Visual Fatigue Syndrome

The Diagnosis and Treatment of Visual Fatigue Syndrome

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Fundamental Shift in Use of Vision

Most professionals require extended intermediate and near viewing and computer use

- Accountants
- Attorneys
- Engineers
- Business administrators
- Architects
- Computer technology
- Designers
- Medical/Allied Health

Widespread Computer Use

Work, Home, School:

- Over 55% use computers at work and rising each day
- Out of 100 million in US – 50% of workday is spent at a computer

Widespread Computer Use

- 75% of U.S. adults use computers
- 71% access the internet
- Adults 25 years and older average between 6-7 per day at a computer

Widespread Computer Use

In the past decade, computer use among children in the United States has increased dramatically... Consider these statistics:

- 94 percent of American families with children have a computer in the home with access to the Internet

Widespread Computer Use

The amount of time children ages 8-18 devote to entertainment media (including computer and video games) each day has increased from 6 hrs. in 1999 to 7.5 hours in 2009

24 hrs
-7 hrs school
-9 hrs sleep
-7.5 hrs comp.

.5 hrs left
Widespread Computer Use

- In 2009, 29 percent of American children ages 8 - 18 had their own laptop computer
- Kids in grades 7 - 12 reported spending an average of more than 90 minutes texting on their cell phones

Visual Fatigue

Today’s visual demands place greater stress on near and intermediate vision than ever before...

- Over 70% of Americans who work on a computer are affected by visual fatigue on a daily basis according to the AOA
- Studies show that eye strain and bothersome visual symptoms occur in up to 83% of computer users

Visual Fatigue

- National Institute of Occupational Safety and Health estimates that 90 percent of people who spend three hours or more a day in front of a computer screen have some symptoms of computer vision syndrome.
- In addition, according to the National Eye Institute, Kids are being diagnosed with myopia, or nearsightedness, more often and at an earlier age because of long stints in front of the screens.

Public Health Issue

- Approximately 10 million eye exams are performed annually in the U.S. due to vision problems related to computer use, making it a major public health issue
- 71% of those patients examined already wear corrective lenses for myopia, hyperopia, astigmatism or presbyopia but still have visual fatigue and eye strain (Independent of Rx.)

Visual Fatigue

- Computer use is the most common source of visual strain and fatigue, but other sources include:
  - Cell phones
  - Iphones
  - Ipods
  - Handheld electronic devices
  - E-readers
  - Video games
  - GPS

What is Visual Fatigue Syndrome?

A visual condition consisting of a sum of TREATABLE symptoms including:

- Headache
- Loss of focus
- Blurred vision
- Burning of the Eyes
- Tired Eyes
What is Visual Fatigue Syndrome?

A visual condition consisting of a sum of TREATABLE symptoms including:

- Red Eyes
- Dry Eyes
- Neck and Shoulder Pain
- Overall general Fatigue

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What is Visual Fatigue Syndrome?

"The complex of eye and vision problems related to near work which are experienced during or related to computer use."

---American Optometric Association---
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VFS - On the Rise

- 50-90% of computer users experience visual symptoms
- Gen Y-ers report seeing the greatest impact, with 68% reporting technology-related eye or vision problems
- 22% of computer users experience musculoskeletal disorders

Contributing Factors of The Patient

- Condition of the patient’s eyes and visual system
  - Rx
  - Dry eye
- Work habits
  - Too much staring, not enough blinking

Contributing Factors of The Computer

- Position of the monitor
  - Distance from the eyes
  - Location relative to eye level
- Nature of the image
  - Difficult to focus on pixel images
  - Eyes tend to relax to a point beyond the screen (resting point of accommodation)
  - Constant refocus needed, tiring the eyes

Contributing Factors of The Office Environment

- Inappropriate lighting
- Reflections from the computer screen or outside sources
- Poor ergonomics
- Dry and poor quality of office air
Detection and Diagnosis of VFS based on patient SYMPTOMS...

- Must screen **every patient** and ask about any **visual fatigue symptoms**

- May use a **specific patient questionnaire** or add to case history form

What Specific Questions should we ask our patients?

