

Verbatim responses of 155 medical students with colour vision deficiency. An unpublished report by Eoghan Burke, 2005.

Have you been given any career advice regarding your colour vision deficiency before medical school?

In ophthalmology retinal work would be better avoided by a doctor with a protan deficiency because of the difficulty of distinguishing between retinal haemorrhage and pigment even with the use of a filter.

Told could not join the Royal Air Force or fly any other type of plane. Cannot drive a train.

Don't become a pilot or train driver.

Vaguely during my gap year I worked for a while in a car battery factory, as the lead components were colour co-ordinated I was forbidden from working on that section of the production line.

Told couldn't join armed services or become an airline pilot.

No police.

No commercial/military pilot licence.

I have been told that I cannot join the military, police, or fly a plane.

Only told that forces/pilot were problems.

Yes, not electrician or pilot.

Careers adviser at school didn't even know what colour blindness was, I wrote to occupational health departments at St. Georges and Southampton medical schools and both said it would not prevent me studying medicine.

Can't be a fighter pilot which was my original dream.

Originally wanted to be a fire-fighter but that my colour blindness would present problems.

Only to avoid electrical work and possible difficulties in the armed forces.

Probably barred from police work and working as a pilot, nothing about medicine.

At school I was given advice as was considering joining the army, but couldn't due to my sight.

Yes, regarding work in the armed forces, e.g. radar.

Don't become an electrician.

Confirmation that colour blindness would not be a hindrance for any part of the medical curriculum.

Yes, you'll never be an electrician.

Yes, could not be a fighter pilot in the forces.

[Given] list of jobs I was incapable of performing.

Don't be a pilot or an electrician.

Don't become an army engineer, don't become a pilot.

Yes, can't be a 'pilot or a policeman'.

At interview the guy said that he knew lots of colour blind doctors and it wasn't a problem, just get on with it.

Cannot join the army.

Not to be a pilot or an electrician.

It will not affect you becoming a doctor, there are lots of colour blind doctors.

That I can't join the RAF as a pilot.

Not to be electrician or pilot.

Yes I can't be an electrician or a pilot.

I can't be a commercial pilot.

I had been considering becoming a pilot but, understandably, was advised against this on the detection of mild red/green colour blindness.

Not to be pilot or electrician.

Yes, I couldn't be a pilot for the RAF.

Unable to join the RAF.

Yes, I was told the careers that I couldn't be an electrician, pilot.

You can't be a pilot or an astronaut!

Just don't be a pilot.

Have you been given any career advice regarding your colour blindness since starting medical school?

None. Told it will make no difference. One surgeon told me it would be harder to do surgery but didn't say why.

None, just extra time.

Can't do histopathology (shame) and anaesthetics - no.

Hadn't really considered it as a problem.

None, only that colour blindness does not affect fitness to (practice) at university.

Good luck with histology.....!

No advice given. (I mentioned it on my occupational health form thinking that the medical school may want to talk about it, but they didn't).

Have asked consultants about impact, e.g. on dermatology/ophthalmology but not been given specific advice.

I saw "occupational health", said I might have problems in certain careers e.g. if I want to be a pathologist (big loss!!).

Reading urinalysis.

Nope. Don't think anyone is aware.

Have you encountered any difficulty so far in your learning or assessment at medical school as a result of your colour blindness?

Pathology slides e.g. gram stain difficult to distinguish inflamed or red tympanic membrane difficult

Some lecture slides have colours such that I simply cannot read, e.g. red/purple on blue

Some problems with histology, photomicrographs/staining

In histology, "the pink bit of tissue" is which bit?

In urine dipsticks: it can be hard to read the result

Venous and arterial blood have looked the same. Sometimes have missed central and peripheral cyanosis. Struggle identifying canals by coloured cap. Have struggled to identify dead flesh whilst debriding a diabetic heel.

Just in detecting pallor on the face, and also cyanosis on hands and tongue to an extent.

