younger ages varies considerably and sometimes the goalkeeper hardly touches the ball.

Observation and analysis are directly related to the evaluation of the goalkeeper's individual performance. We can review the match collectively with all the goalkeepers or just with the goalkeeper concerned. It is also possible to combine both these methods, especially with younger players. Technical resources have developed and evaluations can now be carried out with the aid of video. Starting on the screen and then following up on the pitch, we can review problematic situations and demonstrate the most suitable solutions. There are now plenty of televised matches that can be used to provide additional examples.

There follows an example of an observation and analysis of a match:

Team A goalkeeper		Team A v. Team B 3-0 (1-0)										Goal
		first half				second half				TOTAL		
		Positive		Negative		Positive		Negative		Positive	Negative	
		Long	Short	Long	Short	Long	Short	Long	Short			
Clearance	Dead-ball	4	1			3		1		8	1	
	Volley											
	Half-volley	1				3				4		
	Ground											
	Throw-out						3			3		
Back pass	Pass		2			2				4		
	Clearance	2		1		2				4	1	
Aerial ball	Caught					1				1		
	Punched	1				1				2		
Standing save						1				1		
Dive	On ground											
	Medium height	1								1		
	Lob											
Reflex		2								2		
1-on-1 challenge	No dive					1				1		
	With dive					2				2		
Coming out of penalty area												

COMMENTS:

A very good match. Authoritative first half . Reflex save from a close header. Good reaction to confusion in front of the goal. Good reading and anticipation of balls into the penalty area in the second half.

Recovery after the match

Recovery procedures (warm-down, massage, bath, etc.) reflect the head coach's preferences. Recovery sessions can be scheduled after the match or on the following day. Some coaches do not schedule any recovery sessions and give the players time off. Taking into account the specific nature of his position, the goalkeeper may be tired after the match, particularly mentally. This does not require a special recovery procedure, but rather is an organisational consideration for each goalkeeper (habits).

- the goalkeeper who played the match can:
 - join in with the programme followed by the other players (cool-down),
 - carry out a strength-building session,
 - carry out individual training on the pitch,
- the second-choice goalkeeper can:
 - join in with the other substitutes' programme,
 - carry out a specific additional training session.

10.1 Observation and analysis of high-level matches

All the goalkeeper's actions on the pitch are very important. Some are repeated more often than others. For this reason, it was decided to analyse all the interventions made by goalkeepers during certain matches. This was not an exercise in judging these goalkeepers, but simply quantifying their actions.

Some 43 matches were analysed during the observation period from September 2004 to May 2005, namely:

- 2006 World Cup Qualifiers,
- Champions League matches,
- UEFA Cup matches,
- various European league matches,
- French Ligue 1 and Ligue 2 matches.

Methodology

- every action that the goalkeeper made was listed in a table:
 - the goalkeeper's saves, distribution and all other manoeuvres were considered as separate actions,
- saves using the hands and feet were differentiated,
- totals were drawn up for each:
 - half,
 - match,
 - goalkeeper.
- every goal conceded was associated to the intervention used,
- different conclusions were reached (see the tables on the pages below).



