

COLOUR BLINDNESS IN FOOTBALL

HOW TO IMPROVE THE FOOTBALL EXPERIENCE FOR EVERYONE AFFECTED



'Let's make the game as inclusive as possible'

Our national game welcomes everyone. That can be as a player, coach, referee, official, volunteer or spectator. Age, religion, race, gender, ability/disability or sexual orientation – it really doesn't matter. The FA exists to ensure football is 'For All'.

However, in some cases it can be difficult to know exactly how to ensure specific groups are encouraged to participate. One such group is people with colour blindness or colour vision deficiency (CVD).

If you work or volunteer for a club or league, this guide is intended to help you ensure colour-blind people are welcomed and integrated into the game, enjoying all the positive, lifelong benefits football offers.

In all your work, please be assured you have the full support of the Football Association as we all strive to ensure the game is as inclusive as possible.

Martin Glenn | Chief Executive Officer, The Football Association



THE PURPOSE OF THIS GUIDANCE DOCUMENT IS:

- 1.** To raise awareness and understanding of colour blindness amongst everyone working in English football.
- 2.** To highlight the real-life experiences of colour blind people watching and playing football.
- 3.** To suggest positive interventions to ensure colour-blind people can fully participate in and enjoy our national game.

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'Addressing these problems is long overdue'

I became fully aware of the scope of the problems faced by colour-blind people in football at a UEFA Hat-Trick workshop on social responsibility. To be frank, addressing these problems is long overdue.

Given the number of people affected, there are potentially millions of people who are lost to the game, or not enjoying it as much as they could. And it's not only millions of fans whose experience of football is hampered by colour blindness, but also players, coaches and referees, among others.

To make the game more inclusive we need to look at ways to change that. Therefore, UEFA fully supports The FA's work in this area, and we intend to use its blueprint to advise the other 54 UEFA member associations on this important issue.

Peter Gilliéron | Chairman of the UEFA Fair Play and Social Responsibility Committee



'We have a responsibility to tackle this issue'

It's only in the last few years that technology has allowed us to see the world through the eyes of a colour-blind person. Now that we're able to 'see' the problems and appreciate the inadvertent discrimination colour-blind players, fans and other stakeholders have experienced in football over many years, we have a responsibility to address this.

If we don't, individuals will continue to be excluded. At grassroots level young children will be put off the game because they can't follow instructions in training or identify their team mates. In addition, clubs will risk a commercial impact when fans switch off TV coverage of matches they can't follow or if they find it difficult to purchase tickets online.

Kathryn Albany-Ward
Founder, Colour Blind Awareness



'Statistically, every male team contains at least one colour-blind player'

Congenital colour vision deficiency is one of the world's most common genetic conditions. It affects one in 12 males, so every male team will contain at least one colour-blind player. In women this is much less common, but the issues faced by colour-blind people in football are the same, whether someone is male or female.

I fully support the commitment of The FA to provide guidance and support on colour blindness for everyone involved in football.

Dr Marisa Rodriguez-Carmona
Division of Optometry and Visual Science, School of Health Sciences,
City University of London



1. COLOUR BLINDNESS – THE BASIC QUESTIONS

WHAT IS COLOUR BLINDNESS?

Colour blindness is the inability to perceive colours normally. It is one of the world’s most common genetic conditions. However, colour blindness is under-recognised and poorly understood.

We see colour through specialised nerve cells in our eyes called cones. We have three types of these cone cells which absorb red, blue or green light. These three cone types working together allow us to see the full visible spectrum but in colour blindness, one cone cell type doesn’t function properly.

In about 25% of colour-blind people one cone cell type is virtually non-existent. So whilst people with normal colour vision can see the full visible spectrum, people with colour blindness see many colours as the same.



NORMAL VISION



COLOUR-BLIND SIMULATION

WHAT CAUSES COLOUR BLINDNESS?

The technical term for colour blindness is colour vision deficiency (CVD). It’s usually an inherited condition caused by ‘faulty’ gene-sequencing in the DNA of the X-chromosome. But it can arise as a side effect of some diseases, e.g. diabetes and multiple sclerosis and from some drugs and medications.

WHO IS AFFECTED?

Worldwide, about 320 million people have some form of colour blindness. That's equivalent to the population of the USA.

In the UK there are almost three million colour-blind people. Put another way, enough to fill the 90,000-seater Wembley Stadium more than 30 times. In a full Wembley, at least 5,500 spectators will be colour-blind people.



Statistically, at least 5,500 people at a full Wembley Stadium will be colour-blind. That's equivalent to the highlighted area in the picture.

ARE THERE DIFFERENT TYPES OF THE CONDITION?

Yes. There are three main types of genetic colour vision deficiency (CVD). They can vary in severity.

- **Protanopia and protanomaly:** relate to a red vision deficiency.
 - **Protanopia** is a severe condition, where no red-sensitive cones exist;
 - **Protanomaly** is a less severe condition, where red-sensitive cones exist but don't function normally.
- **Deutanopia and deuteranomaly:** relates to a green vision deficiency.
 - **Deutanopia** is a severe condition, where no green-sensitive cones exist;
 - **Deuteranomaly** is a less severe condition, where green-sensitive cones exist but don't function normally.
- **Tritanopia and tritanomaly:** relates to a blue/yellow vision deficiency.
 - **Tritanopia** is a severe condition, where no blue-sensitive cones exist;
 - **Tritanomaly** is a less severe condition, where blue-sensitive cones exist but don't function normally.

Red/green-inherited CVD is very common. However, blue deficiency and total colour blindness (or monochromacy, where people can only see in greyscale) are extremely rare.

Acquired colour blindness more commonly affects blue/yellow vision and in some cases can be reversed. There's no cure for inherited colour blindness.



WHAT DO COLOUR-BLIND PEOPLE SEE?

What colour-blind people see depends upon the type and severity of their condition. Colour-blind people don't all see colours in the same way as each other. Some people with CVD don't find it causes them too many problems in everyday life. Those with more severe colour blindness face everyday frustrations.

Most people believe that colour-blind people confuse **ONLY** red with green. This is a myth. Many different colour combinations often cause confusion. Some shades of red and green can be mixed up whilst others can be easy to tell apart.

The most common problems are distinguishing between:

- reds/greens/browns/yellows and oranges and
- between blues/purples/dark pink.

But other colour combinations can cause problems. For example, someone with a red vision deficiency will find it difficult to read black text against a red background.



NORMAL VISION



COLOUR-BLIND SIMULATION

Note how the rainbow effect on the iconic Wembley arch is not visible to colour-blind people.

HOW MIGHT COLOURS APPEAR TO COLOUR-BLIND PEOPLE?

The different-coloured footballs in the visuals alongside answer this question.

In the right-hand panel, the red/green colour-blind simulation shows how most of the colours in the left-hand panel appear as murky greens. But notice how blues and yellows stand out because people with red/green deficiencies can see blues and yellows easily.



PERSONAL IMPACT STORY

“I have red-green colour blindness and it affects my life in a number of insignificant ways. I can’t tell how ripe a banana is. A person with red hair appears to have either brown or blond hair. I can’t cook meat and be sure if it’s ready. I can’t become an aeroplane pilot. I wasn’t really planning to become one, but it would have been nice to have that option. Sometimes I feel like my life has been a lie after accidentally learning what colour random objects actually are. For example, I recently found out that the Statue of Liberty is green, and peanut butter isn’t. I’m just waiting for someone to tell me red wine isn’t black.

“These are minor problems though. After all, I don’t really mind eating my bananas a few days earlier, and I get by just fine most of the time. But it’s a little harder not to complain when these inconveniences happen with something more serious in life – football.

