

# PREVALENCE OF REFRACTIVE ERROR IN YOUTH

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Refractive errors are among the most common vision disorders worldwide, affecting individuals of all age groups, particularly the youth population. The increasing prevalence of refractive errors in young individuals has become a significant public health concern due to its potential impact on academic performance, daily activities, and overall quality of life. This study aims to critically analyze and estimate the frequency of refractive errors among the youth population, considering the various contributing factors such as genetics, environmental influences, and lifestyle changes. With the growing reliance on digital devices, prolonged near-work activities, and reduced outdoor exposure, the burden of refractive errors has seen a noticeable rise in recent years. Understanding the magnitude of this issue is crucial for implementing effective screening programs, early interventions, and appropriate corrective measures to prevent long-term visual impairment.

Refractive errors occur when the shape of the eye prevents light from focusing directly on the retina, leading to blurred vision. The most common types include myopia (nearsightedness), hyperopia (farsightedness), astigmatism, and presbyopia. Among these, myopia has shown a remarkable increase, particularly in urban areas where academic and occupational demands require extensive near-work activities. Several epidemiological studies indicate that the prevalence of myopia among youth is steadily rising, with some regions experiencing an almost epidemic-like surge. This alarming trend necessitates a comprehensive investigation into the frequency, causes, and preventive strategies associated with refractive errors.

The youth population, particularly students, is highly vulnerable to refractive errors due to prolonged exposure to screens, inadequate lighting conditions, and improper reading habits. Additionally, genetic predisposition plays a significant role, with children of myopic parents being at a higher risk of developing refractive errors. Environmental factors such as limited outdoor activities, poor dietary habits, and increased screen time further contribute to the escalating prevalence of vision problems among young individuals. Given the global rise in

cases, this study will focus on examining the trends, assessing risk factors, and identifying the most affected groups within the youth demographic.

The impact of refractive errors extends beyond visual impairment, affecting academic performance, social interactions, and mental well-being. Uncorrected refractive errors can lead to difficulties in reading, writing, and participating in classroom activities, ultimately affecting a student's academic achievements. Moreover, undiagnosed refractive errors often result in frequent headaches, eye strain, and fatigue, further hindering concentration and productivity. The psychological effects, including decreased self-confidence and social withdrawal, highlight the need for timely diagnosis and correction of refractive errors in young individuals.

The increasing dependence on digital technology in education and daily life has further exacerbated the issue of refractive errors. Prolonged screen exposure, improper viewing distances, and lack of breaks while using digital devices contribute to digital eye strain and increased myopia progression. Studies suggest that children and adolescents who spend excessive time on screens are more likely to develop myopia compared to those who engage in regular outdoor activities. This shift in lifestyle demands urgent attention from healthcare professionals, educators, and policymakers to implement measures that promote eye health and reduce the risk of refractive errors among youth.

Early detection and management of refractive errors are critical in preventing long-term complications. Regular eye examinations, vision screening programs in schools, and awareness campaigns can play a vital role in identifying and addressing vision problems at an early stage. Optical corrections such as eyeglasses and contact lenses remain the primary method for managing refractive errors, while advanced interventions like orthokeratology and refractive surgery offer alternative solutions for specific cases. Additionally, lifestyle modifications, including increased outdoor exposure, reduced screen time, and proper lighting conditions, can help mitigate the risk factors associated with refractive errors.