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IEHA Program Lesson Submission

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Topic Title:	Impact of Screen Time on Children's Eyes
Topic Description: (Information should be researched, educational, approved for use (if you are not the author, seek approval from materials author), and presented in a format that would allow an individual to read, study, and teach to other peers. All copyright issues should be resolved before submission.)	Understanding the Impact of Screen Time on Children's Eyes and Strategies to Mitigate Negative Effects
Short Goal/Objective Statement for Lesson:	1. Define screen time and its various sources 2. Identify the potential impact of excessive screen time on children's eye health 3. Suggest strategies to mitigate the negative effects of screen time on eye health

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Understanding the Impact of Screen Time on Children's Eyes

As adults, we're witnessing firsthand the rapid integration of technology into every aspect of our lives, and with it comes concerns about its effects on the younger generation. The screens that surround us offer countless benefits and opportunities for learning and entertainment, but they also present significant challenges, particularly when it comes to the health of our children's eyes.

In this lesson, we'll delve into the various ways excessive screen time can negatively affect children's eyesight. From digital eye strain to the potential long-term consequences, we'll explore the research-backed insights that shed light on this critical issue. Understanding these impacts is crucial for parents, educators, and anyone involved in the care and development of children, as it empowers us to make informed decisions about screen use and prioritize the health and well-being of the younger generation.

Objectives:

1. Define screen time and its various sources.
2. Identify the potential impact of excessive screen time on children's eye health.
3. Develop strategies to mitigate the negative effects of screen time on eye health.

Lesson Plan:

1. Introduction (5 minutes)
 - Begin by asking participants about their daily screen time habits. Examples can include smartphones, tablets, computers, television, and gaming consoles.
 - Define "screen time" as the amount of time a person spends looking at screens, including electronic devices such as computers, tablets, smartphones, and televisions.
2. Discussion on the Impact of Screen Time on Children's Eyes (15 minutes)
 - Effects of excessive screen time on eye health.
 - digital eye strain,
 - myopia (nearsightedness),
 - dry eyes, and
 - sleep disturbances.
 - Reasons behind these effects, such as
 - blue light exposure
 - reduced blink rate, and
 - increased near work

Did you know extended periods of screen use can lead to digital eye strain, also known as computer vision syndrome? Symptoms include eye discomfort, headaches, blurred vision, dry eyes, and neck or shoulder pain. The American Optometric Association highlights that children may be particularly vulnerable to these symptoms due to their still-developing visual systems and tendency to engage in prolonged near work.

Nearsightedness: Research suggests a correlation between excessive screen time and the development or exacerbation of myopia (nearsightedness) in children. A study published in the journal JAMA Ophthalmology found that higher levels of screen time were associated with a greater risk of myopia progression among children aged 6 to 12 years.

Difficulty with Sleep: One contributing factor to these issues is the exposure to blue light emitted by screens. Blue light can disrupt the body's circadian rhythm, leading to sleep disturbances and exacerbating eye strain. Additionally, the reduced blink rate during screen use can result in inadequate lubrication of the eyes, contributing to dry eye symptoms.

3. Encourage participants to share their own experiences or observations regarding eye discomfort after prolonged screen use.
4. Strategies for Healthy Screen Habits (10 minutes)
 - Present strategies to reduce the negative impact of screen time on eye health, such as:
 - Taking regular breaks (the 20-20-20 rule: every 20 minutes, look at something 20 feet away for at least 20 seconds).
 - Adjusting screen brightness and contrast settings.
 - Maintaining an appropriate viewing distance from screens.
 - Encouraging outdoor activities to counteract prolonged near work.
 - Discuss the importance of parental guidance and setting limits on screen time for children.
5. Conclusion and Reflection (5 minutes)
 - Summarize key points from the lesson.
 - Invite participants to reflect on their own screen time habits and consider implementing healthy practices to protect their eye health as well the eye health of the children in their lives.

In today's digital age, children are increasingly exposed to screens from an early age, be it through smartphones, tablets, computers, or television. While these devices offer numerous educational and recreational benefits, excessive screen time can have detrimental effects on children's eye health. It falls upon us to supervise and offer guidance, to safeguard, the well-being of our children in regard to screen time.

References:

1. American Optometric Association. (n.d.). Computer Vision Syndrome. <https://www.aoa.org/patients-and-public/caring-for-your-vision/protecting-your-vision/computer-vision-syndrome>
2. Li, S. M., et al. (2019). Association of Lifestyle and Schooling With Myopia in 7- to 12-Year-Old Students in China. *JAMA Ophthalmology*, 137(8), 928–934. <https://doi.org/10.1001/jamaophthalmol.2019.1533>

Additional Resources

1. Prevalence of Digital Eye Strain:

1. According to a report by The Vision Council, approximately 59% of adults experience symptoms of digital eye strain after prolonged screen use.
2. Source: The Vision Council's report "Eyes Overexposed: The Digital Device Dilemma."

2. Impact on Children's Eye Health:

1. The American Optometric Association reports that 83% of children between the ages of 10 and 17 use an electronic device for more than three hours a day, which can contribute to digital eye strain and other eye health issues.
2. Source: American Optometric Association, "American Eye-Q® Survey Shows Screen Time Causing Eye Strain."

3. Association with Myopia (near sightedness):

1. Research published in the journal *JAMA Ophthalmology* suggests a correlation between increased screen time and the progression of myopia in children. The study found that children with higher levels of screen time were more likely to experience myopia progression.
2. Source: Li, S. M., et al. (2019). "Association of Lifestyle and Schooling With Myopia in 7- to 12-Year-Old Students in China." *JAMA Ophthalmology*, 137(8), 928–934.

4. Blue Light Exposure:

1. The American Academy of Ophthalmology warns that prolonged exposure to blue light emitted by digital screens may contribute to digital eye strain and disrupt sleep patterns.
 - Source: American Academy of Ophthalmology, "Blue Light and Your Eyes."

5. Impact on Sleep Quality:

1. A study published in the journal *Chronobiology International* found that exposure to blue light from screens before bedtime can suppress melatonin production, leading to sleep disturbances and reduced sleep quality.
 - Source: Chang, A. M., et al. (2015). "Evening Use of Light-emitting eReaders Negatively Affects Sleep, Circadian Timing, and Next-morning Alertness." *Chronobiology International*, 32(8), 1031–1040.

6. American Academy of Ophthalmology at <https://www.aoa.org/eye-health/tips-prevention/screen-use-kids>



Do you know the

20/20/20

rule to prevent
digital eye strain?

Take a 20
second break



Every
20 minutes



Look at
something 20
feet away



Source: American Optometric Association

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