“Playing - Football is a team sport, and bibs are often used to divide people into groups. It is, however, a terrible idea to put a group of reds or yellows against greens.

“I sat out a session during my Level 1 Coaching Certificate because of this. Probably another good rule to follow is purple should be avoided. For many people with red-green colour blindness, purple just looks blue, and I’m not even convinced purple isn’t a made up colour.

“Attending - When buying tickets for a football match and choosing seats, sometimes I can’t tell which seats are selected because on many ticketing websites, seats already taken by other people are coloured red and the ones I choose turn green (or are they orange?). Of course, I have the same problem for many other ticketed events.

“Viewing - Thanks to the rapid advancement of technology, one of the best things life can offer today is live football matches on television. This takes up most of my free time. However, there is something that makes the experience a little less enjoyable-kit clash. I remember the match between Switzerland and Togo in the 2006 World Cup. Switzerland’s red shirt and Togo’s green camouflaged with the green pitch. Of course, when the players are running around chasing a football, it gets even trickier.

“Today, more than a decade later, since most teams have three kits now, this shouldn’t be happening. But I’ve noticed a lot more kit clashes than ever this season. For example, I don’t understand why Manchester City decided to don their third, orange-purple kit against Barcelona’s traditional red-blue in the Champions League. Although this wasn’t as bad as a red team taking on a green team, such as Liverpool against Ludogorets, it was still confusing and really out of the ‘purple’ for me.

“Fortunately, I don’t have the most severe form of colour blindness, and I am sure there are many football fans who have had, and continue to have, worse experiences related to the game. I hope by raising more awareness and providing the right guidance, we can make football more enjoyable for everyone.”

Yeon Sik – FA employee and lifelong football fan



NORMAL VISION

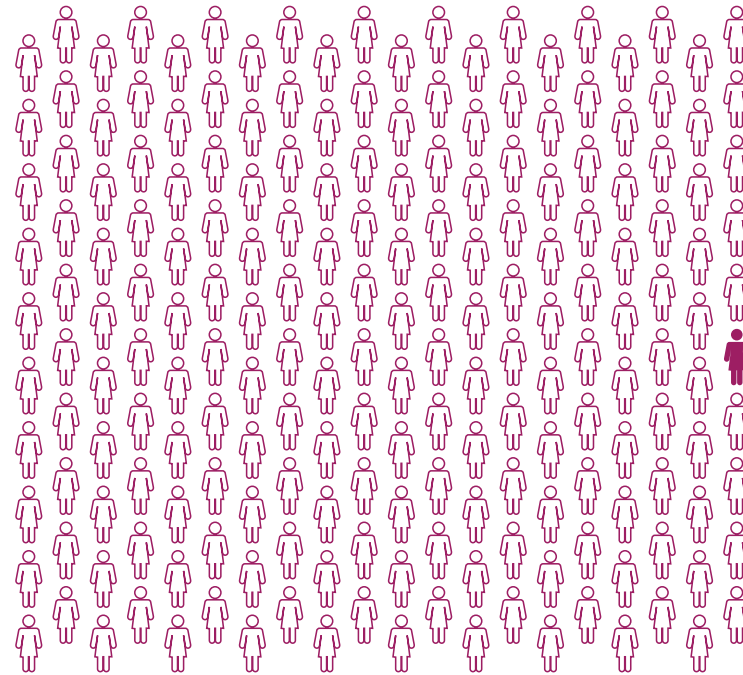


COLOUR-BLIND SIMULATION

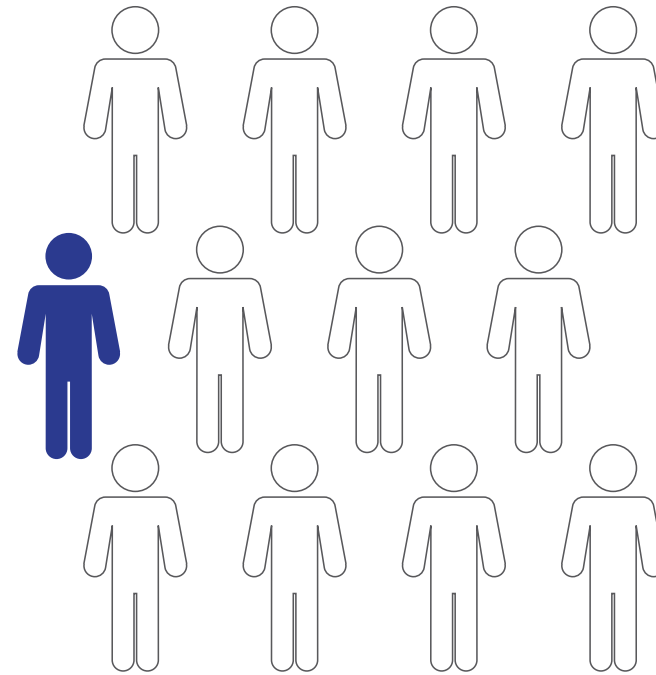
WHY ARE MEN MORE LIKELY TO BE COLOUR BLIND THAN WOMEN?

Approximately one in 12 men (8%) inherit red/green colour blindness but only 1 in 200 (0.5%) of women do. Colour blindness is very common in men because it's carried on the X-chromosome. Men only have one X chromosome, but women have two. For a woman to be colour blind she must inherit colour blindness on both of her X-chromosomes.

1 IN 200 WOMEN



1 IN 12 MEN



WHY ARE WHITE MEN MORE LIKELY TO BE COLOUR BLIND THAN PEOPLE FROM OTHER RACES?

The risk of being colour blind varies with ethnicity and is more common in people of North American and European descent. The reasons for this aren't yet fully understood. Caucasian men have the highest chance of being colour blind (up to one in 10) whilst people from sub-Saharan Africa have the lowest chance.

WHO MIGHT BE AFFECTED BY COLOUR BLINDNESS IN FOOTBALL?

Colour blindness can affect anyone involved in football. That includes spectators, players (whatever their ability level), management, coaches, referees, match officials and employees. In a typical male squad of 25 players, statistically there will be at least one player with colour blindness. Many people reading this guidance will have a colour vision deficiency.

WHY DON'T SOME PEOPLE REALISE THEY HAVE CVD?

Colour blindness does not affect general visual acuity. People with CVD usually see in focus and can see fewer colours, but because they have never experienced normal colour vision, they don't realise how much information they miss. This means they might not realise they don't see colours in the same way as others. People with severe colour blindness are more likely to be aware they have a CVD, but may never have been formally diagnosed. People with severe CVD often believe their condition is mild.

As people grow older they learn coping techniques to help them distinguish between colours. The milder a person's colour blindness the fewer problems they will have day-to-day. Sometimes colour-blind people will talk down the impact of their condition to protect themselves from potential discrimination. Colour-blind people are usually unaware that there are different types and severities of CVD and that other people with CVD will have different experiences to theirs.

WHAT ARE THE MAIN ISSUES SURROUNDING COLOUR BLINDNESS IN FOOTBALL?

- **Kit clashes with**
 - other players (e.g. both teams' outfield players) and/or
 - goalkeepers and/or
 - match officials and/or
 - the pitch;
- **Equipment** – with balls, training cones/bibs, as well as line markings;
- **At grounds/stadia** – with facilities/wayfinding/safety signage/type of lighting;
- **Accessing information** – digital/ticket purchasing/matchday programmes;
- **TV coverage** – inaccessible graphics/long-distance camera angles.

WHAT DOES THE LAW SAY?

A person has a disability under the Equality Act 2010 if they have a physical or mental impairment which has a substantial and long-term effect upon their ability to do normal daily activities.

