THE LATEST IN LENS TECHNOLOGY FOR DIGITAL DEVICE ADDICTS

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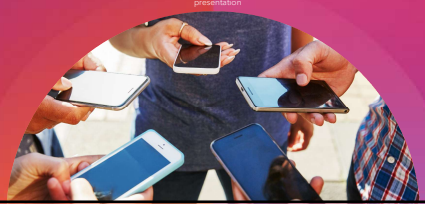
1 Level II Technical Credit

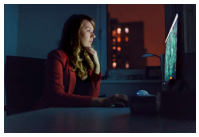
I do not have any relevant financial relationships with any commercial interests as it pertains to this presentation



Who Are the Digital Device Addicts?








Stats from Vision Council on Awareness of Blue Light It's Effects and Solutions to Mitigate Issues

- 55% of people are unaware blue light filtering glasses exist
- 50% of people are concerned about the effects of blue light
- 60% of those that don't currently wear blue light filtering glasses are interested in the future

Computer Vision Syndrome (CVS)

Definition

A condition resulting from focusing the eyes on a **computer** or other display device for prolonged, uninterrupted periods of time.

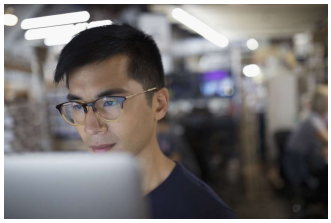
According to the Vision Council **60% percent** of Americans report symptoms of CVS.

Synonyms

Digital Eye Strain

Symptoms of CVS

- Eyestrain 32.4%
- Headaches 27.7%
- Dry Eyes/ Red Eye 27.2%
- Blurred Vision 27.9%
- Neck and Shoulder Pain 35.0%

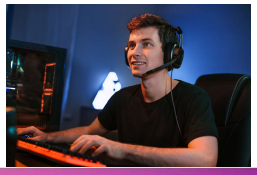


50%
REDUCTION IN BLINKING WHEN USING COMPUTER

7 hrs.
AVERAGE TIME SPENT ON COMPUTER

Causes of CVS

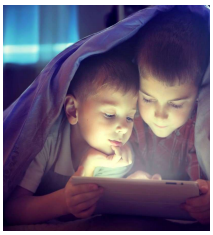
- Viewing a computer or digital screen often makes the eyes work harder. As a result, the unique characteristics and high visual demands of computer and digital screen device viewing make people susceptible to the development of vision-related symptoms.
- Viewing Angle-Eye focusing and eye movement requirements for digital screen viewing can place additional demands on the visual system.
- Glare-Glare and backlit screens can also contribute to the development of CVS.



Children and CVS

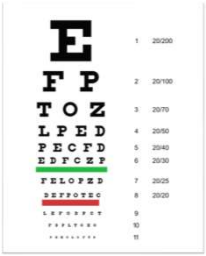
- The Vision Council reports these symptoms were observed by parents after children were exposed to screens for two or more hours:

  - 15.2% Reduced Attention Span
  - 13.5% Irritability
  - 13.3% Poor Behavior
  - 9.1% Eye Strain, Dry or Irritated Eyes
  - 8.8% Headaches
  - 5.0% Neck/Shoulder Pain



Diagnosing CVS

- Patient History
- Visual Acuity Measurements
- Refraction
- Testing how the eyes focus, move and work together



Correcting CVS

Select the right method

- **Take Breaks**
- **Set Ergonomics**
- **Use the right products**
- **Refract the patient for better vision**

70% of your day is spent in your mid zone

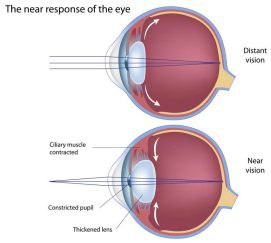
20/20/20 Rule

Every 20 minutes

Focus 20 feet away

For 20 seconds

Why it happens…



Pseudomyopia

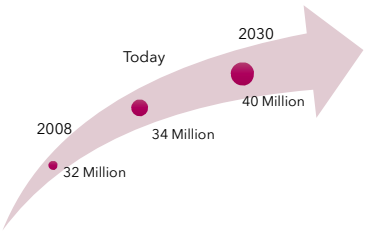
Definition

Refers to an intermittent and temporary shift in refraction of the eye towards myopia, in which the focusing of light in front of the retina is due to a transient spasm of the ciliary muscle causing an increase in the refractive power of the eye.

