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### LIGHT & MOTION

Light and motion from digital devices can be a huge trigger, but there are tools that can help mitigate these effects.

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# Mitigating Triggers from Your Digital Devices

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## INTRODUCTION

People with a vestibular disorder rely heavily on the visual system to keep themselves upright and functioning. In our complex digital world, visual tasks are even more challenging for the vestibular patient than for the general population. Computers, tablets and phones can each pose difficulties.

Our digital devices are wonderful, annoying, and all sorts of inbetween. The lights, the motion, the print, the colors, and the noise can all challenge your already sensitive brain, eyes, and ears. When you are symptomatic, trying to scroll through an article on the phone or watch a movie on a tablet can be torture. Attending a Zoom meeting with multiple people talking and moving can be unbearable. And even texting back and forth can be dizzying.

It is important to use every tool available to improve your ability to function while using your device. Even small changes can have a big impact. It's worth taking some time to explore ways to make our digital companions more user-friendly. There are settings, adjustments, gadgets, apps, and information that can help.

## BRIGHTNESS AND LIGHT

The brightness of a screen can be a particular problem. Our modern devices have settings that can be easily adjusted to reduce brightness. Under Settings this will usually be a Display option. It is recommended that you set the brightness to closely match the room around you. This reduces eye strain as you look from the screen to your surroundings. Some devices have an Automatic brightness setting, which will



adjust the screen brightness automatically in response to the environment.

You also may want to try the Night settings. This option warms the light and blocks some of the blue light, which can often trigger or worsen vestibular symptoms. Some people schedule this option for certain times of the day, but it can also be used all the time.

Your device may also have a Dark option under Settings/display. This changes the background to a dark color and makes the text/image lighter, which reduces the amount of light coming from the device. Experiment with different levels to see which allows your eyes/brain to relax more.

There are several apps (Twilight, CF Lumen, Lux, Velis, etc) available that allow for more brightness control. If you work all day on a screen device it may be worth trying one of these. You can also invest in a screen filter to further cut glare, or wear blue-blocking lenses (see below).

## MOTION

Controlling or eliminating motion settings on your phone or tablet can also be an important factor for comfort. As with the brightness factor, dealing with motion on your devices involves learning which features/apps can be used or disabled, and practicing techniques that can help dampen your reaction.

Watching videos on a screen can be challenging. Partly to blame is the Parallax Effect - a feature that makes images seem realistic by having the background move more slowly than the foreground. This motion difference can be very unsettling for people with balance disorders. Depending on which device you own, there are options to reduce this effect. The iPhone has a feature that allows you

to reduce or stop motion effects. Under Settings, choose Accessibility, then Motion. Make sure the "reduce motion" toggle is switched on and the auto play message effect is switched off.

If you enjoy social media, be aware of a controversial setting called Autoplay, which allows sudden bright or flashing images as you scroll past them. Fortunately, Facebook and Twitter both allow you to disable Autoplay. On Facebook you can deactivate it by going to Settings - Account Settings - Media - Videos and Photos. On Twitter, navigate to Settings and Privacy - data Usage - Video Autoplay.



## NOISE

We are bombarded with so much noise in life. Often this is unavoidable - lawn mowers, traffic, people talking, babies crying, and so on. Then we add TVs, music, audiobooks, and podcasts to the mix. Here are steps you can take to minimize the impact of all this noise.

First, turn down your volume and remove notifications. If you are sensitive to sound, you may want to consider muting sounds associated with notifications. Instead, you can use vibrations to alert you (unless



of course you also experience allodynia, or sensitivity to touch).

You might also consider using headphones to limit outside disturbances. Experiment with different types and styles. Over the ear models can be more comfortable than earbuds. You could try ones that block or mute noise, or ones that plug into a device so you can listen to soothing music or white noise. If you are listening to a sound, remember to keep the volume low and take frequent breaks.

Finally, take notice of how many sounds are around you at once. Sometimes without even realizing it we are asking our brains to listen to people talking, TV, and music all at once. People with hypersensitivity can be triggered by trying to assimilate noise coming from multiple sources. Focus on one sound at a time, and turn off devices you don't need (e.g. don't leave the TV on as background noise). If it's noisy in a way you can't control, don't add more noise.

One exception to this concerns those with tinnitus. This constant hum or ringing in the ears can complicate our ability to handle other noise and find quiet. Sometimes adding a masking sound can help. Our devices offer access to apps and other tools that have an assortment of masking sounds, relaxation exercises, logging functions, sleep guides, and CBT (cognitive behavioral training) instructions. Examples include: OTO, T-Minus, Beltone Calmer, Tinnitus Aide, Audio Cardio and MyTinnitus.

**READING**

The activity we do most often on our devices is reading. We read the news, books, emails, texts, etc. As discussed earlier, the brightness setting can help a great deal when looking at a screen, but there are other ways to ease up the impact on our eyes and brain.

TIPS	
<b>Light</b> Reduce brightness	<b>Motion</b> Turn off Parallax
<b>Noise</b> Use headphones	<b>Dry Eye</b> Blink frequently
<b>Glasses</b> Try FL-41 lenses	<b>Font</b> Use large sans-serif

First, check your font size settings. It often helps to enlarge the font, though this can also result in additional scrolling. Also, when choosing fonts, opt for a Sans Serif one, like Arial. This won't tire the eyes as much as the Serif options (like Times New Roman). Stick with black print on a white background. You can also adjust your Contrast settings. Usually increasing contrast will be easier on the eyes, allowing the text to pop in relation to the background.