Whilst the Government Equalities Office does recognise that colour blindness can be a disability, it is not specifically recognised as a disability in the Equality Act 2010. However, The FA has obtained advice from a leading expert in the field which has confirmed that colour blindness should be treated as a disability under the Equality Act 2010.

Any club which does not recognise colour blindness as a disability under the Equality Act 2010 therefore does so at their own risk.

WHAT IS ACCEPTABLE LANGUAGE?

As mentioned, the technical term for 'colour blindness' is '**colour vision deficiency**' (often shortened to **CVD**). However, most people, whether they have the condition or not, don't realise this.

Colour-blind people will usually say they are '**colour blind**'. Most won't know what type of colour blindness they have. Most will refer to their condition by saying they are '**red/green colour blind**'.

Some may know their exact condition and refer to it specifically. Colour-blind people might say "I'm a protan/deutan/tritan" but are unlikely to do this without previously making you aware that they are colour blind. These more technical terms tend only to be used between colour-blind people.

Some people with colour vision deficiency are not happy to be referred to as 'colour blind', but on the whole you can feel comfortable referring to colour blindness by the terms highlighted in bold above. Don't refer to technical terms unless you are sure you have a good understanding of them.



KEY POINTS

- **Colour blindness is the inability to perceive colours normally. It is one of the world's most common genetic conditions.**
- **You cannot tell someone is colour blind by looking at them; colour blindness is a 'hidden disability'.**
- **People with colour blindness may not be aware they are colour blind because most colour-blind children and many adults have never have been diagnosed.**
- **Colour blindness can negatively affect anyone involved in football, whether actively participating or spectating.**

2. HOW LACK OF AWARENESS DISADVANTAGES THE COLOUR BLIND – AND FOOTBALL ITSELF

The word ‘discrimination’ is often only used in relation to race or gender. In fact it covers any unjust or prejudicial treatment towards anybody on the basis that something is ‘different’ about them.

Often, lack of awareness is the root cause, and in the case of colour blindness, this lack of awareness means the needs of colour-blind people are often not considered. Those who are colour blind can be put at a disadvantage in football – often entirely innocently.

Innocently or not, if disadvantage exists on the basis of ‘difference’, it’s still discrimination.

Here are two examples of common discriminatory or hurtful behaviour towards colour-blind people in football:

- **Inconsiderate colour choices:**

For example, when selecting colours for:

- o kits, balls and equipment;
- o website design;
- o information/maps on tickets etc.

- **Scapegoats:**

The use of colour-blind people as scapegoats, especially in social media and at live events. For example, if a new kit is announced or a referee makes a decision which fans don’t like, comments such as ”Ref, you must be colour blind” and “Was the person who designed that kit a colour-blind four-year-old?” can be hurtful. Colour-blind children watching live matches in stadia are especially intimidated by these kinds of comments.

And here are two examples of behaviour colour-blind people often exhibit:

- **Backward in coming forward:**

People with CVD aren’t always able to understand the impact of what they are missing and tend not to consider themselves disabled. This means they probably won’t stand up for their rights – and until the advent of social media, they didn’t have an outlet to vent their frustrations. In turn, this results in society generally believing they don’t need support or consideration.

- **Lack of declaration:**

Colour-blind players and employees may believe they will be perceived as potentially less able than their colour-normal team mates/colleagues. Consequently they are unlikely to declare their colour blindness to employers and often seek to hide it. This is entirely understandable, and unless steps are taken to demonstrate support for colour-blind people, this situation will continue. This can place teams at a competitive disadvantage and put employers at risk where unsupported colour-blind staff may make mistakes, for example, incorrectly interpreting data or stewarding fans incorrectly.

This all adds up to the widespread perception that colour blindness is only a minor inconvenience and means the needs of colour-blind people aren’t taken seriously.

In turn, this can result in missed opportunities and/or continued discrimination. For example:

- **Loss of revenue:** Lack of awareness of the numbers of people affected means businesses are missing out on income to be gained by making their products and services accessible to colour-blind people. Equally, allowing kit clashes to continue means colour-blind people often turn off TV coverage and are lost to the game and its surrounding advertisers.
- **Ongoing ‘mistakes’:** Sponsors are often allowed to influence colours of the kit and equipment supplied to clubs without understanding how inaccessible they might be. Without awareness and training in colour blindness, colour-blind players will continue to be at a disadvantage.

KEY POINTS

- **Innocently or not, disadvantaging someone because they are colour blind is discrimination.**
- **It’s not just colour-blind people who miss out – so does football. With approximately 5% of the population affected by colour blindness, thousands of people could be lost to our national game.**



3. DAY-TO-DAY ISSUES AND SUGGESTED POSITIVE INTERVENTIONS

This section lists the most common problems colour-blind people face in football – and suggests solutions:

3.1 KIT CLASHES (either with each other, or the pitch)

3.2 DIFFERENTIATING BETWEEN THE COLOURS OF FOOTBALL EQUIPMENT

3.3 WAYFINDING ISSUES

3.4 DESIGN ISSUES



People with colour vision deficiency (CVD) will inevitably be at a disadvantage in some football situations.

There are practical and positive interventions which all clubs, whether professional or grassroots, can take to improve accessibility for those with CVD to enrich their experience participating in football, whether as a player, coach or spectator.

The aim should always be to ensure people with colour blindness can enjoy the game on equal terms with someone with normal colour vision.

Notice how reds and greens tend to merge together for those with CVD.

3.1 KIT CLASHES

This is the most frustrating problem colour-blind people experience in football. In the 2015/16 season, there were colour-blind kit clash problems at all levels of the game from grassroots to the top-level European competitions.

In short, it’s a game-wide problem.

Kit clashes with each other:

Clashes between outfield players’ kits are not the only problematic kit clashes – kits can clash with the colour of the pitch/the goalkeepers’ kits and match officials’ kits.



PERSONAL IMPACT STORY

“My colour deficiency has had an impact most of my life. It had an impact on me as a young person in primary school when it was undetected. I was accused in school by teachers of ‘fooling around and being awkward’ when I gave incorrect answers to what teachers believed were basic instructions. I was able to tell clear colours but struggled with shades and mixed colours.

“As a football referee there have been occasions where I have asked teams to change shirts due to a clash in colours and have received criticism as others could clearly detect differences. However, on one occasion I recall a player thanking me as he too was having these difficulties.

“Business, in my opinion, fails to recognise the extent of the difficulties as presentations invariably highlight areas of importance in red or different colours when actually there is no difference when seen through my eyes.

“On a personal level, it makes the choosing of clothes a difficulty when matching colours with shirts and ties.

“It is a condition that one learns to live with rather than highlight or draw attention to in the fear of it being seen as a weakness, and it can be managed by asking those close to you to highlight differences.”

Mark – FA Referee (Age 54)

While not an exhaustive list, the kit combinations which cause the greatest problems for colour-blind people are:

- Red v black
- Red v green v orange
- Bright green v yellow
- White v pastel colours
- Blue v deep purple/pink

RED v BLACK

(including stripes/patterned kit)



NORMAL VISION



COLOUR-BLIND SIMULATION

See how alike the two kits appear in the right-hand photo.

RED v GREEN v ORANGE

Here, single-colour kits cause the most problems.



PERSONAL
IMPACT STORY

“Red and green are not good against a green pitch, full stop. I wish no one would ever wear all red or all green because I can’t see any of the players. Matches where teams wear red and green are horrible, it just looks like a lot of heads and boots bobbing around the pitch.

“When I was watching one match on TV not very long ago, one team was wearing light green and the other team had a pattern. On the wide-angle shots they all looked like they were wearing white to me.”

