# Colour-blind Series: Anomalous Trichromacy

## What is it for?

Earlier entries in this series covered full colour blindness, where one type of colour sensing cell is missing. Anomalous trichromacy is different. All three types of colour sensing cells are present, but one of them does not function as strongly as it should. The result is weakened rather than absent colour vision.

There are three types, each a milder counterpart to the full deficiencies covered earlier in the series:

**Protanomaly** is a reduced sensitivity to red, making it harder to distinguish red from green or brown.

**Deuteranomaly** is a reduced sensitivity to green, again causing difficulty with red and green. It is the most common form of colour vision deficiency overall, affecting around 5% of men.

**Tritanomaly** is a reduced sensitivity to blue, making blue and green, and yellow and red, harder to tell apart. It is much rarer than the other two.

This is milder than full colour blindness, so people with anomalous trichromacy can sometimes manage where others cannot. But they will still struggle with designs that rely on small differences in colour, so the same principles apply.

## How to support it

The key principle is that colour should always be paired with another visual cue.

- Designers can add icons, labels, or patterns next to colour to show meaning. They can also use colour-blind simulation tools to check designs before they are built.
- Developers can ensure interactive states like errors and warnings are distinguishable by more than just colour (e.g. by using icons or supporting text).

- Content writers can make sure any meaning shown through colour is also stated in words.

## Useful links

- Web Content Accessibility Guidelines (WCAG) 1.4.1: Use of Colour
- Colour Blindness Simulator (Coblis)
- Colour and Accessibility (WebAIM)