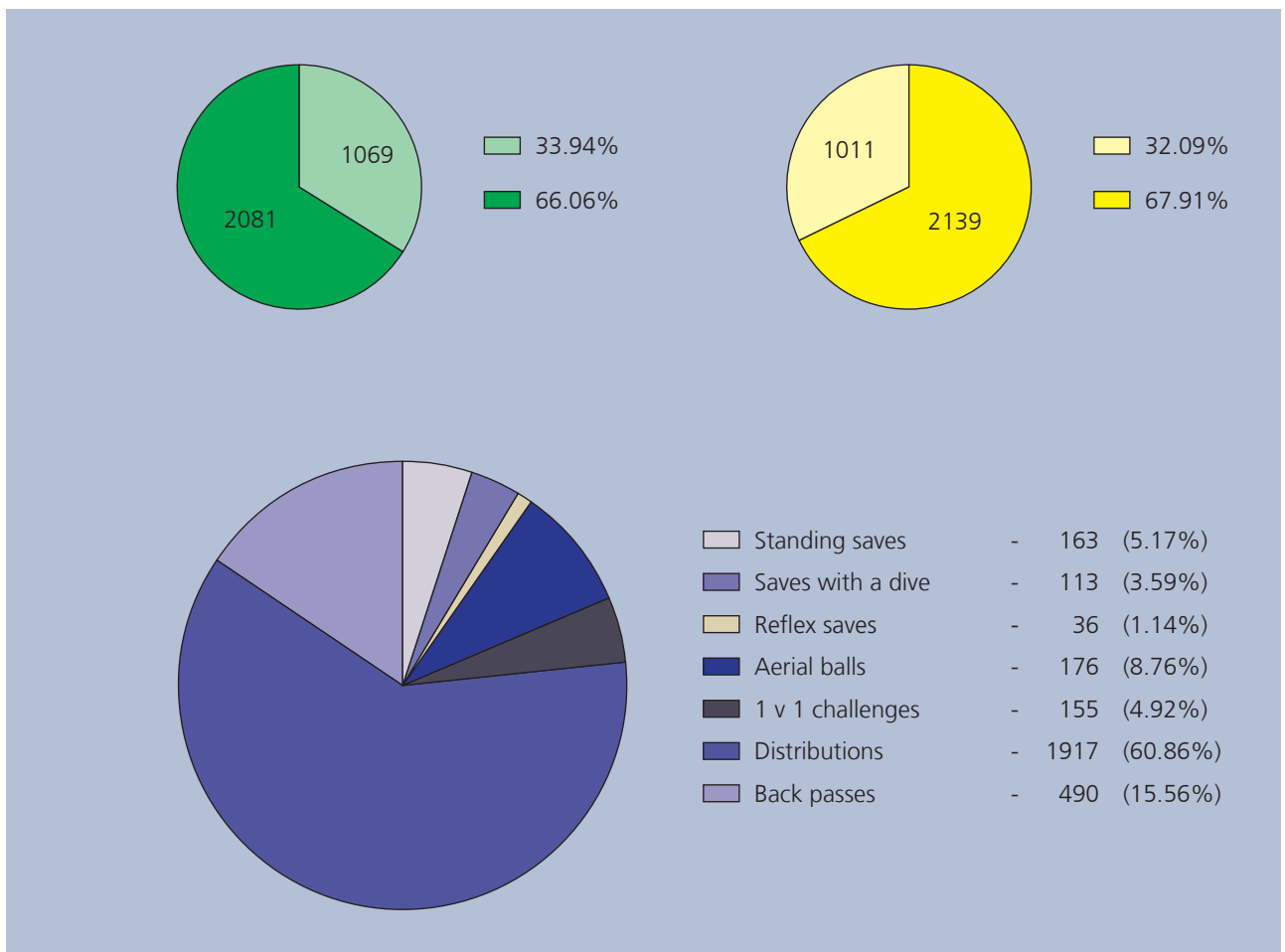
Result of observations – “goalkeepers’ interventions”

Goalkeepers made 3,150 interventions during the period of study, as shown by the table below.

Goalkeeper's interventions	∑ of 43 matches	Ø per match
Interventions in play and defensive dead-ball situations (*)	2139	49.74
Distribution from dead-ball situations (**)	1011	23.51
Interventions with hands	1069	24.86
Interventions with feet	2081	48.40
Total number of interventions in the period of observation		
	3150	
Average number of interventions per match in the period of observation		
		73