Marcus, grassroots player/
Everton supporter, aged 8

BRIGHT GREEN v YELLOW

This depends upon the shade of green. For example, it is a common problem when a goalkeeper wears bright green and his/her own outfield players wear yellow. This is illustrated in the photos alongside.



WHITE v PASTEL COLOURS

White can be confused with most pastel colours including pale blue, pale pink, pale green, grey/silver.



NORMAL VISION



COLOUR-BLIND SIMULATION



NORMAL VISION



COLOUR-BLIND SIMULATION

BLUE v PURPLE v DEEP PINK

The five examples illustrated represent the most commonly-occurring problem combinations. However, this is not a complete list of all potential kit clashes.



NORMAL VISION



COLOUR-BLIND SIMULATION

See how the blue and purple tops appear very similar in the right-hand photo, so it's important to make a strong distinction between the rest of the kit. Here the yellow shorts help to distinguish between the teams.

Best-practice kit combinations:

To ensure enjoyment of the game for all, whether a player or spectator, it's important to consider kit colours when choosing a new kit for your team - and when choosing which kit your team will play in for individual matches.

The more colour combinations there are in a kit, the more likely it is that kit clashes will arise. This can be an issue for your own players as well as spectators, so it's important to avoid kit clashes as far as possible.

For example, blue v white kit can easily be distinguished, as the photos alongside show.

Other good kit colour combinations for people with colour blindness are:

- White v black
- Red v yellow
- Black v yellow
- Blue v bright reds
- Blue v yellow



The photos on these pages are an example of a good kit-colour combination between different teams. As the photo on the right shows, the kits are easily distinguishable by those with colour blindness.

KEY POINTS

Shirt colours:

There should be good colour contrast between the shirt colours of both teams, the goalkeepers and the match officials.

However, what might seem to be good contrast to a person with normal colour vision, e.g. red against black, may have virtually no colour contrast to someone with colour blindness. So avoid the 'problem' kit combinations already mentioned and also note:

- Patterned shirts can complicate matters – as a general rule avoid both teams having the same colour on their shirts, even if one shirt has only a small element of that colour.
- If shirts have a pattern on one side, e.g. black and white stripes on the front and a plain back, remember to consider potential kit clashes for both sides of the shirt.
- Shirts with different-coloured sleeves can cause problems for spectators in long-distance, fast-moving TV shots. Different coloured sleeves should be treated as patterned kits.
- Where shirts are single colours which clash with the pitch, e.g. all red/all green/all orange, consider introducing a strongly contrasting colour across the shoulders and sleeves, e.g. white stripes, so that your players can be clearly seen against the pitch.



As on the previous page, these photos show a good example of opponents' kits which colour-blind people can easily distinguish between.

Shorts and sock colours:

Short and sock colours can also play a part in making a game easier or more difficult for colour-blind people to follow.

Strong contrast between short colours and shirt colours is often the only means colour-blind people currently have to tell teams apart.

Of all the above, the worst problems occur is when both teams wear an entire kit in a single colour, e.g. all red (shirt/short/socks) v. an all-black kit.

This is because if shirt colours can't be distinguished, colour-blind supporters (and players) can ONLY tell teams apart by shorts/sock colours. If shorts and socks also clash, then there is no means for colour-blind players and fans to tell the teams apart.



PERSONAL IMPACT STORY

“In one particular match when we were in red and they were in dark green I couldn't tell the colours apart. I had to really concentrate in that game looking at socks because they were easier for me to distinguish and there was nothing else I could do.”

Matt Holland, retired professional player, former international



Kit clashes with pitch:

Some popular kit colours are very difficult to distinguish from the colour of the pitch itself for people with colour blindness. This is a particular issue when the entire kit is a single colour. The main 'problem' kit colours which can be difficult to distinguish against the pitch, especially from long-distance TV camera angles, are:

- All red kits;
- All green kits;
- All orange kits;
- All grey kits;
- All silver/gold kits.



Some single-colour kits (e.g. all red/ all green/all orange) can seem to be exactly the same colour as each other, making some matches impossible to follow, as the pictures on pages 28 and 29 show. You can also see how this appears in real-time action by watching the video interview with international manager Lars Lagerbäck, who is colour blind.

**Lars Lagerbäck
interview link:**

[http://www.uefa.org/
video/videoId=2438340.
html?autoplay=true#latest](http://www.uefa.org/video/videoId=2438340.html?autoplay=true#latest)

The images on the left show how an orange kit can be difficult to follow against a green pitch.

KEY POINTS TO AVOID KIT CLASH

In general, always try to avoid over-complicating your team’s kit colours. The key is contrast, but:

- Colours which may appear to be strongly contrasting may not actually be contrasting to someone with colour blindness.
- Always aim to avoid these problem kit combinations:
 - Red v black;
 - Red v green v orange;
 - Bright green v yellow;
 - Orange v yellow;
 - White v pastel colours;
 - Blue v purple v dark pink.
- If possible have socks the same colour as either shirt or shorts.
- If your home kit is patterned or has shirt/shorts of different colours, select an away kit of a single colour which strongly contrasts with all the colours of your home kit.
- Select an away kit in a single colour which is easy for people with colour blindness to identify, e.g. blue, white, yellow.
- Select a home goalkeeper kit which doesn’t clash with your outfield players or the colour of the pitch.
- Select second goalkeeper kits which don’t clash with your home, away or third kits – or the pitch.
- For grassroots matches and tournaments always carry a supply of both blue and yellow bibs to avoid kit clashes.
- Good kit colour combinations for people with colour blindness are when teams are:
 - White v black
 - Red v yellow
 - Black v yellow
 - Blue v bright reds
 - Blue v yellow
- Some patterned kits versus single-colour kit combinations can also help colour-blind fans and players to tell the teams apart provided no colours in the patterned kits create a clash with the opponent’s colours.
- However, red or green single-colour kits should be avoided because it can be difficult to spot players against the colour of the pitch.
- Bright yellow is a prominent colour but dark yellow can appear the same colour as the pitch.

3.2 DIFFERENTIATING BETWEEN THE COLOURS OF FOOTBALL EQUIPMENT:

This section will mainly affect coaches – or those who select training equipment.

On the basis of statistical evidence, always assume there will be a colour-blind person in your team. In all-female teams you may not have a player with colour blindness in your own squad, but there could be one in your opponents’ squad. Therefore, in the interests of fair play you should assume there could be a player with colour blindness in every female squad.

If colour-blind players aren’t properly supported they can’t perform to their best. This may be to the detriment of the performance of the team as a whole.

All players can be at risk of injury where team kits/bib colours clash. Colour-blind players might make a mistake when passing the ball/making tackles/ mistaking the location of line markings or the position of training cones, etc.



PERSONAL IMPACT STORY

“If the play moves very quickly it's easy to end up in a situation where you have a hard time telling if the other player is an opponent or a member of your own team.”

Lars Lagerbäck, international coach

KEY POINTS WHEN SELECTING FOOTBALL EQUIPMENT

- **Bibs:**
Choosing the right combination of bib colours is extremely important as the only reason to wear bibs is to distinguish between teams. Apply the same rules to bib colours as to kit colours. The safest combinations are blue v. yellow or white.
- **Balls:**
Many ball colours, especially those used for training, can be difficult to spot against grass and artificial surfaces, particularly when moving. If possible, use a ball with as much white surface area as possible. Avoid all-orange, all-green, all-red and all-pink balls unless you have checked all your players can easily see them against the playing surface.
- **Training cones:**
Avoid red, green, orange, pink, dark grey against grass/artificial pitches. These colours can all potentially 'disappear' against green and brown surfaces. The best colours to use are blue, white and bright yellow.