Symptoms

Intermittent blurring of distance vision particularly noticeable after prolonged periods of near work

Increase Prevalence of Myopia



Stats provided by by The Vision Council

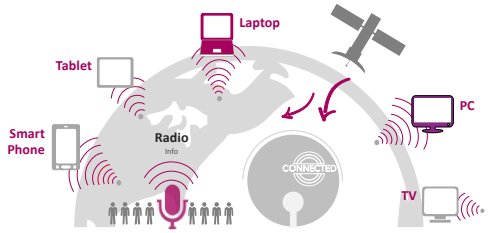
Why?

- Theory 1: "Near Work" or "Close Work" Hypothesis
  - Based on the concept that doing near work and close work strains our eyes. This builds up pressure in the eye as the ciliary fibers that focus on the eye are constantly contracting in an effort to follow words on a page. This is especially exacerbated in children whose eyes are still developing. Their eyes may grow permanently elongated and myopic.

Why?

- Theory 2: "Visual Stimuli" Hypothesis
  - This theory indicates that lack of normal visual stimuli causes improper development of the eye. Because we spend most of our time indoors in dim and florescent lit buildings we are not giving the eye the appropriate stimuli in which humans eye have evolved over time and this may contribute to the development of myopia.
    - Natural Stimuli include:
      - Visually exciting environments that are color rich
      - Geographical items such as sun, wind water and rain, jungle conditions, forest, the ocean and even the plains.

What technologies do we use?



How much time are we spending?

Average Time Spent per Day with Major Media by US Adults, 2011-2017
hrs:mins

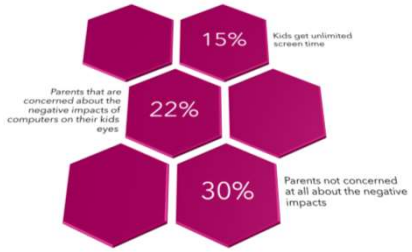
	2011	2012	2013	2014	2015	2016	2017
Digital	**3:34**	**4:10**	**4:48**	**5:09**	**5:29**	**5:45**	**5:56**
—Mobile (nonvoice)	**0:46**	**1:28**	**2:15**	**2:37**	**2:54**	**3:08**	**3:18**
——Radio	0:16	0:26	0:32	0:39	0:44	0:49	0:52
——Social networks	0:04	0:09	0:18	0:23	0:27	0:30	0:32
——Video	0:03	0:09	0:17	0:22	0:26	0:29	0:32
——Other	0:23	0:44	1:08	1:14	1:17	1:20	1:22
—Desktop/laptop*	**2:30**	**2:24**	**2:16**	**2:14**	**2:12**	**2:11**	**2:10**
——Video	0:12	0:20	0:22	0:23	0:24	0:25	0:25
——Social networks	0:21	0:22	0:17	0:16	0:15	0:14	0:13
——Radio	0:12	0:07	0:06	0:06	0:06	0:06	0:06
——Other	1:45	1:35	1:31	1:28	1:27	1:26	1:25
—Other connected devices	**0:18**	**0:18**	**0:17**	**0:19**	**0:23**	**0:26**	**0:28**
TV**	**4:34**	**4:38**	**4:31**	**4:22**	**4:11**	**4:03**	**3:58**
Radio**	**1:34**	**1:32**	**1:30**	**1:28**	**1:27**	**1:25**	**1:24**
Print**	**0:46**	**0:40**	**0:35**	**0:32**	**0:30**	**0:28**	**0:27**
—Newspapers	0:28	0:24	0:20	0:18	0:17	0:16	0:15
—Magazines	0:19	0:17	0:15	0:13	0:13	0:12	0:11
Other**	**0:39**	**0:38**	**0:31**	**0:26**	**0:24**	**0:22**	**0:21**
Total	**11:08**	**11:39**	**11:55**	**11:57**	**12:00**	**12:04**	**12:05**

Over 12 hours!

Did you know?

3 in 4 children under 12 use a smart device, cell or tablet, more than 3 hours per day?!

Are Parents to Blame?