* Defensive dead-ball situations: free kicks and corners taken by opponents

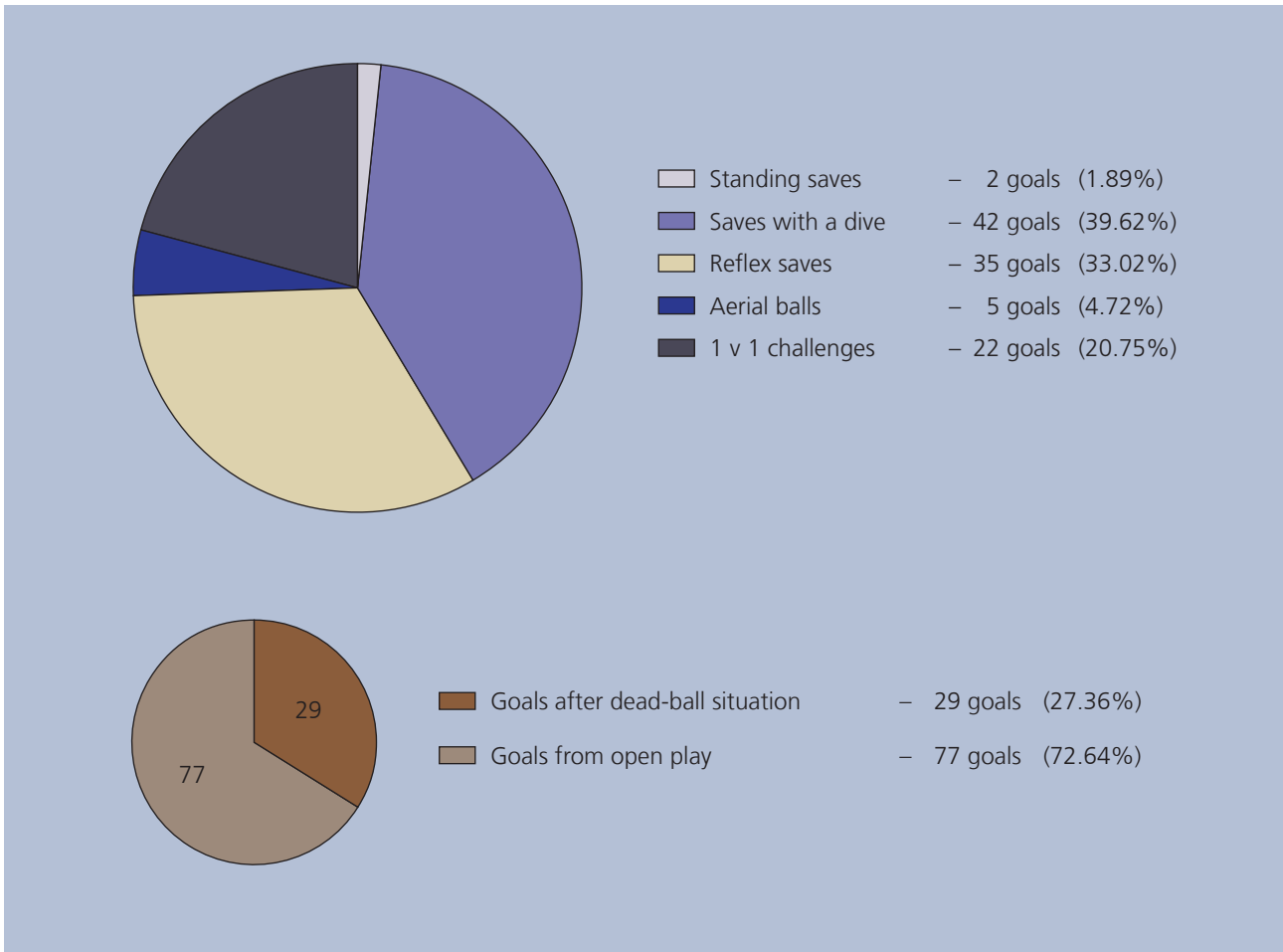
** Dead-ball situations: goal kicks and free kicks near the goal taken by the goalkeeper



Goalkeeper's interventions		Σ of 43 matches	\emptyset per match
Standing saves	Ball on ground	35	0.81
	Ball at medium height	91	2.12
	Ball with bounce	37	0.86
Saves with dive	Ball on ground, caught	13	0.30
	Ball at medium height, caught	16	0.37
	Ball with bounce, caught	8	0.19
	Lob, caught	0	0
	Ball on ground, deflected	11	0.26
	Ball at medium height, deflected	47	1.09
	Ball with bounce, deflected	11	0.26
	Lob, deflected	7	0.16
Reflex saves		36	0.84
Crosses	Caught	214	4.98
	Punched, one fist	17	0.40
	Punched, both fists	45	1,05
1-on-1 challenges	Outside penalty area	35	0.81
	Dive at feet	99	2.30
	Dribble	0	0
	Kicked	21	0.49
Distribution	Volley	328	7.63
	Half-volley	30	0.70
	On ground	173	4.02
	Throw-out	375	8.72
	Dead-ball situation	1011	23.51
Back pass	Clearance	164	3.81
	Pass	326	7.58

