CVD Filter

by Gary Pettie (Slightly Odd Games)

About

Thank you for importing **CVD Filter** into your project.

These post processing profiles are designed to help you to improve the readability of your in-game visuals for people with color vision deficiency (CVD) – aka "color blindness".

Important Note

This version of **CVD Filter** is designed to be used with the **built-in render pipeline** using the post processing (v2) stack.
If you are using URP or HDRP, please download the alternative package from the asset store.

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Setup

1. Install **Post Processing** via the Package Manager.

2. Add a new layer called "**CVDFilter**" to your project.
   Caution: Applying the provided **CVDFilter_TagManager.preset** *will add the required layers but will also remove any others that you have already set up. You have been warned!*

3. Add a **Post Processing Layer** to your camera
4. Set the **Volume Blending Layer** to the **CVDFilter** layer that you just created
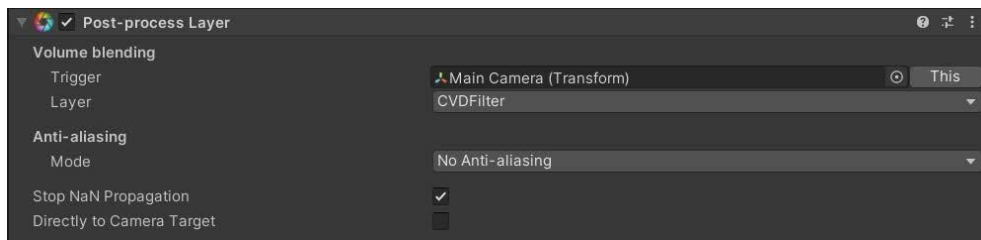
5. Drag the **CVDFilter Prefab** into your scene

6. If you wish to apply the filter to UI elements, set the Canvas **Render Mode** to **Sceenspace – Camera**.

7. Select your desired **Vision Type** from the dropdown menu to apply the various filters in real time.
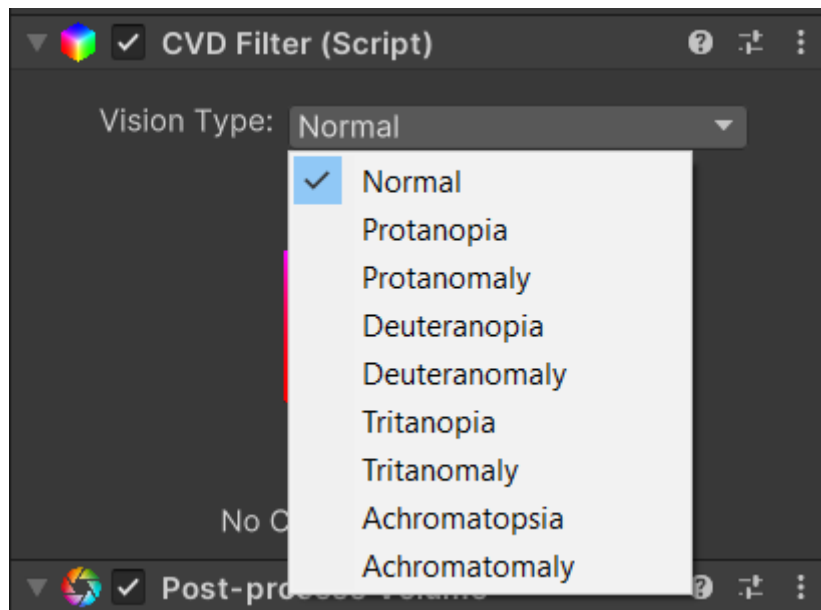
8. When a **Vision Type** is selected, the **CVDFilter** component will update to show you a preview of how colors will now be rendered and offers a short summary of what color modifications are being applied.

Included Filters

CVD Filter is primarily designed to mimic the 3 main forms of CVD, where only a single color receptor is affected.