- **Line markings:**
The only 'safe' line-marking colour for grass or artificial green pitches is white. Some other colours such as yellow and blue might be visible. Whether or not a colour can be seen by colour-blind players depends upon the contrast between the line colour and the pitch colour. Lighting can also play a factor.
- **'Classroom' training:**
Using different colours on a whiteboard or coloured graphics can also cause confusion. Use blue or black pens against white surfaces as first-choice colours and avoid red pens in contrast to black/green/orange. If you need to use several colours, try to distinguish between the colours in other ways, e.g. using shapes, dotted lines, cross hatching, circling etc.



NORMAL VISION



COLOUR-BLIND SIMULATION

Note how the red line markings 'disappear' in the image on the right.

**PERSONAL
IMPACT STORY**

“In training, managers used to make sure when handing out bibs that we didn’t have two bib colours that were similar to me. The worst were always orange and green because they looked almost identical.”

Matt Holland, retired professional player and former international

Bibs: the different-coloured bibs in the right picture are virtually indistinguishable.



**PERSONAL
IMPACT STORY**

“I sometimes find playing football hard as other teams’ kit looks like ours. My team wears orange. When I do training I can’t see the cones very well unless they’re blue, white or yellow ones.”

Marcus, aged 8



NORMAL VISION



COLOUR-BLIND SIMULATION

Line markings: for indoor training/five-a-side games, etc., different colours might cause problems depending upon the colour of the surface and the colours which mark out pitches for other sports, e.g. basketball.

PERSONAL IMPACT STORY

“Matthew trained with the Ipswich Town Player Development Centre (PDC) outreach in Bury St Edmunds, which is our nearest town. They were aware of his CVD and had always been very good at using training cones that Matthew could see rather than the red/green ones in the grass.

"Matthew's group were invited to go to Portman Road and take part with other PDC groups on the training pitches. The pitches were green astroturf and all lines were marked in red or green. When I pointed this out to the coaches (who weren't his usual ones) they did have it on his medical notes about CVD but didn't know that would mean the lines were a problem.

"The only solution they could come up with was putting training cones along the lines but this couldn't be done inside the pitch so he could only see the pitch outline. He was really upset by this as it made him feel different and stupid.

"Training cones are evil things. Places tend to use red and green first, then tell Matthew to let them know if he can't see them, but he can't do that because he doesn't know there's anything to see!

"Recently we've hit a problem with kit colours. Matthew changed teams last year and they wear amber. Many teams in the league also wear shades of yellow and orange, and they look too similar to him. But he would never admit it because at 13 and playing up a year he really doesn't want people to know he's different.

"His coach is aware and does try, but it's hard for him to know. Other teams never bring bibs, so our team now have to have them for any games where there might be a clash. It was raised with the ref at one game but he said the amber and orange of the other team were different enough, so no change was made.

"Towards the end of the game Matthew walked off the pitch in tears. It took several hours before he felt able to tell me it was because he'd passed the ball to someone he thought was his striker teammate and then realised it was the opposition, so he felt stupid again.

"The biggest thing for him is not standing out. He would rather be told off or give the ball away than have to stand in front of 21 other lads and admit there's a problem. And he gets really cross when I make people aware of it!"

Ellen, mother of colour-blind Matthew (aged 13)

Footballs: balls with little or no white surface area can be difficult to distinguish against grass and artificial pitches.



NORMAL VISION



COLOUR-BLIND SIMULATION

**PERSONAL
IMPACT STORY**

“I hate it when the ball is a stupid colour like pink or bright green and I can’t see it.”

Marcus, aged 8

Cones: The red and orange cones in the image on the left merge into the colour of the grass in the image on the right.



NORMAL VISION



COLOUR-BLIND SIMULATION

This combination of bib colours works because the red is dark and the green is a very pale, almost yellow, colour. This means there is strong contrast even to someone with CVD.



NORMAL VISION



COLOUR-BLIND SIMULATION

Flags/cones: Note how the red flags and red/orange cones merge into the pitch colour.

‘Classroom’ training: the problem of using different coloured pens for tactical training is clearly shown in the image on the right where red is difficult to distinguish from black and green. Similar problems occur with red against green. The best pen colours to use are blue and black. For magnetic tactic boards try to use blue and yellow magnets to represent the opposing teams.



3.3 WAYFINDING ISSUES:

Given the large numbers of people with colour blindness who will be present at stadia events, it is vital that external and internal wayfinding information is accessible for effective and safe crowd control.

External wayfinding – the ‘last mile’:

Clubs may not be directly responsible for wayfinding and crowd control outside their premises, however, it is important to understand external factors which might affect crowd control and have an impact when safely evacuating stadia.

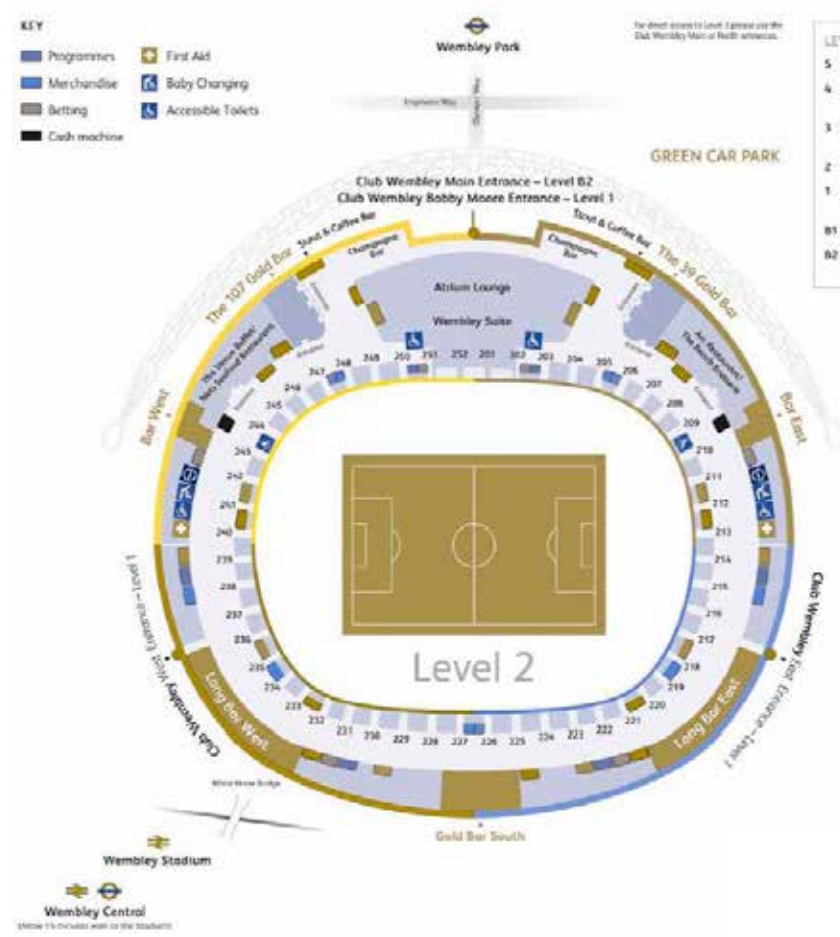
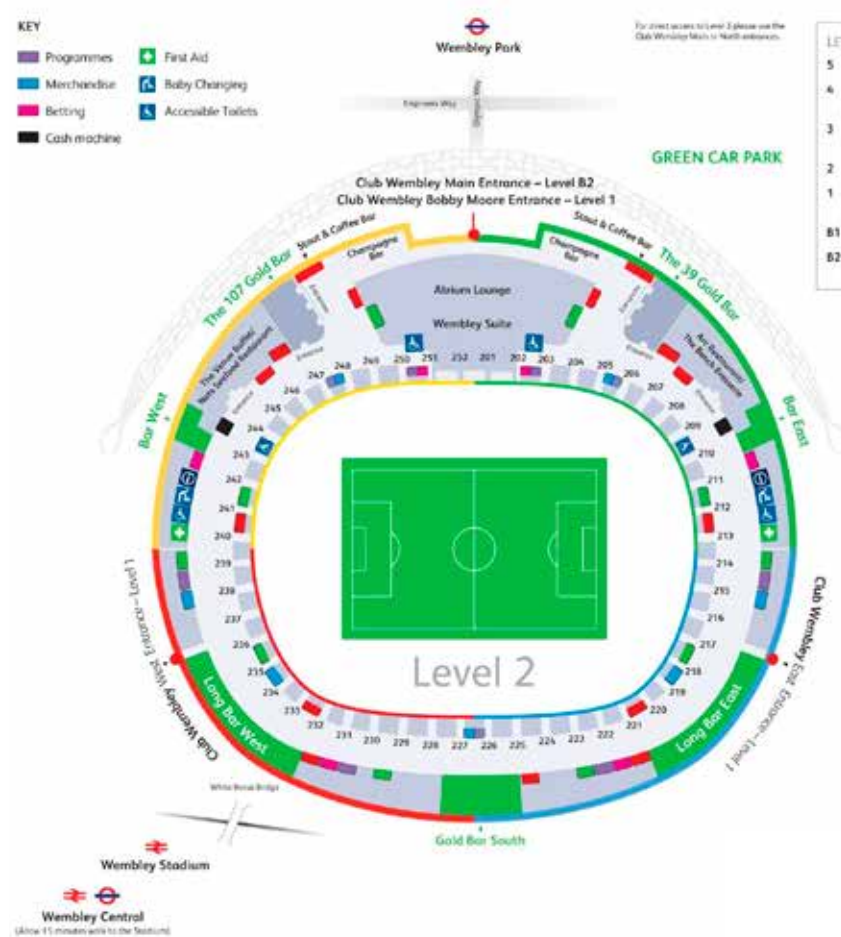
Wayfinding information which relies only on colour is very common, but it’s often inaccessible for colour-blind people. The London Underground Map is a good example of a colour-coded wayfinding map which people with colour blindness find extremely difficult to follow.