Results of observations – “goals conceded”

Goalkeepers conceded 106 goals in the 43 matches, an average of 2.47 goals per match (each goal conceded was associated to the intervention used).



Or, in more detail:

	Number of interventions	Successful interventions	Goals conceded
Standing saves	163	161	2
Saves with a dive	156	114	42
Reflex saves	71	36	35
Aerial balls	276	271	5
1-on-1 challenges	177	155	22

Of 490 back passes, all were negotiated, some better than others, without conceding a goal.

Goals conceded		Σ of 43 matches	\emptyset per match
Standing saves	Ball on ground		
	Ball at medium height	2	0.05
	Ball with bounce		
Saves with dive	Ball on ground, caught		
	Ball at medium height, caught		
	Ball with bounce, caught		
	Lob, caught		
	Ball on ground, deflected	7	0.16
	Ball at medium height, deflected	28	0.65
	Ball with bounce, deflected	5	0.05
	Lob, deflected	2	0.05
Reflex saves		35	0.81
Crosses	Caught	1	0.02
	Punched, one fist	2	0.05
	Punched, both fists	2	0.05
1-on-1 challenges	Outside penalty area		
	Dive at feet	1	0.02
	Dribble	1	0.02
	Kicked	20	0.47
Distribution	Volley		
	Half-volley		
	On ground		
	Throw-out		
	Dead-ball situation		
Back pass	Clearance		
	Pass		
		106 goals	2.47 per match

Changes regarding goalkeepers playing the ball with feet



Two World Cup Final matches were used to compare the way in which the goalkeeper played before and after the change of the “back pass” rule.

Germany v. Argentina

During the 1990 World Cup Final, of 77 balls, the goalkeepers handled 47 and played 30 balls with feet.

- of 17 back passes, the German goalkeeper intervened 16 times with his hands and just once with feet,
- of 8 back passes to the Argentinian goalkeeper, he handled 5 and played 3 with his feet.

The Netherlands v. Spain

During the 2010 World Cup Final, out of 81 balls, the goalkeepers handled 23 and played 58 with feet. They were obliged to play 29 back passes with their feet.

- the Dutch goalkeeper received 22 back passes,
- the Spanish goalkeeper received 7 back passes.

Clearly the trend is virtually reversed. The conclusion is that the goalkeeper playing the ball with feet has an important role in modern football.



GERMANY v. ARGENTINA

1-0 (0-0)

WORLD CUP FINAL – Italy

8 July 1990



<p>GERMANY</p> 		<p>Bodo ILLGNER</p> <ul style="list-style-type: none"> - 7.4.1967 - 187 cm - Debut match: 1987 - Total: 54 matches
<p>ARGENTINA</p> 		<p>Sergio GOYGOECHEA</p> <ul style="list-style-type: none"> - 17.10.1963 - 185 cm - Debut match: 1987 - Total: 44 matches

Germany v. Argentina	Illgner			Goygoechea			Total
	1 First half	2 Second half	Total	1 First half	2 Second half	Total	
Intervention in play and defensive dead-ball situation (*)	21	16	37	14	8	22	59
Distribution from dead-ball situation (**)	2	0	2	7	9	16	18
Intervention with hands	18	12	30	12	5	17	47
Intervention with feet	5	4	9	9	12	21	30