also included are filters that mimic forms of CVD where all color receptors are affected equally.
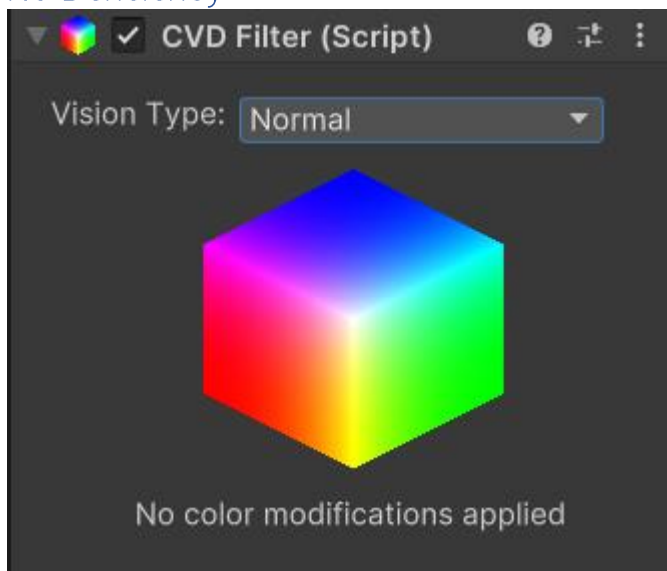
There is a third form of CVD, where two color receptors are affected.
This is called monochromacy and is incredibly rare. Therefore, filters for these conditions are not currently included in this collection.
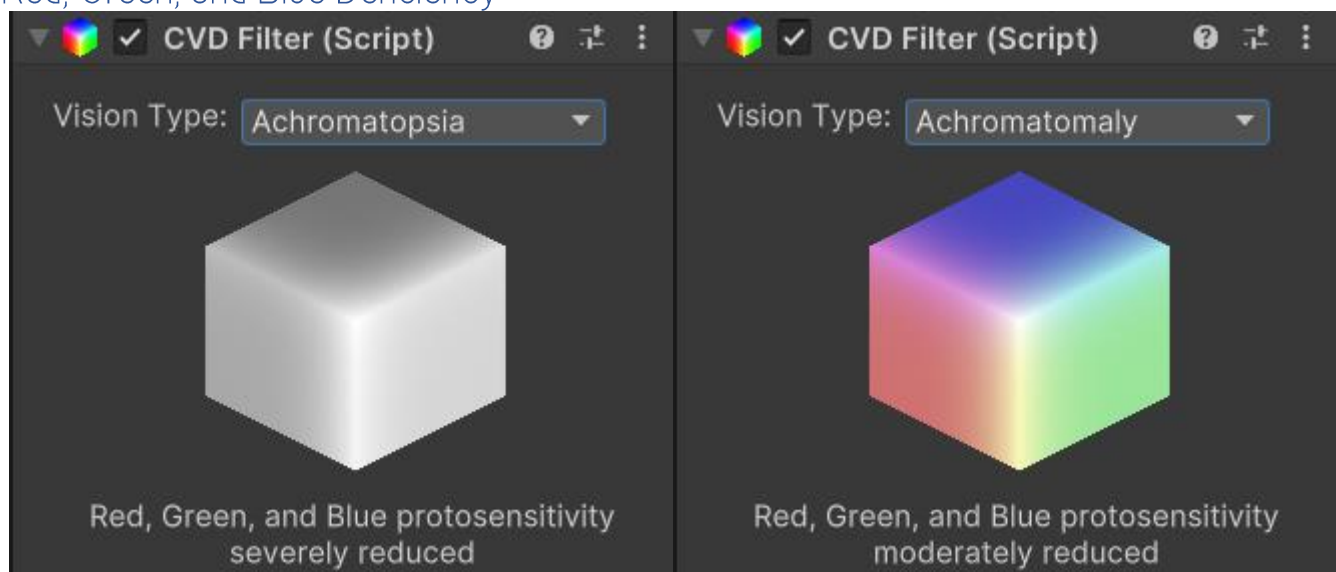However, you can simulate the effect of monochromacy by using the Achromatopsia filter as the readability of objects will be somewhat similar.