I can't appreciate certain clinical signs such as cyanosis, even if I am told it is an obvious case, this can be a bit frustrating.

Optic disc assessment.

Histology. When we made notes from slides my colouring in was different from other people, thus no one could borrow my notes for revision as the colours I had used which for me were correct were incorrect for other people.

Viewing histology slides.

Histology slides.

Anatomy text books.

Slide tests for histology.

Ophthalmology and otology. I just can't see erythema!

Difficulty distinguishing stains on specimen slides under microscope.

Dipstick assessment had difficulty with distinguishing the colours.

Very hard to spot laser pointer sometimes.

Some problems in spotting mild otitis media.

Problems with power point presentations in red/green colours.

Histology very difficult in identifying different stains and therefore cell types.

Dipstick recognition.

For reasons apparent from Q9, some things are difficult. Most difficult of all is red or green LED lights on electrical equipment. They look identical. Graphical displays of data from gene analysis software can be very difficult to interpret.

I have difficulties in using urine dipsticks.

Some lectures presented with a red font against a green background.

Can be hard to differentiate subtle areas of colour, e.g. on projected slides of gram stained bacteria.

Failed OSCE exam because I couldn't tell the difference in colour between strips on container.

Dermatological exam was Powerpoint slides which I sometimes found difficult to interpret.

I can't see the red beam from laser pointers during lectures.

Lecture presentations often show ignorance of green-red colour blindness and some presentations are hard to view. Also, continual difficulty with following the laser pointer unless seated near front.

Hard to see certain clinical signs. Especially blue/purple colours.

Some difficulties distinguishing dermatological lesions based on colour.

I came across a cyanosed patient in a respiratory exam and didn't know what colour he was. Dermatology slide shows were a bit of a mystery.

Remembering colours for clinical signs.

Missed an 'obvious' palmer erythema in a mini-OSCE.

Has your school made any allowance for your colour blindness?

I don't think so.

They don't know. I don't want to get thrown off the course.

It has never been mentioned but don't feel it is a huge problem.

As far as I know they are unaware of my colour blindness.

None, but I haven't mentioned it.

Not that I know of.

Haven't told them.

Apparently not

No. I guess some people can smell 'sweet' breath in diabetic ketosis - and others can't. Your study is very interesting.

Have not told anyone am colour blind (especially as it is only mild), so no.

No, I haven't told them.

Has colour blindness been a factor in your choice of speciality? Or, if you haven't chosen a speciality yet, is it likely to be a factor?

Can't do ophthalmology.

I think some types of surgery could be difficult for someone with colour blindness. Dermatology would be very difficult.

I want to be a vascular surgeon and despite sometimes having mild difficulty, I rely on other methods of accomplishing my tasks for fear of being told that I can't be a surgeon if I'm colour blind.

With dermatology I may find it difficulty to distinguish rashes so I have ruled this out.

Unlikely to do pathology as may have problems with some diagnostic tests.

Unlikely to do ophthalmology as not very confident looking at retinas, and can't do colour testing!

Unlikely to do radiology as colour MRI etc.

Likely to be GP as more emphasis on history plus routine clinical examination, and have partners in clinic for immediate second opinions if necessary.

Not too keen on ophthalmology.

I would have liked to do ophthalmology but I feel that my colour blindness may make this too difficult.

I am interested in surgery and keen to know how colour blindness can effect delineation of tissues or tumour margins.

Perhaps. Would obviously want to chose a speciality in which colour blindness was not going to disadvantage me, though unsure yet what specialties this would apply to.

Less likely to do dermatology.

Aware that a speciality like pathology is not practical because of the forensic aspects of the job.

It would be stupid to do a job that relied heavily on colour vision in the same way that it would be stupid to be a vascular surgeon if you had a tremor.

Anything else to express on the subject of colour vision deficiency in medical students?

