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Mini-Review

Impact of binocular vision anomalies and stereopsis on individual performance: A comprehensive review of binocular vision disorders

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Binocular vision disorders and anomalies in stereopsis primarily affect individuals' everyday functioning, academic performance, and work efficiency. Binocular vision is the coordination between the two eyes and is essential for depth perception, spatial awareness, and visual acuity. Strabismus, amblyopia, convergence insufficiency, and suppression can cause defective stereopsis, visual exhaustion, double vision, and poor reading speed. These conditions typically affect tasks that require eye coordination, such as driving, sports, and fine motor tasks. Patients with binocular vision disorders typically complain of headaches, asthenopia, and difficulty sustaining focus, which can result in decreased efficiency in school and work environments. In children, undiagnosed binocular vision abnormalities can be a cause of learning problems, misattributed as attention disorders or dyslexia. Occupations that require precise depth perception, such as aviation, surgery, and engineering, can be significantly impacted by stereopsis deficits, compromising overall performance and safety. Early diagnosis and treatment, such as vision therapy, corrective lenses, and surgery, can mitigate the negative consequences of these disorders. The current review examines the effects of binocular vision anomalies on daily performance and highlights the importance of early diagnosis and management techniques to improve individuals' quality of life. Educating educators, employers, and healthcare providers about these disorders is essential in creating an accommodating and supportive environment for individuals with these disorders.

Keywords: Binocular anomalies, Stereopsis, Binocular vision, convergence insufficiency, Accommodative anomalies