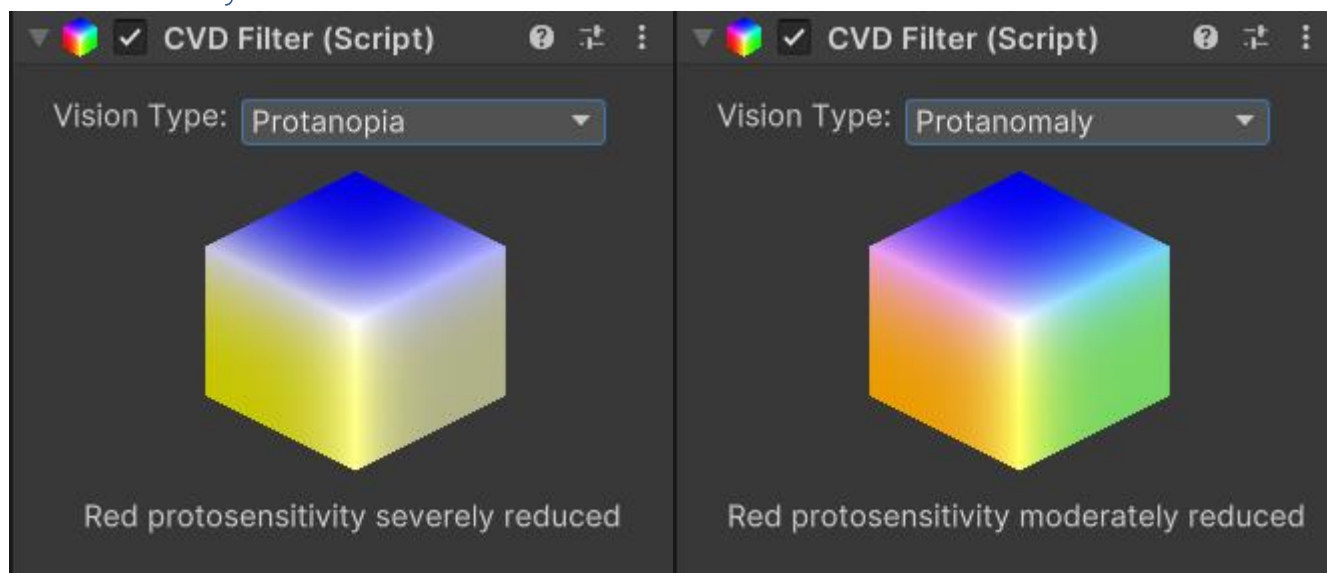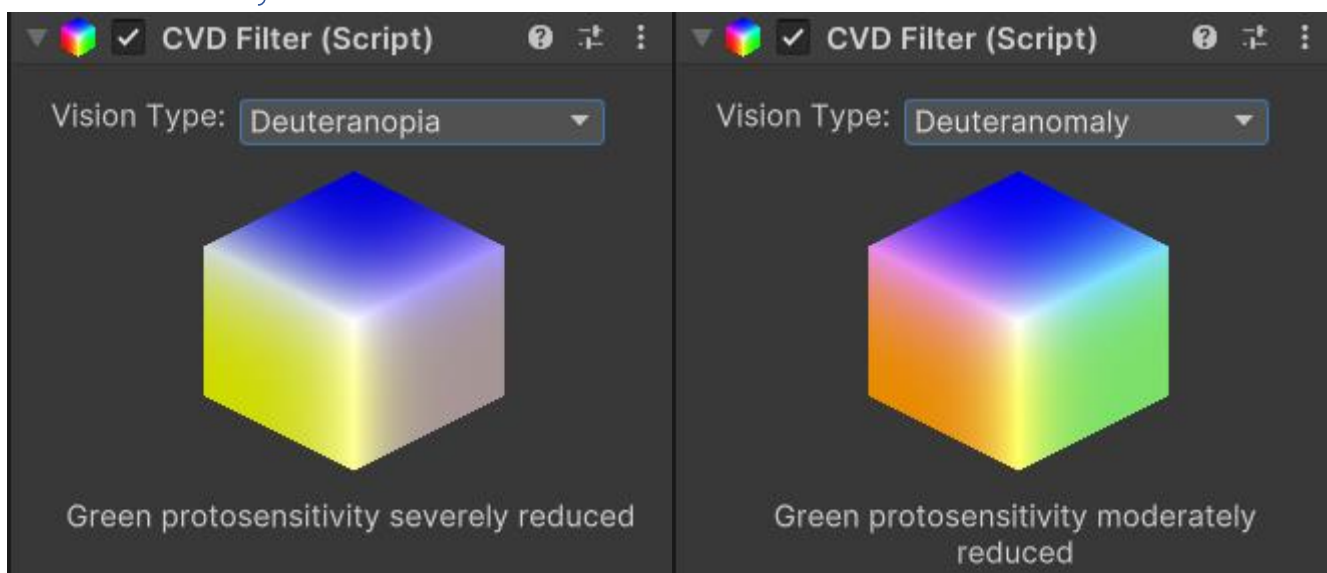Here is a more in-depth look at each of the provided filters.