Who's at risk

- **Kids** (Born 2005-Present)
  - 23.6% are spending more than 3 hours a day on digital devices
  - 22% of parents say they are very concerned about digital eye strain and their kids
- **Millennials** (Born 1982-2004)
  - 7 out of 10 report symptoms of digital eye strain
  - 57% of millennials take their smartphones to bed as their alarm clocks
  - Average time spent on smart devices is 9 hours per day!
- **Gen X** (Born 1965-1981)
  - 6 in 10 report symptoms of digital eye strain
  - GenXers own more tablets or e-readers compared to other age groups
- **Boomers** (Born 1946-1964)
  - 1 in 4 boomers spend at least 9 hours a day on digital devices

Choosing the right products

Glare
- Crizal
- Sentinel
- Transitions

Light
- Blue Light Filtering Clear Lens
- Photochromic
- Tinted Lenses

Fatigue
- Digital Lenses
- Anti Fatigue Lenses

Lens Styles or Rx Options

- ✓ Computer Glasses (SV Lens)
- ✓ Anti-Fatigue Lens
- ✓ Task Specific Progressive Lenses

Making Computer Glasses From a Bifocal RX

- Take half of the add power and add it to the sphere
- If you cannot deduct half of the add, take the lesser denomination
  - Example:
    - Add: +2.25
    - ½= +1.125
  - Instead use
    - Add: +2.25
    - ½= +1.00

Example

Original Rx:		Computer Glass Rx:
OD: -2.50	-0.75 x 82	OD: -1.50 -0.75 x 82
OS: -1.75	-1.50 x 94	OS: -0.75 -1.50 x 94

Add: +2.00

Anti Fatigue Lenses

Lowers the amount of eye fatigue the patient feels when using close technologies with a distance only Rx. We can reduce the strain on the eyes with this technology. It works in one of 2 ways:

1. A mild PAL is added to the lens, typically +.60d or less
2. They manufacturer uses a default base in method for near

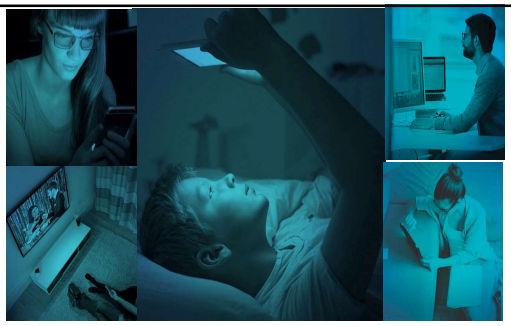
Task Specific Progressive Lenses

Lowers the amount of eye fatigue the patient feels when using devices that require near accommodations with a progressive lens. We can reduce the strain on the eyes with this technology. Lenses work in one of two ways:

1. Arms length correction at the top and progresses to near
2. Correction from 10-13 ft at top then progresses into near

Why Isn't Everyone Purchasing Glasses to Combat Digital Eye Strain????

- 69% of American adults say they didn't know that eyewear could be prescribed to protect their eyes from the effects of digital eye strain.
- Top Three Excuses For Not Purchasing Eyewear to Protect From Digital Eye Strain:
  - They don't think a solution is necessary
  - Their Eyecare Provider didn't recommend a digital eye strain solution
  - They are too expensive.
- Patients are showing symptoms of digital eye strain but they are unaware that there are solutions to help them fix their problem.



Who's at Risk for Damage From Blue Light?

- Children are at especially high risk
  - They have shorter arms which makes it so they hold the device closer to their face
  - Larger pupils
  - And anyone who wears a contact cuts their blink rate in half which allows more blue light in
  - Children have no natural protection
- Anyone who uses a digital device

Options for Protection From Harmful Blue Light

- Good Protection
  - Blue Light Non-Glare
  - Blue Light Clear Lens Monomer
- Better Protection
  - Photochromic Lenses
    - When activated have significant amounts of protection
    - When not activated have some protection because of the small amount of residual color
- Most Comprehensive Protection
  - Lenses with a permanent color/tint- providing the most protection in the entire blue light range from 400-500nm

How Do We Address This Growing Issue and Combat Digital Eye Strain???

Educate	Educate our patients about digital eye strain with marketing materials
Workup	Make sure your pre-examination history questionnaire addresses Digital Eye Strain
Prescribe	Doctors need to prescribe digital eye strain and blue light solutions in the exam room
POP	Your dispensary needs to have digital eye strain and blue light solutions at all price points