



## **Coach online questionnaire- The impact of colour vision deficiency on participation and progression in sport**

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### **Introduction**

Colour-blindness or colour vision deficiency (CVD) affects approximately 1 in 12 men and 1 in 200 women, making it more difficult for those with CVD to differentiate between colours. Considering the world is now heavily reliant on colour this must pose problems for individuals with CVD in their day-to-day life, education, work and hobbies. As such, a questionnaire was sent out to sports coaches.

### **Methods**

A questionnaire was shared with sports coaches in the United Kingdom, Portugal, Netherlands, Iceland, Denmark, Spain, Romania and France to gain an insight into how colour blindness has affected people in their sport, combined with what participants think could and has been done to support those with colour blindness. Table 1 shows the sample size (n = 168) and basic demographic information from valid responses across countries.

**Table 1.** Responses by Country and Basic Demographics

<b>Country</b>	<b>Sample Size</b>	<b>Biological Sex at Birth</b>	<b>Age Range in Years</b>
United Kingdom	10	9 Males 1 Female	22-56
Portugal	101	101 Males	22-70
Netherlands	8	8 Males	27-62
Iceland	29	19 Males 10 Females	17-62
Denmark	5	5 Males	21-53
Spain	1	1 Female	29
Romania	10	10 Males	32-50
France	4	3 Males	32-54

		1 Female	
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## Results

### Impact on coaches per se:

The majority of participants who identified that they had some form of CVD indicated that this had impacted on them in their sport, with kit colours being identified as the most problematic combined with artificial lighting.

#### **Danish Football Coach:**

*"If red plays against green it can sometimes be difficult"*

#### **British Rugby Coach:**

*"When playing in floodlit conditions/low light"*

### Awareness of CVD:

The vast majority of coaches have identified that they are unaware if they have been coaching players with CVD. Some indicate that they have some understanding of what CVD is but are unsure of how to support players with CVD.

#### **Portuguese national level coach with CVD:**

*"I play football myself and the support provided to the players is not enough"*

#### **Dutch national level coach:**

*"No, not really. I just demanded less from him and that benefited him"*

#### **Romanian national coach:**

*"Not having knowledge about colour blindness, I do not allow myself to make suggestions"*

#### **Portuguese national football coach:**

*"The coach needs to have more information on this topic, because many of them do not know how to deal with color blind athletes"*

### How can CVD be supported:

The majority of coach participants identified the following solutions:

- Increased awareness for individuals, teachers, coaches, governing bodies
- Greater testing rates
- Support and respect

**Portuguese national football coach:**

*“Create a space within the annual medical tests and a way to help in the event of being diagnosed colour blindness”*

**UK national football coach:**

*“A guide to know how to work with people with this situation”*

**Icelandic domestic coach**

*“Two players asked me to wear other colours on vests in play. Because they couldn't tell the difference”*

**Portuguese district level coach:**

*“Give tools to those who work with the players, to be able to help them, when I mean tools, I speak of initially training coaches in this area”*

**UK academy football coach who played at semi-professional level:**

*“More education / coach awareness on courses”*

**Another national level Portuguese coach who has coached an athlete with CVD identified the simple but effective changes they have made to help their athlete:**

*“In my case, the team's playing, and training equipment has changed. Going on to have a pattern of its own (detectable by the athlete) mainly in the socks, rather than just being smooth.”*

**Icelandic Football Coach:**

*“Trainers use different colours. Black and white. Or black and white cones. Darker colours against lights.”*

**Portuguese Football Coach**

*“Should beware of green and red kits.”*

**UK Rugby Coach:**

*“We do a health questionnaire at the start of the season and I have never coached someone who has disclosed CVD. If I did, I would aspire to accommodate any changes that would make it easier for the player.”*

### **How CVD has affected other areas of life:**

Coaches who had CVD themselves identified that it impacted on their day-to-day lives as well, highlighting the necessity of raising awareness of CVD inside and outside of sporting contexts.

#### **Icelandic Football Coach with CVD:**

*“Yes I’m an electrician, so I often run into problems with colour vision. It’s a little embarrassing to ask the builders if I’m connected properly.”*

#### **Portuguese Football Coach with CVD:**

*“Yes, in studies and work”*

### **Conclusion**

Coaches with CVD can be impacted in sport (i.e. kit clashes and training resources, slower reaction times, challenges with peripheral vision) and life (i.e. occupation and concurrent careers). There appears to be a lack of awareness within coaches of the CVD challenges and current guidelines. Coaches indicated that more educational resources should be provided along with greater CVD testing rates and support and respect for the CVD players. If not, the danger is that individuals who face challenges due to CVD may be drop out of sport and thus miss out on the physical, psychological and social well-being benefits of physical activity.