No Deficiency
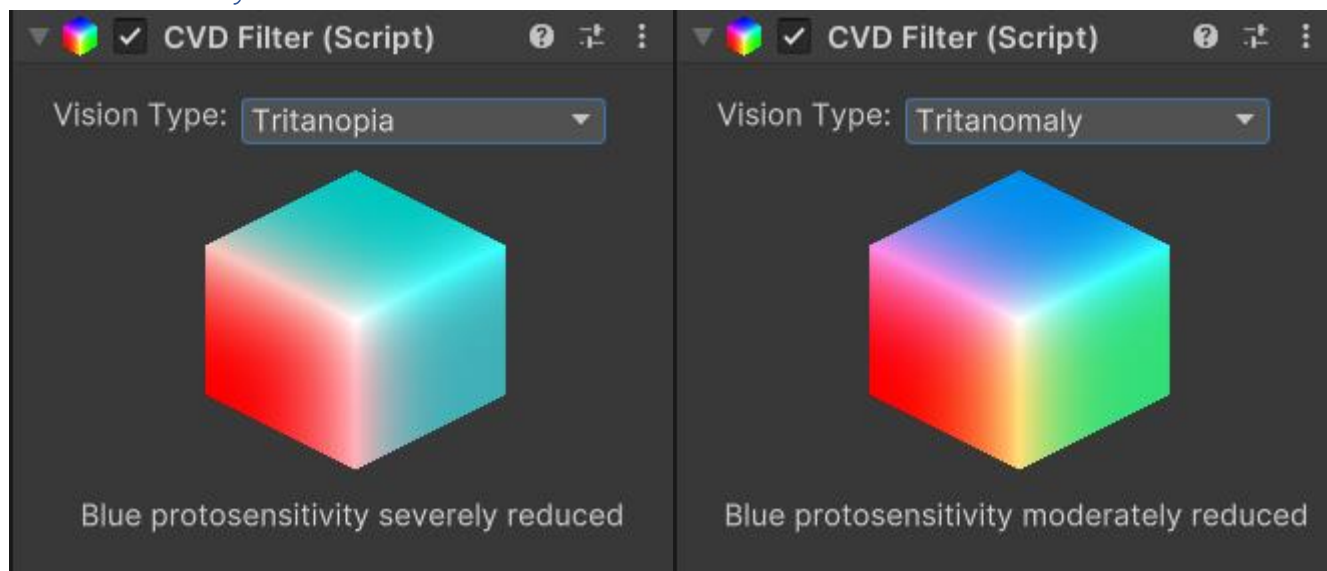

Red, Green, and Blue Deficiency

Red Deficiency

Vision Type: Protanopia

Red protosensitivity severely reduced

Vision Type: Protanomaly

Red protosensitivity moderately reduced

Green Deficiency

Vision Type: Deuteranopia

Green protosensitivity severely reduced

Vision Type: Deuteranomaly

Green protosensitivity moderately reduced

Blue Deficiency

Vision Type: Tritanopia

Blue protosensitivity severely reduced

Vision Type: Tritanomaly

Blue protosensitivity moderately reduced

Learn More About CVD

What is Color Vision Deficiency?

Color Vision Deficiency is more commonly referred to as color blindness.

The cone cells in our eyes are responsible for detecting color and are broken down into three types - Red, Green, and Blue.

When one or more of these types of cone cells are missing or defective a person experiences some form of CVD. If none of the cones function correctly then that person is truly "color blind".

Generally, CVD is grouped into three categories; red-green, blue-yellow, and achromatic.

Why should you care?

The most common form of CVD is, red-green, affecting around 8% of men and 0.5% women. That's a whole lot of potential players!

It's important to consider these players when creating your games, especially if color is used to identify key gameplay elements.

The provided post-processing filters help you see your game through the eyes of a player with various forms of CVD, allowing you to make better design decisions and extend the reach of your game.

Want to learn more?

Check out the following links for some interesting facts and statistics about CVD and color blindness.

GMTK: Designing for Disability - Making Games Better for Gamers with Colourblindness & Low Vision
National Eye Institute - Color Blindness
Colblindor - Colorblind Population
Iris - Statistics and How Many People Are Color Blind

Legal Stuff

This asset is distributed for free via the Unity Asset store. If you found it elsewhere then please let me know - especially if someone tried to charge you for it!

And now for the legal bit...

Support The Developer

If you found this asset helpful, tell your friends and link them to the Unity Asset Store page.
The more developers thinking about this sort of thing the better!

I also accept donations on Ko-Fi to help support the continued development of this asset.
All donations are appreciated but not expected!

(https://ko-fi.com/garypettie)

Contact Us:

If you have any comments/questions/complaints regarding this asset then please let me know!
You can email me at: SlightlyOddGamesUK@gmail.com
I always do my best to respond to everyone who contacts me and am more than happy to fix any bugs that you may come across.