Colour-coded maps could have serious repercussions in emergency situations, so clubs need to use their influence with external stakeholders to ensure maps and emergency planning routes for stadia events don’t just rely on colour to convey important information. This is particularly important in the final stages before reaching or leaving a stadium, i.e. the ‘last mile’.

Internal wayfinding:

Internal wayfinding information, e.g. stadium plans, seating plans and car parking information can be provided by a variety of different means, including wall-mounted signs, hanging banner signage, coloured circulation routes and information printed on tickets/in matchday programmes.

Any wayfinding information provided in colour should also be labelled in some way so that people with colour blindness can understand it.



Consider how your own club’s facilities might be made more inclusive for people with colour blindness.

Something as simple as changing the way you indicate how your toilet cubicles show ‘vacant/engaged’ can have an impact. Denoting ‘vacant’ with green and ‘engaged’ with red causes confusion and embarrassment. Simply labelling with the words ‘vacant’ and ‘engaged’ can help to make people with colour blindness feel more included.

You might also want to rethink how information is presented in your hospitality areas, (e.g. menus), your stadium tour information and even whether your club logos and sponsors’ advertising hoardings are actually legible for everyone.

Emergency signage:

Reflect on how signage is positioned around your ground. Some fire exit signs may not be visible if they are mounted against some backgrounds.

For example, someone with normal colour vision might think that a ‘green’ fire exit sign mounted on a grey concrete stadium wall has a high-colour contrast and so will easily stand out. But to a colour-blind person, fire exit ‘green’ actually appears as a very similar colour to concrete ‘grey’.

Mounted directly onto a concrete stadium wall it won’t stand out. But if mounted against a high-contrast bright yellow background, the sign will be prominent.

This is an example of a stadium plan used by Wembley Stadium, which is owned by The FA. Some colours ‘disappear’ in the right-hand example for people with colour blindness. Wembley is currently reviewing all its signage, with accessibility for people with colour blindness one of the guiding factors.

KEY POINTS FOR WAYFINDING:

- **External wayfinding:**
Liaise with external stakeholders, such as the police, transport operators, etc., to ensure all emergency wayfinding plans/evacuation routes in close proximity to your premises are accessible to people with colour blindness.
- **Internal wayfinding:**
Review your tickets, matchday programmes and wayfinding signage to ensure:
 - stadium plans, seating plans, car parking information, wall-mounted and hanging banner signs as well as circulation routes are easy for people with colour blindness to understand.
- **Stadium facilities:**
To make your facilities more inclusive, consider:
 - toilet facilities;
 - menus and retail information in your club shop;
 - stadium tour information;
 - sponsor information and advertisements.
- **Emergency signage:**
Remember approximately 5% of your spectators will have CVD and they must be able to see:
 - emergency signage, so ensure it really IS prominent to them;
 - fire extinguisher information.

Remember that red and green signs can appear the same colour if you are colour blind and will be difficult to see against some surfaces.

3.4 DESIGN ISSUES:

Clearly, the use of colour is a key element in all design materials. But when taking people with colour blindness into account, the fundamental rule is 'never convey information by colour alone'.

The World Wide Web Consortium (W3C) publishes internationally recognised standards for accessibility of digital data. These standards include a section on colour contrast.

The minimum W3C standard is the AA rating which details colour contrast ratios in relation to font size, etc. The FA expects clubs and organisations to meet these minimum standards where reasonably practical.

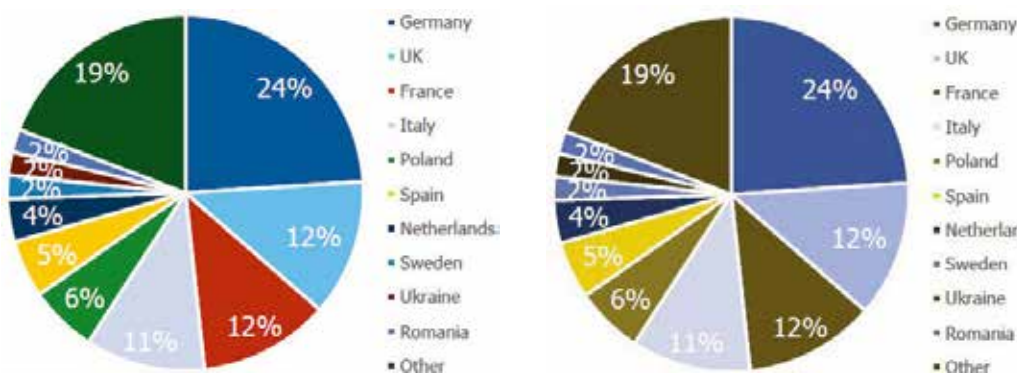
You can read about the AA rating at: <http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast-contrast.html>

Away from the stadium and its environs (covered in previous section), there are many factors clubs need to be considering to ensure information intended for fans, employees and other stakeholders is legible – and therefore comprehended.

Colour is an extremely useful tool for people with normal colour vision, but it can be a hindrance to people with colour blindness if not used in conjunction with some form of labelling.

For example:

- **Website colour combinations:** many are inaccessible, e.g. a red and black colour scheme. Does your website follow the World Wide Web consortium (W3C) guidelines for colour contrast?
- **E-commerce:** can colour-blind fans easily buy tickets/merchandise online? Be aware of potential problems with coloured sections of stadium plans denoting differently priced tickets etc.
- **Charts:** Take care when creating charts and other information in reports. As you can see below, some colours become indistinguishable to people who are colour blind.