I think routine tests/screening should be done to find out who are colour blind as many people are unaware.

I didn't want to be a doctor. I wanted to be a policeman and my school GP told me I couldn't because of some chart and this annoys me every day because I would be a bloody good copper and at the moment the police is full of racist idiots, and some doctor can take 2 minutes dictating your future. Thanks doc.

I am a qualified pharmacist. Throughout my UG studies it was something that I was conscious of but during my pre-registration training I found out about it and realised that it would not be a problem. I'm not sure how aware UG medics are of the implications of colour blindness. I myself am still unaware of which specialities are affected by colour blindness.

Results of blood test are reported in red and green, red to highlight abnormal results and green ones are normal. I find it difficult to distinguish between them on screen when looking at blood test results.

I didn't really appreciate potential of colour blindness to cause problems until undertaking this survey. Personally I still don't perceive that any of my areas of difficulty in clinical practice stem from colour blindness. However I imagine that some individuals have a more severe form than I do and I anticipate your research could prove invaluable to them.

Can you be a colour-blind surgeon?

It would be helpful to know exactly which type of colour blindness I have.

Clear guidance on the likely effects on clinical ability and interpretation of slides (histology, cytology etc) would be useful, although this would have to be linked to the severity of each person's colour blindness.

Lack of information and implications for future career are largely a mystery,

There is lack of understanding among colleagues. Some more education on this would be more important than the physiological explanation of the condition.

Some people have the misconception that being colour blind in some way, shape or form will be detrimental in the future. Many in my year seemed to think that with red/green colour blindness you can't tell the difference at all. This might be true in some cases but I have never been affected by this trait ever in my life; people should be made aware that this need not alter your life in any way if it is as mild as mine is.

It can be quite a scary thing, especially on trying to describe the colour of mucus membranes. They all seem to merge into one colour.

Has not really caused me a problem.

I think the impact of colour blindness on studying and practicing medicine varies according to the severity of the colour blindness and the number of wavelengths that are not seen. I think it is also important to point out that many people who have red-green colour blindness will have developed ways of judging colours that they are unsure of by the time they go to medical school. Nothing was ever mentioned about colour blindness in the application process. The way I have approached it is that I am not likely to diagnose disease on the basis of a single colour dependent clinical sign. Also, that my colour blindness can be trained to a large degree just by repeated experience of colours.

More advice would be great.

I don't feel colour blindness has any impact on my assessing colour, in fact I feel, given the chance to examine something I have very little difficulty. The only thing I struggle with is the test (spots/numbers). I am slightly concerned that I may be disadvantaged in getting some medical or surgical jobs but this is purely out of ignorance of the situation. Are there any jobs in medicine or surgery where colour blindness where colour blindness is an issue.

I think most clinical tests that are completed are objective (using fail-safe techniques and machinery etc) rather than subjective - so I think there is little to worry about.

Exams should have allowance for a second opinion from a non-colour blind person.

It is difficult to test other people for it. Thereby meaning that a career in ophthalmology might be restricted.

Powerpoint presentations and laser pointers are infuriating to watch when occasionally the colours are such that I can't make out what is going on! There is no thought or understanding on how this can impact on up to 10% of the audience! Simple colour schemes and using other pointers, e.g. computer mouse would be much better.

Sometimes I think that colour blindness may actually confer an advantage, e.g. my visual pathways may compensate for colour blindness with increased cortical representation of tone and hue. You might draw a parallel with someone who becomes blind in late life and compensate through increased acuity of remaining senses. In certain situations, e.g. where visual fields do not contain red/green (pigment) I may be better equipped for seeing than other non-colour blind individuals. I don't know how this could be investigated but it makes me feel better nonetheless!

There was a paper in the BMJ about it that you've probably read.

Yeah I get good marks in exams. It worries me that I may not be able to fulfil my potential. It's also worrying that if consultants knew about my colour blindness it may affect their perception of me as a good candidate for a job.