

Letter to Editor

Eyes and Minds under Siege: How Digital Exposure Is Threatening Ocular and Neural Health in Adolescents

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Dear Editor,

In today's increasingly digitized world, adolescents are spending prolonged hours immersed in screen-based activities, including video gaming, binge-watching short video content, and attending online classes. While these habits may appear harmless, they conceal a range of adverse health consequences. A cross-sectional study reported that 63.7% of adolescents suffer from digital eye strain (DES), while 51.2% report poor sleep quality following more than two hours of screen usage daily [1]. According to both the CDC and WHO, the impact of excessive screen exposure extends beyond visual strain, contributing to sleep disruption, concentration difficulties, sedentary lifestyles, and psychological distress.

Among the most visible manifestations of this emerging public health concern is the rise in Digital Eye Strain (DES), formerly known as Computer Vision Syndrome, particularly in students exposed to multiple hours of daily screen time. Common symptoms include blurred vision, frequent headaches, and dry or irritated eyes [2]. These complaints are often worsened by poor posture, such as reclining in bed during classes, using screens positioned at improper angles, and exposure to harsh lighting that reflects off device screens. Furthermore, a marked reduction in blinking during screen engagement contributes to eye fatigue and gritty sensations, particularly after long hours of gaming or streaming [3]. Underlying visual impairments and prolonged neck flexion from poor ergonomics can further intensify these symptoms.

However, the impact of screen exposure is not limited to ocular health. Extended use—especially in the evening, disrupts melatonin secretion and disturbs circadian rhythms, interfering with sleep quality. This disruption contributes to fatigue, impaired academic performance, and can trigger migraine episodes in some adolescents [4]. In parallel, emerging evidence from the CDC indicates that approximately

25% of individuals with vision impairment also report comorbid symptoms of anxiety or depression [5]. These mental health vulnerabilities are further compounded by the emotional toll of cyberbullying and chronic exposure to curated content on social media, where adolescents may experience heightened self-comparison, dissatisfaction, and isolation [6]. The result is a cyclical burden in which visual and psychological symptoms reinforce one another.

Despite these challenges, recent studies suggest that practical interventions can mitigate the risks associated with prolonged screen use. Strategies include the 20-20-20 rule (taking a 20-second break to view something 20 feet away every 20 minutes), proper seating posture, use of blue light filters, frequent breaks, and routine eye examinations. More holistic approaches, such as “digital detox” routines built on self-discipline and conscious disengagement from screens, are gaining traction [7]. Complementary tools such as mindfulness-based practices, including deep breathing and meditation, have also demonstrated promise in reducing screen-related stress while enhancing concentration and emotional resilience.

More Information

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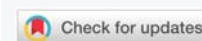
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Given the widespread integration of screens into adolescents' daily routines, a coordinated multisectoral response is essential. Healthcare providers must prioritize regular eye screenings and mental health evaluations, while educational institutions should promote awareness campaigns and reinforce healthy digital habits. Parents also play a pivotal role in guiding screen behaviors through structured limits and supportive digital environments. While digital devices remain indispensable tools for learning and communication, unregulated use can silently accelerate both ocular and neural complications. By implementing evidence-based strategies and promoting digital literacy, stakeholders can safeguard adolescent well-being in parallel with technological advancement.

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