1. How many hours per day are you on a computer or other electronic device at work and/or home?
2. Do you have any hobbies that require you to use your eyes up close?
3. Do your eyes ever feel tired or strained while on the computer?
4. Do you ever have blurred or out of focus vision while on the computer?
5. Do your eyes ever feel dry or get red while using the computer?
6. Do you experience headaches with computer or electronic device use or while engaging in your hobby?
7. Do you experience neck or shoulder pain while using the computer?
8. Do you feel overall fatigue during or after computer use?

Detection and Diagnosis of VFS based on CLINICAL FINDINGS...

- **Refraction**
- **Binocular vision**
- **Accommodative problems**
- **Presbyopia and/or near correction**
- **Dry eyes**

Who is affected by Visual Fatigue Syndrome?

- Emmetrope, Myopes, Hyperopes & Astigmats
- Non-presbyopes & presbyopes
- Spectacle lens wearers
- Contact lens wearers
- Refractive surgery patients

Visual Fatigue can affect anyone at any age... Child, Teen, Young to Mature Adult
Treating VFS using Computer Eyewear

1. Single Vision Lenses or Readers
2. "Anti-Fatigue" Lenses for Non-Presbyopes
3. Near Variable Focus "Computer" Lenses for Presbyopes
4. Progressive lenses

Single Vision Lenses

- Only option in the past...Single Vision
- Poor range of focus
- Single vision lenses for reading have blurred mid-range vision

Single Vision Lenses

- Ages 13 to 29...add +0.50 to their spherical distance correction
- Age 30 and over add +0.75 to their spherical distance correction
- These glasses are intended for use at computer/intermediate distance only and will cause blur at all other distances
- **Always Rx with AR coating**

Increasing Demand for New Computer Lens Technologies

- Despite significant regular computer use by over 75% of the population, only 3% to 4% of Americans today wear eyeglasses to relieve vision problems at a computer.

Why??
- Not receiving appropriate diagnosis and treatment
- Not aware of lens options available

Newer Lens Solutions for Visual Fatigue Syndrome

- Appropriate diagnoses:
  - Accommodative VFS in pre-presbyopic patients
  - True presbyopic VFS
- Broad Range of Lens Options based on patient types & ages

Newer Lens Solutions for Visual Fatigue Syndrome

- **Anti-Fatigue:**
  Primary wear pair for non-presbyopes or emerging presbyopes who suffer from VFS
- **Variable Focus “Computer”:**
  Task specific lens for presbyopes who suffer from VFS
Treating VFS with "Anti-Fatigue" Lenses

Who is it for?
- Non-presbyopic patients having VFS symptoms
- Emerging presbyopes
- Individuals who use near vision for extended periods doing activities such as reading, texting, computer, electronic device use, paperwork, etc.

How do they work?
- Use as the primary pair to replace a patient's single vision lenses
- Provides a slight +0.60 D "power boost" in the lower part of the lens
- Provides greater patient comfort and reduced visual fatigue than standard single vision correction by allowing the eye muscles to relax thereby decreasing the accommodative effort

Fitting & Mounting
- Center pupil fitting height
- 13 mm minimum
- 23 mm minimum B measurement
- Monocular distance PDs
“Anti-Fatigue” Lenses
Key Patient Types

- Myopes or Hyperopes aged 13 to 34 years when they indicate VFS symptoms of tired eyes, eye strain or others
- 35 to 45 year olds just starting to need slight plus for reading

Variable Focus
“Computer” Lens Solution

Treating VFS with Variable Focus
“Computer” Lenses

Who is it for?

- Task specific wear by Presbyopes who spend extended time at intermediate and near viewing
- Meant to be used as a second pair to complement a patient’s primary pair of progressives

Treating VFS with “Computer” Lenses

How does it work?

