

BI103 Spring 2024

Experiment Design

Eyesight is something I have always been curious about. I have used glasses since I was around 10, and transitioned to using contacts around 15. Some days I see great with my contacts while other days my eyesight is slightly fuzzy. Same thing goes when I use my glasses for a day instead, varying eyesight experiences. I believe one of the many causes is screen time, some days I spend more time on the computer or watching tv than others, and that causes that change.

Question: Does screen time affect short term eyesight afterwards?

Variable to test: Eyesight

Hypothesis: More continuous screen time results in diminished eyesight shortly after

Testing something like this would be rather difficult, given the various screens or devices used day to day and time associated with each one. There is however a tendency, at least in my case, to be sat in front of a screen once a week for roughly 4+ hours straight. This could be something like watching a movie or two, getting really invested in some tv show, or simply playing a game. This is where testing can be accomplished, how eyesight is after x amount of hours straight. Something like 1 continuous hour versus 2 hours, versus 3 and so forth. Continuous meaning no breaks, so just looking at the screen with no break in sightline. This method would however result in a test schedule that spans weeks if not months, because I could not easily replicate it unless it were done daily. That itself would also be dangerous, spending excess time on screens so often, so it would be unwise to do so.

Since, in my experience, eyesight is a bit blurry after prolonged screen time, it is a bit difficult to make out tiny details one could normally see. Eye doctors like using a simple test with the eye chart, the letters on the wall and having you read what you see. A similar approach can be done with a poster or an award plaque on the wall. After spending x amount of time looking at a screen, take a look at the item on the wall and try to read a snippet.