* Defensive dead-ball situations: free kicks and corners by opponents

** Dead-ball situation: goal kicks and free kicks near the goal taken by the goalkeeper

Germany v. Argentina		Illgner			Goygoechea			Total	Goals		Total
		First half	Second half	Total	First half	Second half	Total		First half	Second half	
Standing saves	Ball on ground										
	Ball at medium height		1	1				1			
	Ball with bounce										
Saves with dive	Ball on ground, caught				1		1	1			
	Ball at medium height, caught										
	Ball with bounce, caught				1		1	1			
	Lob, caught										
	Ball on ground, deflected						1	1			Germany 84'
Reflex saves	Ball at medium height, deflected										
	Ball with bounce, deflected						1	1			
Crosses	Lob, deflected										
	Caught										
	Punched, one fist						1	1			
1-on-1 challenges	Punched, both fists										
	Outside penalty area										
	With or without dive										
	Dribble										
	Kicked										
Distribution	Volley	1	3	4							
	Half-volley										
	On ground	2		2							
Back pass	Throw-out	2		2	7	9	16	18			
	Dead-ball situation	8	5	13	6	1	7	20			
	Clearance	10	6	16	3	2	5	21			
	Pass		1	1	2	1	3	4			

THE NETHERLANDS v. SPAIN
 0-1 after extra time
 WORLD CUP FINAL – South Africa
 11 July 2010



<p>THE NETHERLANDS</p> 		<p>Maarten STEKELENBURG</p> <ul style="list-style-type: none"> - 22.9.1982, 197 cm - Club: Ajax (The Netherlands) - Debut match: The Netherlands v. Lichtenstein 03/09/2004 - 41 matches (2010 WC included) - 2010 World Cup (total: 7 matches)
<p>SPAIN</p> 		<p>Iker CASILLAS</p> <ul style="list-style-type: none"> - 20.5.1981, 184 cm - Club: Real Madrid (Spain) - Debut match: Sweden v. Spain 31/6/2000 - 117 matches (2010 WC included) - 2002, 2006, 2010 World Cups (total: 15 matches)

The Netherlands v. Spain	Stekelenburg			Casillas			Total 90' + 2x15'
	1 First half	2 Second half	Total 90' + 2x15'	1 First half	2 Second half	Total 90' + 2x15'	
Intervention in play and defensive dead-ball situation (*)	21	15	36 + 11	15	5	20 + 5	56 + 16
Distribution from dead-ball situation (**)	5	5	10 + 8	7	8	15 + 4	25 + 12
Intervention with hands	7	5	12 + 6	8	3	11 + 3	23 + 9
Intervention with feet	19	15	34 + 13	14	10	24 + 4	58 + 17

* Defensive dead-ball situations: free kicks and corners by opponents

** Dead-ball situation: goal kicks and free kicks near the goal taken by the goalkeeper

The goalkeepers' actions during extra time are shown in blue in the table.

The Netherlands v. Spain		Stekelenburg			Casillas			Total		Goals		Total
		First half	Second half	Total 90' + 2x15'	First half	Second half	Total 90' + 2x15'	90'	2 x 15'	First half	Second half + 2 x 15'	
Standing saves	Ball on ground	1	1	2				2				
	Ball at medium height			1	1		1	1	1			
	Ball with bounce				1		1 + 1	1	1			
Saves with dive	Ball on ground, caught		1	1	1		1	2				
	Ball at med. height, caught											
	Ball with bounce, caught											
	Lob, caught											
	Ball on ground, deflected				1		1	1	1			
Reflex saves	Ball at med. height, deflected	1		1				1	1			
	Ball with bounce, deflected											
Crosses	Lob, deflected											
	Caught				2		2	2				Spain 117'
	Punched, one fist											
1-on-1 challenges	Punched, both fists			1					1			
	Outside penalty area											
	With or without dive	1		1 + 1		1	1 + 1	2	2			
Distribution	Dribble											
	Kicked			1		1	1	1	1			
	Volley	1	1	2	2		2	4				
Back pass	Half-volley											
	On ground			1			1		2			
	Throw-out	4	3	7 + 2	2	1	3 + 1	10	3			
	Dead-ball situation	5	5	10 + 8	7	8	15 + 4	25	12			
	Clearance	1	4	5 + 2	2		2	7	2			
	Pass	12	5	17 + 2	3	2	5 + 1	22	3			

The goalkeepers' actions during extra time are shown in blue in the table.







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