KEY POINTS FOR DESIGN:

- **Never convey information by colour alone;**
- **Aim to use simple techniques such as:**
 - Labelling;
 - Cross-hatching/stippling/shading/dotting;
 - Clearly defining boundaries between colours by outlining in a strongly contrasting colour, e.g. black or white;
 - Highlighting information by underlining, using italics/bold typeface/different font sizes;
 - Identify different colours using a symbol-coding system;
 - Ensure text can be read against background colour;
 - Never use black text against red.
- **Check links and hover effects on your website are visible against surrounding text and background colours.**
- **Ensure your website designers, marketing team and organisations publishing digital information on your behalf adhere to the W3C colour-contrast guidelines.**

4. SUPPORTING THOSE AFFECTED, WHATEVER THEIR FOOTBALL ROLE

People with colour blindness are involved in every aspect of football, whether as active participants or spectators. Taking each group in turn, here are some thoughts to generate awareness and ensure they are welcomed into the game – and stay in it.

The particular groups covered in this section are:

4.1 ALL PLAYERS

4.2 SPECIFICALLY, CHILDREN AND YOUTH PLAYERS

4.3 MANAGERS/COACHES/OFFICIALS

4.4 FANS AND SUPPORTERS

4.5 STEWARDS

4.6 STAFF/ADMINISTRATION

4.7 OTHER STAKEHOLDERS

For emphasis, some of the text consciously repeats points made earlier in this guidance document.

4.1 ALL PLAYERS:

Everyone should be able to play and train as part of a team without being at a disadvantage, worrying about being unsafe or potential (probably inadvertent) discrimination.

Safety: If a player is colour blind but undiagnosed/unsupported, they may play in games and train in situations where they are unsure which players are their teammates. This can place the colour-blind player at risk of causing injury, both to themselves and to other players. Imagine the colour-blind player decides to make a tackle believing the player they are intending to tackle is member of the opposing team. If that player is in fact a member of their own team, then he won't be anticipate being tackled and this could result in injury.

Communication: It is important to create an empathetic environment where players and staff can communicate openly by:

- attempting to anticipate and address potential issues before they become a problem;
- listening to and promptly addressing concerns;
- making adjustments to ensure full inclusion;
- creating a balanced atmosphere for the benefit of all players/staff by also reflecting the needs of people with normal colour vision. For example, in 'classroom' training you can use full colour to help those with normal colour vision, but also label information to assist people with colour blindness.

4.2 SPECIFICALLY, CHILDREN AND YOUTH PLAYERS

Please refer to The FA Guidelines regarding club responsibilities towards u18s at: www.theFA.com/footballsafes.

With colour blindness, parents and carers may not be able to advise you how best to support their child. Often children with colour vision deficiencies (CVD) are undiagnosed or parents may not think the condition merits 'special' treatment. Some parents/carers may be concerned their child will be excluded or disadvantaged if they tell you.

Children with CVD will usually find it difficult to report problems they are experiencing. They will worry about being bullied if their team mates find out about their colour blindness and they may withdraw if they are struggling due to colour blindness issues. As many children are undiagnosed well into their teens, they may not be aware the problems they face are due to colour blindness.

Maintaining confidence is therefore extremely important when children are brave enough to report problems and support should be provided confidentially to maintain the trust of the child and their parents/carers.

In academies where clubs are responsible for the development of elite players and also responsible for their academic achievement, they will have obligations under the Children and Families Act 2014, since colour vision deficiency is recognised both as a Special Educational Need and a disability.

Many schools are unaware of this and may need to be informed on how best to support colour-blind students.

KEY POINTS FOR ALL PLAYERS:

- **Consider screening:**
Consider introducing a colour-vision screening test into all player medicals at senior level. For clubs in lower leagues and for grassroots/youth level it may be beneficial to write to all players/parents to ascertain whether a player has CVD or has ever been screened for CVD. Suggest all players have a CVD test with their optometrist.
- **Provide information:**
You should have information for players on your website which explains your policy on colour blindness and how your club will support players with CVD, ensuring you explain that players will be treated fairly and be provided with proper support. Instil confidence that a player's condition will be treated confidentially. Players **MUST** be able to trust and rely upon management to address their concerns swiftly, e.g. address kit clash problems.
- **Anticipate issues:**
Ideally clubs should take action to anticipate CVD players and ensure accessible kits/training facilities and equipment are provided. Don't wait for people with colour blindness to identify themselves to the club. Players of all levels and abilities are unlikely to admit to their condition until they have confidence that their club will support them and the disclosure will be managed sensitively.

PERSONAL IMPACT STORY

"We have a big dilemma.

"My son is nine years old and playing football at one of the country's top football academies.

"We are about to make a choice of whether to have him educated by the academy, which in itself is a big decision as we would be committing him to a career in sport.

"He was recently diagnosed with colour blindness by an optician (not related to the football club). We're worried that this will affect our son's potential career as a sportsman. The last thing we want to do is commit to them, only for them to turn around when he is 16 and say he can't continue because of this condition. Equally, if it is unlikely to cause a problem, we don't really want him to raise it with them.

"We've decided not to disclose his condition to the club for the time being.

"My son was playing against Arsenal at their Hale End academy as an under-9. He is a very skilful player with great ball control, so I was surprised to see him dribbling the ball off the pitch a number of times during the match. It was only afterwards that I realised it was because they had marked the pitch out in red lines. He said to me he couldn't see where the markings were so was just guessing.

"It's small things like this, that could be so easily remedied with some simple guidelines, that are clearly putting some children at a distinct disadvantage to others."

Andy (parent of young Academy player with colour blindness)



COMMON QUESTIONS ASKED AND ANSWERED IN RELATION TO PLAYERS (YOUTH AND ADULT):

WHAT DO I DO IF I SUSPECT A PLAYER HAS CVD?

Speak to the person concerned in confidence. Be aware that colour vision deficiency is a visual impairment and therefore a health condition. So you should act in accordance with your own relevant policies for health conditions. Be mindful that many people with colour blindness are unaware of their condition and may resist an implication that they might be colour blind. If this is the case, refer them to their optometrist and to the Colour Blind Awareness website for more information: www.colourblindawareness.org. Where someone is in denial, take a discreet note of other instances where you suspect behaviour consistent with CVD and re-approach the person once they have had time to take stock of your initial suggestion.

Parents are often resistant to a suggestion that their child might be colour blind and may not be willing to take their child for a colour vision test. Remember that you have an obligation to act in the best interest of the child but not to act against the wishes of parents, so if you suspect CVD in a child, but parents refuse to co-operate, you must treat the child as though they have CVD and offer all relevant support discreetly.

IS A PLAYER WITH CVD OBLIGED TO DISCLOSE THEIR CONDITION?

No, unless a specific question is asked as part of a recruitment or registration process.

DO CLUBS HAVE THE RIGHT TO SCREEN PLAYERS FOR CVD?

No, however colour vision screening can be included as part of a player medical where a pre-contract medical is a pre-requisite to signing a new player. Where a medical is not required for new players, e.g. grassroots, clubs can request that new players disclose a diagnosis of colour blindness as part of the administrative process in setting up the new player's records. The FA will not consider a diagnosis of colour vision deficiency to be a reasonable ground to fail a medical.



WHAT SUPPORT CAN A PLAYER WITH COLOUR BLINDNESS EXPECT, WHETHER A YOUTH PLAYER OR ADULT?