When adjusting font size, remember that screen size is important. The larger the font size on a smaller screen, the more eye movements you will have to make. This can be particularly fatiguing to a vestibular patient. Wearing the appropriate eyeglass prescription to see clearly on your device is a better strategy than increasing font size too much. The distance you are viewing your computer, tablet or phone at is important to tell your eye care provider so the proper lens power can be determined.

If you read books on a device, consider investing in a newer, E-Ink reader. This technology allows the screen to be

more like real print on paper without the glare and irritation from back lit LCD screen readers and tablets.

## VIDEO MEETINGS

Zoom meetings can be extremely tiring for the vestibular patient. While virtual meetings allow you to work and socialize without leaving home, the digital format can also cause your symptoms to flair. During a virtual meeting with multiple people we tend to scan randomly over the screen as people speak when in the gallery setting. This requires vertical, horizontal and diagonal scanning while maintaining convergence, which is a very demanding visual task. Here are some tips to help prevent Zoom fatigue:

- Take breaks, turning off your video and looking at objects in the distance to relax your eyes.
- Use the “direct chat” feature rather than trying to break into the conversation. Fighting for talk space can be challenging.
- Having only the person speaking on the screen will help reduce eye movements. Under Speaker View, select “pin video speaker” to prevent the view from jumping around as different people speak.
- Avoid animated and gimmicky backgrounds. These are distracting and tire your eyes.

## LIGHT-SENSITIVITY LENSES

Blutech lenses are a prescription lens which filters the troublesome blue wavelengths that tend to scatter more light. The classic Blutech has an amber color to the lens. Some eyecare professionals prefer this lens, as the tint helps reduce the most amount of brightness, and therefore is best at

reducing symptoms for people who have to work under fluorescent lights. Fluorescent lights flicker. This flickering is detected by the peripheral retina and can increase dizziness in many patients. It is best to try to avoid fluorescent lighting, but Blutech lenses help if this is not possible.

FL 41 is a rose colored lens that can also lessen symptoms. This works well for people who experience significant headaches when using a digital device. FL 41 does not block blue wavelengths, however a blue blocking anti-glare coating such as Crizal Prevencia can be applied over the FL 41 tint if needed.

## OTHER TIPS

**Look away** from your device often, allowing your eyes/brain to rest. When you rest your eyes, either close them for a few seconds or focus on something in natural light - out a window is ideal. If you are using a device outdoors, try wearing a cap or visor to cut the glare.

**Blink.** Even though blinking is a reflex you shouldn't have to think about, using a screen causes us to stare without realizing it. Studies have shown we blink up to 30% less when viewing any type of screen. Reduced blinking increases dry eye symptoms and can blur vision. Blinking moisturizes your eyes and resets your focus. Try blinking once when you scroll and look again when you stop.

**Neck position** - Bring your device to eye level rather than looking down. Constant strain on the neck can make vestibular symptoms worse. Relax your shoulders and jaw as well. Sit up straight and try not to hunch over. If possible, keep your feet flat on the floor or a stool so you feel grounded.

**Prescription eyeglasses** - Make sure



you have the proper eyewear for the distance you are viewing the screen. This should include any correction for binocular vision dysfunction.

**Well-being** - Some Android devices have a Well-Being feature. This tracks how much time you are on each app and allows you to take more control over your screen time. It can be helpful to limit screen time and work/read/play in shorter spurts.

**Natural light** - Exposing your eyes to natural light is important every day. Try to station your laptop or tablet near a window, or sit on the front porch. Looking toward natural light for breaks minimizes the effects of artificial light on your brain.

**TVs** - TVs are also blue light emitting devices. We don't interact with them, but the motion, light and sound can be just as triggering. Use your FL-41 glasses, sit the appropriate distance from your screen (which varies depending on screen size), and limit screen time.

## THE GOOD NEWS!

Your devices can also be aides. There are apps and podcasts that provide education, meditation, and relaxation guidance. There are apps to record your daily symptoms and apps to improve your on-screen experience. There are apps to limit your screen time and to chart your health. Depending on which device you use, it's worth researching settings options, compatible apps, and screen protectors/filters.

Your phone is also an important tool in case of emergencies. Make sure you have emergency contacts identified and medical information visible. If you need to call 911 or someone in your contacts list, make sure you know how to do so quickly. The iWatch, made by Apple, has a Fall

Prevention feature that senses a possible fall and allows you to either call for help using an SOS option or let the device or select contacts know you are OK. Devices are gradually adding more emergency and health features that can our worlds a bit safer.

## SUMMARY

As we learn to cope with our limitations, staying connected with people and the world is important. Often this is through virtual mediums. While we can't get rid of all triggering lights, sounds, and movements, we can learn how to minimize their impact. Get to know your devices and their settings. And the next time you are in the market for a new one, consider what safety features and settings may be beneficial. Balance your digital world with your need for symptom control and keep moving forward!



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