- **Intermediate Vision**: Wide and comfortable “Computer” lenses provide full vision at intermediate distance by accommodating a patient’s natural posture and workplace ergonomics
- **Near Vision**: Smooth transition. Wide near area that provides a smooth transition for looking at the keyboard or documents
- **Distance Vision**: Functional and efficient. Offers clear vision at full distance within an office setting to most patients, allowing for effective sight at all distances

“Computer” Lens

- Contains an intermediate field of vision designed to offer full coverage of the screen area.
- Lens power specifically tailored for clear screen vision and frequent movements from keyboard to screen to surroundings.
- The design was based on user observations; lenses let you keep a natural posture: a 30° angle between the positions for viewing keyboard and screen.

**These lenses should NOT be worn for driving or other distance viewing activities.**

“Computer” Lens - Benefits

- Comfortable viewing at intermediate, near and distance
- Wide clear intermediate area
- Small area of viewing at distance to see across office
- No more head tipping – correct intermediate power is placed at center of lens

**These lenses should NOT be worn for driving or other distance viewing activities.**
**“Computer” Lens**

**Key Patient Types**

- Any presbyope indicating VFS symptoms
- Also perfect lens for activities at intermediate and near – hobbies, remodeling, sewing, auto work, Optometrists, Optometric Assistants, etc.

**Kodak Lenses w/ Anti-Fatigue Progressive Technology**

- Convergence Insufficiency??
  - Symptoms: Visual fatigue, HA, Blurred or double vision, Burning and tearing, Frequent loss of place and inability to concentrate

**Study of CI in 29 symptomatic pts. aged 45-68**

- Pre Study...all pts given survey about their CI symptoms
- Study...all pts. given two pr. of progresses...one w/BI prism in the add and one without
- Post Study...all pts given same survey about their CI symptoms

**Conclusion:**

PAL’s with BI prism found to be most effective in alleviating symptoms of CI

**Signet Armorlite Anti-Fatigue Technology:**

- Unique
- Precise
- Precise Short
- Concise

**“Computer” Lenses Available**

- Kodak Lenses w/Anti-Fatigue technology
- Essilor “Computer” Lens
- Zeiss “Business” and “Access” Computer Lens
- Shamir “Office” Computer Lens

Specific fitting techniques and lens parameters available from Sales Reps.

**Develop a VFS Plan...**

- Identify patients and educate them on lens options
- Prescribe the best lens for their needs
- Become comfortable using Anti-Fatigue and Computer Lenses to treat VFS
Additional Steps to Relieve VFS

- Use Proper Lighting
  - Decrease bright sunlight
  - Replace bright overhead fluorescent lighting
  - With full spectrum bulbs or floor lamps

- Minimize Glare
  - AR coating
  - Anti glare screen
  - Paint white walls a darker color in matte finish

Additional Steps to Relieve VFS

- Adjust screen
  - Brightness and contrast
  - Text size and color

- Blink more/Use of Artificial Tears
  (5X less blinking when using computer)

- Relax Focusing
  20-20-20 rule – For 20 mins on computer look away at 20 ft for 20 sec.

Additional Steps to Relieve VFS

- Frequent breaks
  - Two 15 min breaks plus 20-20-20 Rule
  - Stand up and walk around
  - Stretch arms, legs, back and neck

- Modify Work Station
  - Copy stand next to monitor
  - Screen 20-24 inches from eyes and 10-15 degrees below eyes
  - Good posture

Which eReader Makes Reading Easier?

- Unmatched visual contrast with both Kindle and Nook
- Maximal contrast display and readability in both
- Both have the crispness and clarity of a printed page, thereby reducing eye strain and fatigue, eliminating glare and backlight and making reading text and viewing images a pleasurable experience indoors and outdoors, even on a bright sunny day
- Both are superior to computer-type displays for extended, concentrated reading

Gunnar High Definition Lenses
 ***Digital Performance Eyewear***

Total Lens and Frame technology addressing the needs of the most demanding digital device users

***Ultimate Gaming Lens***

Gunnar High Definition Lenses
 ***Digital Performance Eyewear***

- Reduces visual stress/fatigue/digital eye strain
- Wrap design for maximum field of clear vision
- Proprietary amber tint to increase contrast
Thank You for your Attention!!
Any ???
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