The FA expects players with colour blindness to be treated in the same way as any other person with a disability. Therefore, clubs must take reasonable steps to ensure information, training equipment etc. are accessible and legible and don't discriminate.

Where a player discloses their colour blindness, clubs must treat this information confidentially in the same way they would any other health information.

Where colour-blind players identify issues due to their colour blindness, for example issues in telling kits apart, inability to see line-markings clearly, etc., clubs must take all reasonable steps to address the issues as quickly as practicable. If one colour-blind player has identified a problem, the chances are that most other colour-blind players/employees/fans will be experiencing the same problem and also benefit from the issue being addressed promptly.

WHAT MUST I DO TO ENSURE COMPLIANCE UNDER THE EQUALITY ACT 2010?

Refer to your club's equality policies and treat colour blindness in the same way that you would any other disability under the Equality Act 2010, taking reasonable steps to ensure your premises/equipment/information/coaching procedures don't discriminate against people with colour vision deficiency.

WHAT SUPPORT WOULD BE GIVEN TO A PARENT IF THEY DISCLOSE THEIR CHILD HAS CVD TO A COACH OR CLUB?

If a parent discloses their child has CVD this information must be treated in confidence and never raised with the child in front of their peers. For example, asking a child whether they can distinguish between bibs when others can overhear would be a breach of confidentiality. It is likely to result in loss of confidence in the child and probably an unwillingness to attend coaching sessions until trust can be restored between the child and the coach.

Where parents make requests for changes to be made to accommodate their child's needs arising from CVD, clubs should attempt to meet reasonable requests as quickly as possible.

WHAT SUPPORT WOULD BE GIVEN IF A PARENT OF A DIAGNOSED CHILD HAS AN ISSUE WITH KIT COLOURS?

A colour-blind child is unlikely to speak up if they aren't able to distinguish between kit colours, so it is the responsibility of the club/coaches to ensure that kits are easily distinguishable. Refer to the 'Key points to avoid kit clash' on page 46. When in doubt about potential kit clashes, always ensure bibs are available for both teams to use. The safest combination for bibs is one team in blue bibs and the other in white or yellow bibs.

Parents should be able to rely on coaches to quickly assess before the start of a game whether there might be a kit clash and to make use of bibs in case of doubt. The child may raise the problem of kit clash to a parent at half time, and if this is the case, parents should be supported (keeping the identity of the child confidential at all times) and the remainder of the match should be played using bibs.

4.3 MANAGERS/COACHES/OFFICIALS:

Management, coaching staff and other officials with colour vision deficiency can have difficulties with statistical and match strategy and other information. For example, tactical training using white boards/coloured markers or colour-coded team statistics/tables.

Provided you consider this guidance document to inform your future planning, you can largely eliminate these issues. Practical issues are also discussed in a video interview with international manager Lars Lagerbäck who is colour blind: <http://www.uefa.org/video/videoId=2438340.html?autoplay=true#latest>

4.4 FANS AND SUPPORTERS

All fans and supporters want full enjoyment of the game. So when considering kit combinations for outfield players/goalkeepers/match officials, please consider the needs of colour-blind fans. The aim must be to ensure those affected can follow games to the same extent as people with normal colour vision, whether watching a grassroots match or a top professional game.

Away from spectating, there are other considerations when fans visit your stadium/grounds or your website – or receive information from you.

Try to make adjustments so that all wayfinding and other information is designed in accordance with the 'Key points for design' on page 65. Such information might be printed (e.g. on tickets/in matchday programme) or could be on digital channels (e.g. websites, especially when using statistic tables, or when depicting ticket or merchandise purchasing).

Consider practical situations within your grounds which might rely on colour, e.g., toilet door indicators, position of emergency exit signs. Provide suitable alternatives where reasonably possible.

Consider how you present information on indicator boards during matches – many people with colour blindness aren't often able to read red LED lights against a black screen. Red and green used for substitution boards can appear as the same colour.

If you have your own TV station, ensure your graphics meet the 'Key points for design' on page 65.



PERSONAL IMPACT STORY

“There have been a number of occasions where I’ve found it difficult to watch football either at the ground or on TV. I follow Southampton who play home matches in red and white stripes.

“I’ve watched Southampton v Newcastle at St. Mary’s a couple of times in recent years and found it incredibly difficult to follow the match where Newcastle have played in their black and white stripes. For my type of colour blindness, black and white vs red and white are almost impossible to distinguish.

“More specifically, I attended an FA Cup match in Southampton in 2015, but in the FA Cup for that season, the ball was pink, which is not a colour that stands out for me. Whilst watching the match, if I took my eyes off the ball I had to search for it, i.e. it wasn’t immediately obvious where it was. It was very hard work to watch!

“When Southampton played in their change kit of green against a team in all-red, it was very difficult for a red/green colour-blind person. Even my wife thought the choice of green was daft as the green chosen was very similar to the colour of the grass making the Southampton players hard to make out.”

Peter (retired grassroots player, keen Southampton and England fan)

4.5 STEWARDS

Clubs and/or stadium operators should consider screening all stewards for CVD (as many will be unaware of their CVD) and provide support for those with colour blindness.

Stewards with CVD need to be able to access ALL information required to carry out their role effectively, such as guiding fans to their seats using accessible stadium plans. Don't expect a steward with CVD to advise you of their condition unless you specifically ask for this information. Also try to ensure that training for all stewards includes information on CVD, as all stewards need to be aware that a significant number of spectators – and some stewards themselves – as well as some emergency services personnel, may be colour blind. This means emergency planning information, such as different coloured hi-vis jackets denoting specific roles, must not rely on colour alone.

4.6 STAFF/ADMINISTRATIONS

Ensure all information provided by your organisation is designed to take account of people with colour blindness. Ideally, you should provide training in CVD to relevant departments, especially Marketing and Communications/IT/HR/Finance and Operations. Consider having a 'suggestions box' for people with colour blindness to anonymously identify where existing information/processes are not accessible.

4.7 OTHER STAKEHOLDERS

Bear in mind that many individuals in other external organisations, such as the media or shareholders, will have CVD. Again, try to ensure all information emanating from your organisation is designed and presented in a colour-blind-friendly format by meeting the W3C colour contrast guidelines. As above, ensure you provide training in creating CVD-friendly materials for external-facing departments, such as marketing and communications teams.



NORMAL VISION



COLOUR-BLIND SIMULATION

KEY POINTS:

- Society tends to treat people with colour blindness as the butt of a joke. It expects them to be able to take 'banter' and to tolerate negative and demeaning comments about the consequences of their condition. But it's not 'banter' to make comments about someone's disability.
- As with all abuse, what is most relevant is how someone experiences it.
- Make sure you communicate your inclusive approach to both people with colour blindness and people with normal colour vision.
- Tackling colour blindness stereotypes is good for football.
- Use all options available to report and tackle the issues. For example:
 - Send key messages via your website, posters in your club, in your matchday programme and anywhere else people might look for it and see it.
 - As you introduce changes to support colour-blind people, for example to your website or to kit or ticket design, take the opportunity to explain that you have made changes to assist people with colour blindness. This will help raise awareness and understanding and lessen the chances of offensive remarks being made.
 - Through the above, communicate your 'zero tolerance' to any form of discrimination.

5. FURTHER RESOURCES

Support and advice

UEFA Football and Social Responsibility
fsr@uefa.ch

<http://www.colourblindawareness.org/kathryn@colourblindawareness.org>

Throughout this document where images are in pairs, 'colour-blind' simulated images are shown on the right or underneath. These illustrative images mostly indicate severe red or green colour blindness, according to the context of the original, unless otherwise stated.

This guidance was written by The FA and supported by UEFA.

All photos courtesy of UEFA and Getty Images.



